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The International Journal of Teaching and Learning in Higher Education (ISSN 1812-9129) provides a forum for the dissemination of knowledge focused on the improvement of higher education across all content areas and delivery domains. The audience of the IJTLHE includes higher education faculty, staff, administrators, researchers, and students who are interested in improving post-secondary instruction. The IJTLHE is distributed electronically to maximize its availability to diverse academic populations, both nationally and internationally.

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Reading Fiction as a Learning Activity in Clinical Psychology Education: Students’ Perspectives

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The use of fictional literature as “case studies” in psychology education has a potential to support students' learning in various ways. To further the understanding of such applications of fiction, we investigated how clinical psychology students perceived reading fiction as a learning activity. The participants saw benefits for their clinical training, theoretical understanding, and self-awareness. They also saw use of fiction in their education as predominantly beneficial for their learning environment. How the present findings support our understanding of fiction as an educational device is discussed in light of previous studies about the potential of fiction in higher education.

Reading fictional literature can be a way of learning about the world and the human condition – a claim explicated by Schick (1982) and empirically confirmed by, for example, Marsh, Butler, and Umanath (2012). An aspect of this is the use of fiction for educational purposes. In this study, we investigate how clinical psychology students perceive reading fiction as a learning activity, and what they feel they learn by reading fiction. The frame of reference is the use of fiction in higher education, in particular within the field of medical humanities.

Fiction in Education and Clinical Practice

It has been argued that engagement with the arts and humanities might increase health professionals’ capacity to empathically listen to patients and help them to understand and handle their own reactions to others so that their emotions can support rather than hinder engagement with patients (e.g., Charon, 2001; Lewis, 2011). Rolfe (2002) argued both that health professionals need the capacity to identify with their clients on an affective level and that this capacity might be increased through reading fiction. Such reading experiences can provide an understanding of others that is unobtainable in scientifically oriented texts. This perspective has been termed medical humanities (e.g., Charon, 2001; Chiapperino & Boniolo, 2014). In line with this, there is an increasing interest in using fictional literature in the education of health professionals, particularly medical students.

The educational approach to medical humanities was defined by Graham et al. (2016, p. 1334-1335) “as an activity that might improve empathy in medical students by fostering skills such as the interpretation of narratives and the ability to manage situations where there is no single correct answer.” Use of fictional literature is perhaps the most common way of including arts and humanities in higher education, but as Ousager and Johannessen (2010) noted, few studies have investigated the assumption that fictional literature improves medical students’ and practitioners’ clinical skills. Yet, some compelling examples exist. Peters, Greenberger-Rosovsky, Crowder, Block and Moore (2000) found that almost ten years after graduation from Harvard Medical School, physicians who had been educated in humanistic-oriented medicine felt more prepared to handle patients’ psychosocial difficulties than did physicians who had engaged in traditional medical education. Moreover, while it is known that empathy tends to decrease during medical education, studies have shown that empathy among medical students who engaged in a medical humanities course did not decrease as much as it did among students in traditional medical education, and the engagement with humanities improved capacity for communication and cooperation (e.g., Arntfield, Slesar, Dickson, & Charon, 2013; Graham et al. 2016; Mangione et al., 2018). Fictional literature can also support theoretical understanding, and Voss (2012) argued that well-chosen fictional descriptions of diseases could supplement scientific literature and clinical training to increase our understanding of neurological disorders.

A Wider Perspective on the Use of Fiction

It should be acknowledged that medical humanities is just one of the disciplines that show how reading fiction might improve empathy, the capacity to understand others, and the capacity to imagine oneself in situations that differs from previous and current experiences. Marsh and colleagues (2012) reviewed studies showing that when fictional literature and other fictional sources such as movies are integrated into education, learners increase their capacity to connect pieces of information and achieve a holistic understanding in ways not observed when textbooks alone are used. Pérez, Linde, Molas-Castells and Fuertes-Alpiste (2018) found that criminology students, who had been reading novellas as part of their education, reported improvement in their understanding...
of concepts. Kidd and Castano (2013) found that reading fictional literature improved readers’ ability to understand others’ mental states. Furthermore, Dijkic and Oatley (2014) argued that reading fiction supports personal development. Also, in the fields of both leadership education and business, the use of fiction have helped students to understand ethics and develop their empathy, as well as encouraging students to reconceptualize taken-for-granted assumptions (Hoggan & Cranton, 2014; Michaelson, 2016). On the other hand, Marsh et al. (2012) acknowledged the risk that fictional sources might include misleading information and errors that might be taken as facts, and they stressed that students’ reactions to fictional sources are heterogeneous and complex. Accordingly, it is difficult to show direct connections between the use of fictional literature and specific goals in the curriculum.

**Fiction in Psychology Education**

The capabilities that can be augmented through reading fiction, according to the cited literature, are also relevant to clinical psychology education. Here, Moghaddam (2004) argued for the use of fiction in psychology education (see also Mills, 2006). It can also be argued that fiction may be even more important in psychology education than in medical education: lacking the physiological measures central to medicine, psychologists encounter clients in complex situations with ambiguous information and a need for interpretation, making the ability to understand concepts and relate complex descriptions of reality to theoretical models central to the clinical psychologist’s education (e.g., Erikson & Erlandson, 2015). However, there are few studies of the integration of fictional literature into clinical psychology education. An exception is Janit, Hammock, and Richardson (2011), who found that students in a course on abnormal psychology increased their understanding of the subject by reading fictional narratives as case studies, to which they applied the theories and concepts they were learning. Deering (2018) found similar benefits associated with the use of fictional literature when teaching crisis intervention (see also Pérez et al., 2018).

The influence of literary quality on readers’ personal development has been studied within experimental psychology. It has been shown that content alone does not explain the influence that has been observed, and that the literary quality of the text is important (Dijkic, Oatley, Zoeterman & Peterson, 2009; Mar, Oatley, Hirsh, dela Paz, & Peterson, 2006). However, the question of literary quality goes beyond the scope of this study.

One benefit of fictional literature is that traditional case studies are written with the aim to illustrate some particular points from a particular theoretical angle, whereas a fictional text usually is less focused, thus, requiring students to assume responsibility for identifying the theoretically relevant aspects (e.g., Michaelson, 2016). This difference between fiction and traditional case studies concerns a general feature of clinical psychology education: the clinical psychologist is constantly confronted with situations where there are no clear answers or where patients’ narratives are incoherent or infused with strong emotional reactions, which are more often than not the reason the patient is seeing the psychologist.

Fictional literature often offers existential dilemmas without solutions: dilemmas that also characterize clinical psychological practice in which there are seldom clear or perfect solutions, and the professional task is to find a solution that is individually framed and good enough (e.g., Hammarström, 2016; Punzi & Hagen, 2017; Topor, Böe, & Larsen, 2018). Therefore, findings suggesting that fictional literature can help students to increase their capacity to handle complex information and reach holistic understanding, as reviewed by Marsh et al. (2012), have direct bearing on clinical psychology education. Particularly relevant to psychology education is Rolfe’s (2002) claim that fictional literature is a potential device when teaching future health professionals to understand their clients on an affective level. This is also in line with a current trend in clinical practice and research where there is a prominent focus on emotional reactions and regulation in assessment and treatment interventions representing various theoretical perspectives (e.g., Berking et al., 2018; Mathiesen et al., 2015; Mlo tek & Paivio, 2017). It is important to note that fictional characters are not restricted to the role of ‘patients’, but might also become positive role models for students, as shown by Hoggan and Cranton (2014).

Many of the capabilities supported by reading fiction are related to what is usually discussed in terms of critical thinking, such as the ability to proceed with caution when conclusions must be drawn from complex and conflicting information. Accordingly, Peters et al. (2000) argued that reading fiction could support students’ development of critical thinking (see also Hoggan & Cranton, 2014). Whereas critical thinking is one of the more enigmatic concepts in higher education, it is hardly controversial to want students to develop critical thinking abilities in line with what Ennis (1993, p. 180) described as "reasonable reflective thinking focused on deciding what to believe or do" in relation to their professional capabilities. Here, critical thinking is also a matter of understanding and accepting the uncertainty of knowledge claims, a vital aspect of higher education going back to the early 19th century and the educational ideals of Wilhelm von Humboldt (e.g., von Humboldt, 1970).

A way of framing the benefits of reading fiction is the possibility of confronting the unexpected and challenging features of human life under educational
conditions where they can be discussed and placed in a context. The need for such confrontations, whether promoted by the use of fiction or not, was accentuated by Barnett (2011, p. 124), who wrote: “It is the university’s direct responsibility to bring students to confront accounts of the world that are new to those students. It is the university’s implicit responsibility, therefore, to disturb the students with strangeness.” Biesta (2005), supporting this view, saw development of knowledge as a reaction to challenges, disturbance, and even irritation, and then went so far as to describe it as a violent dimension to education, which for us includes helping students to develop both “knowing what” and “knowing how”. We submit that all university students have the right to receive an education with such disturbing elements that will push them out of their comfort zones (see also Erikson, 2019a). For psychology students this must be done in a way that prepares them for a profession in which emotional challenges are an everyday occurrence. Therefore, the case for reading fiction as part of the training to be a psychologist is definitely not a matter of romantic expectations about aesthetic experiences or of promoting personal development per se. The clinical psychology student must confront the aspects of human desires and human interaction that can appear strange or repulsive and that must be familiar ground for a clinician (e.g., Punzi, 2016; Shalev & Yerushalmi, 2009) or for anyone who encounters individuals with extraordinary experiences in their professional practice. The case for reading fiction is that it can help students to confront, understand, and respect the complexity of the human condition, provided the fictional examples are selected and used with a clear pedagogical idea that leads students in such a direction. Thus, setting assignments that involve students reading fiction implies a dual responsibility: pushing the students outside their comfort-zones and doing so in a way that supports their development (see, e.g., Erikson, 2019a, for a further discussion of such responsibilities).

However, whereas these arguments suggest that students benefit from reading fiction as part of their education, students’ motivation to engage with such tasks depends on the extent to which they see the potential benefits associated with such learning activities. Despite the compelling arguments for using fictional literature in clinical psychology education, we know little about how students themselves perceive reading fiction as a learning activity. Accordingly, the purpose of the present study is to investigate how clinical psychology students perceive reading fiction as a learning activity and what they feel they learn by reading fiction. The findings from the study, together with the educational theory reviewed, can help in developing use of fiction as an educational device to support learning. Given that psychology covers a wide range of theoretical traditions, concerned with various levels of analysis, use of fictional literature might have different functions in different contexts of psychology education.

Method

Participants

In total, 109 students participated. They studied in a 5-year clinical psychology program at a Swedish university to gain a professional education required to become a licenced psychologist. The first five semesters of the programme constitute the pre-clinical part. During the sixth semester, students practice in clinical settings. The participants in the present study were currently in their second year of education and thus in the pre-clinical part.

The data were collected over a period of three semesters, thus involving students from three different admission waves. Each semester, the students were divided into three seminar groups. Thus, nine seminar groups participated. The first semester, the group consisted of 33 students (23 women). The group from the second semester consisted of 43 students (32 women), and the group from the third semester consisted of 33 students (23 women). The gender distribution is representative of Swedish clinical psychology education (Centrum för rättvisa, 2009).

Procedure

During a course in cognitive psychology, a lecture was given on cognitive models of motivation that included a presentation of the concept of possible selves (conceptions of self in future situation, e.g., Erikson, 2019b; Markus & Nurius, 1986). The lecture was followed by a seminar during which the data collection took place. In preparation for the seminar, the students were asked to read the first part of the novel Doctor Glas by Swedish author Hjalmar Söderberg (1869-1941), which would be used in a discussion of the possible selves distinguishable in the fictional characters.

The novel, originally published in 1905, is written as a diary (available in English translation; Söderberg, 2002). The students read the first 1800 words which cover the first two days of the diary and which present the doctor’s initial reflections on his private and professional life. Doctor Glas is presented as a lonely man with anxieties and occasional strong emotional reactions, in particular regarding his animosity not only against a clergyman, Reverend Gregorius, whom the doctor encounters in both social and professional settings, but also against female patients seeking abortion (which was illegal at the time). The book caused a huge controversy in Sweden when it was originally published because the doctor eventually murders Reverend Gregorius. However, the latter part

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of the narrative, in which the murder occurred, was not included in the part read by the students.

The text was chosen for the course because the doctor’s reflections about himself, as well as the other characters’ behavior and reactions, can be analyzed in terms of the construct of possible selves, making it useful for discussing and illustrating the theory. The students were given the task of reading the text in advance. During the seminar, the students were asked to reflect on the fictional characters in terms of their possible selves and these possible selves’ influence on the characters’ behavior and understanding of the world. The final task of the seminars was to respond to the question, “What kind of knowledge about psychology can you acquire by using a fictional text for the kind of analysis you have just performed?” The discussions of this final task provided the data for this study. We do not know whether individual students previously had read the book, which might have influenced their ability to discuss the characters. However, the task of discussing the experience of reading fiction was not related explicitly to the specific novel, and whether they have read the book as a whole is therefore considered to be of marginal influence.

Each seminar lasted for two hours. Each seminar group (11 to 14 students) was divided into three or four smaller groups, which during the first hour discussed the questions. During the second hour, the seminar group as a whole shared and discussed their reflections. For the last five to ten minutes of the seminar, the students discussed the kind of psychological knowledge they can develop through the use of fiction.

During these final discussions, the seminar leader, who is the second author of the present study, took notes directly—not by transcribing verbatim each statement by the students, but by identifying topics the students discussed—and made notes on these. For each topic, at least one student statement was included in the notes. These notes constitute our data set. Thus, the notes are not representative of the weight given by students to various topics, but the statements represent the students’ various reflections on each topic and thus the breadth of the discussions.

The students agreed to detailed notes of the discussions being taken by the teacher, notes that would eventually be used for research, as well as course development. At Swedish universities, ethical approval is not required for this kind of data collection, and no part of the documentation of the data could be connected to individual students at any time during the data collection or analysis process.

Analysis

The data from each of the nine seminar groups were initially analyzed separately using thematic analysis (e.g., Braun & Clarke, 2006; Willig, 2013). In the first step, we coded the data and identified and labeled meaning units in the notes. In the second step, these meaning units, from all the seminar groups, were sorted into twenty-one sub-themes such as “Literature captures human existence”, “Accepting group atmosphere”, “Alternative to case studies”, “Research and theory”, and “Extended room for learning”.

Results

The discussions in the different groups varied in their approaches, and the four themes were therefore given different attention by the students, as different groups were interested in, and returned to, certain topics during their discussions. Still, the overall attitude towards the use of fiction was positive.

Clinical Skills

This theme was the only one discussed in all seminar groups, and in seven of the nine groups, this theme was important to the students. Here, the students discussed how reading fictional literature could improve their future clinical skills. For example, they sensed that fictional literature improved their capacity to perceive phenomena from varying perspectives. They also suggested that fictional literature made them more aware of how emotional states might be expressed in many different ways. These observations all concerned capacities that are needed in clinical work and, thus, are part of learning to become a clinical psychologist.

Some groups specifically discussed language in terms of the varying verbal expressions that refer to emotional states. Others discussed being able to understand the subtle emotions presented by the main character in the novel, which they felt supported their capacity to encounter and understand their future clients. Students also discussed the extent to which fictional literature could increase their capacity for reflection and simultaneously provide a medium on which they could reflect. In relation to clinical skills, students discussed the importance of empathy and how empathy was necessary for the capacity to take different perspectives. They also assumed that the capacity to take different perspectives increased empathy.

The students mentioned the need to avoid over-interpretation, as well as biased conclusions, which were also perceived as important in their future clinical work. Some sensed that fictional literature could be overly explicit, as the characters were constructed by the author to make a specific point. Therefore, fictional
literature should be approached with caution. The students also suggested that characters in novels cannot be equated with “real persons”. Nevertheless, there was agreement that studies of fictional characters could support the development of clinical skills, especially those centered on reflection, emotion, and empathy. The students also mentioned picturing themselves encountering clients when they discussed how fictional literature might support learning. For example, they sensed that fictional literature could improve their future capacity to encounter clients without judging them or perceiving them as one-dimensional.

Other discussions in relation to clinical skills concerned how fictional literature could raise existential questions about what it means to be a human being, thus broadening their perspective on future clients. In line with this, some students sensed that fictional characters could offer perspectives on how human beings feel, think, and understand themselves and their world because fictional characters are described “from within”.

Self-knowledge

In five of the nine groups, students discussed how fictional literature could increase their self-knowledge, and this was a particularly important theme for students in one of the groups. Such self-knowledge could concern one’s own emotional reactions, as well as awareness of assumptions and even stereotypes about others. The students discussed the need to be aware of one’s own assumptions and how many assumptions one indeed makes without being aware of it, not only when reading fictional literature, but also “in real life”. In this regard, the students believed fictional literature could enable such awareness.

Moreover, the students discussed how fictional literature could foster their development both as individuals and as future clinicians. Some suggested that clinical psychology is not only a matter of theories, research, and methods, but also of human encounters. For this reason, future clinicians need to learn about themselves and their own reactions and emotions. The students were able, for example, to reflect on how their own reading and understanding of the characters reveals something about them. By identifying with the characters, one could imagine what it might feel like to be in a certain situation. By reflecting on one’s own possible reactions and ways of handling the situation, one could also learn more about oneself. Such self-knowledge could make it easier to also understand others. Moreover, it could also help them to understand the complexities of human beings, and to note that people’s reactions and behaviors cannot be assessed in any straightforward way, because the motives and intentions of the individual concerned might vary in so many ways.

The students thus sensed that fictional literature provided insights that could be applied to other life circumstances and contexts. Moreover, by reading fictional literature, one developed the capacity to understand fragmentations and disruptions in narratives, for example how people, including the reader, might lie both to themselves and others and how one needs to listen to the whole narrative in order to understand an individual.

Research and Theory

In eight of the nine groups, the students discussed the relationship between fictional literature and their understanding of psychological research and theory. For one of the groups, this was a particularly important theme. In their discussions, students compared knowledge acquired from reading fictional literature with knowledge acquired from research and theory. Here, fictional literature could be perceived both as a supplement to research and theory and as providing a qualitatively different kind of knowledge. The students felt that fiction gave a presentation of psychological life that was richer and deeper than representations from research or theory alone. Moreover, the students discussed how fictional literature supported their learning of theories, because it allowed them to connect theories to characters and themes in the novel, rendering the theories easier to understand and remember. The students also sensed that theoretical knowledge became more profound through fiction, because it could be connected to a representation of human experiences, making it less abstract.

Fictional characters were perceived as case studies, and the work with fictional cases improved their capacity to analyze and interpret psychological processes from varying theoretical perspectives. According to some students, the fictional characters offered possibilities to test the utility of theories. For example, the students discussed how some theoretical concepts were too limited to capture psychological processes or complexities. They also mentioned that if varying theories were applied to the same case, the theories could be challenged. In this way, fictional literature could open the door to integrating and nuancing theoretical perspectives. Moreover, fiction could initiate communication by adding a layer of human experience that, according to some students, was not captured by research or theory. Moreover, this layer was difficult to verbalize, but some students reported sensing that fictional literature begins where psychology ends.

The students also mentioned that fiction gave rating scales and statistical data a human touch, and in this respect fictional literature was perceived as a unique form of knowledge. Some students mentioned that reading about the depressed Doctor Glas gave more
relevant knowledge about depression than did learning about theories and rating scales for depression. Theories and concepts that were difficult to understand could be approached from an intuitive perspective. Because fictional texts are free in form and might have an insider perspective, they can, according to the students, elucidate psychological processes that are otherwise hidden. Moreover, the students sensed that, in real life, patients might refrain from telling their psychologists everything. Therefore, it must be acknowledged that real human beings are more unpredictable when encountered in real life than when presented in academic or fictional literature. Throughout the discussions the students contemplated whether fictional literature might be just as simplifying as theories are.

**Extended Room for Learning**

In seven of the nine groups, the students discussed how fiction brought new elements to their learning, and this was repeatedly discussed in five of these groups. Fictional literature was perceived as fun and stimulating, thereby enhancing motivation. Moreover, the coherence of the text created a structure that could be perceived as beneficial for learning specific concepts or theories because ambiguities were downplayed. However, other students sensed that, in fiction, ambiguities were tolerated to a greater extent than in traditional case studies. For example, students discussed how fictional characters could be contrasted to educational case studies constructed to illustrate a specific diagnosis or difficulty. The students felt that in traditional case studies the inner life of the individual could be excluded, and thus these cases were perceived as non-engaging.

Integrating fictional literature into education could be timesaving, according to the students. Fiction is accessible: the fictional character is there. The students were aware that an author had created the characters, as well as that the characters were not available for further questions as real clients are. Nevertheless, they sensed that the utility and timesaving aspects of fictional literature should be acknowledged. Some students also sensed that fictional characters were “compact”. The most relevant aspects of the character were already defined, which also was timesaving. They compared this to research data that could be too extensive for students to grasp.

The students also discussed ethical aspects of using fiction as compared to cases based on real persons. When working with real cases, the students wanted to be respectful and humble, whereas they sensed less responsibility when working with fictional characters. They felt comfortable with discussing psychological processes in detail and dared to discuss positive as well as negative sides of the character concerned. It was possible to test ideas and perspectives that could be perceived as somewhat harsh without hurting or patronizing anyone.

The integration of fictional literature could also have positive effects on the interpersonal atmosphere in class, which in turn was beneficial to learning. For example, making a joke was welcome, and the climate was more accepting and productive. Moreover, it was possible to dwell on specific aspects of the character and even to speculate because the person was not a real human being. Students also thought it was fun to read and discuss fiction, and the simple fact that the teaching and learning activity was fun facilitated learning and improved the atmosphere in the group.

**Discussion**

The purpose of the present study was to investigate clinical psychology students’ perceptions concerning reading fiction as a learning activity, as well as what they felt they learned by reading fiction. The students could spontaneously see a range of advantages and some challenges in the use of fiction. In their responses the students moved the discussion to a more concrete level where new dimensions could be seen that went beyond the more theoretical level of the study aim. In this respect, the students, who were in the pre-clinical part of their education were focused on their future roles as clinical psychologists and their encounters with patients.

In particular, the students clearly saw the benefits of using literature in their clinical training, which is in line with prior studies (Djikic & Oatley, 2014; Kidd & Castano, 2013; Marsh et al., 2012). Moreover, the potential of fiction to offer a didactic tool, illustrating theoretical models and concepts – as argued for by Deering (2018), Janit and colleagues (2011), as well as Michaelson (2016) – was perceived by the students (see also Pérez et al., 2018).

The students also problematized the use of fiction, partly in line with the discussions by Marsh et al. (2012), as they felt that fictional characters might be too “compact” or incompletely described to offer a fair representation of human complexity. This points to a responsibility for the teachers to present tasks involving fictions in a nuanced way, making the students aware of the potential difficulties. There is also a need for further empirical research on these kinds of difficulties, as well as on the risk of students being emotionally overwhelmed by particularly distressing passages or topics in the literature, thus hampering their capacity for reflection.

It was not expected that Doctor Glas would provoke the kind of strong emotional reactions in a modern reader that it did when originally published, and a different kind of book might have led the discussions in more emotional directions. However, the students’ discussion of self-knowledge touches upon
the possibility of fiction evoking emotional reactions. If strong emotional reactions are evoked, they could in turn help psychology students to acknowledge the clinical need to understand even the strange and revolting aspects of human behavior, as argued for by, for example, Punzi (2016). Based on our findings, we suggest that it is possible to go further and use fiction to challenge students in a more deliberate way, in line with the claims regarding comfort zones made by Barnett (2011) and Biesta (2005). Use of well-selected fiction has the potential to push students out of their comfort zones in relation to emotional reactions. This is a crucial part of clinical psychology education since students must be aware of the risk that their own affective reactions might hamper their understanding of others. Thus, fictional literature also offers a device for tackling this aspect of self-reflection, as Rolfe (2002) argued. In other words, the use of fiction in psychology education is the opposite of offering students safe spaces. This use of fiction can also be extended to other disciplines and vocational training, preparing students for encountering emotionally challenging situations such as the education of social workers, occupational therapists, and other human care professions.

Even if students are not familiar with the theoretical construct of critical thinking, as described by, for example, Ennis (1993), they are making allusions to the kinds of abilities typically included in this construct. One example is that the students discussed how fiction could increase their capacity to perceive phenomena from varying perspectives (see also Peters et al., 2000).

The students also discussed some interesting benefits of the educational use of fiction not mentioned in the research literature. This concerned how using fiction created an extended room for learning. One example of this was that the responsibilities connected to discussions of real persons were not an issue when fictional characters were discussed. This allowed students to feel more relaxed and freer in their discussions and in creating an environment in which open, creative thinking was encouraged: a feature of the learning environment psychology students have been shown to value (Erikson, Erikson, & Punzi, 2016).

Limitations

It is of course impossible to draw any far-reaching conclusions concerning “all fictional texts”, and students in other settings might have reacted differently, particularly if the text had presented more challenging contents. Even though the context was social cognition, the present study has relevance for education in a broader set of psychology programs. The variety of possible features of fictional narratives makes it important to consider what characteristics and what level of complexity are needed for particular educational purposes. Selecting a text that serves the course’s purposes is an important responsibility for a teacher wishing to use fictional literature.

A methodological limitation of the present study is that full nuances and details of the students’ discussions could not be covered by the data collection. There are other methodological issues. The students might have been trying to please the teacher or to restrict the discussion to uncontroversial subjects in front of their peers. For example, students might sense that their own emotional reactions could hamper understanding of clients but might be reluctant to bring this up in front of their peers. Accordingly, the responses might have been different if the students had been asked to write their personal reflections on the use of fiction.

Conclusion

Much of the discussion presented by the students, as well as the research literature on use of fiction, points to the potential for fiction to support students’ development, as they mature into more reflective knowledge-seekers as regards, for example, self-knowledge, clinical skills, and theoretical understanding. In this sense, use of fictional literature can also be seen as a tool for student transition, a topic that calls for future studies. The focus and interests varied among the groups of students, which is natural given the open nature of the task and the limited time allowed. It is reasonable to conclude that the students have a basic understanding both of the capabilities their future work requires and the relevance of fictional literature in developing such capabilities. The present results suggest that students tend to grasp the possible advantages of fiction in their education. Therefore, we propose that fiction should be introduced to students as something beneficial for their education and future professional roles.

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Peer-leaders’ Perceived Roles: An Exploratory Study in a Postsecondary Organic Chemistry Course

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Peer-led team learning (PLTL) is a pedagogical method in which former students, i.e., those who have successfully completed the course, assist current students in learning course material either through supplemental instruction or in the classroom setting. The impact on student learning for students participating in a PLTL course is widely documented; however, there have been few studies about peer leaders’ experiences and the impact of PLTL on peer leaders. Fifty-two peer leaders assisting with a postsecondary organic chemistry course completed weekly journals about their experiences; the final journal entry prompted peer leaders to describe their relationship with their students by choosing a role that best described that relationship and providing an example of how they filled that role during the term. These entries were coded and analyzed for patterns. Results suggest that when peer leaders describe their relationships, some express they are teachers, others consider themselves guides or facilitators, and some view their role as mentors. We argue that there is a progression of increasing depth in the student-leader relationship that is demonstrated by the description of the roles ascribed by the peer leaders.

Peer-led team learning (PLTL) is a pedagogical technique used to improve student learning through the use of peer leaders to assist students in learning course content and skills (Hockings, DeAngelis, & Frey, 2008). PLTL is built on a constructivist theory of learning as informed by Vygotsky (1978). Peer leaders, i.e., students who have successfully completed the course in which they are assisting, are assumed to have a good understanding of the gaps in student understanding and how to fill those gaps. Thus, peer leaders can assist in identifying zones of proximal development for students and provide the necessary support to catalyze learning (Cracolice, 2000). PLTL has been shown to have particular success in increasing conceptual understanding (e.g., Smith et al., 2009). Research on the efficacy of PLTL has mainly focused on student learning and engagement (e.g., Chan & Bauer, 2015; Drane, Smith, Light, Pinto, & Swarat, 2005; Hockings et al., 2008; Mitchell, Ippolito, & Lewis, 2012; Tenney & Houck, 2003); much less research has focused on the peer leaders and their experiences (e.g., Brown, Sawyer, Frey, Luesse, & Genly, 2010; Gafney & Varma-Nelson, 2007; Hug, Thiry, & Tedford, 2011; Snyder & Wiles, 2015; Tenney & Houck, 2004). Our study is focused on the latter and considers the roles in which peer leaders perceive themselves as enacting during peer leading sessions. Our work provides a framework for developing and refining whole group discussions and reflection activities for peer leader training programs. The roles that some peer leaders are filling are different from what the PTLT literature sets as the ideal or standard. The role of mentor is mentioned in PLTL literature as a possible side effect but not the key role of the peer leader (Gosser et al., 2001). By examining the reflections of peer leaders who both choose this role mentor, or choose a different role, a theme of personal involvement emerged. We use this theme to argue for a potential pathway of deepened student-peer leader relationships.

Literature Review

Peer Mentoring

Mentoring has been a concept that many people have tried to define. Jacobi (1991) stated that “although many researchers have attempted to provide concise definitions of mentoring or mentors, definitional diversity continues to characterize the literature” (p. 506). Merriam (1983) stated:

The phenomenon of mentoring is not clearly conceptualized, leading to confusion as to just what is being measured or offered as an ingredient in success. Mentoring appears to mean one thing to developmental psychologists, another thing to business people, and a third thing to those in academic settings. (p. 169)

Thus, defining mentoring in the context of research is critical. With this in mind, we use a definition of mentoring as articulated by Kram (1983).

Kram (1983) argued that mentoring is the relationship between a senior or more experienced individual (known as the mentor) and a junior individual (known as the protégé). The relationship serves two functions. The first is that the mentor gives advice or guidance about development behaviors that can lead to success in the protégé’s choose field. The second function is personal support. This can come in the form of socialization or emotional support, known collectively as...
Peer-led team learning is a pedagogical strategy that pairs a peer leader with groups of three to four students for the purpose of completing an instructional activity (e.g., end-of-the-chapter problems or guided-inquiry worksheets; Gosser et al., 1996). Peer leading sessions are typically held once per week for the duration of the term; sessions can be held as optional activities outside of scheduled course times (e.g., Chan & Bauer, 2015), during scheduled recitation or help sessions (e.g., Mitchell, Ippolito, & Lewis, 2012), or replacing scheduled classroom time (e.g., Robert, Lewis, Oueini, & Mapugay, 2016). Students participating in courses with PLTL are shown to have increased achievement (e.g., Drane et al., 2005; Hockings et al., 2008; Mitchell et al., 2012; Stewart, Amar, & Bruce, 2007; Tenney & Houck, 2003); researchers have found that PLTL has a positive impact on underrepresented students and at-risk students (e.g., Drane et al., 2005; Stewart, Amar, & Bruce, 2007). PLTL has been found to be an effective pedagogy in an array of disciplines and learning environments (Wilson & Varma-Nelson, 2016).

In their review of over 67 published studies on peer leading Wilson and Varma-Nelson (2016) found a variety of undergraduate disciplines using the PLTL method including: general chemistry (Chan & Bauer, 2015; Hockings et al., 2008; Lewis, 2011; Lyon, & Lagowski, 2008; Mitchell et al., 2012); organic chemistry (Rein & Brookes, 2015; Tien, Roth, & Kampmeier, 2002; Wamser, 2006); allied health, which is also called GOB (Akinyele, 2010); introductory biology (Drane et al., 2005; Peteroy-Kelly, 2007); anatomy and physiology (Finn & Campisi, 2015); bioinformatics (Shapiro, Ayon, Moberg-Parker, Levis-Fitzgerald, & Sanders, 2013); mathematics (Flores, Becvar, Darnell, Knaust, Lopez, & Tinajero, 2010; Reisel, Jablonski, Munson, & Hosseini, 2014); computer science (Horwitz et al., 2009); engineering (Johnson, Robbins, & Loui, 2015); psychology (Miller, Amsel, Kowalewski, Beins, Keith, & Peden, 2011); and physics (Drane et al., 2005). This plethora of STEM disciplines gives reason to understand how to this pedagogy is affecting the peer leaders themselves since they are coming from so many different disciplines.
peer leading sessions with the instructor of the course acting in the role of the peer leader and the peer leaders acting in the role of the students.

There are limited examples of PLTL researchers using journal entries of the peer leaders to examine the personal experiences of those peer leaders. Using journals, leaders can learn from their experiences through retrospective reflection (Boud, 2001). Boud goes on to state that reflective thinking is not simply a process of thinking, but one that involves feelings, emotions, and decision-making to identify important events and analyze the significance of these events. Johnson and colleagues (2015) looked at journal entries of how chemistry peer leaders self-reflected about their peer leading experience. Within fourteen journal entries, they found few mentions of peer leaders that stated that they found fulfillment from helping others and no mentions of a leader expressing a feeling of obligation to help others. Johnson and colleagues, (2015) theorized that this was because their peer leaders may have been too focused on the mechanics of facilitating individual team meetings to recognize the broader implications of their actions on their students. By focusing our self-reflection journal entry prompt on perceived roles, we hoped to see examples of how the peer leaders’ interactions with students were exemplified.

Facilitators and mentors are two distinct yet overlapping roles from which to consider peer leaders. From a broad, overarching perspective, these two roles lead to different peer leader-student interactions and thus theoretically two different learning experiences for the students. Colvin and Ashman (2010) found that in the context of a first-year peer mentoring program the roles peer mentors perceived themselves as enacting had an impact on the types of relationships the peer mentors had with their students.

While facilitator, guide, and mentor are roles that are identified in the PLTL literature (e.g., Gosser et al., 1996; Hockings et al., 2008; Kampmeier et al., 2000), we conjecture that peer leaders could perceive themselves in other roles including teacher, instructor, coach, or advisor, for example. We are interested in identifying the roles peer leaders perceive themselves as enacting in the context of peer leading. Through an understanding of these roles, peer leader training programs can be refined to promote more meaningful student learning and more impactful experiences for the peer leaders and students.

Research Questions

We sought to answer these questions through our study:

RQ1: How do peer leaders view their role in the context of peer-led team learning?

RQ2: How are these roles related to the peer leaders’ self-reported interactions and relationships with their students?

Methods

Our study was conducted in the Fall 2015, Spring 2016, and Fall 2016 academic terms at a large research-intensive university in the southeast United States. Peer-led team learning was incorporated into half of the lecture sessions of the first semester of a yearlong postsecondary organic chemistry course. Content instruction was provided via a flipped-classroom approach using online videos (c.f., Robert, Lewis, Oueini, & Mapugay, 2016). Peer leaders received weekly training on a worksheet activity that the students would complete, common misunderstanding and mistakes made by students, and how to promote learning. Teaching assistants for the course ran 50-minute weekly recitation sections on Fridays in addition to the lecture sessions. These teaching assistants were graduate students and were also responsible for proctoring and grading exams outside of set class time and had limited interaction with the peer leaders. The course and peer leader training sessions were taught by the same faculty member for all iterations of the study. Peer leaders completed weekly reflective journal assignments following each peer leading session; the last assignment focused on the peer leaders’ perceived role. Peer leaders received college credit for their peer leading training course and were only allowed to be a peer leader once.

Participants

A total of 52 peer leaders participated in the course over the three iterations. Each iteration had approximately 240 students enrolled in the course. The peer leaders (16 to 18 per iteration) were assigned three to four student groups, giving each peer leader responsibility for about 12 to 15 students total. Peer leaders were compensated with junior-level chemistry course credit and the opportunity to receive a recommendation letter from the peer leading coordinator.

Data Collection

After each peer leading session, peer leaders completed a reflection journal entry that included an explanation of areas of ease and difficulty for the students in completing the worksheet, identification of insights about student learning gained by the peer leader, and an evaluation of how well assigned small groups worked together. Weekly reflection journal assignments were graded for completion; the peer leaders were encouraged to be open and honest in their reflections on their experiences as a peer leader. The last reflection journal entry of the term asked the peer leaders to “Choose ONE (1) of the following roles you feel best describes you in relationship to the students
you worked with this semester: teacher, facilitator, instructor, guide, mentor, promoter, coach, assistant, advisor. Describe one concrete example of your interaction with a student(s) that best illustrates you serving in that role.” Definitions for the roles were not supplied to the students, thus allowing for self-interpretation. The role options mirror those enacted by teachers in environments adopting a constructivist paradigm (e.g., Gergen, 1995; Mayer, 1996) and in studies of roles espoused by peers in similar situations and contexts (e.g., Colvin & Ashman 2010).

Data Analysis

Journal entries were coded by hand individually by the first author using an open-coding approach based on thematic content analysis techniques (Guest, MacQueen, & Namey, 2012). This involves reading the journal entries and looking for passages that demonstrate a theme or thought of the individual. These themes can then be compiled and, for our research, categorized based on the role described by the peer leader. Familiarization by reading through the data was done twice to get a sense of overarching themes. Following this, data were sorted by the roles selected by the participants. Themes such as “pointing students in the right direction” or “meeting with students outside of class” were noted based on examples provided by the peer leaders in their responses. Data were reread and reanalyzed through the constant-comparative technique (Charmaz & Belgrave, 2012). This technique involves looking back through all previous entries whenever a new theme is discovered to verify that the theme was new and should be included in the code when coding the data. Coded data were compiled and simplified into a coherent set of themes by the roles selected by the peer leaders. Finally, themes were compared across selected roles to look for similarities and differences that the roles had for the peer leaders’ interactions with their students. Peer review was done through discussing themes and roles with colleagues who were not connected with the project but familiar with qualitative coding methods during group meetings and personal communication (Lincoln & Guba, 1985). After compiling the main themes across the set roles, twelve journal entries were randomly selected by the primary author and coded by the second author. Agreement with the proposed themes was met for those entries after initial coding and discussion.

Results and Discussion

Peer leaders selected and provided examples of six of the specified roles in the reflection journal prompt: assistant (n = 1), promoter (n = 2), teacher (n = 3), facilitator (n = 8), guide (n = 17), and mentor (n = 22). Data for the assistant and promotor chosen roles were insufficient to warrant discussion; therefore, these data have been removed from our analyses. While it is possible that peer leaders could have misinterpreted the definition of the role that they selected, explanations given by the peer leaders did not contradict their role choice. Coherent themes were identified for the teacher, facilitator, guide, and mentor groups. We present a discussion of the themes by role and then argue for how these perceived roles fit a framework of increased depth of peer leader-student relationships that is informative for peer leader trainers. While some themes are more prevalent than others, it can be seen that certain roles have a richer collection of themes than others (see Table 1). Teachers wanted to be more of a guide to their students, guides/facilitators followed the process of teaching prescribed by using didactic or probing questioning, and mentors focused more on the psychosocial support and outside time. The last theme, ‘student preparedness and readiness for peer leading sessions’, spanned each of the selected roles; we present this theme first to situate the discussion for each role and our proposed relationship progression.

Student Readiness for Peer Leading Sessions

Active learning pedagogies mandate a level of engagement and readiness of students. In particular, for flipped-classroom pedagogies, students must engage with the out-of-class content (mainly instructional videos) before coming to class (c.f. Robert, Lewis, Oueini, & Mapugay, 2016). Peer leaders from each of the selected role groups noted that many of their students had not watched the videos prior to coming to

<table>
<thead>
<tr>
<th>Role</th>
<th>Student Readiness</th>
<th>Want to be Guide</th>
<th>Probing Questions</th>
<th>Process of Learning</th>
<th>Psychosocial Support</th>
<th>Outside Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mentor</td>
<td>14 %</td>
<td>0 %</td>
<td>18 %</td>
<td>45 %</td>
<td>95 %</td>
<td>32 %</td>
</tr>
<tr>
<td>Guide/Facilitator</td>
<td>8 %</td>
<td>0 %</td>
<td>28 %</td>
<td>84 %</td>
<td>28 %</td>
<td>0 %</td>
</tr>
<tr>
<td>Teacher</td>
<td>33 %</td>
<td>100 %</td>
<td>33 %</td>
<td>0 %</td>
<td>0 %</td>
<td>0 %</td>
</tr>
</tbody>
</table>

Notes: Percentages are the percent of peer leaders within that role that had at least one code of that theme.
the peer leading session. Given by a peer leader who selected the mentor role: “The most difficult part was when students had to start learning actual reactions with reagents and products. This was very difficult because if the students never watched the videos or read ahead of time, they had no clue.” A peer leader who selected the role of guide mentioned that “a lot of students in my section had often not watched the videos.” Finally, a teacher peer leader stated that “I often noticed myself teaching the concept at the beginning of class because most of the students [sic] have not watched the videos or had no clue about the material.” Several peer leaders reported feeling obligated to spend time teaching the material: “I felt like I needed to guide them to either watch the videos, go to the book, or show them how to do the basics.” Time was used instructing instead of engaging the students in completing the problem set worksheet. There are multiple instances reported by the peer leaders irrespective of the perceived role they had in the peer leading session. PLTL trainers may consider how to best address student preparedness with their peer leaders and offer strategies for how to provide assistance to underprepared students while providing more meaningful experiences for prepared students.

Given constraints of amount time per class, the large lecture hall setting, and the number of students that each peer leader had to work with, the experiences the peer leaders had were relatively the same. Despite these constraints, peer leaders used “student preparedness” as a reason for why they felt they fulfilled a particular role in the peer leading sessions.

**Teachers**

Three of the 52 peer leaders perceived themselves as teachers in the context of peer leading. Teacher peer leaders expressed frustration rooted in their desire to be more than just teachers. Their frustration was directed towards the preparedness of the students: “the lack of familiarity the students had [with the material they should have watched before coming to class] led to my having to act as a teacher and explain concepts to them that they should have already seen.” A teacher peer leader commented, “[I] often notice myself teaching the concept at the beginning of class because most of the students hadn’t watched the videos or had no clue about the material.” The lack of preparedness diminished the potential of the student acquiring meaningful learning during the peer leading session. Teachers struggled to get unprepared students to a level where those students could meaningfully engage in the activities.

There was a desire by these peer leaders to be more than just a teacher. These peer leaders collectively stated that while they felt like teachers, they wanted to be more of a guide to their students: “I really wanted to be more of a guide…” “…I tried not to ‘teach’ the students the material and instead guide them through it.” These peer leaders wanted to be more than ‘givers of information.’ The teachers recognized that what they were doing was not as effective “…[I] would have been more beneficial to serve as a guide.” Teacher peer leaders felt hindered by the unprepared students.

**Guides and Facilitators**

Twenty-six of the 52 peer leaders chose guide or facilitator as the role they most espoused in the context of peer leading. Guides and facilitators are reported as a single group because of the overlap of themes between these two selected roles and because ‘guide’ and ‘facilitator’ are used synonymously in the PLTL literature (e.g., Brown et al., 2010; Johnson et al., 2015). These peer leaders noted that their job was not to teach, but to be an assistant in the learning process. Guides and facilitators understood that students could not expect to receive answers and that “students actually showed visual frustration because sometimes I would not give them answers directly, or I would ask them open ended questions to get them to think for themselves.” This set up is a Socratic interaction whereby peer leaders posed questions to the students to help direct the student to more meaningful learning. Guides and facilitators felt that by answering a question with another question, the students would think more deeply about the topic and arrive at an answer by themselves.

Guide and facilitator peer leaders emphasized the process of learning, rather than reinforcing an obtained correct answer:

- Knowing why they got the answer is more important than knowing what the answer is.
- I would ask questions from the students when they presented me with their answers, such as why did you do this, why didn’t you consider this, do you remember these concepts, etc.

Facilitating learning by having the students teach each other was a common method employed by guides and facilitators. “I point the students in the right direction… They can deviate slightly but still reach the correct answer.” The peer leaders in this group acknowledged that their roles were not to give away answers but to give nudges in the right direction and let the students do the legwork. “Most of the time students would know what they were doing, they just needed a little push.” This is how the peer leading processed is ideally enacted; fulfilling these roles would constitute a successful peer leader (c.f., Brown et al., 2010; Johnson et al., 2015).

No facilitators mentioned personal interactions or relationships with their students. They made no reference that they viewed their role as more than simply helping students learn in their 75-minute weekly
interaction. From the guides there were three instances where “help students set goals” and “give advice on how to study” were mentioned. There was one mention of psychosocial support: “[I]f they know a peer can get through it, so can they.” These two role categories comprised the majority of the surveyed peer leaders. Only a small fraction of this majority reported any type of psychosocial or developmental support which is to be suspected due to their choice of role.

Mentors

Twenty of the 52 peer leaders felt they espoused a mentor role in peer leading sessions. Mentors believed that by connecting their own experiences with the course, it would allow the students to develop a deeper understanding of the material: “I was open about my own struggles when I first took the course and I saw a difference in her [a specific student the peer leader was working with] demeanor.” Sharing personal experiences with students varied:

[A student] told me he was having trouble with time management and feels like he is drowning in work… I informed him that I was once exactly like him and in his situation… I answered all of his questions, tried to guide him through a plan of how to get more involved.

I had one student who broke down… due to the class being overwhelming… After talking to her and consolidating her, I began to talk to her about my experience in Organic Chemistry, what I needed to do to succeed, the dynamic of the course, how much I studied, how I studied, and introduced her to students who did understand the concepts well so they could study outside the course together.

Mentor peer leaders communicated their personal struggles in learning the course material and how they overcame those struggles; the mentors’ goals were to relate to the students and help the students develop a hope-based perspective on achievement in the course.

These peer leaders shared with their students that it is possible to understand organic chemistry despite struggling: “I gave [the student] personal stories… I told [the student] how I studied organic chemistry and how many hours I would spend studying it.” Some mentors voiced to their students’ gaps in their own understanding of the material; instead of letting it be a hindrance, these peer leaders were willing to note their deficiencies: “…I for one didn’t know everything and even found myself making silly mistakes [when working with the students in the peer leading session], but that I also could help them learn from my experience.” This humanization of the learning process led to a sense of approachability and a level of trust and friendship that the teachers, guides, and facilitators did not report.

Mentors described instances where they created an environment where students could feel comfortable coming to them: “I made sure to set myself in the same plane as them, let them know I am a student, step off that illusion of me being a teacher and made sure that I was not condescending.” Thus, mentors created an environment that was about more than just learning the content and being able to solve the problems. Building a high level of trust was important to establish for mentor peer leaders. Almost 60% of the mentors reported that they took a “personal interest in or became friends with their students” during the course of the semester. Mentors felt “personally responsible” for the success of their students.

Mentors reported looking for ways to describe how the current concepts in the course were tied into their overall educational experience and courses for their major. This approach demonstrated a substantial investment of time on behalf of the peer leader, more than what was required of the peer leader. One mentor noted that they would “review night before to be able to help teach information to students who would be lacking.” These peer leaders looked for other resources that students may not have been aware of:

- I incorporated outside sources other than straight organic chemistry to enhance the learning environment.
- In addition to helping out with the problems I offered a lot of advice on studying habits and techniques.

Some mentors reported they “stayed after class.” Others reported that “they met with groups of students in the library for a more relaxed and personal setting” and “were asked if they could tutor outside of class.” “[Students] had access to contact me outside of the class to ask questions or advice. It felt great to know that I was there to help them both inside and outside of the classroom.” Being asked “for an email address” was mentioned by several mentors to allow for continued contact after the class was completed.

These outside of classroom experiences show a desire to connect with their students beyond the confines of the classroom and prescribed experience. Mentors supported students whenever and wherever opportunities presented themselves. This level of support was unique in that these mentors had similar students and time commitments as the other peer leaders. Despite these constraints, mentor peer leaders expressed a desire for outside of class interactions and anticipation of student needs. These outside interactions were exclusively mentioned by mentors.
Every group of peer leaders stated that they had students who would not come to class prepared and were not engaged. A key difference between mentors and other perceived role groups was that mentors viewed their students as having the potential to improve but lacking the skills and motivation to grow. Mentors reported they would “help students set goals” or “learn better study habits.” This mentality of bettering students showed responsibility for their students’ learning that extended beyond the typical PLTL experience. There was no indication that the mentors did not embrace their role as facilitators. The difference between guide/facilitator and mentor can be summed up with this peer leader’s statement:

I wanted to say that I saw myself as a facilitator, by answering questions with a question my students slowly got to the right answer but from my experience I think being a peer leader is much more than that. I see myself more of as a mentor to the students. I made sure to set myself in the same plane as them.

Implications for Peer Leader Training

“Teacher, then guide and facilitator, then mentor” forms a progression in peer leader-student relationships. Teaching is helpful; however, this role does not embrace the engagement envisioned for PLTL and is merely an extension of a lecture mode of instruction. Facilitators and guides are the ideal roles envisioned by the developers of PLTL (Becvar et al., 2008). Mentorship has been observed in classrooms implementing peer leading; however, this role is not formally addressed in the PLTL literature (c.f., Wilson & Varma-Nelson, 2016) nor emphasized in PLTL training programs. Since peer leading is a multi-discipline teaching pedagogy, the mentoring of young STEM majors could help bridge the continued gap of representation in disciplines where females and URM students are still underrepresented such as technology, engineering, applied physics and math (Wilson & Varma-Nelson, 2016).

Guides and facilitators are focused on promoting meaningful learning beyond teaching students the content or demonstrating a failsafe method for solving a problem. The Socratic method of questioning is the ideal PLTL pedagogical strategy. Peer leader training programs are intended to provide guidance on learning pedagogies involving groups and opportunities to practice promoting student engagement. Peer leaders are to identify the needs of their students and provide targeted, individualized assistance. Peer leaders are to support collaborative and autonomous (i.e., apart from a formal instructor) learning. Based on these ideal activities of peer leaders, a guide or facilitator role best describes the archetype peer leader (c.f., Becvar et al., 2008). These roles though embrace a perspective that the peer leaders and students are different. The theoretical foundation of PLTL, however, acknowledges the importance of the similarities between peer leaders and students that begs and creates an opportunity for a more mentorship-style relationship.

Mentors stated more often than the other roles about building deeper, more personal relationships with their students. From a peer mentor perspective, these relationships provide a means for broader conversations about the course (e.g., how to best study for examinations), future course enrollments (e.g., Dr. Bartlett provides similar peer leading experiences in their recitation sessions), and shared experiences (e.g., when I took this course, I had a similar struggle learning this particular material). Having a peer with similar shared experiences participating in these conversations could prove beneficial as Seymour and Hewitt (1997) implied that the decision undergraduates make to leave science, math, and engineering was always based on a culmination of discussions that the students have with others. This mentoring process does not need to overshadow the PLTL program but encouraging peer leaders to be open about their experiences when interacting with students may allow for this process to happen more organically. While we do not have quantitative data to specifically support this claim, the research literature suggests that a peer leader who espouses a more mentor-style role is more effective at promoting meaningful learning and retention in STEM (e.g., Becvar et al., 2008; Colvin & Ashman 2010; Damkaci et al., 2017; Martin & Dowson, 2009). Moore and Amey (1988) point out that mentoring can also be covered in a multitude of different roles, e.g., guide, teacher, patron, depending on the needs of the protégé.

Limitations and Future Directions

We wonder how solidified these roles are, how influences beyond preparedness or participation have led to particular perceived roles, and if these roles are fluid and responsive to student needs each session. We also wonder if students perceived these roles espoused by their peer leaders and how these roles may have influenced the students’ experiences and learning. Classrooms observations of peer leader-student interactions and observations of peer leader training sessions were not conducted as part of this study; this limits our ability to corroborate the situations described by the peer leaders and to evaluate the influence that training sessions may have had on the roles peer leaders perceived they were to espouse, including how the peer leaders were referred to by the instructor in these training sessions.
Not every peer leader mentor mentioned what interactions specifically caused them to have this identity of mentor to their students. However, as this journal entry was the final entry of the semester and was asking for their overall view of themselves throughout the course, it can be assumed that there were experiences that happened to cause them to think of themselves as such. It is possible that this holistic view of an entire semester does not account for individual moments of mentoring that could have been done by those peer leaders in other role categories and the peer leader simply did not view that as their main role during the semester.

Despite these limitations and new questions asked, there is an opportunity for more mentorship-oriented training to be included in peer leader training programs that capitalize and formalize mentoring that is informally occurring in the context of PLTL. Non-PLTL peer mentoring programs have shown promise in chemistry contexts (e.g., Damkaci et al., 2017). Coupling PLTL with peer mentoring can provide a more holistic approach to promoting achievement and retention. Mentoring could be in several forms, but based on our analysis it should be used as both a psychosocial and developmental format.

Conclusion

Our results demonstrate that peer leaders perceive their roles in the classroom based on experiences had during their interactions with students through implementing the anticipated PLTL pedagogy of facilitation and use of guiding questioning and a desire to build relationships with the student both inside and outside the classroom setting. Peer leader trainers should be cognizant of how peer leaders enact their roles, especially for identifying when peer leaders settle on a more teacher-focused role which can be caused by a lack of student preparedness. Mentoring should be encouraged and integrated into peer leader training programs; PLTL and peer mentoring share many commonalities from which a synergistic combination could lead to greater achievement and retention. This integration can be simple and does not have change the principles of PLTL, but discussion of how to be empathetic to their students, as well as how to look for opportunities to mentor students, could be discussed in weekly trainings. Understanding how these perceived roles impact student experiences and learning would provide needed evidence for the importance of promoting a more mentorship-style of peer-led team learning.

References


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Online courses are becoming increasingly common at universities as technology continues to expand educational possibilities for remote course delivery (Robinson & Hullinger, 2008). However, engaging students so that they deeply learn course material in an online setting can be particularly challenging due to its remote and asynchronous nature (Thornmann & Zimmerman, 2012). In addition, it is at times necessary to restructure students’ erroneous beliefs about subject matter (Vosniadou, 2007); however, doing so can be difficult because some erroneous beliefs are resistant to change, even when corrective information is presented (Lethaby & Harries, 2016; Pasquinelli, 2012). Because of the aforementioned challenges with online courses, this belief change process may be especially difficult to accomplish in the online instructional setting.

One promising instructional method to address these challenges is Guided Inquiry (GI). When embedded in on-ground settings as a significant piece of Process-Oriented Guided-Inquiry Learning (POGIL), this method has demonstrated fairly robust success for student learning and engagement (e.g., Brown, 2010; Eberlein et al., 2008). Although some of the elements essential to the full POGIL method can be more challenging to implement online, most notably its synchronous group interactions, the structure of guided inquiry questions may be more effective for engagement, learning, and belief change in online instruction than static information delivery methods such as video lectures or reading assignments. GI questions can guide students to think with increasing complexity about course concepts, which helps students more effectively rehearse and code information to put into long-term memory (Willingham, 2009). In addition, GI questions can be structured to help students become aware of any inconsistencies between their existing beliefs and scientific evidence, a necessary step toward belief restructuring (Vosniadou, 2007).

Although the use of GI for online learning holds promise, individual differences among students may play a role in their approach to learning online. In particular, factors such as mindset, academic self-efficacy, and academic entitlement may relate to students’ approach toward instructional methods, such as whether students engage in GI at levels that result in learning and belief change. The purpose of our study, therefore, was to compare the efficacy of GI to a more standard online instructional method (video) for outcomes of learning, belief change, and engagement, as well as to examine the relationship of student factors to these outcomes in each condition.

Instructional Challenges

Beyond learning new information and skills in a class, students may, at times, have beliefs about aspects in the field that need adjustment or reversal. Also known as conceptual change, belief adjustments occur when naïve theories (or “misconceptions”; Alexander, Murphy, & Sun, 2018) of the learner are brought to light and inconsistencies between the naïve theory and the scientific theory are clearly presented (Vosniadou, 2007). Sometimes, however, misconceptions are perpetuated by misinformation in the field. For example, in education, several “neuromyths,” based on erroneous interpretations of neuroscience, continue to be endorsed among professionals (Lethaby & Harries, 2016). Certain of these neuromyths, such as the theory that individuals have specific learning styles (e.g., visual-auditory-kinesthetic, or “VAK”) or that listening to classical music has a positive impact on child development (known as the “Mozart effect”), have even permeated into popular belief, sometimes via commercial exploitation or public policy (Pasquinelli, 2012). Misconceptions can be resistant to change, even when robust scientific information debunking the myths is available, possibly because of biases in thinking about the myths (Pasquinelli, 2012) or epistemological stances that result in valuation of sources of knowledge that may be less reliable (Alexander, Murphy, & Sun, 2018). These beliefs, however, can be harmful to hold, because time and resources are put toward ineffective practices rather than those that work (Pasquinelli, 2012). It is therefore important that when college instructors address
conceptual change among their students, often with limited time to dedicate to any one topic, they use the most impactful instructional methods possible.

Effective instructional methods for student learning and conceptual change require careful consideration in any educational environment, but perhaps even more so in the online classroom. Because an online learning environment often lacks the synchronicity and immediate presence of on-ground classes (Ragan, 2007), it is integral to find ways to keep students actively engaged in the learning process. Active learning is brought about when students must do something other than merely watch, listen, or take notes; instead, they are asked to engage in activities such as observation, reflection, or discussion with others (Felder & Brent, 2009). Not only do active learning methods relate to positive learning outcomes (Prince, 2004), but in the online environment, they are tied to increased student engagement, a key to online learners’ satisfaction (Dziuban et al., n.d.).

Guided inquiry (GI) is an active learning method that can take two forms. In the first form, students’ own inquiry and exploration of a topic is structured and encouraged by the instructor (e.g., FitzGerald, 2011). In the second form, which is embedded in the POGIL format, learners answer a series of instructor-posed questions, often based around models or data, that require them to think critically, problem-solve, and construct their own understandings (Farrell, Moog, & Spencer, 1999). The questions guide students through a learning cycle of exploration, concept invention, and application (Eberlein et al., 2008); this form of GI can thus be considered constructivistic in nature (Farrell et al., 1999). GI in this format has been successfully employed in the on-ground, higher education classroom setting, demonstrating increased achievement, engagement, and positive attitude toward the learning environment (e.g., Brown, 2010; Chase, Pakhira, & Stains, 2013).

The online environment presents challenges to using the entire POGIL format; in particular, its often-asynchronous nature makes the cooperative groups aspect of POGIL more difficult, although some preliminary exploration of using the POGIL format online indicates favorable results (Trevathan & Myers, 2013). The use of only the GI questions, however, may be more easily applied in the online setting, and may still confer many of the positive outcomes observed in the on-ground settings. Not only can GI questions assist students in constructing deep understandings of new course material (Farrell et al., 1999), but they can also be constructed in a way that helps learners to contrast their misconceptions against scientific evidence.

The active approach of GI can be contrasted with a common instructional method for online classes: the video. Videos can be used in many dynamic ways, and there is evidence that the use of videos, as compared to text-based information, results in better student learning (Yousef, Chatti, & Schroeder, 2014). Further, presenting information visually as well as through linguistic channels in a video is supported by dual code theory, which suggests that information presented both verbally and nonverbally (i.e., with imagery) is more likely to be learned (Paivio, 1991). Videos of the instructor presenting information may also add social presence within the course (Bialowas & Steimel, 2019).

However, use of video absent any additional pedagogical methods is not advised (Chuang & Rosenbusch, 2005). Such a method reflects a transmissional model of instruction (Boulton-Lewis, Smith, McCrindle, Burnett, & Campbell, 2001), similar to that of mainly lecture-based classrooms. That is, learners presented with a video for exposure to new information, without any additional activities to utilize that information, remain passive in a unidirectional process. This use of videos in online instruction, which may be particularly common among instructors with a knowledge transmission conception of learning (Boulton-Lewis et al., 2001), may not have as strong an impact on student learning or conceptual change as active instructional methods, such as GI.

Learner Characteristics

Student approach to various online instructional methods may be impacted by personal characteristics, especially those that are related to effort and persistence (Kerr, Rynearson, & Kerr, 2006). In particular, mindset, academic self-efficacy, and academic entitlement have demonstrated links with features such as effort and engagement, which are key for positive outcomes using active learning methods in traditional settings (Cavanagh et al., 2018; Greenberger, Lessard, Chen, & Farruggia, 2008; Schunk, 1991; Vallade, Martin, & Weber, 2014). These student characteristics thus may be associated with student approach to active versus more traditional (e.g., video viewing) online instructional methods.

Mindset is a cognitive framework that is concerned with how people perceive their intelligence (Dweck, 2006). Two mindsets, growth mindset and fixed mindset, are determined by the students’ beliefs about themselves and their abilities to learn (Dweck, Walton, & Cohen, 2014). Students who believe that learning and intelligence are unchanging have fixed mindsets; those who see intelligence and learning as malleable and able to be improved have growth mindsets (Dweck, 2006). A notable difference between mindsets is the perception of effort: Those with a fixed mindset see effort as evidence of reaching one’s intellectual limits, and thus they avoid effortful activities. Those with growth mindsets, however, see effort as necessary to intellectual growth and will therefore embrace effortful challenges (Blackwell, Trzesniewski, & Dweck, 2007). Because answering GI questions becomes increasingly effortful as learners are
led to make comparisons or draw implications, students’ mindsets may play an important role in the efficacy of GI, particularly in an online setting where synchronous, collaborative peer assistance to distribute the effort load is less likely to be available.

Academic self-efficacy is a person’s judgment of his or her competence when approaching academic activities (Schunk, 1991), and it is hypothesized to influence attitudes toward challenges, effort, and persistence in related activities (Bandura, 1977). Higher academic self-efficacy is associated with engagement in activities that are believed will lead to learning, as well as greater mental effort, motivation, and task persistence (Schunk, 1991). As such, students with higher academic self-efficacy, much like those with growth mindsets, may more fully engage in GI activities.

In contrast to the willing effort associated with growth mindset and academic self-efficacy, academic entitlement is the belief that one is owed success in an academic setting despite limited effort (Greenberger et al., 2008). More prevalent in men than women, academic entitlement has demonstrated a negative association with an enjoyment of effortful cognitive activities (Chowning & Campbell, 2009). Therefore, those with greater academic entitlement may refrain from fully engaging in progressively challenging GI activities.

### Study Questions and Predictions

The purpose of our study is to compare the efficacy of two online instructional methods, GI and video information delivery, using instruction about a common neuromyth, the VAK learning styles. Our research questions include: What is the efficacy of the methods on both learning and conceptual change, and are there differential effects? Further, do mindset, academic self-efficacy, and academic entitlement relate to differences in the efficacy of each method? We predict that, overall, the GI will result in better learning and belief change than the video, in part because of its active and constructivist nature (Farrell et al., 1999). We also predict, based upon our literature review above, that growth mindset and academic self-efficacy will be associated with increased learning and subsequent belief change, particularly in the GI condition, whereas academic entitlement will be associated with decreased learning and belief change, particularly in the GI condition.

### Methods

#### Participants and Procedure

Participants were 142 undergraduate college students from a Southeastern university, ranging in age from 18 to “over 25,” with 78% of participants between the ages of 18-21. Seventy-five percent (n = 107) of the participants were women, and the majority of participants (76.8%; n = 109) were Caucasian, 3.5% (n = 5) were African-American, 6.3% (n = 9) were Asian, 2.1% (n = 3) were Hispanic, 2.8% were Biracial (n=4) and 8.5% (n = 12) identified as “other.” Fifty-eight percent of participants (n = 82) were enrolled as freshmen or sophomores.

Participants for our IRB-approved study were recruited through an online system where individuals could review all open studies and then anonymously and voluntarily sign up. Respondents received course participation credit (applied to any course associated with the recruitment system) for completing the study.

Upon electing to participate in the study, participants first confirmed their informed consent, and then completed an introductory survey, which included questions about demographics, mindset, academic self-efficacy, academic entitlement, and a learning styles knowledge and belief pretest. Participants were then sent an email indicating their access into a fictitious online course using the university’s online course management system, Desire 2 Learn (D2L). Within the course shell, participants were randomly assigned by D2L to either the Video or GI condition and completed the associated instructional task. Participants were blind to the nature of either instructional task and could only access the one to which they were randomly assigned. Following completion of the task, participants were provided a link to another survey, which included knowledge and belief post-tests and questions about perceived engagement and effort. The approximate time for completion of this portion of the study was one hour, and participants were recruited and completed the study in multiple waves across the course of approximately 6 months.

Approximately two weeks after completion of the post-test, participants were e-mailed an invitation to participate in a follow-up survey for additional study participation credit; the follow-up survey re-assessed content knowledge and beliefs. However, because the number of participants who completed the follow-up survey was significantly diminished (N = 51) and only one participant for one of the condition x mindset cells completed it, these data were not examined in the outcome analyses. The follow-up learning styles knowledge test data was used, however, to examine test-retest reliability for that instrument.

### Instructional Intervention

Within the online course setting, participants completed a learning activity about learning styles. The activity was offered to participants in one of two possible formats, assigned randomly: video or guided inquiry. For the video condition, participants watched a 7-minute, well-edited and produced video which explains the premises of learning styles theories, the state of current research on learning styles (which largely fails to support
them), and the reasons people tend to maintain belief in learning styles despite lack of empirical support (Willingham, 2008). This video was created by Dr. Daniel Willingham and posted for public use on the Internet; Dr. Willingham gave permission for the video to be used in this study. Participants were instructed to watch the video in its entirety. They completed no other learning tasks associated with the video.

For the guided inquiry condition, participants were introduced through text information, graphs, and other visuals to the same information about learning styles as was introduced in the video. Information was provided in brief “models”, often in the form of a chart or graphic; following each informational model, participants responded to open-ended questions that guided their exploration and explanation of the information provided, occasionally also requesting that participants provide implications of the information (see Appendix for sample). Participants were instructed to (with a few exceptions) avoid overly brief responses, and to instead support their reasoning in one to two sentences. Participants were also told that it was important that they complete the activity with full effort by answering each item completely and that they complete the activity in one sitting.

Measures

Mindset was measured using a three-item Mindset Scale created by Dweck and Henderson (1989). Participants rate their beliefs about the fixed or malleable nature of intelligence; higher scores indicate endorsement of malleable intelligence. The measure has previously demonstrated good reliability (α=.94 - .98; Hong, Chiu, Dweck, Lin, & Wan, 1999) and was excellent in ours, α=.91.

The Academic Self-Efficacy (ASE) scale consists of 12 items for college students created per Bandura’s guidelines (Bandura, 2006); some were developed by Havens (2008) and others created for this study. Participants rate their confidence in their abilities to engage in academic planning, studying, and learning on a 6-point Likert scale, where higher ratings indicate greater confidence. Reliability of Havens’ (2008) version of the scale was excellent (α = .90); for our modified version of the scale, reliability was also excellent, α=.93.

The Academic Entitlement (AE; Greenberger et al., 2008) scale consists of 15 items which measure respondents’ agreement on a 6-point Likert scale with statements reflecting their sense of entitlement to positive treatment despite limited academic efforts. Higher scores indicate greater levels of AE. The original internal consistency for the AE scale was very strong (α = .87; Greenberger et al., 2008), as it was in our study, α=.88.

Out of concern for participants trying to be viewed favorably for either the personal characteristics measures or the knowledge/belief measures, social desirability was assessed for use as a covariate. Social desirability was measured using the 20-item short form of the Marlowe-Crowne Social Desirability Scale (M-C 20; Strahan & Gerbasi, 1972). Reliability coefficients for the M-C 20 have previously ranged from .71 to .87 for various populations (Ballard, 1992; Fraboni & Cooper, 1989; Strahan & Gerbasi, 1972); for our study, reliability was acceptable, α = .80.

Participants’ accurate knowledge of the premises and research findings regarding learning styles theory was objectively assessed using the 7-item Learning Styles Knowledge Test which was created for this study. Because items were scored as correct/incorrect and participant knowledge varied, internal consistency of the test was difficult to assess. However, test-retest reliability using the two post-intervention applications of the test (post-test, N = 142, and follow-up test, N = 51) indicated a very strong and significant correlation, r = .65, p<.001, suggesting good test reliability.

Participants’ beliefs about learning styles (i.e., endorsement vs. non-endorsement of learning styles theory) was assessed in three ways. First, a 6-item scale, created for this study, asks participants to rate their level of agreement, on a 6-point Likert scale, with statements endorsing learning styles; higher scores indicate greater endorsement. For this Learning Styles Belief Scale, pretest internal consistency was poor (α = 0.53); however, after the learning activity, which presumably consolidated participants’ understanding about learning styles, the same scale exhibited dramatically improved reliability, α = 0.84.

An additional, single belief item asked participants to select the answer that best described them from a drop-down menu: “I am a visual learner; I am an auditory learner; I am a kinesthetic learner; I do not believe in ‘types’ of learners.” Endorsement of one of the first 3 choices was taken as a single-item indicator of belief in learning styles; endorsement of the 4th choice was taken as indication of disbelief. Finally, as an open-ended assessment of belief in learning styles, a written response was solicited from participants, asking them to, “Please write 1-2 sentences about what you believe regarding the idea of learning styles.” Responses were used to provide qualitative insights for our other, quantitative findings.

Lacking the necessary elements required for existing measures (such as multiple, varied educational tasks over time; Veiga, Reeve, Wentzel, & Robu, 2014), engagement and effort for our study were each assessed using a single, self-reported item. For engagement, participants were asked, “How much were you engaged in the instructional task (that you completed in D2L)?” Participants responded on a 5-point Likert scale (Not at all; Minimally; Somewhat; Mostly; Very much). For effort, participants were asked, “How much effort did you give toward the task (i.e., follow instructions with care)?” Ratings for this item were also on a 5-point scale (None; Minimal; Some; Most; All).
Analyses

Relationships among continuous study variables were assessed using partial correlations, controlling for social desirability. For these correlations, mindset average scores were utilized as a continuous variable. For between-groups analyses, participants were categorized into fixed or growth mindsets, using instructions from Dweck and Henderson (1989). Thus, participants whose mean score on the mindset items was between 1 and 3 were categorized as having a fixed mindset, and those whose mean score was between 4 and 6 were categorized as having a growth mindset. Those with scores between 3.1 and 3.9 were considered to have no definitive mindset and were, per Dweck and Henderson (1989), excluded from group comparisons that included mindset (n = 17; 10 from video condition and 7 from GI condition). To examine the interaction of condition by mindset on engagement, effort, learning, and beliefs, a 2x2 multivariate analysis of covariance, controlling for the effects of social desirability, was conducted using post-test data. Data for the categorical, drop-down belief item was assessed using chi-square analyses.

Results

Examination of the partial correlations (Table 1) indicates that, as expected, post-test knowledge scores were significantly and negatively correlated with post-test belief scores, r = -.34, p<.01. However, pre-test belief scores and post-test belief scores were significantly and positively related, r = .18, p<.05.

Interesting correlation patterns emerged regarding approaches and attitudes toward learning. A characteristic considered to be beneficial, academic self-efficacy, shared a positive correlation with a belief in learning styles before the learning activity (i.e., at pre-test; r = .24, p<.01), but after the learning activity, that correlation was near zero. Examination of belief post-test correlations with academic self-efficacy across conditions indicated that the associations within each condition were very similar. In contrast, academic entitlement (considered a non-beneficial attitude; Greenberger et al., 2008) had no significant correlation with either knowledge or beliefs about learning styles before the learning activity, but that relationship became significant and negative for the knowledge post-test (r = -.26, p<.01) and significant and positive for the belief post-test (r = .29, p<.01). Although this pattern of correlations was consistent in both conditions, the strength of the associations was much greater in the guided inquiry condition (r = -.34, p<.01 for knowledge post-test and r = .42, p<.01 for belief post-test; df = 56) than in the video condition (r = -.14, p> .05 for knowledge post-test and r = .24, p<.05 for belief post-test; df = 69). Notably, academic entitlement was significantly and negatively related to both academic self-efficacy (r = -.21, p=.01) and growth mindset (r = -.32, p<.01).

A 2 (condition) x 2 (mindset) MANCOVA, using social desirability as a covariate, was conducted for the post-intervention applications of the Learning Styles Knowledge Test (post-intervention application) and the Learning Styles Belief Survey, the difference in pretest to post-test mean scores on the Knowledge test and Belief survey, and the engagement and effort self-reported ratings. Box’s M and tests of normality were conducted and assumptions were met, mitigating concerns regarding the interpretation of results given the imbalance of ns across cells. Analyses indicated no main effects for either condition or mindset. However, significant interactions between condition and mindset were found for Knowledge post-test scores (F[1, 119] = 5.60, p<.05), engagement (F[1, 119] = 4.75, p<.05), and effort (F[1, 119] = 4.01, p<.05). The interaction between condition and mindset for pretest to post-test differences in Knowledge approached, but did not meet, significance, F(1, 119) = 2.47, p = .12. Examination of the adjusted mean scores (Table 2) indicates that for all significant interactions, those in the video condition who had a fixed mindset scored higher than those with a growth mindset, whereas in the GI condition, those with a growth mindset scored higher than those with a fixed mindset.

Examination of endorsement of the drop-down belief item about learning styles indicates that, at pretest, all but 3 of the n=124 participants, regardless of mindset, endorsed a belief in learning styles. For the post-test belief endorsements, a two-way group-independence chi-square was performed to examine the relationship between condition and mindset. The chi-square statistic was not significant for those endorsing belief in learning styles, χ² = 1.38, df = 1, p = .24. However, group differences were significant for those endorsing disbelief in learning styles at post-test, χ² = 4.63, df = 1, p<.05, with an effect size of φ= 0.37, indicating a significant relationship between condition and mindset for disbelief in learning styles after the instructional intervention, such that participants with a growth mindset were more likely to not believe in learning styles when in the GI condition than in the video condition, whereas the opposite was true for those with a fixed mindset (Figure 1).

Discussion

Contrary to our predictions, we found no main effects for instructional method. Learning and belief change were not significantly different for participants in the GI condition as compared to the video condition. Instead, it appears that efficacy of the instructional methods, particularly on learning, depends on student characteristics.

Participant mindset interacted with instructional method such that those with a fixed mindset had better learning, engagement, and effort in the video condition
Table 1
Partial Correlations of Study Variables

<table>
<thead>
<tr>
<th>Study Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Knowledge Pretest</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Knowledge Posttest</td>
<td>0.19*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Belief Pre-Survey</td>
<td>-0.16</td>
<td>0.05</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Belief Post-Survey</td>
<td>0.01</td>
<td>-0.34**</td>
<td>0.18*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Engagement</td>
<td>0.04</td>
<td>0.25**</td>
<td>0.11</td>
<td>-0.22**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Effort</td>
<td>0.04</td>
<td>0.23**</td>
<td>0.12</td>
<td>-0.19*</td>
<td>0.70**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Mindset</td>
<td>-0.01</td>
<td>0.02</td>
<td>0.13</td>
<td>0.01</td>
<td>0.11</td>
<td>0.08</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Academic Self-Efficacy</td>
<td>-0.04</td>
<td>0.14</td>
<td>0.24**</td>
<td>-0.02</td>
<td>0.24**</td>
<td>0.18*</td>
<td>0.07</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>9. Academic Entitlement</td>
<td>-0.04</td>
<td>0.02*</td>
<td>-0.08</td>
<td>0.29**</td>
<td>-0.01</td>
<td>-0.07</td>
<td>-0.32**</td>
<td>-0.21**</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: Correlations controlling for Social Desirability. *p ≤ 0.05; **p ≤ 0.01; df = 133.

Table 2
Descriptive Statistics of Study Outcome Measures by Condition and Mindset

<table>
<thead>
<tr>
<th>Condition</th>
<th>Mindset</th>
<th>Knowledge Posttest</th>
<th>Knowledge Pretest to Posttest Difference</th>
<th>Belief Pre-Survey</th>
<th>Belief Post-Survey to Post-Survey Difference</th>
<th>Engagement</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M (SD)</td>
<td>Adj. M</td>
<td>M (SD)</td>
<td>Adj. M</td>
<td>M (SD)</td>
<td>Adj. M</td>
</tr>
<tr>
<td>Video</td>
<td>Fixed Mindset</td>
<td>4.62 (1.20)</td>
<td>4.62 (0.98)</td>
<td>1.52 (1.52)</td>
<td>3.30 (1.26)</td>
<td>-1.09 (1.46)</td>
<td>-1.09 (0.62)</td>
</tr>
<tr>
<td></td>
<td>Growth Mindset</td>
<td>4.36 (1.19)</td>
<td>4.35 (1.61)</td>
<td>1.31 (1.30)</td>
<td>3.60 (1.02)</td>
<td>-1.06 (1.21)</td>
<td>-1.06 (0.94)</td>
</tr>
<tr>
<td></td>
<td>Fixed Mindset</td>
<td>4.00 (1.66)</td>
<td>3.94 (2.60)</td>
<td>1.00 (0.94)</td>
<td>3.33 (0.78)</td>
<td>-0.93 (1.42)</td>
<td>-0.94 (1.13)</td>
</tr>
<tr>
<td>Guided</td>
<td>Growth Mindset</td>
<td>4.90 (1.08)</td>
<td>4.92 (1.58)</td>
<td>1.82 (1.84)</td>
<td>3.30 (1.12)</td>
<td>-1.30 (1.00)</td>
<td>-1.30 (0.94)</td>
</tr>
<tr>
<td>Inquiry</td>
<td>Fixed Mindset</td>
<td>4.00 (1.16)</td>
<td>4.00 (2.60)</td>
<td>1.00 (0.94)</td>
<td>3.33 (0.78)</td>
<td>-0.93 (1.42)</td>
<td>-0.94 (1.13)</td>
</tr>
<tr>
<td></td>
<td>Growth Mindset</td>
<td>4.90 (1.08)</td>
<td>4.92 (1.58)</td>
<td>1.82 (1.84)</td>
<td>3.30 (1.12)</td>
<td>-1.30 (1.00)</td>
<td>-1.30 (0.94)</td>
</tr>
</tbody>
</table>

Note: Adjusted means based upon Social Desirability = 0.52.
as opposed to the GI condition, whereas those with a growth mindset indicated greater learning, engagement, and effort with the GI than the video. These findings corroborate a body of empirical findings indicating that those with growth mindsets are more academically tenacious and view effort as a virtue, whereas those with fixed mindsets avoid expenditure of effort, as it suggests to them that they may be at the limits of their intellectual capacity (Dweck et al., 2014). However, it is interesting to note that those with a growth mindset learned less well in the video condition – a condition in which those with a fixed mindset did better. These findings may indicate that students with growth mindsets prefer, and learn better from, effortful learning activities, whereas those with fixed mindsets will learn more with instructional methods that require less effort, perhaps because such activities do not threaten their intellectual self-perception (Blackwell et al., 2007).

Of interest, our findings suggest that academic entitlement may be associated with resistance toward instructional methods, particularly those that require greater effort (such as our GI). For both instructional methods, academic entitlement was negatively correlated with knowledge gains and positively related to post-instructional belief endorsements of learning styles; these correlations were more pronounced in the GI condition. Because these associations were non-significant prior to the learning condition, it appears that, for those with greater academic entitlement, simply participating in either instructional method was more likely to lead to outcomes antithetical to the purpose of the instruction. Although this relationship and its possible mediators require further exploration, academic entitlement has been noted as a key characteristic of millennial students (Goldman & Martin, 2016), and these students have also been characterized as resistant to authoritarian policies, which can impact student-instructor rapport (Frey & Tatum, 2016) and perhaps, by extension, academic success.

Academic self-efficacy did not relate to post-instructional knowledge, but it did seem to be associated with some belief change in the desired direction. That is, a significant, positive correlation between academic self-efficacy and belief in learning styles that existed pre-instruction was nullified after instruction; there were no notable differences in the strengths of these changes between instructional methods. Our findings suggest the possibility that those with greater academic self-efficacy may be more open to learning information that contradicts misconceptions and to gradually adjusting their beliefs. Research, although not conclusive, indicates that academic self-efficacy is related to the personality construct of Openness to Experience, which is associated with curiosity and critical thinking, and thus also associated with positive academic performance (McIlroy, Poole, Ursavas, & Moriarty, 2015). However, since our results indicate that the beginning of belief change, but not greater learning, is associated with
academic self-efficacy, more exploration into the complexities of these relationships is warranted.

Overall, the results of our study suggest that belief change was more difficult to achieve, despite improvements in learning. Even when the instructional method and mindset were optimally paired, those groups did not differ on the multi-item measure of beliefs about learning styles. We did find mild evidence that those with growth mindsets in the GI condition were more likely to endorse non-belief in learning styles on a single-item measure than those in the video condition (the opposite was true for those with fixed mindsets). Thus, we may again be seeing some evidence that mindset and instructional method interact such that those with growth mindsets begin to correct misconceptions with effortful course activities, whereas those with fixed mindsets do better with less effortful activities.

Nevertheless, it appears that a single dose of instruction using either method is not strong enough to strongly affect belief change. The persistence of misconceptions that we witnessed may be due in part to their relationship with participants’ identity, as those who hold misconceptions related to their self-identities are more likely to resist new information which contradicts them (Nyhan & Reifler, 2018). In their open-ended responses, some participant statements supported this possibility:

- “Although after watching the video I still believe in types of learning. I am a visual learner.”
- “Personally, I am a visual learner, more hands-on learner.”

In addition to self-identity increasing resistance to belief change, certain epistemological stances, and in particular a foundationalist perspective, may not be compatible with many academic domains (Alexander et al., 2018). Foundationalists prefer reliance on intuitive beliefs rather than scientific evidence (Alexander et al., 2018), and we saw corroborating evidence of this perspective in some participant responses:

- “Of course people learn better if the teaching is done in their own learning style. Research proving this or not is irrelevant in this case.”
- “I believe that students do have different learning styles regardless of a lack of experiments [supporting them].”

These types of statements corroborate Kahneman’s (2011) observations that once a theory is personally accepted and integrated into one’s thinking, it becomes very difficult to acknowledge its flaws. Thus, although GI is a promising start to promoting belief change, it may need to be tested and built into a non-threatening or supportive atmosphere that includes interpersonal dialogue and gradual instruction about building better habits of mind (Alexander et al., 2018).

Our study provides useful information about the efficacy of GI and videos in the online class setting; however, its limitations include its fictitious class setting and one-time learning event, such that participants may not have been as invested as they might be in a higher-stakes class environment, nor as impacted by the instructional method as they might have been over an entire term. Relatedly, participants were not solely Education students, and thus may have been less interested in learning, or changing views about, the subject matter. Further, our sample had limited ethnic diversity, reducing the generalizability of our results. Finally, our assessments of engagement and effort are not robust; they give us insight into possible outcomes but should be replicated with more reliable measures before reaching conclusions. Similarly, our multi-item measure of beliefs had poor pre-test reliability, making the degree of belief change from pre-test to post-test difficult to truly ascertain. Future belief assessments may benefit from a brief introduction to the topic in question before assessing initial beliefs in order to increase reliability of pre-test measurement.

Despite these limitations, our study provides useful implications for online instruction. In particular, our results suggest that choice remains important for learners so they can select the instructional method that best aligns with their attitudes toward effort. Autonomy, supported via choices, is considered elemental to motivation (Ryan & Deci, 2000), and our results provide further insight into why student choice is important in instruction. Additionally, mindset change is possible (Dweck et al., 2014), and instructors who wish to use more active methods might consider including instruction which explicitly develops learners’ growth mindset.

More research on instructional methods that can impact conceptual change in the online setting is needed. For example, studies could explore GIs that are structured so as to more clearly confront participants’ beliefs as compared to science, so that they must consciously and deliberately restructure their understandings (Vosniadou, 2007). In addition, research comparing instructional methods in actual online class settings, and perhaps also including sociocultural interactions (Alexander et al., 2018; Vosniadou, 2007), may help us further understand the most impactful methods for assisting our students with correcting their misconceptions.

References


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Appendix

Sample of Learning Styles Guided Inquiry

Note: Inquiry proceeds to present learners with a graph of actual results that contradict these predictions, accompanied by questions, as well as other information about learning styles theory.
Widening Participation and Linguistic Engagement in Australian Higher Education: Exploring Academics’ Perceptions and Practices

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Language practices represent significant barriers to engagement in higher education for many learners from traditionally underrepresented backgrounds. In Australia, such students may be Aboriginal and Torres Strait Islander learners, students from rural and remote locations, learners who are the first in their family to access higher education, from non-English speaking backgrounds, learners with interrupted schooling due to refugee or asylum seeker experiences, or first language speakers of English dialects that vary from the dominant forms privileged in the academy. While subject-specialist language and engagement with text can present ongoing challenges for many learners, such linguistic barriers—and the practical implications for academics engaged in teaching—often receive limited attention in institutional policy. This article reports on research that sought to critically examine how ten academics from different disciplines and university contexts perceive their role in the linguistically diversified academy, particularly but not exclusively, in relation to students from traditionally underrepresented backgrounds. The experiences of the ten academics who contributed to this research offer a useful vantage point from which to consider the various ways in which language may be conceptualized in higher education, the possibilities for embedding linguistic support in content area instruction, and the need to ensure tailored and responsive language assistance for learners throughout their studies.

Introduction: Widening Participation and Linguistic Barriers to Engagement

In recent decades, “widening participation initiatives”—efforts to increase higher education participation for students from traditionally underrepresented backgrounds—have resulted in greater linguistic diversification of Australian universities. Outreach initiatives, targeted scholarship and admission programs, and the provision of bridging and enabling courses¹ have aimed to facilitate more equitable entry into higher education, resulting in increased enrollment of students from traditionally underrepresented language backgrounds (Bradley, Noonan, Nugent, & Scales, 2008; Gale & Parker, 2013; Gidley, Hampson, Wheeler, & Bereced-Samuel, 2010; Naidoo et al., 2014; Rissman, Carrington, & Bland, 2013). Such students may be Aboriginal and Torres Strait Islander learners, students from rural and remote locations, learners who are the first in their family to access higher education, from English as an Additional Language (EAL) backgrounds, learners with interrupted schooling due to refugee or asylum seeker experiences, or first language speakers of English dialects that vary from the dominant forms privileged in the academy.

While targeted admission programs and the provision of alternative pathways to higher education remain important foci, advancement of the equity agenda also requires critical examination of the challenges encountered by students as they move beyond university entry and the completion of enabling or bridging programs to participate in ‘mainstream’² higher education. This understanding of widening participation in tertiary studies extends beyond the setting of enrolment targets, to encompass equitable participation in the educational, social, and cultural structures of the university.

Among the chief barriers to inclusion in higher education for many learners from underrepresented backgrounds are the hidden sociolinguistic norms and expectations surrounding academic engagement with specialist content knowledge (Ben Moshe, Bertone, & Grossman, 2008; Hirano, 2014; Silburn, Butler, & DeMori, 2010). While often invisible to discipline ‘insiders’, each field of study is embedded within a specific linguistic context in which knowledge of specialist vocabulary, grammatical forms, text types, and certain ways of using language are required for engagement with content (Gee, 2008; Halliday, 1993; Mitton-Kukner & Murray Orr, 2014). While all students can encounter difficulties acquiring discipline-specific language, a growing body of research indicates that learners from traditionally underrepresented backgrounds are more likely to experience significant and ongoing linguistic barriers to academic engagement in higher education due to contrasts between their primary linguistic practices and those privileged within the academy (Arkoudis,

¹ Enabling courses provide an alternative pathway to tertiary studies for students who lack the qualifications required for entry. Bridging courses are offered to students who have completed high school but require assistance preparing for tertiary studies or meeting program entry requirements.

² ‘Mainstream’ is used here to refer to educational contexts where additional language supports are not typically provided.

Despite its centrality to all learning, language is often considered separate to the core business of discipline studies in higher education and associated solely with learning support centers or enabling/bridging programs. However, failure to provide formalized, integrated, and ongoing linguistic support beyond initial bridging or enabling courses has significant equity implications. Students from traditionally underrepresented backgrounds frequently gain access to higher education through targeted entry programs, only to struggle with the language required for engagement with academic content, participation in face-to-face and online learning, or demonstration of knowledge via assessment in the ‘mainstream’ (Gray & Irwin, 2013; Hirano, 2014; Jacobs, 2005; Murray, 2013; Naidoo et al., 2014; Fagan, Baker, Irwin, Dantas, Gower, Singh, Taiwo, & Ross, 2018). The impact of these linguistic barriers on learners’ academic progress is often misinterpreted as a lack of capacity or motivation for succeeding in higher education, fuelling deficit models of non-dominant language background students and undermining the transformative potential of tertiary education.

Sociocultural theories of language acquisition emphasize the importance of an ongoing community of practice embedded within meaningful communicative contexts for the attainment of language proficiency (Gee, 2008; Luke, 1991). For higher education, this requires discipline specialists to explicitly deconstruct and co-construct relevant language forms with students as they simultaneously explore key content and specialist knowledge. By facilitating learner exploration of discipline texts in terms of purpose, intended audience, structures, and key features, academics can recognise and value students’ existing linguistic repertoires, and assist them to become familiar with the expected forms and linguistic practices of the academy, the discipline, and their intended profession (Daddow, 2016; Hammond et al., 1992). Further, co-constructing subject-specific text types under the guidance of a discipline specialist allows learners to apply this linguistic knowledge to become increasingly independent text producers. This process of deconstructing, joint construction, and independent construction of discipline texts apprentices learners into shared understandings about the function and nature of language within the sociocultural context of their subject (Rothery, 1994). As Derewianka (2015) comments, this apprenticing of learners into disciplinary textual practices: “aims to provide the potential for all students, regardless of background, to have access to the powerful discourses of the culture” (p.78).

Accordingly, the role of the teaching academic necessarily involves assisting all learners, including increasing numbers of students from traditionally underrepresented language backgrounds, to navigate the linguistic requirements of the field. Yet, this important aspect of widening participation is often overlooked in institutional policy regarding equity initiatives, and it remains noticeably under researched, particularly in terms of the practical implications for discipline specialists engaged in teaching. Likewise, there is minimal critical scholarship to underpin institutional initiatives to better assist academics to provide linguistic support as part of inclusive practices in higher education.

This article reports on research that sought to critically examine how ten academics from different disciplines and university contexts perceive their role in the linguistically diversified academy, particularly, but not exclusively, in relation to students from traditionally underrepresented backgrounds. The study focused on the practical implications of linguistic diversity for teaching in higher education with an emphasis on participant approaches to the provision of language support within content area instruction. Key foci included: academics’ perceptions of specialist language and discursive practices in their discipline, their appraisal of the linguistic needs and strengths of learners, and their approaches to scaffolding learner engagement with language. Specifically, the study focused on the following research questions:

1. How do academics perceive the role of language within the knowledge base of their discipline?
2. As experts in their discipline, how do academics perceive their role in relation to linguistically diverse student populations?
3. How do academics support student engagement with the linguistic requirements of their discipline?

What assumptions, values, and perspectives underpin this support?

The experiences and perceptions of the ten academics who contributed to this research offer a useful vantage point from which to consider the various ways in which language may be conceptualized in higher education, as well as the impact of these varying epistemological understandings on practical approaches to promoting language diversity and engagement within content area instruction. While the ten participants offered differing views of language and associated equity implications, they shared a common understanding of the interconnectedness between language and discipline content. Accordingly, this research offers a cogent response to the traditional disconnect between language support and discipline specific teaching, highlighting the possibilities for embedding linguistic support in content area instruction.

Theoretical Framework

This study is framed by a sociocultural understanding of language, which considers all linguistic acts as forms of social practice that occur within
particular contexts and are subject to various power relations, epistemological understandings, and performance of identities. This sociocultural approach distinguishes between discourse, or language in use, and Discourse, or situated enactments of particular values and behaviors that contribute to the performance of identity(ies) (Gee, 1999). As Gee (1996, p.131) explains, Discourse refers to “...a socially accepted association among ways of using language, other symbolic expressions, and artifacts, of thinking, feeling, believing, valuing and acting that can be used to identify oneself as a member of a socially meaningful group or ‘social network’.” In this sense, linguistic practices are understood to be far more than decontextualized, cognitive transactions in which users receive and transmit information, but are bound to the contexts in which they are produced and interpreted, reflecting and also impacting social and cultural values and practices.

A sociocultural understanding of language considers textual practices to be “socially regulated, recurrent, and patterned things that people do with literacy as well as the cultural significance they ascribe to those doings” (Brandt & Clinton, 2002, p. 342). Through the acquisition of disciplinary textual practices, students participate in “new Discourses”, taking on or contesting associated values and ideologies (Burgess, 2004, p.41; Gee, 1999). For learners from traditionally underrepresented backgrounds, the language privileged in disciplinary Discourses and higher education assessment and andragogy may be markedly contrasted with the language of their primary Discourses (Gee, 1990). Institutional assumptions of linguistic homogeneity and failure to acknowledge and value students’ diverse linguistic repertoires can marginalize and restrict learners’ engagement with knowledge, interaction with peers, and demonstration of understanding through assessment.

Language, Higher Education, and Learner Exclusion: Existing Research

Research indicates that while many learners from non-dominant language backgrounds have a strong desire to contribute to and participate in the academy, linguistic barriers associated with specialist vocabulary, grammatical forms, and ways of navigating and producing text can pose a significant challenge (Hirano, 2014; Johnston, 2011, Murray, 2013, Naidoo et.al., 2014; Terry, Naylor, Nguyen, & Rizzo, 2016). Further, the removal of formal linguistic scaffolding following bridging and enabling programs contradicts theories of language acquisition that emphasize the ongoing and iterative nature of the process, as well as the need for meaningful, authentic, community-based interaction. As Wingate (2006, p.464) notes, engaging with and producing text are “cultural and social practices that depend on their context and tutors’ and students’ assumptions of what constitutes knowledge”.

Yet, existing research suggests that while discipline specialists are generally aware of the linguistic challenges encountered by learners from underrepresented and non-dominant language backgrounds, they are unsure how to support students to engage with the discursive practices of the discipline (see Bretag, 2007, Skyrmee & McGee, 2016). Daniels (2013, p.238), in her small-scale investigation of Australian educators’ perceptions regarding their roles in the diversified academy, describes “high levels of confusion and frustration in some teaching staff faced with the challenges of teaching students whose understanding of both English language and Australian higher educational purposes is limited.” While some studies have explored institutional programs for assisting discipline specialists with linguistic inclusion (see Terry et.al, 2016), the prevailing image to emerge from the albeit limited literature suggests a general lack of formal planning to support educators with practical strategies for embedding customized language support within discipline studies (Briguglio & Watson, 2014; McWilliams & Quentin, 2014; Skyrmee & McGee, 2016).

Skyrmee and McGee’s (2016, p.769) study of educators’ perceptions and practices concerning international students attending a university in Aotearoa/New Zealand revealed tensions around issues of academic standards which they describe as having “appeared to threaten some basic disciplinary values manifest in pedagogical traditions which mark out for them university as higher education.” Questions concerning the balance between linguistic accuracy and content knowledge in assessment, as well as guidelines for delineating how much and what type of assistance academics could provide to non-dominant language background students, were among the key issues raised in Skyrmee and McGee’s (2016) study. Other research suggests discipline specialists consider their andragogical responsibilities to be solely related to content knowledge and understand this to be in isolation from the language used to convey, construct, and engage with the field (Dunworth & Briguglio, 2011).

Questions concerning the role of academics in the linguistically diversified academy, as well as possibilities for language support in content-area instruction, are of vital importance to the future of the widening participation agenda in higher education. Providing alternative pathways to university enrollment without also considering the need for ongoing, tailored language support or the implications for teaching practices, undermines the intention of widening participation initiatives and the opportunity to genuinely pursue a more equitable academy. Issues foregrounded within existing research, including concerns regarding the disenfranchisement of non-dominant language background students and staff, the peripheral positioning of language support, and the additional burdens on time-poor academics
unsure how to explicitly value and support linguistic diversity through content area instruction, carry significant equity implications. As greater numbers of students from underrepresented backgrounds access higher education, these issues take on increasing importance, generating an urgent need for sector-wide reflection and action.

**The Study**

This research was undertaken at an Australian university comprised of metropolitan, regional, and rural campuses, with higher than average numbers of learners from groups that have been traditionally underrepresented in tertiary education, including students from lower socioeconomic backgrounds, learners with Aboriginal and Torres Strait Islander backgrounds, and students from regional and remote locations. While each campus of the university features a unique sociocultural and linguistic environment, there is a shared equity agenda and institution-wide commitment to teaching excellence.

**Participants**

The ten academics who volunteered to participate in the study teach at the regional and rural campuses of the university, working in a range of science, technology, engineering, and mathematics (STEM) and humanities-related fields, including the sciences, English, mathematics, performing arts, psychology, history, physical education, sociology, teacher education, geography, cultural studies, and research methodology. Participants ranged from lecturer level to members of the professoriate, with a mixture of tenured, full-time permanent, casual contract, and adjunct positions represented. At the time of the research, none of the academics had doctoral qualifications, with the tenth undertaking a PhD. All ten academics had extensive experience educating students at undergraduate and postgraduate levels. Only two of the participants had formal qualifications in linguistics, although several others had been exposed to introductory theories of language acquisition and learning in their undergraduate degrees.

Three participants identified as speaking English dialects that differ from Standard Australian English. Six participants had foreign language learning experience, with two of these academics describing themselves as bilingual. These language learning experiences/identities were identified by participants as pivotal in shaping their understandings of linguistic diversity.

**Research Approach**

The study occurred within a descriptive, qualitative approach to research. Each academic was invited to participate in a narrative-based interview focused on eliciting significant moments, important events, and teaching experiences that have shaped their understandings and practices regarding language. While this study was conceived within a sociocultural understanding of language (Gee, 1999), which considers all linguistic acts as forms of social practice that occur within particular contexts and are subject to various power relations, epistemological understandings, and performance of identities, no such theoretical frame was presented to participants. Rather, the ten academics were invited to define ‘language’ according to their own views and in their own words. This methodological decision was prompted by the desire to probe the various ways in which language is conceived, consider these notions in relation to disciplinary background, and explore how they translate into educational practices. Interview prompts were intentionally vague and intended to facilitate reflection on each academic’s current practices and the theoretical perspectives, values, experiences, and attitudes informing their approach. This foregrounding of praxis was a response to the current dearth of theoretically-informed, systematically researched, practical recommendations for scaffolding learner engagement with discipline specific, academic language in higher education.

The face-to-face interviews were audio recorded and professionally transcribed. Following member checking, inductive content analysis was undertaken to establish the presence and frequency of key themes within the transcripts (Berg, 2001). Recurring lexical items and phrases related to language were then identified through a conceptual analysis and considered in terms of related themes discussed in the text.

**Findings**

**Varying Definitions of Language**

Each interview commenced with an invitation for the participant to reflect on their own conceptions of language and to provide an overview of the linguistic practices relevant to student engagement in their discipline. While only two participants had formal qualifications in linguistics, all ten interviewees expressed awareness of language as an important mediator of learning and emphasized the responsibility of every academic to support students’ linguistic development. These views are perhaps unsurprising given the participants’ willingness to contribute their experiences to research focused on linguistic inclusion in higher education. Likewise, all ten participants recognized that while engagement with discipline specific language practices can be challenging for all learners, the greater the contrast between the students’ primary linguistic Discourses (Gee, 1999) and the dominant language of the academy, the more likely
they were to encounter difficulties. In this sense, each of the participants noted that students from traditionally underrepresented backgrounds tended to be at greater risk of linguistic exclusion.

Yet, despite a shared understanding of the relevance of language to academic engagement and success, as well as the need for academics to scaffold language development in content area instruction, the ten participants offered varied definitions and understandings of language and the related equity implications. These contrasting conceptions occurred on a continuum ranging from a mostly instrumentalist understanding of language to more socially embedded views of text as sociocultural practice. These conceptualizations of language informed each academic’s understanding of the processes via which students may develop proficiency in academic Discourses (Gee, 1999), their engagement with the associated equity implications, and their views regarding the roles and responsibilities of academics in the linguistically diversified university. For all ten academics, there was notable cohesion between conceptualizations of language, their self-reported classroom practices, and the roles they assumed in relation to student language development.

For several participants, language was defined chiefly in terms of grammatical accuracy, emphasizing comprehension of specialist terminology and metalanguage, syntactical precision in written text, and adherence to the formal conventions of spelling and punctuation. For these participants, language practices in higher education were defined mostly in the traditional sense of reading and writing, with linguistic expertise thought to be attained through the mastery of, and compliance with, underlying rules. Participants expressing a predominantly instrumentalist view of language in higher education considered knowledge of the grammatical aspects of language to be essential to students’ future professional status and disciplinary membership.

I’ve always, in my written work, particularly with undergraduates, spent a lot of time correcting grammar and spelling and whatnot because I used to be just horrified to think that we would send a teacher out there who couldn’t spell or write a proper sentence. It’s just embarrassing (Participant 8).

Accordingly, discipline specialists were perceived to have a responsibility to uphold the standards of formal academic language, not only in language-focused courses, but across the curriculum. For instance, four participant teacher educators working in the humanities, including two who also engaged with more socially embedded notions of language, conceived of their role as equipping future generations of teachers to maintain the expected standards of grammatical accuracy. One participant suggested: “If they can’t write well themselves, they don’t really have a hope of being able to teach others” (Participant 4), while another added, “Everything they read, everything they write, has the possibility of impacting on their own future students, so it’s quite possible for them to be a very poor role model in terms of literacy practices” (Participant 8). The need to ensure future teachers are equipped with formal grammatical knowledge was considered an important issue for the academy, necessitating “a systemic and consistent response” (Participant 2).

All ten academics identified grammatical accuracy, knowledge of subject-specific terminology and metalanguage, and understanding of structural and stylistic conventions of text as essential to academic success.

It’s mainly the writing that we notice, that their grammar can be quite poor, they’re not great at sentence structure, and spelling can also be an issue, despite, you know, them having to word process their assignments and having the ability to use grammar check, spell check, etcetera (Participant 2).

However, eight of the ten academics also expressed the view that considerations of language in higher education extend to notions of identities, power, and epistemological engagement. For these academics, who work in a range of STEM and humanities-based fields, language was described as “communal” (Participant 7), “emotional” (Participant 6), “about belonging,” and “wrapped up in a cultural world view” (Participant 1). As one participant stated, “It’s language that tells people about whether they fit within a certain cultural grouping” (Participant 5). This understanding of the socially and culturally embedded nature of textual practice informed these academics’ views regarding linguistic equity, as well as the relationship between learner background, linguistic identities, and engagement with higher education. As one of the humanities-based participants explained:

…for some of our students…many of whom are first in family, many of whom come from financially and socially disadvantaged backgrounds, many who may come from rural environments where the written language is not necessarily privileged in their home or community life, I do find that those students do need additional support…(Participant 3).

As will be discussed later, participants espousing a sociocultural understanding of language described how they seek to encourage learner expertise in disciplinary discursive practices via exploration of the many textual practices that students perform both inside and outside of higher education. In this approach, diverse text types
are valued and understood to be located within particular social contexts, and acquisition of the linguistic conventions and practices of higher education is not a subtractive process in which students replace existing linguistic repertoires. Rather, this approach emphasizes the responsibility of all academics to unpack the textual practices of the academy – and of students’ future professions – while also drawing attention to learner agency to question, contest, and shape textual practices in all aspects of their lives.

Accordingly, the ten academics who participated in this study articulated varying definitions of language. These conceptualisations did not correlate with disciplinary background or career stage, but they were strongly aligned with self-reported classroom practices and understandings of the way that language may act as a potential barrier to engagement in higher education.

**Academic Responses to Learners’ Linguistic Strengths and Needs**

During the interviews, each participant was invited to provide an overview of their perceptions regarding learners’ linguistic strengths and needs, and recount critical incidents that illustrate how language practices impact student engagement in their discipline. All ten participants were careful to note that broad categories, such as ‘English as an Additional Language/Dialect’ (EAL/D) or ‘international student’, are not necessarily helpful in anticipating learners’ linguistic strengths and needs. In fact, all participants reflected on the potential for such categories to deny the diverse educational and linguistic experiences and repertoires of learners:

I think it’s impossible to say, “All of my international students are like this,” because in fact some of them, their English skills are as good as the domestic students in terms of the academic discourse, but there are other students that I’ve had, both in the past and present, that have had to be heavily scaffolded… (Participant 3).

Several participants perceived some EAL learners to have greater syntactical knowledge of formal English than monolingual English users, suggesting: “[T]hey come here speaking better English than locals will because they’ve been through very formal education systems … [T]hey don’t face the same challenges as some of our students who are English speakers” (Participant 1). Likewise, some EAL students were thought to transition into academic Discourses with greater ease than their monolingual/monodialectal peers due to their familiarity with the processes of language learning and their ability to switch between different codes.

Interestingly, despite being invited to discuss learners’ linguistic needs and strengths, all ten interviewees focused their responses on student needs. This focus may have resulted from the invitation to recount key incidents or experiences that the participants identified as illustrative of the role of language in mediating discipline area instruction. Further, as mentioned previously, these academics volunteered to participate in the study due to their views regarding the importance of language and literacies in higher education. As such, participant emphasis on learner needs may reflect their commitment to ameliorating language barriers through responsive and tailored instruction. However, beyond this study, it is also important to consider broader conceptions of linguistic diversity in higher education in general, where traditionally emphasis has been placed on challenges rather advantages of linguistic diversity. In this way, well-intentioned institutional approaches to support student language development can fail to engage with learners’ existing linguistic repertoires and overlook important opportunities for enriching the linguistic practices valued within higher education.

**Scaffolding Engagement with Subject-specific Language**

Each participant was asked to provide an overview of the practices they implement to assist students to engage with the linguistic practices required for disciplinary membership. Despite their different specialist backgrounds, all ten participants identified subject-specific vocabulary, metalanguage and academic jargon, and discipline-specific uses of regular English terms, as key to student engagement with content:

It was the first thing anyone said in any of the lectures or tutes, that they found the language difficult…there was something about the jargon, there was something about the appropriation of everyday words that then get used for different meanings, or the fact that …you’d use the same word in three different papers, and they’re being used for entirely different purposes because they’re coming from three different discipline backgrounds (Participant 9).

Participants working in STEM-related fields identified how each discipline has “its own sort of grammar…its own sort of alphabet” (Participant 6). Academic engagement with discipline knowledge in these subjects was described as “dependent on the capacity to unpack that jungle of symbols” (Participant 6). The ability to decode complex symbolism was also associated with understanding metaphorical uses of language within disciplinary instruction, where abstract concepts are personified in narratives to assist student learning:

You’re talking about trying to traverse a landscape and discovering unexpected vistas and getting
through obstacles and finding ways over and around things…killing off this guy, liking that guy, this one lives here. So, they would even sometimes use gender pronouns, you know, this guy lives in this space. This other guy lives in this space. Those two don’t talk to each other, you know, all of that sort of stuff. And I think it’s important somehow in enculturation [in the discipline] (Participant 6).

Associated with the need to understand metaphorical uses of language, the same academic working in a STEM-related discipline described how failure to engage with subject-specific specialist terms can be problematic for classroom processes and learner affective states:

One of my colleagues was teaching the class and noticing the students were behaving really, you know, freaked out at various points and was wondering why, and it was a class where he was talking about…the error in the estimation, so he’s saying, “Okay, we can bound the error, we can do this with the error, we can do that with the error;” and what the students were hearing was “I’ve got it wrong, I’ve got it wrong!” (Participant 6).

Participants referred to a range of strategies they implement to assist all students with subject-specific vocabulary acquisition, including the use of pictures and animations. Other academics in both STEM and humanities-related fields described strategies for assisting learners to decode symbols and structures of language, including using ‘nonsense’ texts to draw attention to the systems of language, reassuring learners that “even if you don’t know the details, you can sort of start to unpack the grammar of this, so don’t be scared to try” (Participant 6). Another STEM-based academic relayed how students—particularly those with little experience in language learning—often react to activities that seek to unpack and denaturalize subject-specific language practices, recounting how one learner observed:

You take apart the language, and then we get really angry and frustrated because suddenly we don’t know what we’re doing anymore, and then when we put it back together again, suddenly we’re better at it than we were before (Participant 7).

Other strategies described by participants as central to their efforts to scaffold engagement with subject-specific language indicated a strong awareness of the need to provide students with authentic and meaningful communicative contexts. One academic working in a STEM-related field described how students are often resistant to including written text with calculations, despite the fact that providing such rationales is a necessary textual practice when producing industry reports. In seeking to “model the practice that I’m hoping to encourage” (Participant 6), the academic described tutorials in which students work in groups to solve problems, showing their calculations on whiteboards, while class members explain the underlying theories. The academic describes this activity, which seeks to encourage spoken language as a foundation for the written rationales to accompany calculations, as a strategic way to prompt students to use subject-specialist terminology for meaningful purposes: “In that context, it’s a really positive vibe, and they’re laughing and they’re talking together, and it seems to be a more verbal context” (Participant 6). The academic also described how the activity takes on additional meaning due to the authenticity of the communicative purpose: students are genuinely explaining theory to peers rather than to a lecturer who already understands the concept. Such activities provide interactive, meaningful, and scaffolded linguistic engagement for all students, with the academic reporting increased attendance at tutorials and enhanced learner outcomes.

Modifying spoken language to assist comprehension. Listening to academic English was also identified as challenging for some students, especially EAL background learners, and several participants described how they consciously slowed the pace of their speech or modified aspects of their dialect to assist with comprehension:

- I intentionally soften my language of communication with my colleagues and with the students, but I inform them of that so that they can recognize that they need to meet people halfway as well. We should model what we do (Participant 5);
- I dialect shift with them to make sure that they’re understanding what is going on (Participant 7).

Here, an awareness of the need to assist with learner comprehension is paired with attempts to explicitly discuss how language varies according to social context, location, and purpose.

Several academics also described how they scaffold learner engagement with spoken language by employing teacher recasts in which they paraphrase student responses or their own statements in order to simplify or rephrase complex language. As one participant who works in a STEM-related field explained:

I try to say, ‘So we’ve got to check that this thing is a vector space, that means we’ve got to check that addition holes, that means that ... you know, close
terminology, and clearly structured paragraphs. Other more accessible content through
subheadings, definitions for key terminology, and clearly structured paragraphs. Other
academics continue to use journal articles for course readings, identifying these as important text types in their discipline; however, they also attempt to scaffold engagement with journal articles via joint deconstruction activities. For one humanities-based participant, this involved assisting all learners to navigate journal content by providing annotated and color-coded hard copies of the text to highlight the various sections and key points. Commenting on the general lack of scaffolding for the textual practices embedded within higher education, the academic noted that while learners are expected to engage with journal articles from the first year of their degree, they are usually provided with minimal preparation: “I don’t know if they’re actually taught explicitly how to engage with the structure, with the language, that unfamiliar terminology, the fact that it’s written for sort of more academic audiences…” (Participant 4).

Other participants described similar approaches to deconstructing text that they had adapted from EAL pre-reading activities, with an academic working in STEM explaining:

Biology textbooks have a particular structure, and the author has signposted their meaning in the chapter through the use of hierarchy of emphasis…And if you don’t read the passage but just pull out the hierarchy of emphasis, you can produce a graphic overview (Participant 7).

In describing the benefits of such activities for learner outcomes, the participant recalled how students who had previously failed biology courses “because teaching in undergraduate biology is very didactic… and nobody will talk to them about their textbook” (Participant 7), started to succeed in their studies once they received this tailored language support. Discussing the obvious equity implications for students, the academic added:

If nobody tells the students this, then how are they supposed to know? And what happens then, of course, is the kids who succeed are the ones who catch on to…the way the content is being presented through the language that they’re being exposed to…So I try to use the language issues to open up the academic community that’s going to be producing the stuff that they’re going to have to draw on (Participant 7).

Supporting academic writing. Similar approaches to scaffolding academic writing were described by participants who drew attention to rhetorical style, discourse organization, and the need to elaborate and support a point by deconstructing model texts in tutorials. As one participant explained, “The verbal feedback that I got from those students was that it was so useful because
no one had actually taught them how to write…they just did what they did…” (Participant 4).

Further, participants reported that students were often expected to adopt a critical approach to the production of academic text, yet were provided with minimal explanation or modelling to apprentice them into such culturally-situated, disciplinary practices. Academics in the humanities described how expectations regarding the critical use of a text pose a particular challenge for students attempting to produce a literature review that is “a critical analysis, not just a reporting of facts…and weaving that into the analysis of data” (Participant 8). In response, participants described the necessity of the following:

...giving them seriously scaffolded understandings of what it means to write a synthesis, because they just don’t understand…what that might even look like, and without really scaffolding what you get is this kind of series of summaries of, you know, this paper said this, and this paper said that … and they’re not doing anything with the knowledge, they’re just reporting on what they’ve read (Participant 9).

All participants described spending considerable time providing students with detailed feedback on written assessments, modelling the expected linguistic forms, and explaining grammatical rules. This provision of language-rich feedback was offered to all students but was reported as being particularly useful for traditionally underrepresented background learners: “I will edit their work to show them, ‘This is how it should be written.’ I offer to meet with my students if there’s a particular area that they’re working on, to talk to them about it…” (Participant 3).

However, the depth of guidance academics could conceivably provide students concerning written language was restricted by overall workload and employment conditions, particularly for participants employed on casual contracts.

Some participants also described how they dedicate time at the start of each tutorial – regardless of course content – to focus on a different grammatical point, such as the use of apostrophes, in order to explicitly address structural aspects of language “because you can’t know what you don’t know” (Participant 3). This additional guidance was provided to the whole class, with grammatical topics chosen to reflect areas of concern or confusion identified in student writing. Other academics took a more relativist approach to grammar:

I try to encourage students to use a registered tone that is formal rather than be so specific about types of spelling unless they’re completely out of the way, because I think there’s a difference between the two. And I am not a prescriptive, I am much more a descriptive linguistic user obviously because I feel that language should be fluid and flowing and it’s changing (Participant 5).

Negotiating linguistic transitions in higher education. The need to critically engage with the meaning and purposes of disciplinary textual practices, rather than simply mimic the style or vocabulary, was also emphasized by participants who discussed various instances of students using subject-specific language inappropriately or in ways that obstruct meaning because of their desire to sound ‘academic’. This situation was identified as particularly problematic for assessment, when, in an attempt to appropriate academic discursive practices, students fail to articulate the depth of their content knowledge. One humanities-based participant recognized this as a common situation for students from traditionally underrepresented backgrounds “who came in [to university] without a strong academic background, now are loving theory … and the jargonistic style of writing” but in turn, engage in so-called “overwriting” (Participant 8). As another academic suggested:

[T]here is a distinction between those who understand a research discourse and those who are trying to emulate a research discourse…You start talking to them about research and you ask them to write about research, and they go into this other discourse which I think they believe is an academic discourse but is not quite …They would be better off…not then trying to emulate what they think an academic discourse looks like (Participant 9).

These observations reflect the complex linguistic transitions required of students as they engage with disciplinary studies and the challenges associated with appropriating unfamiliar Discourses and approaches to text. Despite the rich, responsive, and innovative strategies employed by academics in this study to scaffold such linguistic transitions, all ten academics emphasized the need for more extensive language support to be provided for learners throughout their degree. In particular, assistance with the complex identity shifts required for the appropriation of expected linguistic forms associated with academic and discipline membership was seen as essential. Several participants discussed the impact of these linguistic shifts on students’ lives and the need to explicitly address the associated “identity work”:

The social stats about break ups and divorces and that sort of thing is very, very high…and I believe there’s a linguistic aspect to that as well in that they are talking differently, they’re talking about different things…You don’t realise that your vocabulary’s
shifting and then by third and fourth year you’re at the pub with your mates and they’re going, “Oh, who do you think you are with all those long words?”... I think there’s a really, really big linguistic shift that takes place with students that come from a particular kind of background. And there’s very little support for them (Participant 1).

This particular academic described how she undertakes to talk explicitly about these linguistic transitions, to work with students in tutorials to unpack associated issues of power and identities, and to assist them to make sense of the social impact of their engagement in higher education.

Future Directions for the Provision of Language Support. All ten academics were emphatic about institutional responsibility to support students with language development, with one participant stating: “They got into this program. We need to support them when they’re in, not just fail them and say they’re not good enough” (Participant 10). Such assertions reflect an understanding of the need for widening participation efforts to focus on supporting student engagement throughout the entirety of their degree, rather than solely concentrating on providing alternative pathways for entry.

The implications of failing to provide responsive and subject-specific linguistic support were recounted in detail by participants who identified linguistic challenges as a source of significant stress for many learners. One academic described an EAL-background international student’s situation, which was identified as representative of many other learners in similar circumstances:

I don’t know how she’s going to get through, actually. She’s an international student and feels very pressured with regards to paying for her degree... She’s failed several subjects, and really, I find it distressing a little because she pleads with you about passing... but, you know, ethically we’re not going to pass her if she’s not doing what she should be doing. But I do know that she has failed quite a few other subjects, but I put a lot of extra work with her to get her through one of the subjects... (Participant 10).

While “language issues” were cited as one of the main reasons for student academic failure and subsequent attrition, for all ten academics interviewed in this study, the sector-wide emphasis on expanding learner recruitment did not necessarily translate into the provision of ongoing, tailored, and responsive language support. Failure to recognize the fundamental role of language in mediating learning was identified as a contributing factor in the lack of assistance provided to students from non-dominant language backgrounds. As one academic advised: “[I]f you’re not sensitized to the language issues, then you interpret every student misunderstanding as either recalcitrance or stupidity” (Participant 7). A need for greater professional development for all staff regarding linguistic diversity was therefore an important factor to emerge from the study.

In addition to a lack of awareness regarding linguistic issues, participants emphasized the complex and structurally entrenched power relations at play in terms of language, access, and inclusion in higher education. Several academics – from STEM and humanities-related disciplines – recounted instances in which colleagues refused to simplify the language required to engage with assessment tasks, relating the view: “If they can’t understand me, then we’ll lock them out of the community” (Participant 7). Here, familiarity with language forms is erroneously equated with capacity for engagement with discipline content, and language becomes an instrument for conferring or withholding membership to disciplinary communities.

Participants also described systemic failure to provide language assistance in higher education as partly the result of erroneous assumptions concerning the universality of students’ background educational experiences. The language practices embedded in higher education were thought to be neglected in ‘mainstream’ instruction because of an assumption that all learners had been provided with such input at school. This, of course, belies the diversity of educational experiences and learner backgrounds, particularly within the context of widening participation.

Several participants also noted the need for more explicit and centralized mapping of degrees to indicate when (and if) students have opportunities to explore linguistic practices as part of their programs. A failure to plan for such learning can mean that academics assume students are informed about disciplinary expectations for language use:

And to be honest, I didn’t realize how little they were getting of this... I just assumed that they’d be taught these things over their degree...[but] There’s not as much being done about, well, how do I critically analyze, how do I compare...how do we structure an effective essay, and how do we interrogate sources? We get a little bit of that, but not as much as they should have (Participant 4).

Conclusion

While this study was both small in scale and focused on the perceptions and self-reported practices of academics who are clearly committed to reducing linguistic barriers to engagement in higher education, it provides important insights into the possibilities for embedding language support within a wide range of STEM and humanities-related disciplines. The
instructional strategies described by the academics in this research are innovative and yet practical, with most allowing for the explicit deconstruction and co-construction of texts within meaningful, authentic, and discipline-based communicative contexts. While the majority of participants did not regard their approaches to scaffolding language and literacies to be particularly significant or theoretically-informed, they align with many of the principles and practices of language instruction; an unexpected finding given that only two of the ten participants had formal qualifications in linguistics.

Research question 1 explored academics’ perceptions regarding the role of language within the knowledge base of their discipline. In this study, participant conceptions of language ranged from mostly instrumentalist and grammatically-focused to more socially and culturally embedded definitions. These varying ideas did not correlate with disciplinary background or stage of career, but they did inform participant understandings of the processes via which discipline-specific linguistic expertise may be acquired, as well as the instructional practices they implemented to provide language support.

Despite contrasting definitions of language and approaches to linguistic support, all ten participants emphasized the need for academics to assume responsibility for learner engagement with disciplinary language, indicating a strong awareness of the associated equity implications for widening participation in higher education. In this sense, exploration of research question 2, which focused on academics’ perceptions regarding linguistically diverse student populations, indicated that all participants were committed to linguistic inclusion and had implemented a range of subject-specific strategies to provide opportunities for students to engage with language. Further, all ten participants understood this commitment to linguistic inclusion to be central to their role as discipline specialists, regardless of their area of expertise or stage of career. While this finding is perhaps unsurprising given that participants volunteered to contribute their experiences to a study regarding linguistic inclusion, the depth of understanding regarding potential linguistic barriers in higher education, as well as the range of scaffolding techniques employed by these academics, were unexpected outcomes.

While listening and speaking were described as problematic for some students, most academics in this study indicated that engagement with formal and specialized texts in academic reading and writing presents the most significant challenge for learners, particularly those from traditionally underrepresented backgrounds. Academics who subscribed to more sociocultural understandings of language also identified the significance of complex linguistic transitions required of students as they engage with disciplinary Discourses (Gee, 1999), identifying a need for institutional support for learners as they navigate these multifaceted shifts in linguistic identity.

In response to the final research questions: “How do academics support students’ engagement with the linguistic requirements of their discipline? What assumptions, values, and perspectives underpin this support?”, participants described a range of practical support strategies that closely aligned with their conceptions of language. Those academics with mostly instrumentalist understandings of language tended to provide more structural, grammatically focused support, usually via feedback on written assessment. Participants with more sociocultural orientations to language tended to engage with both the structural and social aspects of textual practice. These academics described how they integrate a focus on disciplinary language into subject specialist instruction, recounting strategies for deconstructing and co-constructing text with learners, with the overall aim of encouraging increasingly independent production. This apprenticing of learners into specialist linguistic practices was accompanied by attention to broader issues of linguistic identity, discipline membership, language diversity, and power relations enacted through text.

Clearly, questions concerning the role of academics in the linguistically diversified academy, and the nature and implementation of effective language support for all students warrant broader, systematic, and sector-wide consideration. As raised in this study, possibilities for facilitating language development must be explored alongside attention to the implications for academic workload and professional development needs; important issues identified in existing literature (see Bretag, 2007; Daniels, 2013; Skyrme & McGee, 2016). There is also a requirement to pursue productive and efficient collaborations between academics, bridging/enabling program educators, and language support staff.

Providing alternative pathways to university enrollment without also considering the infrastructure required of students as they engage with disciplinary Discourses (Gee, 1999), identifying a need for institutional support for learners as they navigate these multifaceted shifts in linguistic identity.

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Providing alternative pathways to university enrollment without also considering the infrastructure required of students as they engage with disciplinary Discourses (Gee, 1999), identifying a need for institutional support for learners as they navigate these multifaceted shifts in linguistic identity.
expectations. In this way, social and cultural factors rather than aptitude or disciplinary expertise determine learner success. Not only does this limit the potential for students to diversify the linguistic and cultural landscape of tertiary institutions and shape the language practices of their future professions, it ensures universities continue to reproduce existing social stratification, limiting the transformative potential of higher education for broader society.

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Higher Institution Engagement in Partisan Politics: Perspective of Bangladesh

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The purpose of this study was to explore the ways in which teacher engagement in partisan politics in Bangladesh higher education institutions have influenced their teaching as well as the learning of their students. The study also examined the teachers' perceptions of the benefits and challenges arising from their engagement in partisan politics. A case study methodology was adopted for this study with the goal of capturing each participants' individuality and ensuring that in-depth information for each case was presented. One-on-one in-depth interviews were conducted directly with teachers in Bangladeshi higher institutions in order to explore their engagement in partisan politics. The study found that the higher institution teachers’ engagement in partisan politics took time away from their professional responsibilities and accountabilities, which had serious implications for their teaching and their students’ learning. In addition, while their engagement in partisan politics resulted in personal rewards for the teachers, it also undermined the status of teachers in general, as well as the reputation of higher learning institutions.

Bangladesh achieved independence in 1971 and has a land area comprising 51,703 sq. miles (133,911 sq. km) with a population of 167,830,571 (2019 est.). For a society like Bangladesh to develop and evolve, education is viewed as fundamental, as it creates a literate and educated populace (Badruzzaman & Mian, 2015; Hassan, 2016; Knox, 2009; Shiddike, 2016, 2019). Knox (2009) suggested that the people of Bangladesh view teachers as being among key leaders in establishing, developing, and sustaining an educated nation and in helping students to achieve their expectations for a better future. Accordingly, the people of Bangladesh expect teachers to teach students what they need for their intellectual, moral, and spiritual growth. Teachers are expected to focus on being professional, including in their teaching activities, classroom management, and reflective practices (Gurney, 2007; Schindler, Puls-Elvidge, Welzant, & Crawford, 2015). Further, Day (1999a) argued, "Teaching is more than a craft," suggesting that it is an "educational science and a pedagogical art" (p. 22). Day (1999b) also suggested a model for reflective professionalism should include "learning, participation, collaboration, co-operation, and activism" (p. 228), which, he noted, are ideals that effective teachers should maintain as touchstones for their practice. In Bangladesh teachers, especially university teachers, are deeply engaged in partisan politics and often spend time in researching or supporting the political agendas of their preferred party (Masum, 2008; Rabbani & Chowdhury, 2014; Shiddike, 2019).

The Research Problem

In Bangladesh teachers who work in formal education institutions, especially universities, engage in partisan politics and participate in political meetings and forums, and they openly express their political views to show active support for particular parties (Alam, Rabby, Boon, Khan, & Hoque, 2011; Masum, 2008; Shiddike, 2016, 2019). Another common practice in Bangladeshi higher education is many teachers’ continual use of traditional teaching strategies, such as a heavy reliance on lectures, as well as the use of dated teaching resources (Mahmud, Mozumder, Shahana, & Islam, 2018; Rabbani & Chowdhury, 2014). This problem is partly due to the teachers’ limited engagement in academic activities, as well as the limited time they devote to their professional activities (Ashraf, Osman, & Ratan, 2016; Monem & Baniamin, 2010; Shiddike & Rahman, 2019). Monem and Baniamin (2010) indicated that because of inadequate opportunities for professional development, most university teachers in the country do not utilize their time and professional abilities to either develop teaching materials or engage in academic research. As Monem and Baniamin (2010) put it, these teachers often pursue the patronage of political party leaders and appear to be driven by personal motives and choices in their work as teachers rather than by the ethos of their profession. Moreover, by engaging with political parties, teachers can enjoy freedom and empowerment to abuse their educational duties and responsibilities. For all of these reasons, I hope to explore in this research the potential implications of teachers’ participation in partisan politics and the ways such participation and activism might influence their engagement in teaching at higher education institutions in Bangladesh.

Purpose of the Study

The purpose of this study was to explore the ways in which teacher engagement in partisan politics in two Bangladeshi higher educational institutions influenced the teaching of four university teachers and the learning of their students, as well as its influence on the educational institutions for which they worked. The
study also examined the teachers' perceptions of the benefits and challenges arising from their engagement in partisan politics. The purpose of this study was achieved by addressing the following research questions:

1. In what ways does teacher engagement in partisan politics influence classroom professional practices?
2. How does teacher engagement in partisan politics influence students’ learning?
3. What do teachers see as the benefits and challenges to them from their engagement in partisan politics?
4. How does teacher engagement in partisan politics influence the institutions for which they work?

Statement of Interest

In Bangladesh we witness, to our dismay, certain teachers openly engaging in partisan politics. These teachers would acquire and disseminate relevant political information about their parties to students, participate in partisan activities on campus, and leverage benefits from their respective party leaders. Seeing the contemporary issues happening in Bangladesh higher education institutions, we have wondered about the possible implications of their political engagement for their professional roles and responsibilities as teachers. As a result, we see the development of the code of ethics as being necessary to protect students from any academic harm that might be inflicted on them by teachers engaging in partisan politics. In addition, a code of ethics might provide a moral framework for teachers so that they can demonstrate a commitment to ethically responsible practices.

As already noted, we share the views of authors who argue that teachers play a critically important role and responsibility in developing a nation’s human resources (Galbraith, 2004; McLean, 2004; Pratt & Associates, 1998) Partly because of their roles and responsibilities in the education system of any country, teachers constitute a key block in the social and economic development of a nation such as Bangladesh. We strongly believe that teachers have a right to support a political party of their choice; however, Alam et al. (2011) argued that engagement in partisan politics by teachers is likely to have adverse implications for their professional roles and responsibilities, as well as the nation’s education system.

Pratt and Associates (1998) contended that teaching is widely perceived as a "set of generic skills or techniques to be mastered" (p. 16), and they further stated that this view presupposes a split between content, which reflects the teacher's expertise, and the process of transmitting that content, a process that appears as a "politically neutral, skilled performance" (p. 16). However, we have come to realize that this perspective on teaching might be flawed because it presupposes that teaching is politically neutral. We believe that one’s beliefs about teaching, including about one’s roles and responsibilities as a teacher, are likely to guide one’s perspectives on the process. In short, we agree with scholars who view teaching as political (Cranton, 2001; Galbraith, 2004; Hare, 1993; Pratt et al., 1998). Further, we agree with scholars who argue that the development of a society like Bangladesh depends upon an educated population. We see education as a key component in the development of a nation; however, as Monem and Baniamin (2010) indicated, teacher and student engagement in partisan politics appear to be a key factor in the erosion of the quality of education in Bangladesh.

Literature Review

Teacher engagement in partisan politics is a common phenomenon in Bangladesh, and Bangladeshi higher education institutions face many political influences (Ashraf et al., 2016; Badruzzaman & Mian, 2015; Masum, 2008; Shiddike, 2019). Masum (2008) indicated that since 1971, the common scenario in Bangladesh has been that public universities are viewed as political extensions of political parties and are supported from party funds. In addition, the government interferes with the institutional functions of the universities, such as employee and faculty recruitment and academic decision-making, which in effect, makes these institutions extensions of political offices (Kumar, 2017; Sarker, Rana, & Zitu, 2013; Shiddike, 2019). This practice applies to institutions established by the government as well as private individuals. In Bangladesh, political leaders, including ruling party leaders and government authorities, support the establishment and functioning of party agencies on educational institution campuses and also support the recruitment of teachers and other members of staff from their own political parties (Ahmed, 2013; Akareem & Hossain, 2016; Shiddike, 2016, 2019).

Education at the university level in Bangladesh is guided by the 1973 Public University Ordinance (PUO) (Alam, Hoque, & Siddique, 2007; Masum, 2008). This ordinance dictates the selection procedures for the four statutory bodies of a university, which comprise the senate, syndicate, academic, and finance councils. This structure is the governance framework for all universities in Bangladesh. The PUO ordinance is sometimes seen as the root cause of much of the politicization of public university campuses (Middlehurst & Woodfield, 2004; Shiddike, 2019), as since 1973, this ordinance has been a factor in the recruitment and promotion of university administration.
personnel and teachers, as well as the allocation of other benefits as a partisan political tool. In addition, Alam et al. (2007) indicated that the rules in the ordinance appear to have increased the politicization of university administrations.

Political favoritism has affected the quality of education in public universities because faculty recruitment appears to be driven primarily by partisan political loyalty rather than academic qualifications. These rules and regulations have affected the teaching, motivation, and proper guidance of the students, and it is therefore likely that the ordinance has affected effective teaching, student motivation, and student attention in the classroom as well as the overall academic environment (Alam et al., 2007; Shiddike, 2019). As Andaleeb (2003) indicated, teachers, influence students to become involved in partisan politics, and leading political parties have often used their student fronts to achieve political objectives, with the power struggles among conflicting political parties degrading the academic environment in public universities. Khaleduzzaman (2014) added that partly because of partisan politics, Bangladeshi higher education is threatened, and the target of higher education output is not being achieved. Khaleduzzaman (2014) further noted that universities appear to be failing to do their duty in terms of providing quality education to Bangladeshi students.

Teaching is a heavy responsibility and requires teachers to instill in themselves the qualities of dedication and resourcefulness (Alam et al., 2011; Behari-Leak, 2017; Hossain & Khan, 2014). For this to occur, teachers must engage in professional development activities that will have a positive impact on their knowledge, attitudes and beliefs, teaching practices, and their students’ achievement (Anwaruddin, 2014; Campbell, 2017; Hoque, Alam, & Abdullah, 2011). Teachers are architects of the nation and are among the founders of a nation’s prosperity, development, and growth (Alam et al., 2011). The University Grants Commission (2016) of Bangladesh stated that:

> The development of modern society depends to a large extent on the nature and standard of the teaching profession in higher education. Thus, the role of higher education is to prepare competent, knowledgeable and far-sighted people for assuming various higher responsibilities. The growing importance of knowledge in the modern world can hardly be overemphasized, especially in the era of globalization and in a global environment, which is fiercely competitive. Particularly, higher education has an enormous potential to promote prosperity in developing nations. (p. 109)

It is obvious from the quote that education is considered a core component of growth and development in Bangladesh and that teachers are expected to play their role in improving the productive capabilities of the people. The country’s growth and development depend on an educated nation, and thus teachers need to focus on teaching.

Unfortunately, the present scenario in Bangladeshi universities appears to conflict with this goal. Most teachers engage in partisan politics, and quite often they spend considerable time on the dissemination of partisan political information and participation, as well as building trust with party leaders (Bidabadi, Isfahani, Rouhollahi, & Khalli, 2016; Masum, 2008; Monem & Baniamin, 2010). Several authors, including Masum (2008) and Monem and Baniamin (2010), have argued that teachers should act in a professionally responsible manner and engage in professional and academic research instead of partisan politics. This engagement in partisan politics by teachers affects their teaching in the classroom (Hossain, Hassan, Rahman, Ali, & Islam, 2017; Shiddike, 2016), as well as Bangladesh’s growth and development.

In addition to partisan politics, other factors appear to be having an impact on the higher education system in Bangladesh. Alam et al. (2007) note the following:

> In Bangladesh, higher education costs and lower quality university education, students were leaving for Indian educational institutions, or those who could manage financial assistance (due to merit) or private funding would leave to study in the Western capitalist countries, e.g. USA, Canada, UK and Australia. It is reported that, on average, in a year, about 50-60,000 Bangladeshi students study in different colleges, universities, and institutes in India. Similarly, a significant number of the professors of public universities (mainly belonging to the disciplines of engineering, natural sciences, economics, and business) did not return to the country from the Western countries after completing their study leave. These bright and promising teachers were demanding both better teaching-learning environments on the campus on the one hand and better material and non-material incentives on the other; unfortunately, the state/society could not inscribe both of these conditions. Hence, the brains drain pupils and teachers belonging to the better education sub-sector (p. 17).

**Research Methodology**

A case study research design was considered as the most suitable for the study because of its ability to deal with a full range of evidence, such as from documentation, artifacts, interviews, and observations. As already stated, a qualitative research approach was used in order to explore teachers’ engagement in
partisan politics and the way that engagement influenced their professional classroom practices. As a research methodology, Creswell (2002) contends:

Case studies are seen as a qualitative approach in which the investigator explores a bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information including observations, interviews, audiovisual material, and documents and reports, and provide a case description and case-based themes (p. 73).

Recruitment of the Study Sample

Four university teachers from two Bangladesh prominent higher institutions were recruited to participate in this study. Upon my arrival in Bangladesh for the data collection, I met with the teachers at both institutions and informed them of the three main criteria, i.e., that they must have a Master’s or Ph.D. degree, a minimum of five years’ teaching experience at their respective institutions, and be currently engaged in partisan politics. Based on that criteria, I randomly selected four professors (2 males and 2 females) as participants and formally invited them to join in the study.

Data Collection Methods

The primary data collection method for the study was in-depth, one-on-one interviews that involved the use of open-ended questions. In qualitative research interviews, the researcher records more than the participants' words and also inquires about their experiences and actions, which are narrative expressions (Boje, 2002; Denzin & Lincoln, 1994). In addition, the interview process was based on the theoretical assumption that interviews are products of “situated understandings grounded in specific interactional episodes” (Denzin & Lincoln, 1994, p. 353) that reflect the moods, voices, and feelings of individual participants (Denzin & Lincoln, 2003). The interview process adopted in this study was aimed at empowering the participants to produce their own narrative accounts, which in turn were viewed as adequate representations of a more “realistic” picture of their perspectives on their engagement in partisan politics in the Bangladeshi context. The guiding questions for the interviews were developed from a review of the literature and the researcher’s personal experience as a teacher in Bangladesh.

Data Analysis and Interpretation Procedures

The analysis of the data for the study was viewed as an ongoing activity, thereby making it both formative and summative (Bogdan & Biklen, 2007). In other words, some data analysis was done during the fieldwork, although the bulk of the work was deferred until the end of the data collection. The importance of the analysis-in-the-field strategy stems from the opportunity it provides to direct the data collection process in a more productive manner. In other words, it paves the way for some preliminary searching for patterns, common themes, or ideas arising or emerging from the data (Ball & Forzani, 2009). In addition to the opportunity to direct the data collection process, the analysis-in-the-field strategy allowed for the taking of some preliminary measures designed to ensure the credibility of the research findings (Crowe et al., 2011; Guba & Lincoln, 1989). Almost immediately after each interview, crucial portions of the interview data were highlighted or summarized and forwarded to the respective participants along with requests for another meeting. The idea was to grant the participants an opportunity to verify that the representations of the interview data (as presented in summary form) were actually those offered by them. All the participants were able to engage in the data review process.

The analysis of the interviews started with formal transcriptions of the audio recordings. The approach adopted for the data analysis consisted of: 1) coding procedures that would place the narratives of each participant into the areas highlighted in the interviews; 2) employing a conditional matrix to allow a discursive presentation of the data that would descriptively convey the substantive content of the study; 3) comparing the theoretical concepts the participants generated to the literature reviewed and analyzing their relevance in terms of the discussion about teachers’ engagement in politics; 4) interpreting what was heard, recorded, read, and analyzed; and 5) as (Strauss & Corbin, 1998) suggested, meeting any obligations as a researcher to “tell their stories” and to give a voice to the teachers’ narratives of their engagement in partisan politics.

Presentation of the Research Findings

The findings of the study start with a brief descriptive review of each participant’s professional engagement and experiences. The first participant appeared to acknowledge that “Teaching is a noble profession where the art and science of a teacher are applied. The phrase “to teach” means to make something understandable to others, i.e., participants in the classroom." He believes that “teaching involves helping students to acquire knowledge and assist them in their learning," and further indicated that “teachers should take their time to implement the activities needed to support learning in the classroom.”

The first participant stated, “They [teachers] get their undue promotions without research works and required publications, different positions of the
university, and also the financial benefits.” It appears as if teachers see their engagement in partisan politics as a form of transactional relationship with their parties; they expect some form of reward from the parties, including appointments and promotions to positions for which they may not be qualified. As Masum (2008) pointed out, partisan political loyalty often trumps qualifications and credentials in recruitment and promotion in higher education institutions in the country. I inquired about the participant’s own engagement in partisan politics, and he explained, “Yes, I am involved in a political party, but for me, an engaging partisan political party is the secondary. My first priority is my professional responsibility.” In short, while the first participant did acknowledge his engagement in partisan politics, he prioritized his professional work and professional engagement over his partisan political activities.

The second participant explained her teaching philosophy and then said, “To me, teaching means to help someone to learn; it may be any skill, any work, or to show the way things can be done or how knowledge about anything can be acquired.” She seemed to suggest that teaching in most Bangladeshi universities is grounded in the transmission of information perspectives, given the emphasis on completing course syllabi in time for students’ academic exams. This participant strongly believed that teachers’ engagement in partisan politics affected their classroom practice:

Sometimes teachers do not prepare their lectures properly and then spend the class gossiping or talking about their own achievements in politics. Again, political activities also impact their mind and soul, which is connected to their teaching attitude. As a result, most politically engaged teachers are unable to effectively continue class. They cannot maintain the time schedule, and they cannot complete the syllabus in time.

This narrative indicates teachers’ active engagement in partisan politics does affect students’ learning in the classroom. This participant believed that teachers benefited from their engagement in partisan politics and explained it in this way: “It often benefits teachers personally. Personal benefits like holding a political leader at a national level in future and sources of earning more money other than the teacher’s salary.” She continued, “Instead of personal benefits they [teachers] also have extra opportunities and access to power positions and such as opportunities for higher studies abroad, early promotion, on-campus residence and getting higher administration positions, e.g., dean, head of the department, etc.”

Finally, the second participant believed that teachers’ engagement in partisan politics affected the educational institutions for which they worked. She explained:

Institutions suffer as a result of non-academic activities such as lack of infrastructural development budget for a new student residence, an academic building, adding [sic] enough classrooms, new department facilities, more teachers, and more official employees, etc. Not only that, but other teachers also face challenges when they engage in different partisan political parties, which are different from the ruling parties. They receive fewer opportunities for studies abroad and promotion and on-campus residence. In addition, most of the parents and students do not like the public educational institutions for their higher study as teachers and students’ partisan politics exist.

The third participant shared his perspectives on teaching, such as the following:

Teaching means to teach someone to convey knowledge. Teaching is a very crucial and technical skill, which is really difficult. This is not like another job. Overall, the word “teaching” is only one technique, which helps to prepare all humans to perform their own job effectively. To teach means to educate students, to enlighten followers.

He also thought that "teacher engagement in politics affects teacher effectiveness in the classroom," and that, “I believe if teachers actively focus on partisan politics more than the teaching of course, student classroom learning will be affected.” He further added that:

Lack of research, lack of attentiveness, lack of affection, lack of future indication, lack of morality and ethics, lack of punctuality and seriousness, lack of proper knowledge sharing, lack of lecture plan and prepare materials, and lack of continuity, etc. all may be largely because of partisan politics.

The third participant appeared to indicate that as teachers engaged in partisan politics, they were likely to have a divided professional focus and concentration, which might affect their regular professional activities. Thus, it is very important for teachers to focus on their professional growth and engage in developing their professional knowledge and activities.

This participant emphasized the advantages enjoyed by Bangladeshi teachers because of their engagement in partisan politics. He noted the following:

Teachers receive change in status such as being promoted from lecturer to assistant professors,
associate professor or professor, holding higher administrative positions like Dean, Associate Dean, Chairman or head of the department, Examination or other committee head. Some achieve a Ph.D. degree without sufficient research work and publications, or campus residence facilities, higher salaries studies abroad and earning more money.

The first and second participants also expressed similar views and believed that in Bangladesh, teachers engage in partisan politics for personal gain and benefit. However, the third participant indicated some challenges teachers face due to their engagement in partisan politics, stating, “Overall, politically engaged teachers lose their values and are disrespected by students and the society. Though teachers engage in ruling government parties, they receive many benefits”. However, he also indicated the following:

Day-by-day institutions lose their recognition and positions of prestige around the world. Suppose, once upon a time, Dhaka University was compared to Oxford but nowadays, across the world, among 2500 universities there is no position for Dhaka University, not any Bangladeshi universities.

The third participant believed, “Engagement by teachers in partisan politics might be acceptable, but they need to prioritize their engagement by focusing first on their teaching, as well as their professional growth and development.” He also talked about teachers’ engagement in partisan politics in Bangladesh:

Teachers, including myself, believe and support any political party, which is not wrong. But the problem is most of the teachers, when engaged in partisan political activities, forget their professional duties and responsibilities. They want to gain something from the ruling government to show they are an active supporter of the party, which is contradicting with their professionalism.

The third participant continued to discuss teacher engagement in partisan politics and its effects on their classroom practices:

Teaching is a creative profession. It relates to research and active participation; unfortunately, most of the teachers, when they are actively engaged in partisan politics, they do not have enough time to engage in academic research, teaching students or taking the class in a creative manner. So, it affects their academic research, proper lesson plans and effective classroom teaching. It might affect students’ attentiveness in the classroom.

In short, he appears to say simply that such professional activities become secondary for many teachers who are engaged in partisan politics, which might not bode well for their profession and their students’ learning.

The fourth participant strongly felt that “teaching is not only a profession; teaching is like caring about our son and daughters, caring about our future.” She strongly believed that “teachers should engage in partisan politics to participate in the country’s growth and development, but at the same time, teaching should be their first priority,” explaining the following:

It would be very bad if we engaged most of our time in partisan political work and not professional work. We need to keep in mind that end of the month, we received our salary for teaching, not for partisan political work. We support a political party, which is for one political party. On the other hand, teaching is for everybody.

Teaching students means guiding the students’ futures and caring for them as the next generation of workers and leaders, and so effective teaching is essential for the students.

The fourth participant also agreed that teacher engagement in partisan politics definitely affected classroom practices, and she responded in this way: “Partisan political views change teachers’ motives, goals, morality...so it’s more than obvious it will affect the students...”. She thought that:

Student learning relies on teachers. In this case, how the teacher teaches depends on that. But no doubt in Bangladesh, teacher engagement in partisan politics affects student learning, affection, and attention. In addition, the engagement of teachers in partisan politics also affected the relationships between teachers and students. It also causes students to lose their learning interest in Bangladeshi higher educational institutions and to go outside the country for their higher education degree.

But why would teachers do that? She went on to state that there were some advantages for teachers who engaged in partisan politics, for example:

In Bangladesh, the majority of politically active teachers have just a tag of the teacher. Politically they have power and money under the faithful cover of teaching. When a teacher is involved in partisan politics, it becomes easier for him to jump into the next promotion without facing any obstacle, even if he does not have the required qualification, experience and capability.
Finally, in her opinion, when teachers engage in partisan politics, they also hamper their institutions’ reputations. She remarked:

Students and teachers constitute the institutions. So, the effect can make the institution not only the scholar’s home but also the shelter to give a nation as well as valuable humans. When teachers are engaged in partisan politics, the harmony of the balance of peace and rules in the institution get hampered.

Discussion of the Research Findings

Four broad themes emerged from the data collected for this study, and these themes are discussed.

Finding #1: Teachers’ Engagement in Partisan Politics Influences Teaching Strategy

The findings of the study revealed that the participants thought teacher engagement in partisan politics took time away from adequate preparation for their professional duties and responsibilities, including research, publication, and classroom teaching. There was considerable unanimity among them on this issue. They all thought that teacher engagement in partisan politics left them with inadequate time to focus on their professional development activities, including preparation for classes as well as scholarly research and publications, and that this political engagement seriously undermined their ability to function effectively and efficiently as teachers. Their main concern appears to have been that they thought teachers spent far too much time on partisan political activities than on their professional roles and responsibilities as teachers. Although I believe that while teachers, as citizens, should be allowed to have the right to participate in the country’s political system, including partisan political activities, this should not interfere with their professional roles and responsibilities, which, the participants agreed, appeared to be the case in Bangladesh.

Finding #2: Teachers’ Engagement in Partisan Politics Influences Students’ Learning

All the participants believed that teachers’ engagement in partisan politics undermined the learning environment for their students. In other words, teachers’ engagement in partisan politics adversely influenced “student learning, affection, and attention” in the classroom. Based on my experience in the country and from much of the literature, I would agree with the participants. Teachers’ and students’ engagement in partisan politics, which is an increasing trend in Bangladesh, encourages students to focus less on their studies.

Although the participants could not think of any way that teachers’ engagement in partisan politics might promote their students’ learning, it appears that students whose political activities were identical to those of their teachers received some favors from their teachers. The participants indicated that students whose party affiliations were different from those of their teachers did not necessarily get along with their teachers in the classroom and that this did not bode well for those students' learning. However, in those instances where students and teachers shared the same party affiliation, the students appeared to benefit from the affection of the teachers, and that the affection served as an incentive in the learning process. The participants also thought that by encouraging or supporting students’ partisan activities on campus, it was likely that the teachers undermined the learning culture of their institutions, a point that was emphasized by Ahmmed (2013).

Finding #3: Teachers’ Engagement in Partisan Politics Influences Higher Education Institutions’ Reputations

The findings revealed that the research participants believed that teacher engagement in partisan politics undermined the reputation of universities as institutions of higher learning in the country. The participants thought that the reputation of higher education institutions depended in part on the quality of the academic work of teachers and students, but that this quality was compromised by teachers’ engagement in partisan politics.

The participants collectively offered one main suggestion, which was that teachers and students should refrain from engaging in partisan political activities on campus. They acknowledged that, as citizens, teachers and students had the right to participate in the nation’s political system; however, they thought that teachers and students were much better off by focusing much more on their academic activities than on partisan politics. I agree with the participants’ suggestions and those of several other authors who have argued that teachers should refrain from partisan political activities in the workplace and instead focus much more on the successful performance of their professional roles and responsibilities (Masum, 2008; Rabbani & Chowdhury, 2014)

Finding #4: Benefits and Challenges to Teachers Resulting from Their Engagement in Partisan Politics

The findings of this study revealed that the participants thought that teachers who were engaged in partisan politics benefitted from such engagement, probably due to the transactional relationships that
existed between them and their political parties, especially the parties in power. All the participants agreed that teachers received personal benefits like financial rewards and promotions, primarily because of their engagement in partisan politics.

This issue is very important, as much of the literature appears to emphasize the perceived benefits of engagement for teachers, and there is hardly any discussion of the perceived challenges to teachers regarding their engagement in partisan politics. While I agree that teacher engagement in partisan politics might help teachers to achieve tangible wealth and positional power, I also view their engagement as a factor in losing their honor, respect, and social acceptance. As a Bangladeshi national and former university teacher from that country, I believe that the honour and respect teachers enjoy from students and society is a source of infinite benefit compared to the limited tangible benefit they receive due to their engagement in partisan politics.

**Recommendations**

Based on the findings of this study and the literature reviewed, as well as my experiences as a teacher from Bangladesh, the following broad recommendations are offered concerning Bangladeshi teachers’ engagement in partisan politics.

The first recommendation relates to the amendment or reform of the 1973 Public Universities Ordinance (PUO) Act. The participants believed that the ordinance allowed Bangladeshi political parties, especially the parties in power, to use teachers and students as political agents on university campuses. The second recommendation is that teachers should focus primarily on their professional engagement and academic development rather than partisan political engagement. The findings of the study indicate that teachers should utilize their time and effort to focus on their professional responsibilities and duties. The third recommendation is that recruitment and promotion to academic and staff positions at universities should be based primarily on professionalism, academic experience, and qualifications rather than partisan political loyalty, as appears to currently be the case in the country. The fourth recommendation relates to the establishment of accountability for teachers based on professional ethics and values.

Lastly, it is my view that the government of Bangladesh needs to focus on improving the higher education system in order to provide a better quality of education for the citizens. Accordingly, government and opposition leaders need to encourage teachers and students to increase their academic engagement and focus on the concept of academic success, as well as to reduce their engagement in partisan politics.

**Limitations and Suggestions for Future Research**

The most significant limitation of this study was the lack of generalizability of the findings. The study was only based on the experiences and perceptions of four teachers (2 males and 2 females) from two universities in Bangladesh who volunteered to participate in the research. Therefore, the study sample was not representative of university teachers engaged in partisan politics across the country. Further, the data for the study were collected through one-on-one in-depth interviews only, and therefore, partly because of issues of confidentiality, there was no extensive review and use of the participants' employment documents and records. As well, the research design depended solely on qualitative data-gathering methods, and no quantitative surveys were used to add to the data collected from the interviews. Finally, the researcher's personal experiences and familiarity with the issues relating to teacher engagement in partisan politics in Bangladesh may have influenced the interpretations of the research data. In future research, these issues should be addressed.

This study focused on the ways in which teacher engagement in partisan politics might influence their teaching and their students’ learning, as well as their institutions’ reputations and the benefits and challenges of such engagement. A study with broader sampling that involves all key stakeholder groups, such as party officials, university administrators, students, and students’ parents, could provide a much better understanding of the broader implications of teacher engagement in partisan politics. Furthermore, it would be beneficial to study not only teachers, but also other professionals in Bangladesh, like doctors, lawyers, nurses, etc. who might be engaged in national partisan politics. Such a study would provide a more balanced view of the experiences of a broader range of professionals relative to their engagement in partisan politics in the country.

In addition, a comparative study of the experiences of both teachers who engage in partisan politics and those who do not could provide further insights and valuable information. Conducting a study of this sort on a countrywide basis to include primary and secondary school teachers could provide rich and important information about the experiences of teachers engaging in partisan politics in the education sub-sectors as well. Finally, a study that explores the engagement in partisan politics of workers in other sectors of the Bangladeshi economy, and how such engagement might influence national economic and social development, might be quite helpful.

**Conclusion**

This study concludes that university teachers’ engagement in partisan politics in Bangladesh has
influenced their professional practices in several ways. The participants agreed that the 1973 Public University Ordinance appeared to have created the opportunity for university teachers to become engaged in partisan politics; however, they suggested that teachers should focus much more on their professional duties and responsibilities than on those politics.

Furthermore, Bangladesh is an economically deprived country with a limited land area and limited natural resources, but with a dense population. In such a case, human resources become a primary resource, and teachers' roles in developing these human resources are crucial. Therefore, we believe that the Bangladeshi government should seriously reflect on what it and its citizens can do to develop a productive workforce in the 21st century. In addition, the government should seriously consider addressing teachers' demands for increased support in order to enhance their capabilities, capacities, and professional development, in contrast to encouraging teachers to engage in partisan politics. At the same time, in order to attract competent, qualified teachers, the Bangladeshi government should consider ways to make its teaching profession more attractive through a review of its salary structures and incentives.

References


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Promoting and Measuring Reflective Skills in Depth and Breadth of English and Physics Teacher Trainees

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Undoubtedly, supporting reflection in student teachers during university-based training is one of the most sustained measures to attain teacher professionalism. Therefore, at the Freie Universität Berlin an on-campus seminar designed to relate theory to practice and vice versa – the so-called Teaching and Learning Lab (TLLS) – was implemented over the course of five terms to stimulate reflective skills of English and physics teacher trainees. Investigations on the effectiveness of three types of the TLLS (no video and two types of video-supported reflections) compared to a parallel group (PG) and a control group (CG) occurred in a Mixed Methods quasi-experimental study. Reflective skills were elicited with vignettes, relevant covariates with questionnaires. Reflective development was then traced in the dimensions depth and breadth employing a Qualitative Content Analysis. MANCOVA and regression analyses revealed a substantive increase of reflective depth for English and physics teacher trainees and breadth development for English TLLS-participants in contrast to both, a PG and a CG, even when controlling for the subjects’ individual prerequisites.

Introduction

Conceptualizing Reflection

Reflection is believed to contribute to “self-consciousness [which then] generates valid knowledge” (Fendler, 2003, p. 17). Dewey (1933, p. 9) regards it as “the active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it.” Reflection herein is considered an active practice and a means to diminish an individual’s unwarranted assumptions about teaching and learning. Any kind of passive action, in turn, is equated by Dewey with action based on “trial and error” (Griffiths, 2000, p. 540). Such routine and passive action is in danger of being justified by “authority and tradition” (Griffiths, 2000, p. 540). It is further hypothesized by Dewey that such rational reflection-rooted practice emerges in teachers when their observational and analytical skills have been trained systematically. Besides that, he considers refinement of three key personality features crucial for successful reflection: “open-mindedness, wholeheartedness and responsibility” (Griffiths, 2000, p. 540; cited in Dewey, 1933).

Schön (1983, p. 26) draws a distinction between “reflection-in-action” as it occurs intuitively in the moment of action and “reflection-on-action” as a retrospective act temporarily separated from the teaching act. This typology was supplemented with the term “reflection-for-action” coined by Körkkö, Kyrö-Ånniala, and Turunen (2016, p. 200) to demonstrate that reflection may also take place before action, for instance, when planning for alternative action. Clárà (2015) rejects many of those widely accepted assumptions on reflection. For him, Schön’s (1987) concept of reflection-on-action must not necessarily culminate in decision-making or alternative action plans. Rather, it should be considered a means to clarify pedagogical situations in order to gain greater insight and discernment (Clárà, 2015). Consequently, Clárà (2015, p. 263) defines reflection as “a thinking process which gives coherence to a situation which is initially incoherent and unclear.” For this study, reflective performance will be expressed in accordance to Schädlich (2015, p. 258, translation and adaptation C.K.):

Teacher trainees are capable to plan and conduct [English and physics activities] on the basis of subject-matter or curricular texts (theory). These teacher trainees are able to discuss the relevance of these texts for individual and complex experiences in a situation of action (praxis) and manage to explicate those field experiences. Reflective competence becomes explicit in trainees’ performance to retrospectively verbalize their actions […] and their learning processes in the whole.

Promoting and Modeling Teacher Trainees’ Reflection

Promoting Teacher Trainees’ Reflection Skills

Claims are frequently made that the professionalization of teacher trainees largely rests on reflective teacher education (e.g., Davis, 2006; Leonhard, Wüst, & Helmstädt, 2011; Santagata & Yeh, 2013). Literature review reveals five recurring objectives associated with a teacher education promoting reflective practices. Reflection is regarded to stimulate:

I. The process of becoming conscious of one’s own beliefs on teaching and learning which transforms implicit (unconscious, intuitive) to explicit (rational, theory-guided) knowledge
(e.g., Körkkö, Ämmälä, & Turunen, 2016; Häcker, 2017).

II. The negotiation of the relation between knowledge and performance (e.g., Bullough, 1989; Day, 1993).

III. The negotiation of the theory-practice-relation (e.g., Wildt, 1995; 2003; Birmingham, 2004).

IV. Dealing with pedagogical dilemmas (e.g., Combe & Kolbe, 2008; Leonhard, Wüst, & Helmstädter, 2011).

V. Rethinking and innovating the educational landscape (e.g., Schön, 1987; Smyth, 1989; Bullough, 1989; Day, 1993; Dewey, 1933).

Developing reflective skills serves as one of many means to attain the features of a professional educator. In order to bring this important skill closer to student teachers the Teaching and Learning Laboratory (TLLS) was constructed implementing specific micro-interventions to promote reflective skills in a training environment combining theory and practice elements. According to Abendroth-Timmer (2017), four approaches can be differentiated in teacher education to promote reflective reasoning, all of which were implemented in the underlying intervention, the TLLS:

I. Individual-monological approaches include self-reports, such as journals (Rieger, Radcliffe, & Doepker, 2013), diaries (Akbari, 2007), or portfolios (Schädlich, 2015; Abendroth-Timmer, 2017).

II. Collegial-dialogical approaches rest on peers as “critical friend[s]” (Hatton & Smith, 1995, p. 37) or experts as “knowledgeable others” (Gelfuso & Dennis, 2014, p. 2).

III. Visual approaches allow for critical reflection-on-action (Schön, 1983) of teacher trainees’ own teaching (personal video reflection), or other’s teaching efforts (external video reflection). Both of these video reflections – personal and external – were realized in the TLLS.

IV. Experimental approaches comprise action research projects (Legutke & Schart, 2016), simulations (Abendroth-Timmer, 2017), blended-learning experiences (Abendroth-Timmer & Frevel, 2013), as well as Microteaching (Schädlich, 2015)

Modeling Teacher Trainees’ Reflective Skills

In the past, products of student reflections were empirically evidenced to vary with respect to their quality. Assessment of “reflective depth” as one alleged sub-dimension of reflective skills (Leonhard, Wüst, & Helmstädter, 2011), for instance, occurred with reference to hierarchical reflectivity models (Hatton & Smith, 1995; Abels, 2011). These models were employed to reconstruct various reflectivity levels from the reflective data material (verbal, written, or videotaped).

Hatton and Smith (1995) laid foundations for the four-level-model of reflection 1 utilized by likewise, the authors of this contribution and Abels (2011). Abels (2011) adapted Hatton’s and Smith’s model to determine teacher trainees’ reflective performance in written portfolios. The research project discussed in this paper relies on the four-level-reflection-model by Abels (2011).

Investigation of “reflective breadth” as a second dimension of “reflective skills” can yield valuable additional information on the quality of teacher reflections (Leonhard et al., 2011) and can be operationalized by Pedagogical Content Knowledge (PCK). According to Shulman (1987, p. 9), teachers’ PCK translates Content Knowledge (henceforth CK) from English Linguistics, Literary, and Cultural Studies into “comprehensible” input for language learners. This specific characteristic ultimately renders PCK a “special amalgam of content and pedagogy” (Shulman, 1987, p. 9).

Very limited research was conducted on PCK in English Language Teaching (ELT; e.g. Akbari & Tajik, 2009; Freeman & Johnson, 1998; Gatbonton, 1999). Systematic, large-scale research projects have only been realized very recently. As one example, in the PKE-study (Professional Competencies for English Teacher Trainees) (Kirchhoff, 2017), Shulman’s three knowledge domains were used as a framework by König and colleagues (2016, p. 322) to track trainees’ PCK, PK, General Pedagogical Knowledge (GPK) and CK development over the course of their university-based training. The PCK knowledge assessment tool employed in PKE comprises the subsequent three dimensions (Darling-Hammond & Baratz-Snowden, 2007; Jansing Haudeck, Kellner, Nold, & Stancel-Piatak, 2013):

1. Curriculum knowledge (CURR)
2. Strategy and representational knowledge (STRAT)
3. Learner Knowledge (LEARN)

König and colleagues (2016) statistically confirmed a PCK-model which subdivides CURR- and STRAT-knowledge into six and LEARN-knowledge into another seven domains. This PCK-trias was also deployed in this study.2

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1 By way of analyzing the content of teacher trainees’ reflection essays Hatton and Smith (1995, p. 41) identified four types of reflection: I. descriptive writing, II. descriptive reflection, III. dialogic reflection, and IV. critical reflection.

2 This project is part of the “Qualitätsoffensive Lehrerbildung”, a joint initiative of the Federal Government and the Länder which aims to improve the quality of teacher training. The programme is funded by the Federal Ministry of Education and Research. The authors are responsible for the content of this publication.
In sum, the PKE-study evidenced that relationships between the domains resulted in either high (CK vs. PCK; GPK vs. PCK) or medium correlations (GPK vs. CK). As compared to a stronger correlation between CK and PCK for mathematics teaching in the COACTIV study (r = .78), the role of CK in English Language Teaching (ELT) appears to differ. Taking into consideration the role of English in ELT, being a simultaneously learning vehicle and an objective of Teaching English as a Foreign Language (TEFL), this finding is hardly surprising.

**Treatment Description: The TLLS**

The TLLS-format was designed and implemented as a quasi-experimental teacher training approach” in the subject-matter domains of English and physics according to a standardized theoretical framework (Rehfeldt, Seibert, Klempin, Mehrtens, Lücke, Sambanis, Köster, & Nordmeier, 2018). For the purpose of developing teacher trainees’ reflective skills, implementation of three micro-interventions derived from the body of literature on effective strategies to foster reflection occurred. The TLLS blends elements of a regular theory seminar with iterative field explorations with pupils, followed by reflective sessions.

In a TLLS, teacher trainees develop theory-grounded learning opportunities which are first put into practice with visiting learners in university spaces. Field experiences are then subject to reflections, theory-based optimization, and iterative explorations with learners.

The conceptual framework of the TLLS traces back to the process model developed by Nordmeier and colleagues (2014). The TLLS-conception model describes five main steps, whereby steps (b) and (d) are repeated:

(a) Pre-selected theory input and supported planning of instruction (approx. 6 sessions)
(b) Conduction and exploration of instruction plan (1 session)
(c) Theory-based observation of peer exploration (occurs during b)
(d) Theory-based reflection of field experience (1 session)
(e) Theory-based adaption and modification of instruction plan (approx. 1-2 sessions)

In order to actively guide teacher students and support their skill development, a competence model targeting expert teacher perception and action skills, was employed and is further discussed in Klempin (2019).

**Micro-Interventions to Foster Reflective Skills**

At the Department of English subject-matter education at Freie Universität Berlin, the TLLS was specifically implemented at the B.A. level for the promotion of English teacher trainees’ didactic reflective skills (Klempin, 2019). At the Department of Physics Teacher Education, the same concept model was employed, including the three micro-interventions to foster reflective skills of the participants. This has enabled the researchers to conduct joint data analyses.

First, a Cognitive Apprenticeship (Schärdich, 2015) based on the instructor’s model was pursued, specifically during those phases which relied on theory input by the instructor (a, d & e). As a second micro-intervention, Noticing Trainings (Sherin & van Es, 2009) were carried out. For that, trainees were to collaborate with “critical friend[s]” as advised by Hatton and Smith (1995, p. 37) during instruction planning (phase a), field explorations (phase b), and peer observation (phase c). For further advancement of students’ observation skills, pre-structured protocols were to be filled out during field explorations (phase b). Along with short teaching video clips, these observation notes were used to stimulate participants’ theory-guided reflections (phase d).

The two highly structured reflective sessions, framing both praxis phases of the TLLS, were modeled on the reflective cycle by Rodgers (2002). This reflection-on-action (Schön, 1983) provides trainees with opportunities to look back onto their praxis experiences while making references to relevant theories when passing through the steps of the cycle. Reflection occurs individually as well as in peer tandems and with the mentoring instructor providing assistance whenever required (Kaasila & Lauriala, 2012). Following reflection, the activities were revised for performance improvement throughout the second field trial. These revisions are based on students’ findings from the first reflective session, peer feedback, and observation protocol notes the tandem partner took during the activity. It is assumed that through the reflective sessions participants acquire the epistemic skills to reminisce on their field experiences in a theoretically sound fashion. This could, for instance, be realized by way of imagining alternative paths of action for the second field trial (phase e).

**Research Hypotheses**

Our research project is driven by the assumption that didactic skills of participants of the TLLS will extend with regard to their reflective depth and breadth. Reflective depth is operationalized as modes of perspectives and analyzed employing a reflectivity model (Abels, 2011). Reflective breadth is hereby approached as the display of PCK (König, Lammerding, Nold, Rohde, Strauß, & Tachtsoğlu, 2016). Further, we hypothesize different effects on reflective depth and breadth development depending on the type of intervention participants were exposed to.

Three main TLLS-interventions are distinguished, all comprising the aforementioned micro-interventions to
support reflection (3.1). However, interventions II and III also include the visual approach integrating either trainees’ own short teaching video clips (“personal video”), or other candidates’ video clips (“external video”) into the reflective sessions. Drawing from prior research findings (Santagata, Zannoni, & Stigler 2007, p. 344), we expect the highest increase of reflective depth in intervention group II, followed by III and I:

I. Intervention “regular TLLS”: TLLS with 3 micro-interventions
II. Intervention “personal video TLLS”: Regular TLLS plus videography and reflective sessions with personal videography
III. Intervention in “external video TLLS”: Regular TLLS without videography but with reflective sessions with someone else’s videography

This research project pursues the following research hypotheses on reflective skill development of TLLS-participants compared to subjects from a parallel (PG) and those from a control group (CG).

**Research Hypotheses on Reflective Depth Development.** H1: The reflective depth development differs measurably between participants of the five intervention types (regular TLLS, parallel TLLS/PG, control group CG and TLLS with either personal or external video reflection) with a medium effect size in favor of the TLLS-participants and even with a high effect size resulting from the additional video-supported reflection (Bandura, 1997, p. 79-81; Tschannen-Moran, Hoy, & Hoy, 1998; Schmitz, 2000, p. 16; Helbig, Guntner, Rehfeldt, & Krüger, 2019).

**Research Hypotheses on Reflective Breadth Development.** H2: The reflective breadth development differs measurably between participants of the five intervention types (regular TLLS, parallel TLLS/PG, control group CG and TLLS with either personal or external video reflection) with a medium effect size in favor of the TLLS-participants and even with high effect size resulting from the additional video-supported reflection.

**Further Research Hypotheses.** H3: According to a theoretical framework, the statistical relation between the increase of reflective depth and breadth is positive and medium to strong (representing an overall reflection skill/competence).

**Research Design, Methods, and Instruments**

The TLLS in the subject-matter education of English and physics are explored within the research paradigm of Mixed Methods (Kuckartz, 2014) as to pay tribute to the complexity of the construct under investigation (Häcker, 2017). “Didactic reflection”, in its alleged dimensions “reflective depth” (Hatton & Smith, 1995; Abels, 2011; Leonhard, Wüst, & Helmstädter 2011; Roters, 2013; Stender, 2015) and “reflective breadth” (König, Lammerding, Nold, Rohde, Strauß, & Tachtsglou, 2016), was elicited at pre- and post-points of measurement. Data was collected in five experimental cohorts (interventions I-III), one parallel TLLS (PG follows TLLS-concept but lacks the three micro-interventions), and three content-wise comparable control groups (CGs constitute regular theory courses without field practice and systematic reflective sessions). Pre-test data collection always occurred in the initial week of the term, whereas post-test data was collected during the penultimate or ultimate session. Table 1 gives insight into the distribution of additional interventions in the TLLS.

Data on reflective depth and breadth was elicited using open written discourse vignettes which were developed based on a theoretical framework (Rehm & Bölsterli, 2014). Additionally, a paper-pencil questionnaire was distributed in EG, PG, and CG at pre and POST points of measurement to allow for covariate analyses of such variables theoretically suspected to affect the development of reflective skills.

**Analysis**

**Study I: Reflective Depth and Breadth Development of ELT Trainees**

**Sample Description Study I**

This intervention study is based on a quasi-experimental design whereby participation in the intervention seminars was voluntary. All five interventions were realized at the Freie Universität Berlin (Germany). The TLLS were conducted as part of teacher training during the Bachelor’s program spanning summer terms 2016 to 2018. The cohorts which were used for further analyses comprised English and physics teacher trainees. Samples for the TLLS without video support were recruited from the English cohorts of summer term 2016 to winter term 2016/17. Control groups could be established during the summer terms from 2016 until 2018. A parallel TLLS (PG) exists for English only and was conducted by a fellow researcher during summer term 2018. TLLS with personal video occurred during summer term 2017 in English and the external video reflection was implemented in the TLLS offered during winter term 2017/18. More detailed information on the samples and sub-samples is provided in table 2.

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3 For more insight into the construction of the open written discourse vignettes, see Klempin (2019).
During (Kuckartz s well as coding process Categories M B Qualitative A analyses time, factor: intervention type breadth and reflective depth MAN statistically insignificant sample (With regard to those variables used to describe the summer term 2016), d ubject) TLLS TLLS PG S Distribution of grades from 0: Age (SD) Distribution of External VPP Parallel Group (PG) Control Group (CG) Intervention II: Personal Video Intervention II: Personal Video 4. Multi Intervention II: Personal Video 1. Hypothesis mode 2. Explorative-productive mode 3. The Practice-Score Ranges from 0: No Prior Experience up to 5: Rich Prior Practical Experience as Student Teacher or Private Tutor etc. Practical Experience A Level Sum Score (SD) Intervention Age (SD) Semester (SD) Gender (SD) CG 24.1 (3.82) 4.1 (1.26) 16f, 5m 1.33 (1.46) 2.1 (0.64) PG 21.42 (1.56) 4.58 (1.24) 8f, 4m 1 (0.6) 2.43 (0.78) TLLS 22.17 (2.98) 4.07 (1.16) 23f, 6m 0.72 (0.88) 1.94 (0.54) TLLS external 23.06 (3.86) 3.94 (1.43) 8f, 10m 2.56 (1.42) 2.13 (0.44) TLLS personal 21.83 (2.32) 3.67 (1.37) 4f, 2m 3 (1.1) 2.07 (0.84) With regard to those variables used to describe the sample (see Table 2), differences were found to be statistically insignificant when employing a MANCOVA (dependent variable/DV: reflective breadth and reflective depth, independent variable/IV: time, factor: intervention type). For subsequent analyses, therefore, samples of the five groups are treated as comparable. Qualitative Analysis for Reflective Depth and Breadth Qualitative Analysis for Reflective Depth. For analysis of English teacher trainees’ “reflective depth”, an inductive Qualitative Content Analysis (Kuckartz, 2016) was pursued to gradually extract a four-category-system from the data output. The assessment tool MAXQDA Plus 12 was employed for data coding. Categories were coined inductively in a double-blind coding process by the TLLS-instructor-researcher, as well as by two trained student assistants (one in each subject). During the initial rounds of analyses (cohort of summer term 2016), disagreements between the coders were discussed until mutual agreement was reached (Kuckartz, 2016). Further, the category system derived during this very first phase was inspected and consensually negotiated by a group of subject-matter education experts from English, physics, primary education, and history. After coding, the vignettes were subject to double-blind allocation by two raters (for each subject) to four levels of the adapted reflectivity model by Abels (2011). Formative modifications on the original model by Abels occurred as a result of the inductive coding process of the first phase which led to the realization that alterations were required due to diverging subjects, data material, and finally content. Model adaptations gradually emerged in all phases of the analytical processes (summer term 2016 to summer term 2018) until eventually the subsequent modes of reflective depth appeared from the data:

1. Descriptive mode
2. Hypothesis mode
3. Explorative-productive mode
4. Multi-perspective-productive mode

Reflective modes (1-4) assigned to all teacher trainees’ vignettes were then transformed into rank scores, giving way for inferential statistics. According to Krippendorff (2004), intercoder reliability indicated a good overlap across all times of measurement, spanning all cohorts from summer term 2016 to summer term 2018 (α = .92***).
Qualitative Analysis for Reflective Breadth.

The quality of a reflection on teaching also largely depends on how much knowledge someone has at his/her disposal. If reflection now occurs on a subject-specific teaching issue – for instance, on how to handle students’ misconceptions on climate change in physics or how to initiate and support communication in English – the quality of the reflection becomes overt in a person’s ability to retrieve PCK in such a way as to clarify the teaching problem (Roters, 2012, p. 387).

Since PCK has been proven to be highly topic-specific, the open written discourse vignettes utilized to elicit reflection in this study proved helpful in visualizing the knowledge teacher trainees referred to when trying to make sense of the very subject-specific teaching problem which was presented in the impulse. This reverberates the notion of reflection as an act of establishing situational coherence (Clarà, 2015) and as a very specific type of problem-solving (Berliner, 2004). The more and varied the display of PCK in the reflective output, the higher our estimation of the quality of the reflection.

Analyzing English teacher trainees’ "reflective breadth", a deductive Qualitative Content Analysis (Kuckartz, 2016) was utilized. Categories were coined in a deductive fashion referring to the three PCK-dimensions deployed in the PKE-study by König and colleagues (2016). The deductive content analysis was conducted by coders working double-blind and ignorant to both the intervention group and the time of measurement. Quality of the coding processes was ensured through several measures following recommendations by Steinke (2007) and Kuckartz (2016). After each coding loop, the double-blind codings of the two researchers were discussed in a team of three coders until mutual agreement on the adaptations and refinements made on the category system was reached (Kuckartz, 2016). The final category system was critically inspected and approved by a team of ELT experts.

The formative coding process resulted in slight adaptations of the original PCK-model by König and colleagues (2016). In sum, two major changes in the category system with regard to the first PCK-domain CURR-Knowledge occurred. First, the sub-dimension TEFL was too unspecific to allow for distinct coding. Therefore TEFL was theoretically further specified by consulting Legutke and Schart (2016, 18-20). This yielded the novel PCK-domain TEFL compartmentalizing into the four sub-domains: 1. Linguistic, literary, and cultural knowledge; 2. Knowledge about teaching and learning; 3. Identity and role development; and 4. Cooperation and professional development.

Secondly, the sub-domains “learning goals” and “development goal” (both CURR) were not only impossible to distinguish in the coding process, but were also found to lack theoretical foundation in the respective ELT literature (i.e., German educational plans and framework curricula). Consequently, these domains were merged into one sub-domain called “development and learning goals”. The following final category system emerged from the deductive coding process:

1. TEFL knowledge (TEFL)
2. CURRICULUM knowledge (CURR)
3. STRATEGY knowledge (STRAT)
4. LEARNER knowledge (LEARN)

Quantitative Analyses for Reflective Depth and Breadth of ELT Trainees

In this first study, missing values were treated with multiple imputation, proceeded by pool-procedure (Van Buuren & Groothuis-Oudshoorn, 2011). If imputation was impossible (5%-criterion, Van Buuren & Groothuis-Oudshoorn, 2011), a listwise case exclusion was chosen. The two constructs “reflective depth” (“reflbr”) and “reflective breadth” (“reflbr”) were elicited at two points of measurement, pre-test (before the intervention) and post-test (after the intervention). Under consideration of covariates, a multivariate analysis – specifically a MANCOVA with repeated measures – was selected due to the fact that the investigation of the development of two constructs as two dependent variables was pursued. We are aware that a structural equation model might have yielded greater accuracy. However, such procedures are inappropriate for our small samples (N<300, Brown, 2006, p. 305). For MANCOVA, both constructs “reflbr” and “reflbr” were defined as dependent variables, and the point of measurement (pre-test vs. post-test), as well as the intervention type (TLLS, TLLS personal, TLLS external, PG, and CG), were determined as factors. As covariates, trainees’ prior practical experience was implemented to gauge its impact on reflective development, and the A level sum score was used to determine the cognitive prerequisites. Further, the personality traits for successful reflection according to Dewey (1933), the covariates prior reflection knowledge, gender, age, and semester, as well and character count of the reflection output at pre-point of measurement4 were investigated. With a sample size of N = 86 for the

4 Character count of the reflection output served to control for the effect of the method on the study participants’ motivation to reflect in writing.
analysis of reflective breadth and depth in English via MANCOVA, a power of .80 and a level of significance of $\alpha = .05$, medium effect sizes can be resolved ($f(V) = .27$; Bortz, 2010, p. 481).

**Results**

**Results of Study I: Reflective Depth of English and Physics Teacher Trainees**

Data for study I overlaps notably with that of study II. However, in study II, physics teacher trainees were included in the dataset, along with those English teacher trainees who were omitted from the analyses of study I due to their missing data.

**Sample Description Study II**

The sample analysis is comparable to that of study I. The sample of study II is detailed in Table 3.

**Qualitative Analysis of Reflective Depth for English and Physics.** In terms of elicitation and investigation, reflective depth was analogously treated to study I. Methodically, the four-category coding scheme which was developed for English was transferred to these vignettes in order to determine the level of reflective depth achieved by the physics teacher trainees. Intercoder reliability for English and physics subject-matter education yields a good overlap across all times of measurement ($\alpha = .91***$).

**Quantitative Analysis of Reflective Depth for English and Physics.** In the second study missing values were again treated with multiple imputation, pool-procedure (Van Buuren & Groothuis-Oudshoorn, 2011), or listwise exclusion. Based on the identical conception of the TLLS in English and physics (Klempin, Rehfeldt, Seibert, Mehrtens, Nordmeier, Lücke, Köster, & Sambanis, 2019), despite the two distinct subject-matter domains, data for both was aggregated. An interdisciplinary analysis was realized as part of the covariate analyses (see for further information below), whereas covariates were equal to those in study I. Multiple linear regression analyses were employed to quantitatively investigate the development of “reflective depth (reflex)” of English and physics teacher trainees. For all regression analyses, the relevant statistical assumptions were tested and found to be met (normal distribution, homoscedasticity, normally distributed residuals, no multicollinearity). Exclusion of outliers was conducted for each model (Mahalanobis Distance, Cook's Distance, and Leverage with equal weighing; exclusion when a minimum of two out of three criteria was met) with an exclusion rate of $< 6\%$.

For elaboration of H1, reflective depth at the end of the intervention (post-test) was defined as the dependent variable, whereas reflective depth at the beginning of the seminar (pre-test), as well as the intervention type (1: CG, 2: PG, 3: TLLS regular, 4: TLLS external, 5: TLLS personal), were determined to be the independent variables. This procedure enables to control for the pre-baseline, which in turn guarantees improved validity of the outcome. As another benefit, this method allows for implementation of interval-scaled covariates in order to gauge an estimate of means adjusted for covariates. The latter can be illustrated in the unstandardized regression coefficient of the independent variable “intervention type”. Estimation of the adjusted mean of reflective depth can also be achieved by centering the means of the independent variable and covariates except for the control group. Mathematically, the determination of an adjusted effect size for the mean difference of reflective depth between the three TLLS-formats and the control and parallel group can be realized.

### Table 3

**Comparison of the Samples of the Five Interventions (Regular TLLS, Personal TLLS, External TLLS, Parallel Group (PG), and Control Group (CG)) According to Age, Semester, Gender, Practical Experience, and A Level Sum Score. The Practice-Score Ranges from 0: No Prior Experience up to 5: Rich Prior Practical Experience as Teacher Student or Private Tutor etc.**

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Subject Distribution</th>
<th>Age (SD)</th>
<th>Semester (SD)</th>
<th>Gender</th>
<th>Practical Experience (SD)</th>
<th>A Level Grade (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG</td>
<td>27 English</td>
<td>23.80 (3.57)</td>
<td>4.30 (1.27)</td>
<td>21f, 6m</td>
<td>1.15 (1.38)</td>
<td>2.19 (0.63)</td>
</tr>
<tr>
<td>PG</td>
<td>14 English</td>
<td>21.93 (2.76)</td>
<td>4.50 (1.16)</td>
<td>9f, 5m</td>
<td>1.00 (0.68)</td>
<td>2.32 (0.85)</td>
</tr>
<tr>
<td>TLLS Regular</td>
<td>38 English</td>
<td>23.38 (4.92)</td>
<td>4.16 (1.21)</td>
<td>25f, 13m</td>
<td>0.63 (0.82)</td>
<td>2.00 (0.58)</td>
</tr>
<tr>
<td>TLLS External</td>
<td>18 English</td>
<td>23.94 (3.86)</td>
<td>4.00 (1.50)</td>
<td>8f, 10m</td>
<td>2.72 (1.32)</td>
<td>2.13 (0.44)</td>
</tr>
<tr>
<td>TLLS Personal</td>
<td>7 English, 8 Physics</td>
<td>25.87 (5.25)</td>
<td>6.07 (2.52)</td>
<td>8f, 7m</td>
<td>1.81 (1.37)</td>
<td>2.25 (0.71)</td>
</tr>
</tbody>
</table>
For H2, the dependent variable was defined as the difference between the reflective depth values of a subject at post-test and pre-test measurement point. As an independent variable, again, the “intervention type” was selected, albeit, now centered. This prior analysis serves to statistically ensure mean variation between entry (pre-test) and exit reflective depth (post). It also detects developmental differences regarding the intervention group. With a significant intercept (average mean differences “intervention type” vs. “reflective depth”) it is statistically appropriate to test post-hoc for mean differences between the three TLLS interventions, the PG, and the CG without α-correction (Field, Miles, & Field, 2012, p. 745). A significant regression coefficient of the CG (centered) indicates differences in the perception of EG and CG.

H3 is investigated as part of the above-mentioned analyses via implementation of planned contrasts. All of the aforementioned analyses were calculated using Rstudio (lm()-package). With a sample size of N = 112 via regression analysis, a power of .80 and a level of significance of α = .05 will resolve small to medium effects (F = .07, Bortz, 2010, p. 481; Faul, Erdfelder, Buchner, & Lang, 2009).

Results

Study I Results: Reflective Depth and Breadth in English

Statistical assumptions were first tested for the MANCOVA (multivariate normal distribution, homogenous variance-covariance matrices; Bortz, 2010, p. 481). Both assumptions were found to be violated (Box-Test: $\chi^2(27) = 48.3, p = .007$; Shapiro-Wilk-Test: $W = 0.96, p < .001$), but MANCOVA is assumed to be a robust procedure for sample sizes exceeding 30 (Allen & Bennett, 2007). The A level sum score, gender, “prior knowledge on the reflection of teaching,” “prior teaching experiences,” and the character count (pre) were implemented as covariates. In sum, all of these covariates were statistically insignificant ($ps > 0.05$). Besides that, the impact of the “personality traits for successful reflection” yielded insignificant values ($ps > 0.05$). However, significant effects were detected for both factors, the time of measurement, and also the intervention type. In particular, the significance of the effect of the interaction term time*intervention (see Table 5) is worth mentioning, as this might serve as a first indicator for different developments of reflective depth and breadth in the five intervention types. It was then proceeded with univariate ANOVAs (Field, Miles, & Field, 2012, p. 745). The subsequent univariate ANOVAs consolidate and diversify the insights gained from the earlier MANCOVA analysis (Tab. 3). Time of measurement, intervention type, and the interaction term time*intervention type remain significant. This suggests differences for both dependent variables across time and with respect to the intervention format.

Post-hoc tests were conducted afterwards. Therefore, the progression of either constructs was modelled as a pre- and post-differential measure, whereby positive values indicate a positive pre- and post-development. If one tests these differential measures, contrasting the interventions via t-test or Mann-Whitney-U-Test, significant differences between the interventions TLLS, TLLS personal video, as well as TLLS external video against the PG and the CG are yielded ($ps < .001$). Contrasting all TLLS-interventions with the CG and the PG significant and medium effects for both dependent variables, in favor of the TLLS-interventions ($ds > 0.67$), are evidenced. Between the three TLLS-interventions no significant differences could be detected ($pSdepth > .51, pSbreadth > .56, p = .47$).

For the increase in reflective depth an investigation with respect to the sub-dimensions was pursued (see Table 6). It is evidenced that significant differences solely occur in some comparisons of the CG and the PG with the TLLS-formats, whereas the TLLS-interventions do not differ with regard to the reflective breadth development per sub-dimension. For the sub-dimension STRAT-Knowledge in all TLLS-formats differences are statistically significant compared to PG and CG. The TEFL-dimension develops significantly more exclusively in the regular TLLS, again compared to PG and CG. In contrast, the LEARN-dimension yields significant increases only for the TLLS with external video reflections. The effect sizes range from medium to high. For the CURR-dimension no differences were detected.

When considering global statistical efficiency (overall reflective depth and breadth), the five interventions, which were originally assumed in this paper, result in solely two intervention types. As a result, CG and PG can be considered one intervention type whereas all TLLS-types (regular, external, and personal) can be counted as a second treatment group. Merely on the level of the sub-dimensions of reflective breadth, specific differences were identified. According to the final H3, a correlation of $r = .51 (p < .001)$ between the increase of reflective depth and breadth was detected.

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5 The moderate to small sample sizes per intervention were approached with a parameter-free test.
Table 4  
Results of MANCOVA. Dependent Variables are “Reflective Depth” and “Reflective Breadth”. Factors are the Point of Measurement (Time) and the Intervention Type (Intervention).

<table>
<thead>
<tr>
<th>Factor/Covariate</th>
<th>Test Statistic</th>
<th>F</th>
<th>df1</th>
<th>df2</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>Pillai’s Trace</td>
<td>0.185</td>
<td>18.52</td>
<td>2</td>
<td>163</td>
</tr>
<tr>
<td></td>
<td>Hotelling’s Trace</td>
<td>0.185</td>
<td>18.52</td>
<td>2</td>
<td>163</td>
</tr>
<tr>
<td>Intervention</td>
<td>Pillai’s Trace</td>
<td>4.87</td>
<td>4.87</td>
<td>8</td>
<td>328</td>
</tr>
<tr>
<td></td>
<td>Hotelling’s Trace</td>
<td>5.28</td>
<td>5.28</td>
<td>8</td>
<td>324</td>
</tr>
<tr>
<td>Time*Intervention</td>
<td>Pillai’s Trace</td>
<td>3.68</td>
<td>3.68</td>
<td>8</td>
<td>328</td>
</tr>
<tr>
<td></td>
<td>Hotelling’s Trace</td>
<td>3.66</td>
<td>3.66</td>
<td>8</td>
<td>324</td>
</tr>
</tbody>
</table>

Table 5  
Results of the ANOVAs. Dependent Variables are “Reflective Depth” (reflbr) and “Reflective Breadth” (tlls). Factors Are The Time of Measurement (Time) and the Intervention Type (Intervention). A Significant Effect was Evidenced for the Measurement Time (Time), the Intervention Type as well as the Interaction Between Measurement Time and Intervention (Time*Intervention).

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>reflex</td>
<td>14.37</td>
<td>1</td>
<td>14.37</td>
<td>14.37</td>
</tr>
<tr>
<td></td>
<td>reflbr</td>
<td>0.38</td>
<td>1</td>
<td>0.38</td>
<td>0.38</td>
</tr>
<tr>
<td>Intervention</td>
<td>reflex</td>
<td>11.34</td>
<td>4</td>
<td>2.84</td>
<td>2.84</td>
</tr>
<tr>
<td></td>
<td>reflbr</td>
<td>0.94</td>
<td>4</td>
<td>0.23</td>
<td>0.23</td>
</tr>
<tr>
<td>Time*Intervention</td>
<td>reflex</td>
<td>6.92</td>
<td>4</td>
<td>1.73</td>
<td>1.73</td>
</tr>
<tr>
<td></td>
<td>reflbr</td>
<td>0.45</td>
<td>4</td>
<td>0.11</td>
<td>0.11</td>
</tr>
<tr>
<td>Residuals</td>
<td>reflex</td>
<td>64.33</td>
<td>164</td>
<td>0.39</td>
<td>0.39</td>
</tr>
<tr>
<td></td>
<td>reflbr</td>
<td>4.92</td>
<td>164</td>
<td>0.03</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Table 6  
Analysis of Significant Mean Differences for Reflective Breadth and Reflective Depth Depending on the Intervention Type.

Reflective Breadth (Increase)

<table>
<thead>
<tr>
<th>Intervention 1</th>
<th>Intervention 2</th>
<th>M1</th>
<th>M2</th>
<th>p</th>
<th>d*</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG</td>
<td>TLLS</td>
<td>0.31</td>
<td>0.53</td>
<td>&lt; 0.001</td>
<td>0.87</td>
</tr>
<tr>
<td>CG</td>
<td>TLLS+External</td>
<td>0.31</td>
<td>0.58</td>
<td>&lt; 0.001</td>
<td>0.95</td>
</tr>
<tr>
<td>CG</td>
<td>TLLS+Personal</td>
<td>0.31</td>
<td>0.56</td>
<td>&lt; 0.006</td>
<td>0.85</td>
</tr>
<tr>
<td>PG</td>
<td>TLLS</td>
<td>0.28</td>
<td>0.53</td>
<td>&lt; 0.001</td>
<td>0.98</td>
</tr>
<tr>
<td>PG</td>
<td>TLLS+External</td>
<td>0.28</td>
<td>0.58</td>
<td>&lt; 0.001</td>
<td>1.11</td>
</tr>
<tr>
<td>PG</td>
<td>TLLS+Personal</td>
<td>0.28</td>
<td>0.56</td>
<td>&lt; 0.003</td>
<td>1.08</td>
</tr>
</tbody>
</table>

Reflective Depth (Increase)

<table>
<thead>
<tr>
<th>Intervention 1</th>
<th>Intervention 2</th>
<th>M1</th>
<th>M2</th>
<th>p</th>
<th>d*</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG</td>
<td>TLLS</td>
<td>0.14</td>
<td>0.86</td>
<td>&lt; 0.002</td>
<td>0.73</td>
</tr>
<tr>
<td>CG</td>
<td>TLLS+Personal</td>
<td>0.14</td>
<td>1.50</td>
<td>&lt; 0.000</td>
<td>1.04</td>
</tr>
<tr>
<td>PG</td>
<td>TLLS</td>
<td>0.08</td>
<td>0.86</td>
<td>&lt; 0.005</td>
<td>0.74</td>
</tr>
<tr>
<td>PG</td>
<td>TLLS+Personal</td>
<td>0.08</td>
<td>1.50</td>
<td>&lt; 0.001</td>
<td>1.17</td>
</tr>
<tr>
<td>+External Video</td>
<td>TLLS+Personal</td>
<td>0.61</td>
<td>1.50</td>
<td>&lt; 0.05</td>
<td>0.67</td>
</tr>
</tbody>
</table>

6 Only for the comparison of CG vs. TLLS a classical independent t-test was calculated, whereas all other comparisons were realized via U-test. The classical effect size r was calculated referring to Field (2012, p. 665) and converted into Cohens d.

7 Only for the comparison of CG vs. TLLS a classical independent t-test was calculated, whereas all other comparisons were realized via U-test. The classical effect size r was calculated referring to Field (2012, p. 665) and converted into Cohens d.
Results study II: Reflective Depth in English and Physics for Each Intervention

To begin with, differences in the increase of reflective depth per subject (English vs. physics) were insignificant (t-test, \( p > .73 \)), so data was aggregated. The linear regression (see Table 7) of the teacher trainees’ reflective depth at the end of the seminar (post) as a dependent variable, along with the reflective depth at the beginning of the course (pre) and the intervention type as an independent variable, resulted in a significant prediction model \( (F(5, 106) = 13.76, p < .001, R^2 = .36) \) with a significant intercept \( (f = 2.38, SE = 0.11, p < .001) \), a significant regression coefficient for the reflective depth of students at the start of the seminar \( (b = 2.38, SE = 0.11, p < 0.002, \beta = .26) \), as well as partially significant contrasts of the intervention types against the CG (see Table 7).

It is noteworthy that only the contrast CG vs. PG turns out to be insignificant \( (p = .76) \), and all remaining contrasts are highly significant to the disadvantage of the CG \( (\beta s > .34) \). The covariates were not further incorporated into the analysis, as the correlations with the target variable were found to be small and, hence, negligible \( (rs < .22) \). The independent t-tests and Mann-Whitney U-tests (N < 20, for at least one group), which investigate the different intervention types, could not evidence any differences in means for reflective depth increase across the TLLS-formats \( (ps > .26) \). Additionally, there are no differences between both the PG and the CG \( (p = .76) \). Table 8 shows the significant results, including the effect sizes. However, significant differences with medium to high effects could be ascertained for all TLLS formats as compared to both the PG and the CG, especially the differences in means for the increase in reflective depth between the TLLS-formats and the CGs, as well as the PG yield statistical significance \( (ps < .02) \), mostly even with high effects.

Discussion

Discussion Study I: Reflective Breadth Development

Concerning H2 we are able to report significant differences for some comparisons of the PG as well as the CG against the TLLS formats. Simultaneously, the TLLS formats do not differ statistically in terms of reflective breadth, even per sub-dimension. Hence, the first part of the initial research hypothesis 2 can be confirmed. For the second part, the data is somewhat inconclusive and does not suffice to claim that reflective breadth development increases significantly more with video-supported reflection in the TLLS. So far, it appears that the regular TLLS with its three explicit micro-interventions to support reflection avails the promotion of an overall reflective breadth development in teacher trainees, regardless of additional video reflections.

Taking a look at the particular dimensions of PCK, STRAT-Knowledge displays a significantly higher increase across all TLLS-formats contrasted to both, the PG and the CG. Conversely, TEFL-knowledge only yields a measurable enhanced increase for the regular TLLS as contrasted to both the PG and CG. On the other hand, LEARN-knowledge develops much stronger with medium to strong effect sizes exclusively for the TLLS with external video reflection compared to CG and PG. No significant differences between reflective depth developments for the five interventions can be reported for CURR-knowledge.

Based on these findings one might assume that watching someone else’s teaching performance – as part of the TLLS intervention with external video reflection – rather focuses teacher trainees’ attention on the learner. One should, however, take into consideration that LEARN-knowledge has already been addressed quite frequently at the beginning of the course. Consequently, this shift in attention might be an indicator that the focus on the learner remains stable or is even enhanced only when reflection is supported by external videos.

CURR-knowledge did not increase regardless of the TLLS-type, which might be explained by the location of the module (Bachelor’s program). Curriculum does not yet play such a crucial role there.

In this study a pronounced development in the sub-domain LEARN-knowledge was found for participants of the TLLS as compared to teacher trainees who attended the non-TLLS-formats. Experienced teachers were evidenced to target the learning and apprehension processes of learners in their reflections (Borko & Livingston, 1989). Those teacher trainees who participated in the external video intervention display such skills, as they sustain and extend their learner focus over the span of the course while also attempting to develop appropriate strategies to support student learning. According to Neuweg (2007, p. 94), expertise is expressed by teachers’ unconditional orientation towards the learner. Such behavior is assumed to increase the probability for a context-sensitive perception and diagnosis and in turn, meaningful and student-centered teacher actions (Neuweg, 2007, p. 94). We see such an orientation reflected in TLLS-participants’ overall increased explication of STRAT-knowledge and LEARN-knowledge, the latter being valid solely for TLLS external video though.
Table 7
Breakdown of Significant Reflective Breadth Increases According to Dimension.

<table>
<thead>
<tr>
<th>Intervention 1</th>
<th>Intervention 2</th>
<th>Reflective Breadth (Increase): TEFL</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CG</td>
<td>TLLS</td>
<td>M1 0.18</td>
<td>M2 0.44</td>
<td>p 0.002</td>
<td>d 0.74</td>
</tr>
<tr>
<td>PG</td>
<td>TLLS</td>
<td>M1 0.23</td>
<td>M2 0.44</td>
<td>p 0.03</td>
<td>d 0.57</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervention 1</th>
<th>Intervention 2</th>
<th>Reflective Breadth (Increase): LEARN</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CG</td>
<td>TLLS+External Video</td>
<td>M1 0.36</td>
<td>M2 0.67</td>
<td>p 0.02</td>
<td>d 0.64</td>
</tr>
<tr>
<td>PG</td>
<td>TLLS+External Video</td>
<td>M1 0.32</td>
<td>M2 0.67</td>
<td>p 0.02</td>
<td>d 0.72</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervention 1</th>
<th>Intervention 2</th>
<th>Reflective Breadth (Increase): STRAT</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CG</td>
<td>TLLS</td>
<td>M1 0.48</td>
<td>M2 0.78</td>
<td>p 0.03</td>
<td>d 0.53</td>
</tr>
<tr>
<td>CG</td>
<td>TLLS+Personal Video</td>
<td>M1 0.48</td>
<td>M2 1.03</td>
<td>p 0.006</td>
<td>d 0.85</td>
</tr>
<tr>
<td>PG</td>
<td>TLLS</td>
<td>M1 0.35</td>
<td>M2 0.78</td>
<td>p 0.01</td>
<td>d 0.67</td>
</tr>
<tr>
<td>PG</td>
<td>TLLS+External Video</td>
<td>M1 0.35</td>
<td>M2 0.82</td>
<td>p 0.05</td>
<td>d 0.62</td>
</tr>
<tr>
<td>PG</td>
<td>TLLS+Personal Video</td>
<td>M1 0.35</td>
<td>M2 1.03</td>
<td>p 0.002</td>
<td>d 1.11</td>
</tr>
</tbody>
</table>

Table 8
Results of the Regression Analyses.

<table>
<thead>
<tr>
<th>Model 1: DV: Reflective Depth Post (N = 112)</th>
<th>R²</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>.36</td>
<td>2.38</td>
<td>0.11</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>Absolute Term/Constant</td>
<td></td>
<td>0.30</td>
<td>0.09</td>
<td>&lt;.002</td>
<td></td>
</tr>
<tr>
<td>Reflective Depth pre</td>
<td></td>
<td>-0.54</td>
<td>0.12</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>Control Group (yes = 0, no = 1)</td>
<td></td>
<td>0.95</td>
<td>0.15</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>Contrast 1 (CG = 0, PG = 1)</td>
<td></td>
<td>0.80</td>
<td>0.18</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>Contrast 2 (CG = 0, TLLS = 1)</td>
<td></td>
<td>0.73</td>
<td>0.19</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>Contrast 3 (CG = 0, TLLS+external = 1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contrast 4 (CG = 0, TLLS+personal = 1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Only for the comparison of CG vs. TLLS a classical independent t-test was calculated, whereas all other comparisons were realized via U-test. The classical effect size r was calculated referring to Field (2012, p. 665) and converted into Cohens d.

Table 9
Analysis of the Significant Mean Differences for Increase of Reflective Depth (Reflective Breadth, 4 Levels) Based on the Intervention Type.

<table>
<thead>
<tr>
<th>Intervention 1</th>
<th>Intervention 2</th>
<th>M1</th>
<th>M2</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG</td>
<td>TLLS</td>
<td>0.19</td>
<td>0.77</td>
<td>&lt;.001</td>
<td>1.11</td>
</tr>
<tr>
<td>CG</td>
<td>TLLS+External Video</td>
<td>0.19</td>
<td>0.78</td>
<td>&lt;.02</td>
<td>0.61</td>
</tr>
<tr>
<td>CG</td>
<td>TLLS+Personal Video</td>
<td>0.19</td>
<td>1.07</td>
<td>&lt;.002</td>
<td>0.82</td>
</tr>
<tr>
<td>PG</td>
<td>TLLS</td>
<td>0.55</td>
<td>0.77</td>
<td>&lt;.001</td>
<td>0.85</td>
</tr>
<tr>
<td>PG</td>
<td>TLLS+External Video</td>
<td>0.55</td>
<td>0.78</td>
<td>&lt;.008</td>
<td>0.78</td>
</tr>
<tr>
<td>PG</td>
<td>TLLS+Personal Video</td>
<td>0.55</td>
<td>1.07</td>
<td>&lt;.001</td>
<td>0.83</td>
</tr>
</tbody>
</table>

Only for the comparison of CG vs. TLLS a classical independent t-test was calculated, whereas all other comparisons were realized via U-test. The classical effect size r was calculated referring to Field (2012, p. 665) and converted into Cohens d.
Discussion Study II: Reflective Depth Development

It was found in this study that the reflective depth of English and physics teacher trainees differs measurably between participants of the five intervention types (regular TLLS, parallel TLLS, control group, and TLLS with personal/external video reflection), in consistent favor of the TLLS participants, and even with mostly high outcomes. Thus, the first part of H1 can be verified. However, we did not find evidence to support the hypothesis that with an additional video-supported reflection, reflective depth could be fostered to a stronger degree because non-significant differences were discovered. Thus, it seems safe to assume that reflective depth development occurs in the TLLS regardless of additional video reflections, with a gain of reflective depth of about one level rank (see M2, Table 8). Along with this is the fact that in the PG we do not see a comparable development (see M1 = 0.55, Table 8) despite a similar conceptual framework like the TLLS. This finding might serve to underpin the exclusive impact of the micro-interventions on the promotion of reflective depth.

As auspicious and positive as these results are, this study’s findings do not resound in most of the other studies conducted on reflective depth development. Hatton and Smith (1995), for instance, have primarily detected the lowest mode of descriptive reflective writing, and discovered no indication of a fourth, critical level of reflection. Comparable results were delivered by Stender (2015), who could mostly extract descriptive reflection from the data material, only few dialogic and no critical reflection at all. Lüsebrink and Grimminger (2014, p. 208) also found no evidence to indicate pre-post-differences for teacher trainees’ reflective depth. It remains unclear how far teacher trainees of the aforementioned studies were exposed to interventions to foster their reflective skills in such a way as it occurred during the TLLS. Contrary to the overwhelming corpus of such studies in which no effects were detected, reflective depth was promoted successfully in some other studies (Fund, Court, & Kramarski, 2002; Leonhard, Wüst, & Helmstädt, 2011). Eventually, the TLLS-participants demonstrate rather evaluative, analytic, and multi-perspective reflections, aspects associated with a proactive and learner-supportive stance and considered an attribute of expert teachers (Sato, Akita, & Naoki, 1993, p. 10). Novices’ reflections on teaching were often found to be descriptive in style (Sabers, Cushing, & Berliner, 1991; Wolff, van den Bogert, Boshuizen, & Jarodzka, 2015, p. 80). These findings may imply that our TLLS-format might play a crucial role in modern teacher training, whilst fostering the reflective skills of the participants in depth and breadth.

The main limitations are that this study was conducted under quasi-experimental conditions, albeit with covariate control. Thus, teacher trainees could not be assigned to the TLLS in a randomized fashion even though it was later statistically secured whether participants’ individual properties had affected reflective skill developments. Further, some of the estimates are imperfect due to small sample sizes and experimental mortality in the research process in some of the sub-groups, in particular the PG. Due to the complexity of the construct under investigation, not only one instrument should have been employed to elicit the reflective data to prevent mono-method bias. Besides that, prognostic and economic validity of this study are confined as we do not yet know how teacher trainees with high, medium, or low reflective skills will eventually behave in an authentic classroom setting in the foreseeable future.

References


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DR. DANIEL REHFELDT concluded his PhD in 2017 in the Department of Physics Teacher Education. As part of his dissertation, he developed a quantitative measurement instrument to assess the quality of experimental laboratory practicums during students’ higher science training. His PhD was followed by a postdoctoral research phase from 2017 until 2018 aiming to diversify the above-mentioned TLL-teacher training format to other subject domains than physics (e.g. English, history, and primary science education). Since 2018, he holds a position as a permanent postdoctoral researcher in primary science education.
Let’s Have Lunch: Preparing Pre-Service Teachers to Support Students with Disabilities via Authentic Social Interactions

Srimani Chakravarthi and Lisa White-McNulty
University of St. Francis

Educational leaders have called for the development of authentic experiences to better develop pre-service teachers’ competencies in the classroom, particularly with regard to working with students with disabilities. This research was conducted to study the impact of a unique experience of lunchtime social interaction between preservice teachers and students with intellectual and/or developmental disabilities in the transition age program at a local high school. The authors describe the experience and its influence on pre-service teachers’ competencies and beliefs. A qualitative analysis of reflection samples revealed pre-service teachers’ competencies in identifying the strengths and needs of students, as well as accommodations and instructional strategies to support them. Results suggest that the experience was effective in enhancing pre-service teachers’ positive beliefs and alleviating their fears about working with students with developmental disabilities. The study promotes the value of such inclusionary experiences on teacher education to prepare them for successfully including students with intellectual and developmental disabilities.

The day before, I was a little nervous because I did not know how these students were going to behave with us. Now I know they are full of love and happiness ... Not every student learns the same, some are more advanced than others. SWD are very capable of doing a lot of things. I thought that these students were not capable of reading and knowing their colors so well. I was wrong. (Participant 19)

There has been a tremendous increase in research in education of students with intellectual and developmental disabilities leading to very successful outcomes in and outside the classroom. Such students are increasingly included in the general education classrooms for a large portion of the school day, especially in lower grades (National Center on Educational Statistics, 2015). Students with disabilities (SWD) between ages 16-21 benefit from transition-age programs focusing on life and social skills (Office of Special Education and Rehabilitative Services, 2017). Despite the benefits of social interaction with peers without disabilities, the lack of students without disabilities in the transition age within the high school inhibits opportunities for social interactions among the two groups. While there are calls for rethinker teacher preparation programs (Darling-Hammond, 2014), the teacher education curriculum continues to rely largely on the traditional form of field experience and student teaching placements for providing authentic experiences to prepare pre-service teachers (PST).

Review of Literature

Teachers’ competencies and beliefs are integral components to enhancing outcomes for SWD in an inclusion classroom. When teachers have positive perceptions of their relationships with SWD, reports of students’ problematic behaviors decrease, and students are more socially included with peers (Syriopoulou-Delli, Cassimos, Tripsianis, & Polychronopoulou, 2012). Along with pedagogical content knowledge, teacher beliefs and motivation are critical in promoting the success of students (Kunter, Klusmann & Baumert, 2013) and in particular SWD (e.g., Ross-Hill, 2009; Swain, Nordness, & Leader-Janssen, 2012); however, the lack of adequate knowledge and skills to teach children with disabilities is certainly another essential factor that prevents teachers from providing effective education (Cameron & Cook, 2007). Teachers may hold negative beliefs about working with SWD, perhaps related to fears about whether they have the skills to effectively support them (Friend & Bursuck, 2009). They may not be receptive because they do not know how to teach or how to differentiate for children with disabilities (Lopes, Monteiro & Sil, 2004). While teacher beliefs may provide the necessary foundation for inclusive support, developing the teaching competencies and skills necessary for supporting SWD in inclusive classrooms should be part of the preparation for all PST. Because teacher beliefs are inextricably related to their perceived competence, measures of teacher competencies include beliefs and motivation along with pedagogical content knowledge and skills (Pit-en Cate, Markova, Krischler, & Krolak-Scherwrdt, 2018). Competencies include the ability to identify accommodations in the classroom (Fisher, Frey & Thousand, 2003) and the ability to view students as unique individuals with their own specific strengths and needs (Hammond & Zimmerman, 2012).

Research studies generally report modest positive outcomes related to PST’s self-efficacy, competencies, and perceptions about SWD as a result of field experiences (Atiles, Jones, & Kim, 2012). However, some researchers (Swain et al., 2012) suggest that field
experience coupled with coursework may lead PST to improve their attitudes towards disabilities and teaching in an inclusion classroom. They recommend that early field experiences enabling interactions with SWD be coupled with coursework in special education.

While what constitutes “field experience” varies within and across institutions, one intent is to develop skills in instruction and give practical application to concepts encountered in coursework. One of the gaps in teacher preparation research on field experiences is the study of the nature and impact of innovative field experiences on PST’ progress in learning to teach (Wilson, Floden & Ferrini-Mundy, 2001). This report on teacher education research also calls for future research to develop measures of teachers’ developing professional competencies rather than focus on their attitudes or how they feel about the experiences. Despite this call for research almost 20 years ago, we noted the dearth of published research in measuring teacher competencies as a result of such field experiences. Zeichner (2010) highlights this in the calls for third space options for using teaching practice as sites for inquiry and a paradigm shift in the role of field experiences. The need to elevate skills in teaching students with intellectual disabilities is essential, with specific regard to instructional planning and identifying strategies to support learning (Cameron & Cook, 2007).

Having knowledge about laws and policy and improving levels of confidence using coursework and simulation activities do not necessarily address concerns or perceived stress in PST (Forlin & Chambers, 2010), suggesting the need for developing alternative ways for PST to interact with SWD. Several studies have documented increases in pre-service teacher attitudes (Swain et al., 2012) and self-efficacy (Atiles et al., 2012), but additional research is needed to examine whether non-traditional field experiences have a positive impact on PST’s competencies with regard to supporting SWD.

Direct contact with SWD, including contact coupled with coursework, is shown to lead to positive attitudinal shifts among PST (e.g., Rilotta & Nettlebeck, 2007; Sharma, Forlin & Loreman, 2008). Although it is likely that field experiences provide at least some opportunities for informal interaction, researchers have not specifically examined the impact of social interactions with students with intellectual and/or developmental disabilities on PST. In an effort to improve the competencies and positive beliefs of PST with regard to using inclusion practices, an experiential learning component was included in an introductory course on special education required of all education majors during the foundations segment of the teacher education program. The experience involved lunch meetings with SWD from a local high school transition program.

The purpose of this study was to explore the following research questions: Will interactions with SWD in a social setting (1) reveal preservice teachers’ ability to identify strengths & needs of SWD? (2) reveal preservice teachers’ ability to identify accommodations and differentiation strategies for SWD? and (3) bring a positive change in their beliefs regarding including SWD?

**Theoretical Framework**

Pre-service teachers need to perceive SWD as individuals with unique strengths and challenges. The ability to identify strengths and needs in SWD is a significant skill for all inclusion teachers, enabling them to capitalize on strengths and use them to plan instruction. The construct of teacher competencies is used as part of the framework for this study, defined for this study as the ability to (1) identify unique strengths and needs in the individual and (2) identify accommodations and/or differentiation strategies. Knowledge and use of these competencies are addressed by InTASC teacher preparation standard #2 (InTASC, 2013).

Considering the influence of beliefs and attitudes on teachers’ perceptions, judgments and classroom behaviors (Pajares, 1992), the construct of teacher beliefs was used as an additional theoretical frame in this study. The term beliefs is commonly used synonymously with terms such as attitudes, dispositions, knowledge and perspectives (Pajares, 1992). The role of beliefs in effective teacher preparation has been well established (e.g., Ross-Hill, 2009). PST’s acquisition of the professional knowledge necessary for becoming an effective teacher may be inhibited by failure to study these teacher beliefs (Morton, Williams & Brindley, 2006). In this research, teacher beliefs include PST’s assumptions about SWD, as well as their judgments about their own skills and dispositions with regard to working with SWD.

The coupling of teacher competencies and teacher beliefs in our theoretical framework emphasizes the importance of addressing both competencies and beliefs regarding inclusion at the pre-service level (Pit-en Cate et al., 2018) and for providing authentic social experiences for PST to interact with SWD (Kunter, et al, 2013). In this study, a course with an embedded field experience provides knowledge and supporting skills for shaping beliefs toward inclusion. The focused and well-structured interactions with SWD, paired with coursework in diverse characteristics and inclusion strategies, provided opportunities for the PST to experience meaningful application of knowledge and skills. It also provided them with a chance to examine their own perspectives and beliefs on inclusion in understanding diversity among their students.
Method

Participants

Pre-service teachers enrolled in the introductory special education course over two semesters served as participants in the study. The total number of participants across all education majors (elementary, secondary, special education, music, and visual arts) was 35. The demographics of the PST are provided in Table 1. All PST participated in an embedded field experience with SWD from a high school transition program of a local school district. The students from the local high school were between 18-21 years of age and were identified as having either intellectual and/or developmental disabilities. They ranged in ability levels from mild to moderate.

Procedures

The Let’s Have Lunch Experience. A teacher from a local high school transition program had contacted our College for possible partnership opportunities with our teacher candidates. The introductory class to special education seemed like a good fit for this opportunity, considering that all education majors were required to take this course and such an embedded experience would be valuable for all PST. The primary author/faculty member teaching this course and the school teacher decided to make these lunchtime social interaction experiences for the PST and the SWD.

The field experience was embedded as a mandatory component to a semester-long introductory course in special education taken by all education majors. The learning outcomes targeted in this course are provided in Figure 1. An important objective was to teach PST to view SWD as individuals with strengths as well as needs.

Six regularly scheduled class sessions were set up as meeting times with SWD, each lasting an hour. The meetings began after the course was in session for 4-5 weeks, so that the PST had a basic knowledge of Universal Design for Learning (Rose & Gravel, 2010; U. S. Department of Education, 2015), categories of disabilities and characteristics, accessibility and differentiation. To prepare the PST, the instructor provided instruction and scaffolding during class sessions on what appropriate social behaviors could be modeled, such as being mindful of how they greet their peers, how they greet their professors, how they speak to each other and the choice of topic, words, etc.

The course instructor arranged the meetings and sought a brief description from the teacher on each of the students arriving each week (who varied due to the nature of the transition program). Most PST had little or no experience teaching and few had previous interactions with SWD, as revealed by a brief survey.

To ensure successful interactions during the experiential component, PST were carefully paired so at least one had some prior experience with disability or indicated comfort with people who had diverse abilities. For example, if a student had severe communication challenges, he/she was paired with at least one special education major or someone with previous experience with similar students.

The meetings were structured around lunch, with opportunities to walk around campus or play card games as time permitted. During the interactions, the instructor modeled certain behaviors for the PST such as greeting the SWD and asking them if they wanted to know anything about their “new friend” from college, asking them to remember their friend’s names and what their favorite things are, and reminding them gently of table manners (“Oops, excuse you!”, “Did you forget the magic word?” “How can you ask for help?”). These scaffolds were provided as necessary during the interactions, especially during the first two meetings and with SWD who were known to be particularly in need of more supports in these areas. As the meetings with SWD progressed, these supports were faded out, and the instructor simply remained on the scene for support or direction as needed. PST completed a brief, prompt-guided reflection following each of the six interactions (See Figure 2).

Data Sources

In order to assess change in beliefs over time, data from the first and sixth reflections by each of the 35 PST, a total number of 70 reflections, were analyzed for this study. The course assignment was designed both to facilitate reflection and to evaluate the PST’s competencies and beliefs as a result of the lunch experience with SWD. PST were asked to interact with, and observe, SWD and note what they could do well in their language, social, and academic skills, followed by what they needed to learn in these areas. They were also asked to reflect on the experience: what went well or not, what they learned that will prepare them for supporting SWD, what accommodations they would put in place if they had similar students in their classrooms, and if their perceptions of working with SWD had changed as a result of the interaction. The reflection prompts were explained to them in class before their first meeting with SWD, and models were provided to clarify the expectations for each prompt.

Data Analysis Process

Using a qualitative approach, we analyzed pre-service candidates’ reflections from their initial and final lunch meetings with SWD using a directed content
Table 1

<table>
<thead>
<tr>
<th>Major</th>
<th>Number of participants(n)</th>
<th>Percent of sample (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary Education</td>
<td>21</td>
<td>60.0</td>
</tr>
<tr>
<td>Special Education</td>
<td>10</td>
<td>28.6</td>
</tr>
<tr>
<td>Visual Arts Education</td>
<td>2</td>
<td>5.7</td>
</tr>
<tr>
<td>Music Education</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>Secondary Education</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1

Learning outcomes in the course:

1. Identify the 13 disability areas as defined in Individuals with Disabilities Education Act, IDEA 2004.
2. Outline the main principles of Individuals with Disabilities Education Act, IDEA 2004 and the procedures, which govern special education.
3. Describe the major issues and trends in special education and explain how these relate to general education and related fields
4. Describe the educationally relevant characteristics of exceptional children including curriculum accommodations and modifications
5. Develop an understanding of the roles and responsibilities of teachers, parents, students and other professionals related to special education
6. Identify the issues in definition and identification procedures for individuals with disabilities including those associated with individuals from culturally and/or linguistically diverse backgrounds
7. Define terms that are commonly used in special education
8. Identify procedures of assessment, identification and intervention using the Response to Intervention (RtI) approach for individuals who have exceptional needs.
9. Using the Universal Design for Learning (UDL) approach to design instruction to suit diverse learner needs.
10. Use technology and assistive technology as an effective tool to assist and accommodate individual needs of SWD

Figure 2

Reflection prompts

1. **Strengths** (what the student can do, based on your interactions and observations. Consider language skills, intellectual functioning, social skills, academic skills):
2. **Weaknesses** (what the student needs to learn how to do in each of the above areas):
3. **Reflection**: Include the following:
   a. what you did today with the student
   b. what went well in the interactions & what didn’t go as well
   c. change of plans (if any) & rationale for it
   d. what you learned from the interaction which will help you as a teacher in an inclusive classroom
   e. what accommodations and adaptations will be needed in your classroom for students like these
   f. any change of perceptions that you may have had as a result of this interaction
   g. any change of skills that the student may have had as a result of this interaction (how this interaction has helped the student).

analysis method (Flick, 2013). We took a number of steps to ensure the credibility of the study (Brantlinger, Jimenez, Klingner, Pugach & Richardson, 2005). The first author, a special educator, developed a codebook to guide the content analysis. Along with the second author, an educational psychologist, an initial sample of 10 reflections were independently coded and the results were compared for validity. Special education terminology, definitions of
strengths and needs versus perceptions needed clarification and common understanding. The primary author established preliminary themes, and we looked for evidence inconsistent with these themes or outliers and discussed additional themes as a team. We came together to reconcile discrepancies and ambiguous phrases, check for possible biases, and reach consensus. The full sample of reflections were then analyzed, including a reanalysis of the initial 10. We discussed a small number of discrepancies in coding the utterances to reach a consensus. Finally, we enlisted two experts with expertise in special education, assessment, and qualitative analysis to review the analysis and provide critical feedback.

Results

Using the constructs of competencies and beliefs consistent with our theoretical framework, a number of themes emerged. The number of coded responses in the analyzed reflection samples (n=70), mean of utterances (coded responses per individual reflection) and range of responses is reported in Table 2.

Pre-Service Teacher Competencies

The theme of competency was evidenced in multiple areas: identifying strengths in the SWD, identifying challenges or needs of SWD, and identifying differentiation strategies, accommodations, or instructional strategies for the SWD.

Identifying Strengths in SWD

PST found competence in identifying a variety of strengths in their student partners. The frequency of responses in the theme of “identifying strengths” was 385, ranging from 0-14 utterances per reflection. Strengths were identified in the areas of language and social skills, such as maintaining eye contact, being friendly, making jokes, and understanding and responding to questions during conversations. For example, one PST noted, “she is very social, and we had a good conversation. [S]he is able to distinguish a casual conversation and a conversation between a professor” (Participant 13).

Other strengths noted were in areas related to intellectual functioning and life skills, such as remembering the rules of a game, counting money, and using skills related to food.

The thing that surprised me was when we advanced to a harder level with more pictures that looked kind of the same; he sat there and stared at them for a while. I just let him continue to stare, but then out of nowhere he started putting them in the correct order without almost any hesitation. (Participant 11)

Strengths of SWD pertaining to learning by observation were revealed: “He was able to show that he can adapt to situations. For example, in the foosball game he was able to improve by watching how we played” (Participant 1). Participants also observed students showing the skills required for to pay for their food and to get their food on their own, and to eat independently.

Kaylee* handed the cashier the money and waited patiently for change, knowing that she would be receiving change... She thanked me while I was helping her get her food... She seemed to have no problem finding somewhere to sit down... I would tell her funny stories, [and] she would understand and laugh along with all three of us. (Participant 16)

*All names used in quotes are pseudonyms

Table 2

<table>
<thead>
<tr>
<th>Theme</th>
<th>Occurrences recorded in reflections (n=70)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
</tr>
<tr>
<td>Competencies</td>
<td></td>
</tr>
<tr>
<td>a. Identifying strengths in SWD</td>
<td>385</td>
</tr>
<tr>
<td>b. Identifying needs in SWD</td>
<td>258</td>
</tr>
<tr>
<td>c. Identifying differentiation, accommodations and/or instructional strategies</td>
<td>192</td>
</tr>
<tr>
<td>Beliefs</td>
<td></td>
</tr>
<tr>
<td>a. Positive change in perception of SWD or working with SWD</td>
<td>115</td>
</tr>
<tr>
<td>b. Overcoming fears of SWD or working with SWD</td>
<td>14</td>
</tr>
</tbody>
</table>
The strengths in language and communication were noted in both receptive and expressive language areas. Participants noted in the reflections that students used two components of communication, both verbal and nonverbal abilities, to communicate. Participants noted specific examples of SWD strengths in communication in their observations:

[Last, I would definitely mention Daniel’s ability to use technology (his cell phone) as a strength. He knew how to type certain words or pull up certain pictures to show us what he was thinking of or referring to during our conversation definitely stood out to me as an advantage of his. (Participant 4)

Participants were able to gather observational evidence during the interactions. The instructor also provided support early in the experience for noting specific areas of strengths (e.g., ‘How do you know he understands?’) and guided prompts during interactions.

Through their writing, participants demonstrated an ability to look for strengths - a deviation from the traditional way of viewing SWD through a deficit perspective (Cramer, Pellegrini-Lafont, & Gonzalez, 2014).

Identifying Needs in SWD

Participants noted needs in the areas of language, cognition and social functioning during the interactions. The frequency of utterances in the theme of “identifying needs in SWD” was 258, with a range of 0-10 utterances addressing areas of need, per reflection. In the areas of language skills, participants observed needs in both receptive and expressive communication skills:

Sometimes he was hard to understand when he spoke because he would not speak clearly, and at times I wondered if he did not understand us because we would ask him a question and his answer made no sense with the question we asked. Another thing I noticed was that he agreed with anything and everything I said. (Participant 32)

Needs observed were mainly in the use of social communication. Participants displayed the competencies of looking for expected socially appropriate norms and etiquette. For example, one observed that a SWD “was indeed social, but it was still hard to get him to be the one to start the conversation” (Participant 31). Another PST noted:

Lena was in people’s personal space often. I feel like Lena does not understand that when a person whispers you do not have to be in a person’s personal space instead, you just need to lower your voice. (Participant 34)

Social communication skills are essential for socialization and job retention in SWD. Identifying the specific areas of need is an important skill for teachers in providing goals for learning tasks and setting up learning activities. Participants’ reflections showed that they were able to pinpoint specific areas of need that addressed social proximity, intent, clarity, and reciprocity of communication.

Participants noted cognitive abilities of students as they engaged in social activities. Utterances addressing the cognitive abilities were in the areas of memory, processing time, and problem solving:

- As we were conversing with Corey, I noticed that he would hear what we were saying or asking, pause, then reply. I figured that this pause was to process what we were saying then what he was going to say (Participant 11).

- She asked this same question two more times...either because she does not have a good memory, or she might have been a little uncomfortable since she was going out of her comfort zone” (Participant 13).

Analysis of the PST’s reflections suggest that, as illustrated in the excerpt above, participants were trying to understand the characteristics of their students and beginning to make connections to likely cognitive factors. Similarly, participants tried to infer other potential causative factors, beyond the disability, showing an ability to relate social, cognitive, and environmental factors to behaviors. Describing an issue that arose during one meeting, a PST noted, “Mostly it was because they kept interrupting each other, but I think that may have been due to their excitement over their discussion more than actual communication problems” (Participant 9). A few physical areas of need were noted such as in the area of speech articulation, movement, and motor skills. Participants were able to recognize the characteristics of specific disabilities: “Nora is dealing with ….. a form of Spina Bifida, which makes movements like walking a slow and tiring process for her” (Participant 5). Such statements suggest that the participants were able to make meaningful connections between course concepts and observed experiences.

Participants demonstrated the competency of identifying specific areas of need in areas of receptive and expressive language, social communication, and cognitive areas. They identified SWD’s needs related to the ability to handle money, maintain a conversation (mainly in the skills of asking questions or initiating and continuing conversation), and use expected table manners.
Identifying Accommodations and Instructional Strategies for SWD

If I had a student like Elena in my classroom, the most important accommodation I could provide for her is a longer wait time. She would take longer to answer us, but that was because it took longer for her to process the question and formulate a response. (Participant 1)

The competency of identifying intervention strategies and/or differentiating instruction, occurred in written statements with a frequency of 192, with a range of 0-11. PST displayed an ability to think of the SWD as potential students in their future inclusive classroom, noting the need for accommodations and/or instructional strategies. The most frequently noted was the need for more patience, and particularly more wait time for processing: “[If I were to have him participate in class, I think I would give him a heads up so he has enough time for him to process his thoughts and formulate an answer” (Participant 34). PST also identified the need for providing additional/written directions on assignments, assigning the SWD a partner to help them stay on task, and taking time to form positive relationships with SWD.

Participants displayed the ability to apply a major focus of the course: Universal Design for Learning (UDL). One participant stated she would “use choices wisely in class for optimum time spent and make sure to convey concepts in multiple ways so that students will understand them” (Participant 25). Another (Participant 2) indicated that the SWD she observed “would also need multiple ways of representation for speeches because she sometimes mumbles her words and occasionally is hard to understand.”

Participants also identified assistive technology they would use in their classroom to support their students’ learning, such as “iPads or communication devices” (Participant 35), “word cards” (Participant 30), or “assistive technology to aid with...fidgeting” (Participant 9). These suggested strategies revealed an ability of the participants to match the interventions to specific needs of their student partners. Overall, the reflections suggested that the participants recognized the need for accommodations to include the student successfully in their classrooms and the need to treat each student as an individual with his/her own strengths and needs.

Pre-Service Teacher Beliefs

Evidence of the construct of beliefs emerged in several themes. PST reported positive beliefs about SWD/working with SWD (n=115, mean=1.64, range =0-6). We also found evidence of a theme of overcoming fears of SWD/working with SWD (n=14, mean =0.10, range =0-1).

Changes in Pre-Service Teacher Beliefs

I know it is sort of bad of me to say, but I did not realize just how capable they were in functioning in a conversation or in a job but Mike definitely opened my eyes, and I know I will no longer have such harsh pre-judgments (Participant 23).

An overwhelming majority of participants corroborated their positive perceptions by sharing how they loved the lunch meetings with SWD and looked forward to it during class sessions. Many participants expressed general, but profound, changes in their beliefs about SWD: “Even though some have limitations, it is important to remember they are humans just like us. Their smiles, happiness, friendliness, and hearts are real” (Participant 8). Another participant noted “[t]hat exceptional students can have self-esteem issues and need to be nurtured just like any other student” (Participant 5). In other cases, changes in perceptions were more specific, and included new understandings about the diversity of SWD:

I learned that not all kids in a Special Education will be low functioning. That there will be students, like Renata, who are high functioning but still struggle in some way. I often think that Special Education students are low functioning, but this has changed my views on that. (Participant 21)

Finally, participants’ reflections revealed growth in their understanding of themselves as educators of SWD. For example, one noted that “the interaction helped me learn how to quickly change tactics when working with students” (Participant 16), revealing consideration of the need for flexibility. Others showed an awareness that they, as teachers, are responsible for ensuring that all of their students are welcomed and supported in their future classrooms: “Having lunch with Adolfo definitely opened my eyes, and I realized that there will be students in my classroom that will feel uncomfortable at first, and it is my job to make them feel normal” (Participant 35).

It should be noted that participants’ awareness of their obligation as teachers of SWD did not indicate negative reactions or reluctance. Rather, as the above quote suggests, they seemed to accept the responsibility for inclusion as customary.

Overcoming Doubts and Fears

Our analysis of participants’ reflections revealed 14 utterances related to feeling nervous or awkward during an encounter or doubting their ability to effectively work with SWD.
[W]hen all the special needs students arrived, I became very apprehensive. I have never had the opportunity to work with people with special needs, and I was worried about realizing I did not have the patience for eventually teaching in that kind of environment. (Participant 32)

Of the 35 participants, 11 revealed such doubts within their first reflections. Three others were part of their final reflections; however, two of these were part of statements indicating that they no longer held such beliefs. For example, a PST admitted, “[I]ndividuals like Desmond, honestly, made me scared at times. I have no explanation for the feeling, but I know after spending this time with Desmond and learning about him and his personality, those fears went away” (Participant 15).

**Discussion**

[I] am definitely more motivated to help every single student gain their own level of confidence no matter how long it will take and no matter their learning disability. It will be achieved, and I am determined to help aid in that. (Participant 11)

Our findings suggest that PST, at this early stage of their teacher education program, are able to recognize the unique skills and capabilities of SWD after this authentic social experience. The ability to identify strengths and needs provides a strong basis for creating appropriate supports for developing students’ academic, social, and life skills. The reflection responses on the strengths and needs also formed a good transition to the class discussion on varied types of disabilities and their characteristics. Since participants in the study were students in an introductory course, they were not familiar with nor expected to formally assess the skills of their SWD. However, participants were encouraged to provide observational evidence for their conclusions, and it is clear that their inferences went beyond merely noting challenges but moved to a level of trying to understand the underlying causes. Hence, the opportunities and continued interactions provided the participants with actual one-on-one experiences with understanding the manifestation of individual characteristics of these students. Participants also shared their personal experiences of the interactions during classroom discussions in order to positively extend the application of classroom learning.

The ability to move beyond the problem (the disability label) and see the person as an individual is an essential skill. Parents of students with developmental disabilities specifically note the need for teachers to understand and see the students as children first rather than labels (West & Pirtle, 2014). A strength-based paradigm shift encourages teachers to view the students as having “potential” rather than being “at risk” (Hammond & Zimmerman, 2012). While most special education teacher training programs emphasize the strengths-based approach and advocate the use of strengths first while talking about the student, parents of SWD have voiced in the need for general education teachers to adopt this mindset as well (West & Pirtle, 2014). Our results confirm that authentic social experiences such as these can facilitate explicit strength-spotting and the development of a strengths-based perspective in all teachers.

PST were able to pinpoint strengths and needs in students with whom they interacted. Their responses indicate that they were analyzing the behaviors of students and making connections between their characteristics and likely cognitive factors associated with their strengths and needs as well. The competency of identifying specific strengths seemed to be facilitated by being able to work with a partner, thus enabling participants to alternate between interacting and observing. The opportunity to discuss their interactions in class also seemed to support their developing competence.

Further, reflections indicated that participants understood their responsibility to accommodate their teaching practices to support SWD in their classrooms. PST were able to apply course concepts to identify appropriate accommodations and strategies for SWD in their future classrooms. Their suggestions were consistent with UDL which encourages teachers to provide learning experiences via multiple modes and allow students to express their learning in various ways (Rose & Gravel, 2010). They also indicated the need for patience and more wait time to provide the much-needed processing time for most SWD. Wait time or extended time is an essential strategy in effectively supporting SWD (Johnson & Parker, 2013).

Our data reveal that the Let’s Have Lunch Experience had an impact on PST’s ability to see SWD as humans and as individuals with strengths and interests, as well as needs. Positive relationships between teachers and their students can significantly enhance student learning and success (Hattie & Yates, 2014). It appears that the informal social setting was an important factor that enabled PST to form positive connections with SWD.

Indeed, participants showed overwhelmingly positive perceptions about SWD. Our data suggest growth in participants’ perceptions of SWD as individuals well as in understanding their own responsibilities as inclusive teachers. Given that newer teachers can have fewer positive attitudes towards accommodating SWD (Lopes et al., 2004), facilitating positive beliefs can potentially lead them to be more effective as inclusive teachers.

Teacher beliefs about SWD have repercussions on a variety of outcomes, including student behavioral
problems (Syriopoulou-Delli et al., 2012) and teacher behaviors and instructional decision making (Newman Thomas, 2014). Clearly, it is essential to prepare teachers to work effectively with SWD by providing experiences that enable PST to develop constructive perceptions about and attitudes toward SWD. The results of this study indicate that PST showed growth in positive beliefs after participating in the Let’s Have Lunch Experience. Our results lend further credence to the idea that notions of teacher competence include beliefs as well as knowledge and skills (Kunter, et al., 2013; Pit-en Cate et al., 2018).

Our findings also confirmed what we would expect: that PST often feel some trepidation about working with SWD. While traditional field experiences in classroom settings can reveal the joys and challenges of an inclusion classroom, limited interactions with SWD, especially for general education PST, can leave them worried about whether they are equipped to effectively work with students who have special needs (Swain et al., 2012). In this study, 13 of 14 PST who expressed doubts and fears about working with SWD also noted that their concerns were alleviated. We are encouraged that the results of this study suggest that the Let’s Have Lunch Experience was effective in allaying doubts and fears in all but one participant.

Conclusions and Recommendations

Although the intent of the social Let’s Have Lunch Experience was to enable students with disabilities (SWD) to have adequate social interactions with same-aged peers, the experience proved to be an effective way to influence preservice teachers’ (PST) competencies, change beliefs and alleviate fears about working with SWD. The preservice teachers of various teaching majors affirmed the success of this experience. In teacher education research, a common theme regarding field experiences is that they lead to more significant learning when activities are focused and well structured (Wilson et al., 2001). We would not suggest that such an experience be used as an intervention for those candidates who have negative attitudes about working with SWD. However, the interpretive analysis suggests that the influence of the Let’s Have Lunch Experience on teacher competencies and beliefs is a promising one to help PST overcome their trepidations.

Participants in this study demonstrated competence in identifying students as individuals first by noting their specific strengths and challenges, then imagining likely accommodations they would need to make. They had an opportunity to interact with peer-aged SWD at a personal level in a social environment outside of traditional classroom-based, academically oriented encounters. This enabled them to observe and learn while modeling the appropriate social skills for the students. The Let’s Have Lunch Experience provided PST with the opportunity to immediately apply course concepts, such as UDL, as well as the chance to reflect on the experiences.

Participants at the foundation level of the teacher education program were able to imagine students in their future classrooms similar to those with whom they interacted and to suggest appropriate strategies to support them. For several of the participants, this was their first interaction with any individual with disability at such levels, and our evidence suggests that the experience enabled them to overcome their past fears about having SWD in their classrooms.

We suggest that teacher preparation programs can avail of partnerships with local schools to enable positive experiences such as the Let’s Have Lunch Experience. Involving PST in early experiences that require them to socialize with SWD may help them to alter their beliefs about inclusion and raise their competency levels. It also provides faculty members a chance to model effective practice outside the classroom and link theory to practice. We would encourage programs to collect data to add to the body of research, especially in larger programs.

While our findings are encouraging, additional research would help address several unanswered questions. The participants in this study were PST at the foundations level. While special education majors get additional coursework and experiences in their program, further studies on the impact of such experiences on general education majors could be conducted to see if the skills, competencies and attitudinal shift carry over during their advanced program experiences and into their teaching careers.

PST met with different students during the course of the experience in order to expose them to students with a variety of strengths and needs. Some of their reflections noted an improvement in social skills of the student, but a fuller examination was beyond the scope of the current study. Having the same PST and SWD matchup for several sessions could create the opportunity for PST to measure the improvement in social skills of the SWD. It could also help reveal whether PST’s observation skills improve over time.

Our study documented PST’s competencies with regard to applying course concepts. It is possible that some participants, particularly those with prior experiences interacting with SWD, were already able to identify students’ strengths, needs, and potential strategies. Additional research to establish a baseline would help determine whether including an experiential component to the course facilitates growth in PST’s competencies.

Developing professional competencies and positive teacher beliefs is an important goal of any teacher
preparation program. Our study did not make comparisons between PST majoring in special education and other education majors. More studies could shed light on similarities and differences in teacher competencies and beliefs among these groups as a result of non-traditional field experiences. Since educators’ level of engagement with, as well as attitude and sense of responsibility toward, SWD are critical factors in the effectiveness of inclusive classrooms, we must continue to explore varied models of teacher preparation. Innovative field experiences such as the Let’s Have Lunch Experience can be developed and executed within coursework to enhance PST’s competencies and positive beliefs towards teaching students with intellectual and developmental disabilities.

**References**


Chakravarti and White-McNulty


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Great Expectations or Simply Realistic? An Exploration of Second Year Undergraduate Expectations of Science Programs of Study at an Australian University

Mary Sarah-Jane Gregory, Christopher Klopper, and Wendy Loughlin
Griffith University

This study explored the lived expectations of second-year undergraduate science students at a large, government-funded university in Australia. The investigation made use of a mixed methods approach to inform the understanding of the second year of study expectations. Findings identified three key contributors to expected second-year experiences: (1) academic activities, (2) support provisions, and (3) the complexities of combining study, work, and life balance. Evaluation indicated that the majority of respondents articulated realistic expectations regarding academic difficulties and challenges associated with the second year. To successfully complete second-year courses respondents expected to engage primarily with activities and resources recognizably associated with assessment. The study provides evidence of misalignment between some student expectations of available learning support and preferred forms of support in contrast to those afforded them by the university. Furthermore, respondents expected that to keep up with course requirements they would need more time investment in academic activities, thus impacting their ability to maintain a balanced lifestyle that integrated study, work, and social endeavours. The study also identified a subset of students who did not have a developed awareness of their learning modalities, were socially isolated, and were undertaking long hours of paid employment. These findings call for continued improvement of students’ expectations of second-year programs of study experiences to minimize poor student experiences through unmet need, including the development of sophomore slump.

Introduction

Student Expectations

A significant body of evidence indicates student expectations of tertiary education are important in enabling a successful assimilation, progression, and graduation. Internalized student perceptions of higher education are shaped by their previous cultural experiences and lead to the formation of specific expectations (Maunder, Cunliffe, Galvin, Mjali, & Rogers, 2013), and they have been classified into four distinct categories: optimistic, prepared, fearful, and complacent (Jackson, Pancer, Pratt, & Hunsberger, 2000). To date, there has been limited exploration of Australian experiences of progression beyond the first year of a program of study. Even so, there is a developing understanding that the experiences of second-year students are different from those of other academic year levels. Key influences on second-year student experiences are academic developmental factors and institutional contributors. The literature identifies specific key areas of undergraduate experience that are particularly challenging for second-year students and that are broader and more complex than the first-year experience (Jevons & Lindsay, 2018). Key developmental factors include the questioning of self-capacity, the search for purpose and direction, learning capabilities, and connection (Kennedy & Upcraft, 2010; Lemons & Richmond, 1987; Tetley, Tobolowsky & Chan, 2010). Additionally, there may be institutional confrontations for these students, particularly around program progression with selection of discipline major and support services that include financial, academic, and career advising (Gahagan, 2018; Nelson, 2018). These heavily influence the progression and experiences second-year students have.

Forming an understanding of student expectations allows for consequent analysis of their lived experiences during the progression through their programs of study (Appleton-Knapp & Krentler, 2006; Juillerat, 2000; Money et al., 2017; Nicholson, Putwain, Connors, & Hornby-Atkinson, 2013) and facilitates evidence-based effective enhancement of university experiences for second-year students through holistic program development. Few examples of this application support enriched student experience through undergraduate programs to address perceived issues of “sophomore slump” (Gahagan, 2018; Tetley et al., 2010; Wang & Kennedy-Phillips, 2013); more often, intervention programs are based on other institutional approaches. Recently recommendations have been to establish cohort and institutionally relevant data for the second-year student experience (Loughlin, Gregory, Harrison, & Lodge, 2013; Milsom, Stewart, Yorke, & Zaitseva, 2014; Schreiner, Schaller, & Young, 2018).

Many reports indicate the criticality of understanding students’ expectations to increase learning and engagement with learning tools and strategies (Money et al., 2017; Schmitt et al., 2013), as well as satisfaction of students’ experiences of higher education (Appleton-Knapp & Krentler, 2006). Expectations of both independent study requirements and academic behavioral confidence has been shown to
be positively predictive of end of semester results (Nicholson et al., 2013) and impacts student retention (Longden, 2007). However, it has also been noted that academic staff often have difficulty in identifying and subsequently addressing student expectations (Lopez & Lopez, 2014) likely due to changes in the function and purpose of higher education with the “students as clients” perception (Altbach, 2015; Pearson & Chatterjee, 2004; Tricker, 2005), compounded by increased student diversity created by the widening of participation (Bowman & Denson, 2014; Gale & Parker, 2013) and globalization of higher education (Altbach, 2015; International Strategy Office, 2017). Furthermore, these measures should not solely be the responsibility of academic staff but should rather be a collaborative effort between academics and student service providers to facilitate all progression experiences (Ayres & Guilfoyle, 2008).

There is a paucity of research that explores second-year student expectations, and while some have included science discipline students in a wider cohort, there exists only one study specifically identifying characteristics pertaining to this discipline’s expectations (Money et al., 2017). There is some generalized understanding of second-year student expectations, primarily from the USA. These include negative expectations of academic self-efficacy in second year that can lead to attrition (Hill & Tinker, 2018) and those with high expectations of excellent academic outcomes derived from first-year performance where grades drop in second year have been identified to be at risk of developing sophomore slump (Pattengale & Schreiner, 2000).

A misalignment of second-year student expectations has been an area of concern raised as contributing to poor student experiences such as the ‘sophomore slump.’ (Heier, 2012; Willecoxon, Cotter, & Joy, 2011). The mismatch between expectations and realities are said to be multifaceted (Nelson, Kift, & Clarke, 2008) and provide framing to the overall student experience. Studies have shown that a student’s perception of independent study and academic behavioral confidence can be used as a predictor of end of semester results in undergraduate programs (Nicholson et al., 2013). Additionally, if students entertain realistic expectations and accept responsibility for their own learning progression in combination with academic confidence and attending class, these will have positive student learning outcomes (Nicholson et al., 2013). It is also reasonable to entertain the notion that if students demonstrate unrealistic expectations, this will have a negative impact on the progression (Lopez & Lopez, 2014). Longden (2007) identified that changing student expectations of the university with regards to the nature of skills and knowledge associated with academic programs of study can have a positive impact on student non-completion rates. They found disconnections between student and program expectations as outlined in the Higher Education Standards Framework (Birmingham, 2015). Along with Pearson and Chatterjee (2004), the Longden (2007) report identifies a widening gap between lecturer and student expectations, thus leading to conflict between the delivered curriculum as opposed to what is expected and valued. This is particularly crucial when it comes to support systems. Second-year students anticipate that the support systems provided in their first year will remain, and when this is not the case, students indicate they feel surprised and abandoned by their university (Schreiner, 2018).

To enhance student learning there needs to be clear articulation of expected learning outcomes (Evenbeck & Hamilton, 2010). To achieve this there must be an understanding of the different elements of second-year expectations of the undergraduate experience. Subsequently, this can contribute to preventing contradictory behavior and encourage the development of realistic student expectations through provision of additional guidance and support where appropriate to enable student success (Stewart, Milsom, & Zaitseva, 2014; Thompson, Darwent, & Zaitseva, 2014). Faculty have a critical role in supporting realistic expectations, and they contribute holistically by connecting interests and strengths to possible career opportunities thus providing direction and purpose, key elements of challenge for second-year students. So too can be the positive influences of peers in levelling to establishing appropriate expectations (Yorke, Milsom, Stewart, & Zaitseva, 2014). Fostering realistic expectations can also abate potential student attrition due to unrealistically high expectations of service excellence and policy (Schreiner, 2010).

Given the grave impact student expectations can have on academic outcomes, there is a need to inaugurate an evidence-based understanding of how student expectations impact their higher education experience. Thus, processes that facilitate the development of appropriate expectations of second year are both anticipated and necessary for this cohort (Schreiner & Tobolowsky, 2018). Where provision is not met, evidence suggests it can contribute to the mediocre satisfaction reported by 50% of USA cohorts due to unmet expectations (Ruffalo Noel-Levitz, 2017) and risks the development of sophomore slump.

Similarly, it is important to provide opportunities for students to articulate their expectations through the development, refinement, and implementation of tools that can identify and index student expectations to further facilitate constructive dialogue towards a more positive alignment of student satisfaction with the educational experience (Appleton-Knapp & Krentler, 2006; Crisp et al., 2009; Juillerat, 2000; Schmitt et al., 2013).
The Purpose of the Study

This study explored the lived expectations of second-year undergraduate science students at a large government-funded university in Australia and forms part of a broader appraisal study of second-year experiences. For terms of reference in this paper, a second-year student was defined as the following: a tertiary student currently enrolled in their first bachelor’s program of study who has progressed into their second year of academic work regardless of where their first year of academic program work was completed. Each student must have successfully completed a minimum of 75% of first year program-related coursework requirements.

Methodology

The study made use of a mixed methods approach to deepen the understanding of the second year of study. Application of a mixed-method research is regarded as highly effective in gathering rich, thick data that when analyzed reveals a detailed exploration of the study participants (Cresswell, 2007). The participant group was comprised of second-year science students enrolled in one of four different bachelor’s degree programs: Bachelor of Biomedical Science, Bachelor of Science, Bachelor of Forensic Science, and Bachelor of Medical Science. Students were enrolled at one of two different campuses at a large government-funded university in Australia during 2015-2017. The participants were selected to represent key science discipline areas and create a student sample representative of the second-year science student cohort at this university. Students who were invited to participate met two specific criteria: (1) they subscribed to the proffered definition of second-year science students, and (2) they had engaged in studying core science subjects such as biology, chemistry, mathematics, and physics in the programs defined in this investigation.

Four data collection points occurred during the 2015-2017 academic years via online and in-person administration of a unique survey tool. An anonymous codification system was employed for each individual respondent. In addition, cross-checking for all data collection periods in 2015-2017 was implemented to insuring individual data was not captured twice for the same collection time point.

The expectations survey was designed to develop an understanding of student expectations of their second academic year of study in a science degree program contextualized by their experiences in the first year. It utilized an embedded mixed methods design (Fowler, 2009; Given, 2008; Schmitt et al., 2013) and included a combination of quantitative Likert and qualitative open response questions. Questions were developed initially based on relevant question selection from an assortment of survey tools used with similar cohorts, trialed during the 2015 pilot study (collection point 1) and slightly refined for the 2016 and 2017 collection points (2-4) to include more open response type questions. In 2017 an abridged hard copy of the survey tool was also distributed. Questions collected information on student expectations of both academic and non-academic influences of student experience in addition to pertinent general information. The survey was implemented at the beginning of each academic year during Teaching Period (TP) 1 in accordance with the university policy related to data collection associated with teaching and learning using the Lime Survey tool.

While response rates were low for any given online collection point (12.9%) and high for in-person respondents (100%), this was not atypical of the collection methodology and all recommended participation encouragement methods (Fowler, 2009; Garner, 2018; Nulty, 2008) were employed, except incentivization. The samples were analyzed and considered to be representative of the cohorts with regards to program of enrollment and campus of attendance. Given the nature of the sample, both in size and draw, the findings of this study are exploratory and cannot not be generalized. However, they form a foundational understanding of where further research is required to extend understanding of the second-year student experience phenomenon and of science undergraduate experiences.

In keeping with the mixed methodological approach, data evaluation was conducted using several analytical approaches. Quantitative summation of Likert data across the three years was completed. The sample size of individual data collection points was not sufficient to make inferential analysis or apply statistical validity tests. Initial quantitative data analysis indicated observed trends within the data that was consistent across multiple year levels. Therefore, data from each of the four collection points (119 respondents in total) was reported in collated form. The qualitative analysis used the latent analysis methodology of interpretative phenomenological analysis (Smith, Flowers, & Larkin, 2009). While this approach is traditionally used for small study in-depth interviews, here it was applied to the open-ended survey data. Initially, all survey responses were downloaded from the LimeSurvey and processed in an Excel spreadsheet. The open responses provided by 47 individual students were then extracted, collated, and saved into the NVivo software Version 11.0. Familiarization through “pawing”, or multiple read-throughs, (Ryan & Bernard, 2003) was conducted in four sequential stages: initially in the LimeSurvey HTML data file, then in the extracted Excel spreadsheet, both in a digital and a hard
copy, and finally in multiple passes in the NVivo file. Responses were then codified using language analytics software NVivo software Version 11.0. Thematic analysis using a combination of deductive literature derived a priori codes, and inductive reasoning methodology insured that identified themes were emergent and thus grounded in the data (Ryan & Bernard, 2003; Stuckey, 2015). A code book including both a priori and emergent codes was implemented for each recursive data set to insure consistent comparison and evaluation. The implementation of these combination data analysis processes and measures provide validity and reliability as recommended (Cresswell, 2007; Leung, 2015).

Key Findings and Discussion

Demographically, respondents in this study (98%) were primarily enrolled as full-time students undertaking between 30-60 credit points (CP) of study in the semester the survey was conducted. Most respondents (87%) expected their living arrangements to remain the same as in first year being off campus (89%) and primarily (81%) with family. The majority can also be classified as meeting the commuter student profile (Stewart & Rue, 1983) where they spent either up to 10 hours per week (74%) or more than 10 hours per week (14%) travelling between their accommodations and university.

In general, respondents expected that there would be an increase in all university academic requirements compared with their first year, and consequently the year would be more difficult and challenging. They expected potential challenges arising from three core aspects associated with undertaking the second year of academic programs of study. These expectations focused around the following: (1) degree of difficulty, (2) support for, and (3) utility of time. The following discussion will explore regarding impact and potential associated risks. Second year is “…the crucible year. If you do will… then you’re in a good place mentally and physically” (Student 1).

Major Theme 1: Anticipated Level of Difficulty of Curriculum

Greater than 90% of respondents in the study indicated that they expected their second academic year would be more challenging than the first year. This was independent of the amount of time respondents expected to engage with various activities both academic and non-academic in nature. There were specific aspects of undertaking second-year courses that students identified as presenting challenges. These included four sub-themes: (1) the difficulty of course content and associated assessment, (2) learning activities, (3) resources provided to facilitate demonstrated successful mastery of curriculum, and (4) the way these impacted on expected workloads. Many respondents echoed the sentiments of the students who shared the following: “I’ve heard that for my degree the course content and assessment will be more challenging then [sic] first year…” (Student 41). Frequently, these expectations were referred to in a negative vein with how they expected the second year to be “harder, more stressful, more depressing, more challenging” (Student 15), that “you have to suck it up” (Student 18), and that they anticipate that it would be “…very difficult” (Student 14), as well as “very stressful and hard to keep up with” (Student 44). Some students valued these challenges, recognizing that there is “…no point in doing a degree which is easy” (Student 2).

Sub Theme 1: Content and Assessment

Respondent expectations regarding the nature and undertaking of assessment in second year seemed realistic. The participants expected that assessment would be different from first year with regards to increases in both quantity and difficulty of course content. Many respondents articulated their realistic expectations regarding prior knowledge that they should “…have a high degree of understanding of the first year [sic] content” (Student 23) and that this knowledge formed the prerequisite knowledge for second year. Respondents also indicated they expected content to be “more discipline focused and [with] increased difficulty” (Student 26), that there would be “more things to cover and much deeper” (Student 33) with “not as much revision” (Student 29). There is limited information regarding second-year student expectations of curriculum. However, in a number of countries, including Australia, New Zealand (NZ), and the United Kingdom (UK), university degree programs are certified based on an academic quality framework. Studies in NZ with Information and Computing Technologies students found that there were significant differences between student and NZ Quality Framework expectations of curriculum components with students clearly lower than the framework (Lopez & Lopez, 2014). This misalignment poses a challenge for all stakeholders but is perhaps less of a concern with the cohort in this study.

The students involved in this study expected that assessment would focus more on evaluating greater depth of understanding. Respondents expected “more long/written response assessment; more frequent and more prep required” (Student 29), that there would be “more complex questions” (Student 23) of the “…short answer and essays…” (Student 24) variety, “…that require writing and critical analysis” (Student 30). These types of assessments require demonstration of
higher order revised Bloom’s taxonomy levels (Krathwohl, 2002) in alignment with analysis and evaluation instead of the perceived to be simplistic multiple-choice questions favored in the first year. Respondents also expected there would be “a lot of assessment” (Student 33) that would “…be more difficult…” (Student 25) than first year with 80% of respondents across 2015-2017 anticipating experience assessment fatigue during their second academic year due to this combination.

There was a small sub-set of participants, primarily drawn from students enrolled in the Bachelor of Medical Science program, who clearly anticipated that their second year should be more difficult than the first and that this was valued as it enabled their development because attainment was not worth having unless this kind of adversity was embraced and overcome to further academic and personal growth:

My degree program is designed to be intensive, so I can understand certain aspects of my life will become more strenuous. With the University’s support mechanisms, I am sure that I can continue to achieve the marks that I need to attain my career goals. (Student 6)

Science students in this study appear to demonstrate more realistic expectations regarding the nature of content and assessment associated with their second-year level curriculum. They cannot be directly compared with combined discipline, international cohorts where reported unrealistic expectations were mismatched to institutional standards and requirements (Pattengale & Schreiner, 2000b). However, this does not dispel concerns they may have regarding their ability to demonstrate successful mastery of the materials, a previously identified concern of similar cohorts (Loughlin et al., 2013; Shastri, 1993).
Sub Theme 2: Learning Activities

From the outset of the second year, students identified that there were a number of academic learning activities that they expected to undertake to successfully master course requirements. These activities can be aligned to summative and formative assessment requirements. The majority of respondents indicated that the tasks they expected to complete most of the time (Fig 1) were those either involving summative assessment tasks such as laboratories, exams, and workshops or tutorials containing quizzes. Respondents also expected to complete academic learning tasks associated with a hurdle requirement (workshops) or as a gatekeeper for access to an assessment item (pre-laboratory activities).

For each cohort, the more the learning activity was associated with autonomous learning actions (such as pre-readings for lecture classes, textbook readings, and formative assessment) the lower the proportion of students who identified as expecting to undertake such tasks in their second year. Thus, it would appear that the more removed from direct assessment a task was, the less likely students were to complete it. Despite the benefits of these activities, this was neither a surprising nor unexpected outcome. Voluntarily undertaking non-assessable items requires intrinsic motivation from students for self-starter exploratory actions and curiosity (Bye, Pushkar, & Conway, 2007). In addition, students may not understand the benefits of various learning approaches that support knowledge schema construction for deep learning (Entwistle & Ramsden, 1983). However, it could also be that these may be students with lower academic outcome aspirations or high achieving students who did not require additional learning approaches to master content to their level of satisfaction. Equally, the lack of engagement with less assessment aligned activities could also be due to students focusing primarily on memorization or other surface-level learning strategies that require less academic engagement as a way to cope with the increased quantity of work required (Gardner, 2000), a characteristic previously identified in second-year students.

Of note, for those students who spent long hours in employment were more likely to engage with less learning activities, but these did include preparatory work for labs and tutorials. For students who had expected to spend less than 25 hours per week on university associated work in second year, their anticipated use of this resource set was not statistically different from the whole of cohorts. However, more of these students expected not to undertake learning activities requiring more autonomy and aligned with formative requirements. This could potentially be due either to push-back with students thinking, “[I]t’s much more self-directed than first year even though first year was already self-directed enough” (Student 4) or the reasons listed previously which demonstrate unrealistic expectations of what it means to be an independent learner.

Laboratory experiences feature heavily in the second year of science programs in this study. As an authentic experiential learning opportunity, they are a key component of a science degree (Laws, 1996). Respondents indicated realistic expectations associated with laboratory experiences. These included a “more individual approach” (Student 33) “requiring finer skills” (Student 30) with “more independence” (Student 27) and greater complexity (Student 34) that “involves more than just mix A and B” (Student 23).

I expect a lot more autonomy in the labs this year… which can be daunting, kind of like an apprentice chippy being given a nail gun for the first time…it looks cool, and it make a loud noise, but it’s got a kickback to it. (Student 10)

This shift to anticipated higher levels of independent learning is appropriate for second year. However, it has potential academic consequences if students do not have the academic capabilities or self-efficacy to make this transition. Students who are yet to completely separate from parental support and to make this autonomous shift are at risk of experiencing aspects of “sophomore slump” (Maggitti, 2008). This observation is likely partially a consequence of the widening participation enterprise (Australian Department of Education & Workplace Relations, 2009), whereby students with potentially lower levels of academic capital and self-efficacy are accepted into university programs, well supported in their transition-in phase, but are still in need of support in subsequent years when comparatively little is available (Money et al., 2017). This also concurs with findings in the UK where 45% of students indicated that in their second academic year, they found the need for so much independent learning difficult to acclimatize to (Webb & Cotton, 2018).

Sub Theme 3: Learning Resources

The students enrolled in the science programs specific to this study had a wide variety of resources available to support their learning (Figure 2). Respondents indicated that they were expecting to utilize a combination of resources with a high preference for commonly provided higher education resources including lecture slide materials, lecture recordings, online materials, and textbooks, all of which are readily available to students. Most students also expected to create their own notes from learning materials, but the nature of these notes was likely variable.

Here it should be noted that the prevalence of study guides at the second-year level is minimal, and while two-thirds of students expected study guides to be
available, disappointment likely ensued with their absence. The proportion of students undertaking autonomous deeper learning strategies such as concept maps and glossaries was consistently 25-40% of all cohorts. These activities involve knowledge association that develops connection and meaning, as opposed to surface learning including memorization, unreflectiveness, and unrelatedness (Entwistle & Ramsden, 1983, p. 137). This could be problematic for students given reports that student learning has a propensity towards visual/auditory learning styles and the loss of hands-on learning in second-year with a shift towards more theory meaning students may adopt less preferable learning strategies to survive (Gardner, 2000).

While access to a wide variety of resources and learning activities is helpful for meeting the diverse needs of a student cohort it can be better utilized if students also have an awareness of how best they learn. The data from survey respondents indicates that 78% of students reported a high level of awareness of how they best learned, which allowed them to enhance their “capacity for meta-cognitive control of their learning process” (Kolb, 2014, p.39) thereby enabling them to minimize the amount of study time required to master concepts.

Respondents with limited awareness (22%) of their most suitable learning approaches had a number of similarities. They were more likely to be working 10 hours per week or more, were unlikely to participate in voluntary work, were identified as mostly spending large quantities of time on academic activities and had tendencies towards being more socially isolated. They were also more likely to have failed one or more first year courses.

Sub Theme 4: Workload

Students were asked to report their expectations regarding the amount of time they expected to spend weekly attending university classes and studying coursework. The university recommendation for the successful completion of course requirements for an average student is to spend 150 hours in a semester for a 10 CP course, which equates to 10-12 hours per week per course. However, this is with the assumption that students plan for sufficient provision of individual needs. This requires students to understand their own capabilities and best approaches for learning and to take responsibility to commit the appropriate time to achieve this outcome.
For 55% of respondents, their expectation was 30 hours or more per week in total on these activities. These students identified as being enrolled full-time, many of whom where undertaking an overload of courses. They were mostly enrolled in Bachelor of Medical Science (78%) or Bachelor of Forensic Science (73%) programs. Perhaps for the 78% of students who were aware of how they best learned, this allowed them to be more strategic about how to study and minimize the time required to complete activities successfully. For a small number of respondents (12%) they anticipated spending less than 16 hours per week in total on academic activities. These students were mostly enrolled in Bachelor of Science or Bachelor of Biomedical Science programs.

There is potential for a mismatch of expectations and requirements for individual students to complete activities to a personally satisfactory level that could subsequently lead to dissatisfaction. Evidence of this comes from students commenting, “[T]here is too much to do. Every week there is minimum [of] 2 assessments due plus all the prelab work” (Student 16). “You really cannot have rest, even in the holidays, there [sic] is stress about everything, exams, quizzes and everything” (Student 47). This concern resonates with previous bioscience student concerns regarding the expected workload (Gregory & McDonnell, 2012; Loughlin et al., 2013) but could also be affected by a mismatch between the time students require to complete task when compared with academic staff expectations during development (Stewart-lewits & Webb, 2009). For those students who were not self-aware of their learning capabilities and expected to spend shorter time periods on work this could lead to poor experiences and longer study time requirements due to lower self-efficacy or academic capital and unrealistic expectations.

Here students commented on their negative perception associated with the desire to achieve high grades, recognition of a high amount of work, and sacrifice of sleep and social life. “There is a large volume of work with 5 courses, and I attempt to complete these thoroughly to gain a deep understanding. It is not often possible to attain sufficient sleep without short-cutting on study” (Student 17). The challenge in this being that “the workload is heavy, and people strive for High Distinctions” (Student 7). The expected potential risk was academic burnout: “It’s very difficult…….I expect the entire Med Sci cohort will be burnt out and uninterested in their uni work…” (Student 14)

The expectation of excelling academically is not uncommon for students expecting to progress to medicine where the undergraduate exit Grade Point Average is a key determinant of the funding opportunities afforded to students’ post-medicine. In addition, frequently perfectionism is a challenge for these students (Dickinson & Dickinson, 2015) and whilst they clearly anticipate the workload challenges associated with their program this doesn’t necessarily support a positive student experience. It also supports previous reports that achieving academic success is the number one cause of stress for 90% of undergraduate students (Endsleigh Student Survey, 2014).

Overall students anticipated an elevation in the workload required to successfully complete second-year courses but that dependent on the students’ self-efficacy, time management, and academic achievement goals, the amount of work expected could be variable.

**Major Theme 2: Anticipated Support**

The completion of an undergraduate degree program is not an easy endeavor and many students, particularly those from disadvantaged backgrounds, will find they require academic support for learning (Australian Department of Education & Workplace Relations, 2009). This provision is both needed and expected beyond first year enrollment (Schreiner & Tobolowsky, 2018) to support academic success and decision-making processes, including major selection, thus contributing to sense of direction, along with developing a sense of purpose (Bacio, 2017). Within the anticipated support there were two different aspects identified: (1) who respondents expected to provide them with support, and (2) the nature of the support provided.

**Sub-Theme 1: Provision of Support**

Juillerat (2000) indicated the need for evaluating second-year student expectations and determining whether high expectations were unreasonable as they have significant ramifications for student support and experience outcomes. In successfully navigating this increased degree of challenge a large proportion of students in this study anticipated that support would be provided to them from two main sources; their specific school/faculty and centralized university support centers. Consistently students across 3 years expected that the university would provide equivalent to first year (60%) or more (20%) support for academic learning in their second year. Students also reported that their expectations of support opportunities would be specifically of a just-in-time, just-for-me nature as regularly provided in first year transition experiences (Hamilton, 2018; Kift & Australian Learning and Teaching Council & Queensland University of Technology, 2009; Taylor & Harrison, 2016). Respondents indicated that they expected an increase in the level of support afforded them in accordance with the increased degree of difficulty of second year and that this support should be provided by both the faculty directly and the central university support center. These findings concur with previous reports from the Second-Year
Student Assessment™ (SYSA), which is part of the Retention Management System Plus™ from Noel-Levitz. “This motivational, early-alert assessment identifies self-reported attitudes, motivations, needs, and interests, as well as barriers to persistence and opportunities for supporting students as they transition to the second year of college” (Noel-Levitz, 2013). In evaluation, slightly more than 50% of respondents indicated they expected to seek institutional assistance in finding tutors to support their learning in second-year courses.

Sub-Theme 2: Support Modalities

Students were asked to indicate the type of learning support activities they anticipated using in their second year. Reported here are the six top activities identified by students that highlight two main modalities of support (1) online and (2) in person (Figure 3).

Four of these top six involve peer-assisted learning as the most common to be anticipated, through self-organized study groups, utilization of the social media platform Facebook, and formalized peer-assisted study support (PASS) sessions. Consistently the preferred support mechanism was self-established study groups with peers that were either in person or via online platforms such as Facebook. Respondents indicated that they expected to utilize their peers as resources to help “…understand concepts and subject matter (Student 12) or “…regarding what material in courses I am currently enrolled in are extremely relevant. Potentially regarding assessment items as well” (Student 6). This form of social learning not only benefits academic progression and supports the development of realistic expectations (Yorke et al., 2014), but also helps in building self-efficacy and a sense of belonging (Tower, Blacklock, Watson, Heffernan, & Tronoff, 2015) for second-year students. Peer learning has been noted by second-year students to be most beneficial when students had common purpose and common courses (Money et al., 2017).

Few second-year students expected to use the library learning support services in spite of a wide array of both in-person and online support services that would be considered appropriate for second-year use and complement peer learning on provision. These findings are similar to those of Webb and Cotton (2018) where the second-year students support moved from on-campus support, such as tutors, due to more professional support provision (such as academic skills developers) and online self-help. This shift was proposed to be affective for those with employment, commuting, and caring responsibilities.

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**Figure 3**

Top six mechanisms of support for academic learning second-year students expect to utilise.
Two of the support mechanisms second-year students expected to utilize in this year were Peer Assisted Study Sessions (PASS) and Student Success Advisors (SSAs). Of the 60% of respondents who used PASS in their first year, 16% expected to have access in their second year. For SSA of the 31% of respondents who sought their assistance in first-year, 12% expected this to remain available. In addition, for both services there was a small proportion of respondents (8%) who had not utilized the resources previously but expected to draw on them to assist in their second year.

The funding support for both these services are limited to provisioning first year retention efforts and are not offered to subsequent years. The expectation be able to utilize them comes from the perceived value and benefit. Students commented, “[I] wish there were more PASS sessions for second year science courses” (Student 46), and “I would have greatly appreciated the Student Success advisor’s help this year... (as they are) an essential tool to help navigate the way through courses and university” (Student 42). Having them “removed was a very big disadvantage in 2nd year.” (Student 42) However, this is an unrealistic expectation of support options for second year.

These findings support previous discussion of how the loss of support mechanisms perceived to be beneficial and provided during the first-year of university can lead to students feeling abandoned by the university as they turn their attention back to incoming new first year students (Schreiner, 2018). Students who feel unsupported can also experience a decline in confidence and motivation, leading to negative academic behaviors that can impact progression (Bickerstaff, Barragan, & Rucks-Ahidiana, 2017). There is consequently some rationale for some universities to have implemented tailored personal tutoring support for second-year students, having found that the lack thereof contributes to the development of sophomore slump (Thompson et al., 2013).

From this study we can ascertain that the support modalities favored by students are those least likely to be provisioned by the university, and despite a high propensity to offer online support, the library student services offerings were not those utilized by students. Thus, students experience ensuing disappointment from the mismatch in expectation of continued offering of strategies students perceive to be beneficial in supporting academic success.

**Major Theme 3: Competing Demands for Time**

Maintaining a balance between study and life is a challenge for many students. Second-years students are no different in this regard. The findings of this study support a shifting imbalance with students experiencing a wide range of competing pressures. Student expectations indicate a variety of concurrent non-academic activities. These included two sub-theme areas: (1) working either to support themselves financially or developing experience in a work environment, and (2) social interactions, including recreation. Some respondents recognized the challenge of juggling different demands on their time and expected that they would “need to get better at time management because schedules will be much busier” (Student 28). Perhaps this shift was not unreasonable in the short term for long term benefit with some students acknowledging, “[I]t takes a toll on my social life to some extent but it isn’t too bad. I don’t mind it at all” (Student 38).

**Sub Theme 1: Budgetary/Experience Employment Need**

It is commonplace for students to undertake employment-related activities during their time as undergraduates. The majority of respondents (86%) indicated they were engaged in paid employment in some form with the majority of these students anticipating spending less than 20 hours per week. Students not employed (14%) were primarily from Bachelor of Science and Bachelor of Biomedical Science programs. This group of students were also unlikely to be engaged with volunteer activities.

This finding concurs with the only reported study specifically for second-year employment participation rates from the UK. This study identified 86-91% of second-year students usually worked up to 20 hours per week during the semester (Webb & Cotton, 2018). These rates seem at somewhat higher levels than those international statistical reports on undergraduate employment in general where 62.4% of Australian undergraduates (Australia Bureau of Statistics, 2013) and 43% of United States of America (USA) of full-time students (McFarland et al., 2017) work part-time during their studies. In the UK this proportion has been reported as high as 77% of undergraduates working part-time and 14% working full-time while studying (Endsleigh Student Survey, 2015).

There was a smaller group of students (17%) who reported working for greater than 20 hours per week. Many of these students also anticipated spending more than 20 hours per week engaging in social activities, and almost all expected academic activities would require more than 30 hours per week. Almost all students working long hours indicated higher awareness of their learning strengths, which would allow for more effective study time. They also indicated large periods of time spent weekly on social activities, primarily of a non-face-to-face nature. This combination suggests that
high-achieving students who expect to work long hours are likely to value balance and possess excellent time management skills to be able to fit work, study, and social activities into weekly time. They demonstrate optimal motivation, high self-efficacy, a productive mindset, good social skills and high degree of organization (Millward, Rubie-Davies, & Wardman, 2018). This data does not speak to the academic outcomes of these students. For students reporting long employment hours it was not uncommon that they accepted a lack of sufficient rest because they were endeavoring “…to complete all tasks along with making sufficient money at work” (Student 11). Students in this situation will potentially also apply coping options involving reduced academic achievement expectations, missed classes, and limited focus on some coursework (McInnis & Hartley, 2002).

In addition, students working more than 30 hours per week were highly likely to possess unrealistic expectations about both the quantity and modalities of support afforded them by the university.

Australian students are recognized as some of the least financially stable in the world and need to work during their undergraduate studies far more than their international counterparts (McInnis & Hartley, 2002). The Australian Bureau of Statistics indicates that for 61% of these students, this was their main source of income (Australia Bureau of Statistics, 2013). The large proportion of students engaged in some form of paid employment are the result of Australian government economic policies affecting tertiary financial support (Pearson & Chatterjee, 2004) and employer expectations of demonstrated work experience (McInnis & Hartley, 2002), thereby creating a unique set of values and expectations. These circumstances are also not dissimilar to those reported from UK students enrolled in post 1992 institutions (Money et al., 2017). The lack of financial resources has also been cited as a contributing cause for the development of sophomore slump and second-year attrition in American cohorts (Noel-Levitz, 2013), thus the need for work during the second year may be necessary for continuation.

In this study, 45% of students also recognized the value of gaining experience and community integration through volunteering activities. Those volunteering were also mostly working less than 20 hours per week in paid employment. The proportion of respondents is lower when compared with the 63% uptake in the UK (Holdsworth & Brewis, 2014) but higher than in the US where recent declines show uptake is around 25% (Grimm & Dietz, 2018).

**Sub Theme 2: Social Activities**

Students reported participating in a variety of social activities whether in person or online. For the majority of students the amount of time spent per week on any individual activity was less than 14 hours per week. The main in-person activities were spending time with family and friends or at work. Non-face-to-face interactions were largely through the use of social media platforms, gaming, and watching television.

Evaluation of expected social activity data indicated that the majority of students (71%) expected to engage in a combination of face-to-face and in-person social activities for less than 40 hours per week. Many of the students in this group demonstrated heightened awareness of their learning capabilities and expected to spend greater than 30 hours per week on academic activities (55%). Of those expecting to spend greater than 20 hours per week engaged in social activities, most were not anticipating needing to work at all or working relatively short hours (less than 10 hours per week). They also expected fewer family responsibilities and shorter commuting times (less than 5 hours per week). However, the majority of the group also indicated that they expected to use a variety of support resources, particularly from the top six categories indicating more realistic expectations of support.

Overall, 68% of respondents anticipated that the demands of the second year would impact their social life, e.g., “My social life will be compromised” (Student 31), with changes anticipated including “less free time” because “the workload of study leaves no time to socialize” (Student 13) primarily due to “…lots of assessment” (Student 19, 34, 37) and the “…need to study on weekends” (Student 29). In addition, an acknowledgement that some social activities in particular would be less possible:

I will have to sacrifice many elements of my social life, such as going to parties and talking to other people due to the massive amount of study I have to do in order to complete assessment tasks successfully. (Student 4)

For those who didn’t anticipate an impact on their social life (32%), it was because they acknowledged a lack of one, e.g., “[I] didn’t have much of one [social life] to begin with (ha ha)” (Student 3), or they “…chose to keep a low level of social life, as university is more important to me” (Student 39). The value of social engagement was demonstrated by some students in that they expected to incorporate activities of this nature. “I will find balance, and still have a social life” (Student 8), and “I will plan around study to make sure the little socializing that I do still enables me to keep on track with my study” (Student 9).

For second-year students in the cohort of interest there appear to be many competing demands with students juggling work commitments, study commitments, and social activities. Students
demonstrated recognition that to be able to successfully complete academic activities, some compromises would likely be necessary. The most commonly reported compromise was rest, with just 33% of students expecting to gain sufficient rest in their second year and with lack thereof anticipated due to the anticipated elevation in the workload associated with second year and trying to maintain a work/study/life balance. Some students were expecting to find an alternative compromise by using peer group study as both a social and academic time with “...most time spent with friends at uni...studying” (Student 37) with “...most friends...in the same course” (Student 35), or by using “...time socializing [in the] network” (Student 27).

Conclusion

Expectations are formed from prior cultural experiences (Maunder et al., 2013), including those of first year (Pattengale & Schreiner, 2000a), coupled with clearly articulated requirements from faculty (Dunlap & Lowenthal, 2013) and the institution (Felten et al., 2016). A clear understanding of student expectations of their second year of undergraduate experiences enables the capacity to provide effective guidance to support student success through understanding driving factors for contradictory behavior (Stewart et al., 2014). Yet within the nascent understanding of second-year academic experiences, there is limited understanding of second-year science undergraduate expectations.

In this study, second-year Australian science undergraduates demonstrated appropriate expectations at the beginning of the year regarding many, but not all, dimensions of their second-year experience. The findings indicated that most respondents had appropriate expectations associated with the escalated nature of content and assessment, combined with learning activities that result in elevations in workload required in a second-year level academic program. Many respondents thought it would be difficult, and some welcomed this challenge with the recognition that more effort may be required to be academically successful in this year. Respondents also expected they would face challenges in endeavoring to balance the various aspects of their whole lifestyle, with attempts to meet their necessary, personal study workload requirements while working or having other commitments.

Areas where a mismatch between student’s pre-conceived ideas of second year and the realities were also identified. These included the type of learning resources and support mechanisms available to them in their second year. Further disconnection between the modalities of academic support available and preferred support forms were identified. These factors were also impacted by a lack of awareness of suitable learning approaches. Inappropriate expectations potentially place students at risk. Areas of mismatch are concerning, given that previous reports from non-discipline-specified second-year cohorts indicate poor student experience due to unrealistic expectations leading to a decrease in academic performance and satisfaction (Ruffalo Noël-Levitz, 2017). The dissatisfaction of second-year experiences is a key contributor to intentions to withdraw (Gahagan & Hunter, 2006), particularly when coupled with the common second-year issue of poor self-efficacy (Thompson et al., 2014; Willcoxson, 2010). Further that these were common characteristics associated with the “sophomore slump” phenomenon (Juillerat, 2000) that may lead to attrition.

With the diversity of any given university undergraduate student cohort, those seeking to enhance the second-year student experience in any discipline would be advised to guide students to hold appropriate expectations around changes to curriculum, assessment standards, and academic support for learning. The paucity of understanding regarding second-year student expectations and experiences, particularly in the science disciplines, warrants continued study to deepen our understanding of their progression during and beyond the second-year level. Information pertaining to different discipline expectations and learning cultures of a country could provide further context in the future. This understanding will help to ensure effective setting of expectations and alignment with a university culture of learning to enhance the student experience and facilitate student progression and success.

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Undergraduate Expectations of Science Programs


Smith, B. M. (2002). Sophomore retention: The common characteristics of academic and social integration of students in selected Christian
colleges (Doctoral dissertation). State University of New York at Buffalo, Buffalo, NY.


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Understanding Instructors’ Behaviors in Using Facebook for Educational Purposes

Ünal Çakıroğlu, Melek Atabay, and Merve Aydin
Trabzon University

Drawing on the Technology Acceptance Model (TAM), this qualitative study examines instructors’ behaviors in using Facebook in their teaching practices. Participants were ten instructors enrolled at various departments of universities in Turkey. Interviews were analyzed in order to understand the instructors’ Facebook use for educational purposes. Results indicated that access, management, cooperation-socialization, sharing, and motivation were the main factors affecting instructors’ behaviors in using Facebook for educational purposes. While usefulness was prominent, ease of use was also frequently addressed in terms of TAM elements. Considering TAM, some external factors such as students’ use and social pressures were also influenced instructors’ intention and attitudes toward using Facebook in their classes. The implications of notable findings and directions for future studies are discussed.

Facebook use among young people has attracted considerable attention in education because social connections provided by Facebook revolutionized the ways of communication and interaction (Saini & Abraham, 2019). Facebook supports collaboration through the social constructivist approaches of learning (Schrader, 2015). Thereby, Facebook has enormous demands by institutions looking for innovative teaching practices (Kolek & Saunders, 2008; Selwyn, 2009; Shiu, Fong, & Lam, 2010; Tapscott & Williams, 2010). While prior work has highlighted its potential as a powerful learning tool (Badge, Saunders, & Cann, 2012), a need still exists for more research for better understanding how it can be integrated into the instructional process. When dealing with the integration of new technology into the educational contexts, “acceptance” comes to the front among the stakeholders: instructors, students, administrators and others (Chen, Looi, & Chen, 2009; Murray & Olcse, 2011). In this context, we used the Technology Acceptance Model (TAM) as a theoretical framework to understand instructors’ behaviors in using Facebook for educational purposes. Exploring instructors’ behaviors in this process considering technology, people, and learning environment may guide instructors or instructional designers to follow a systematic way.

Educational Use of Facebook

Facebook allows users for communicating, information sharing, creating a friend list, producing photo albums, forming or applying to social interest groups, and playing different kinds of online games (Oeldorf-Hirsch & Sundar, 2015; Shen, Brdiczka, & Liu, 2015). Users can engage in these activities by using walls, pokes, status, photos, news feeds, tags, marketplaces, instant messages, and videos. It offers various options to people sending messages, chatting, tagging on photos, writing on walls, joining groups, creating new groups, sharing ideas in discussions, and adding applications (Judd, 2014; Mazman & Usluel, 2010). Researchers argued the open nature of the Facebook group provides a convenient platform for collaborative learning by sharing information via documents, pictures, links, etc. to students (Miron & Ravid, 2015), discussion on course topics and getting feedback from peers (Fordham & Goddard, 2013; Mason, 2006; Mazman & Usluel, 2010). Wang, Woo, Quek, Yang, and Liu (2012) also pointed out that closed groups in Facebook can be used as LMS. In the studies focusing on the educational use of Facebook, communication, collaboration, material, and resource sharing were found having a significant positive effect the learning outcomes (Amin, Naqshbandi, Moghavvemi, & Jafar, 2015; Sánchez, Cortijo, & Javed, 2014).

Researchers argued that while some faculty members have positive views about the use of Facebook to enhance the learning process and some other studies conclude that faculty are reluctant to incorporate it into their teaching strategies (Roblyer, McDaniel, Webb, Herman, & Witty, 2010; Won, Evans, Carey, & Schnitka, 2015). Since Facebook is mostly used among university students, the effective implementation of it depends mostly on instructors’ positive intentions, which are largely shaped by their actual experiences (Sadaf, Newby, & Ertmer, 2016). Although there is a significant research effort directed toward learners’ perspectives or behaviors about accepting Facebook for educational purposes, there is little research investigating instructors’ behaviors in this acceptance process.

Various factors can influence instructors’ Facebook use in their classes. On this point, Manca and Ranieri (2016) reported that even if instructors have easy access to information technologies, they mainly use these technologies for personal purposes and they do not adopt these to their classrooms. As adults, instructors use Facebook in their life for professional purposes, but they may resist or reject using it in classrooms. Users’ age may also influence use of Facebook for personal needs or educational purposes (Greenhow & Gleason, 2014). Therefore, it is important to understand instructors’
experiences and support to use it effectively for educational practices systematically. In this sense, the Technology Acceptance Model (TAM) can be used as a theoretical framework in order to understand how instructors adopt Facebook for educational purposes.

Theoretical Framework

With regard to the TAM model, in this study an attempt was made to present the relationships between instructors’ current use of Facebook for educational purposes and the affordances of Facebook. Figure 1 briefly describes the acceptance process TAM model (Davis, 1989).

In this model, attitude is considered as a mediator between the perceptions about usefulness, ease of use, and intentions. The ease of use and usefulness were expected to influence attitude and, in turn, impact the actual use of a system or a service. The theory also posits that behavior intention has a positive relationship between the actual use of the system (Davis, 1993).

Perceived Usefulness

Prior studies determined usefulness as the desired value for the accomplishment of any task by using new technology effectively and successfully (Kim & Shin, 2015). In the studies on Facebook use, usefulness is considered as the degree to which users think Facebook helps them to achieve some tasks for educational purposes (Mazman & Usuel, 2010).

Ease of Use

Ease of use is defined as the degree of a particular system to be free of effort (Davis, 1989). Thompson, Higgins, and Howell (1991) defined ease of use as complexity and the degree to which a system is
perceived as relatively difficult to understand and use. In this study, ease of use is considered using Facebook features easily without much effort and less knowledge for educational purposes.

**Attitude**

Attitude is made up of emotion, cognition, and intention. It refers to evaluations of individuals have regarding people, places, objects, and issues in affective and cognitive dimensions (Petty & Brinol, 2010).

**Intention**

The intention is defined as a determination to do a specified action, which in turn is determined jointly by individuals’ attitudes, beliefs, motivation (Bock, Zmud, & Kim, 2005) and user’s effective feelings (Dumpit & Fernandez, 2017). Grandon, Alshare, and Kwan (2005) indicated that TAM elements were found to have an indirect effect on students’ intentions through perceived ease of use.

In prior studies the contexts, aims, tools, time, or other variables related to the educational use of Facebook were interpreted within the TAM framework. For instance, Mazman and Usluel (2010) constructed a model for educational usage of Facebook. The researchers examined the factors that may affect Facebook’s use and reported that usefulness, ease of use, social influence, facilitating conditions, and community identity played an influential role on Facebook use.

From a methodological point of view, prior research focusing on both Facebook and TAM generally use quantitative analysis. While some of the studies were focusing on scale developments, some others measured the acceptance level of participants via survey data. It was also determined that the studies were mainly carried out with higher education students and the use of quantitative methods (Kang & Shin, 2015; Kwon, Park, & Kim, 2014; Raza, Qazi, & Umer, 2017; Sánchez et al., 2014).

**Need for the Study**

Instructors’ values, needs and past experiences are important in the adoption of Facebook. In addition, instructors may be able to communicate, collaborate, and exchange information through Facebook. This may shape instructors’ perceptions or mental efforts that can affect their attitudes towards using Facebook for educational purposes. Despite some studies that have focused on perceptions, attitudes, and beliefs toward the use of Facebook for educational purposes, the conditions under which it is accepted by instructors remain unclear. Therefore, this study addressed instructors’ perceptions about the use of Facebook and the ways they used it. Unlike others, this study focuses on various features of Facebook and explores instructors’ experiences in using Facebook for educational purposes via TAM. Dealing with the qualitative data, the study mainly puts an emphasis on the answers for the questions beginning with "How?" and the relation to instructors’ behaviors.

Thus, the following research question is formulated: “How do instructors use Facebook for educational purposes?” The research reveals the perceptions of the instructors with regard to their experiences and determines the relationships among ease of use, usefulness, intention, and other external variables.

**Methodology**

Considering the methodological approaches in prior studies, this study was carried out in an explorative nature using a qualitative research design. The study can be considered as an exploratory case study in order to investigate how faculty members can integrate Facebook into their lessons.

**Participants**

With different demographic characteristics from various branches, ten instructors who teach various courses at a public university in Turkey participated in the study. The participants were chosen by using a purposeful sampling method. We selected the participants considering their Facebook use in the courses in various extents and for various purposes. One of the criteria for recruiting the instructors was their experience in using Facebook. Some of the participants are in branches of computing, and they were somewhat accomplished in use of Facebook in the class. For instance, two of the instructors in the Instructional Technologies Department are teaching courses fully via social networks, or they use these for assisting their courses. Besides, some of their courses are related to integrating the technologies in the class. Other instructors in computer science naturally have high computer and technology literacy. The mathematics and social science instructors were also interested in using emerging technologies in their classes. That is to say, the instructors who are outside of the field of computer science and those who are more eager and curious about technological changes were recruited. The demographic characteristics of participants are exhibited in Table1.

**Data Collection Tool**

Interviews were the main data collection tool in this study. The interview questions were aimed to
reflect educational purposes such as sharing, communication, evaluation, collaboration, motivation for reasons of educational use on Facebook. Each interview was conducted for approximately 20 minutes and recorded with a voice recorder. After the interviews, the records were transcribed, and the instructors asked again to check whether the transcripts cover the observations that they made.

### Data Analysis

The qualitative data were analyzed through content analysis. We created the categories which demonstrate the behaviors in different forms by using different tools for different purposes. To determine the themes (purposes of Facebook use) and codes, two coders read the instructors’ responses carefully. The coders reached a sense of the scope of answers and the possible codes to identify themes by reading and re-reading the qualitative data. The relationships, similarities, and differences among the codes were revealed. We coded the statements individually and then discussed these together until we come to an exact agreement about the themes, the codes, and their relationships with TAM components. In this context, the features of Facebook were carefully associated with TAM with regards to the instructors’ perspectives. In this sense, the themes about the purposes of educational use were addressed through the ease of use, perceived usefulness, attitude, and intention. It was difficult to link the features of the Facebook and the instructors’ purpose of use for educational purposes through the lens of TAM. The frequencies of the codes belonging to the themes which were obtained as a result of the analysis were calculated, and these frequency values are shown in the table as high, average, or low. These frequency values analyzed according to each code are expressed as high for codes 6-10 times, average for 3-6 times, and low for 0-3 times. The purposes of Facebook use are summarized in the following tables where EU (Ease of Use) and PU (Perceived Usefulness) are considered as low, average, and high values. Table 2 shows the use of Facebook in terms of sharing.

### Results

Seven main themes (purposes)—sharing, motivation, cooperation-socialization, assessment, communication, management, and access—were extracted from interview data. The following tables summarize the purposes and the factors about Facebook use for educational purposes through the lens of TAM.

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Contribution of Facebook</th>
<th>EU</th>
<th>PU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharing</td>
<td>Sharing instructional material (text, image, audio, video)</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Sharing schedule</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Storing instructional material</td>
<td></td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>Time and space flexibility in sharing</td>
<td></td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>Uploading files (easy)</td>
<td>Average</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Uploading files (takes more time)</td>
<td>Average</td>
<td></td>
</tr>
</tbody>
</table>

### Table 1

**Demographic Characteristics of Participants**

<table>
<thead>
<tr>
<th>Instructor (I)</th>
<th>Year of Experience</th>
<th>Using Facebook for (years)</th>
<th>Branches</th>
</tr>
</thead>
<tbody>
<tr>
<td>I1</td>
<td>11</td>
<td>2</td>
<td>Instructional Technologies</td>
</tr>
<tr>
<td>I2</td>
<td>12</td>
<td>2</td>
<td>Instructional Technologies</td>
</tr>
<tr>
<td>I3</td>
<td>7</td>
<td>3</td>
<td>Social Sciences</td>
</tr>
<tr>
<td>I4</td>
<td>9</td>
<td>3</td>
<td>Mathematics Education</td>
</tr>
<tr>
<td>I5</td>
<td>5</td>
<td>5</td>
<td>Computer Sciences</td>
</tr>
<tr>
<td>I6</td>
<td>10</td>
<td>7</td>
<td>Computer Programming</td>
</tr>
<tr>
<td>I7</td>
<td>11</td>
<td>4</td>
<td>Computer Programming</td>
</tr>
<tr>
<td>I8</td>
<td>11</td>
<td>4</td>
<td>Instructional Technologies</td>
</tr>
<tr>
<td>I9</td>
<td>18</td>
<td>4</td>
<td>Science Education</td>
</tr>
<tr>
<td>I10</td>
<td>13</td>
<td>4</td>
<td>Management Information Systems</td>
</tr>
</tbody>
</table>

### Table 2

**Use of Facebook in Terms of Sharing**

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Contribution of Facebook</th>
<th>EU</th>
<th>PU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharing</td>
<td>Sharing instructional material (text, image, audio, video)</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Sharing schedule</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Storing instructional material</td>
<td></td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>Time and space flexibility in sharing</td>
<td></td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>Uploading files (easy)</td>
<td>Average</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Uploading files (takes more time)</td>
<td>Average</td>
<td></td>
</tr>
</tbody>
</table>

The relationships, similarities, and differences among the codes were revealed. We coded the statements individually and then discussed these together until we come to an exact agreement about the themes, the codes, and their relationships with TAM components. In this context, the features of Facebook were carefully associated with TAM with regards to the instructors’ perspectives. In this sense, the themes about the purposes of educational use were addressed through the ease of use, perceived usefulness, attitude, and intention. It was difficult to link the features of the Facebook and the instructors’ purpose of use for educational purposes through the lens of TAM. The frequencies of the codes belonging to the themes which were obtained as a result of the analysis were calculated, and these frequency values are shown in the table as high, average, or low. These frequency values analyzed according to each code are expressed as high for codes 6-10 times, average for 3-6 times, and low for 0-3 times. The purposes of Facebook use are summarized in the following tables where EU (Ease of Use) and PU (Perceived Usefulness) are considered as low, average, and high values. Table 2 shows the use of Facebook in terms of sharing.
Almost all respondents identified that they would continue to use Facebook if the students also conducted the tasks. In this sense, 17 expressed, “It is true that students also participated in the course and their peers. Therefore, I would like to continue to use Facebook. However, I would not participate in discussions with the participants on Facebook.”

Besides, instructors stated that the message feature of Facebook, such as “has seen the message by…,” was useful about the students’ excuses. Some of the instructors remarked that this motivates students. In this regard, 110 commented that the contributions of the messaging system maintain motivation: “I can track who has access to tasks via Facebook. Students cannot provide excuses such as, ‘I forgot to do the work,’ or ‘I cannot access the work.’ This directs students to be extraneously motivated.”

One main theme extracted from the instructors’ perspectives in using Facebook for educational purposes is cooperation and socialization. The instructors’ perspectives are shown in Table 4.

More than half of the instructors stated that the notification of status, comments, likes, answers to comments, and discussions of subject features are easy with Facebook. Most of these features are considered as facilitators for instructors’ support for the course. In this sense, 17 addressed the peer support in Facebook: “I would like to discuss students about the tasks by writing comments. This allows students to complete shortcomings about the subjects.” In addition, instructors pointed out that peers could also share information, ask questions, and participate in discussions with the participants on Facebook.”

Most of the instructors indicated that Facebook allows the students to share their course materials easily because it provides time and space flexibility. In this context, 15 expressed commented, "I used the file-sharing feature. I shared pdf documents, homework instructions, and videos. I think that Facebook is useful if you need to share information, ask questions, and participate in discussions with the participants on Facebook.”

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Contribution of Facebook</th>
<th>EU</th>
<th>PU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation</td>
<td>Allows students to participate actively in the tasks</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Helps to develop positive attitudes for the course</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prevent the disruptions due to student excuses</td>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>Enjoy the course period</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Connect with the instructor</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Feel comfortable in the group</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Feeling ready for the classroom</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increasing attention to the out of school tasks</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Boredom from continuously incoming messages</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Contribution of Facebook</th>
<th>EU</th>
<th>PU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooperation-Socialization</td>
<td>Allows studying collaboratively</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Create an environment for discussions in the tasks</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Increase socializing</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Allows instructors to support the students</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increase peer support</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Provide a setting to build a learning community</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control students who did not participate in the cooperation</td>
<td>Low</td>
<td></td>
</tr>
</tbody>
</table>
collaboratively work on their tasks, support each other, and discuss the tasks. Instructors found it useful that Facebook provides social interaction between peers. In terms of social interaction, I3 addressed that Facebook is useful for creating a positive atmosphere in the class. He noted, “Facebook has positive influences because it helps students to fuse together and help each other in their problems.”

One main theme for the educational use of Facebook is assessment. Table 5 shows the instructors’ perspectives on assessment.

One interesting finding about assessment is that it was difficult to use Facebook for individual evaluations and this difficulty negatively affected instructors’ intention of Facebook use for assessment purposes. In this sense, I3 stated, “Facebook is not as powerful as LMS…Assignments can be analyzed separately and the weekly assignments can be downloaded collectively.” Similarly, I1 identified that: “I have downloaded collectively. Facebook provides social interaction be-
tive work on their tasks.

Almost all of the instructors stated that they use Facebook for communication. It has instant messaging, viewing of the delivery of messages, and commenting, all of which can be easily used. In this line, I4 observed, “I prefer to use Facebook in my lessons because instant messages are useful, and the messages can be seen by everyone in a short time.” Some of the instructors noted that they could find the students at any time, check whether messages were received, and make announcements, so the students become more active in the instructional processes. According to I7, “Owing to Facebook's notification of users, all of the students were informed.” A few numbers of the instructors emphasized that another tool is required to transmit private messages, and Facebook is not appropriate for this purpose. I9 pointed out, “I used the Messenger, but it was not appropriate for private messages, so you need to install an additional application to messaging.”

Table 5

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Contribution of Facebook</th>
<th>EU</th>
<th>PU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>Allows formative assessment</td>
<td>Average</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enhances summative assessment</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Provides environment for peer assessment</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Facilitates self-assessment of students</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Facilitates self-assessment of instructor</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Allows giving instant feedback</td>
<td>Average</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Allows using survey for information</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Need another assessment tool</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evaluating products of students is difficult</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Individual student evaluation is difficult</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Challenge in following the collaborative actions in the projects</td>
<td>Average</td>
<td></td>
</tr>
</tbody>
</table>

Table 6

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Contribution of Facebook</th>
<th>EU</th>
<th>PU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>Increase student-student, student-teacher interaction</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Allows communication in out-of-the course hours</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Allows textual, audio, video communication</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Allows students to be active out-of the class</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Be aware of the updates about the course</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Another tool is required for instant communication</td>
<td>Low</td>
<td></td>
</tr>
</tbody>
</table>
Instructors’ perspectives about the management theme are presented in Table 7.

Table 7
Use of Facebook in Terms of Management

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Contribution of Facebook</th>
<th>EU</th>
<th>PU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>Allows observing the students’ actions</td>
<td>Average</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Allows time management</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increase class management</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Facilitate to direct the flow of course</td>
<td>Average</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prevent the disruption of the course due to possible student excuses</td>
<td>Average</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Course organization</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Boredom of the students due to being followed</td>
<td>Low</td>
<td></td>
</tr>
</tbody>
</table>

Table 8
Use of Facebook in Terms of Access

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Contribution of Facebook</th>
<th>EU</th>
<th>PU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access</td>
<td>Allows practical and easy access</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Able to improve the IT skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Allows using via mobile</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The familiarity of most of the students</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Easier than to set up a website</td>
<td>Low</td>
<td></td>
</tr>
</tbody>
</table>

Overall, instructors were asked the reasons for using Facebook for educational purposes, and it was found that the instructors used Facebook in their courses for sharing, communication, motivation, cooperation, socialization, management, and access. Particularly, sharing and communication were prominent among the purposes of Facebook use for educational purposes. One reason why instructors use Facebook for sharing purposes is using information sharing features easily and quickly. The fact that Facebook allows uploading and downloading different types of files easily does this via mobile devices positively influenced the intention of instructors to use Facebook in their lessons. At this point, Facebook stands out with ease of use at the organization and management of the course. It was surprising that some instructors seek another application for assessment. Considering Facebook as a media, some external factors also play an important role in instructors' preference. Instructors stated that they would continue to use Facebook for educational purposes if the students continue to use it. It is noteworthy that the development of Facebook tools also affected the intention to use for this purpose.

Discussion

Researchers argue that social media should be seen as an educational tool by instructors to engage students to share their ideas both in and out of the classroom (Neier & Zayer, 2015). The main themes found in this study are somewhat similar to prior studies which found
that social network tools support educational activities by providing interaction, collaboration, active participation, information, resource sharing, and critical thinking (Ajjan & Hartshorne, 2008; Mason, 2006; Selwyn, 2007). Focusing on the rationales that are explaining the instructors’ uses of Facebook, we implemented TAM to provide a more holistic way of understanding the instructors’ perspective.

With regard to professional experiences, while some of the instructors’ purposes were similar, some were different. For instance, instructors with 10 years or fewer in professional experience (13, 14, 15 and 16) use Facebook mostly for sharing material, making announcements, communicating with students, and dealing with related course training factors. Similarly, instructors with 10 years or more of professional experience (11, 12, 18) also use Facebook for material sharing and announcements. In a somewhat different way, the more experienced instructors also use Facebook for providing homework, offering feedback, and monitoring students’ actions for the course. One remarkable finding is that some of the experienced instructors used the closed Facebook groups for the class through the whole 4-year process. Thus, it can be inferred that, experienced instructors can use Facebook for dealing with course-oriented situations. Independent from the experiences of their professions, instructors pointed out that Facebook is easier than other tools, and it that can be regarded as an indicator that can positively affect to the instructors’ attitudes and intentions for using it in their classes.

Instructors’ Perspectives Regarding Educational Purposes

Sharing

In accordance with the prior studies, this study indicated that sharing and interaction are two main purposes of instructors’ Facebook uses. It is argued that social networks act as a key channel in learning environments for knowledge sharing (Cadima, Ojeda, & Monguet, 2012; Hung & Cheng, 2013). In this study, Facebook was considered useful for sharing resources and influenced users’ intention to use Facebook in their teaching process. Instructors found the affordances of Facebook valuable in serving students by exchanging ideas and information about their common interests. In this line, this study was in accord with the prior studies suggesting the use of Facebook for sharing materials, projects, useful resources, and documents in the form of texts, voice, videos, photos, and links to external resources (Sharma, Joshi, & Sharma, 2016). In addition, the flexibility of sharing anywhere and anytime and the ease of announcements to students in a short time were both found valuable. In this study, the instructors’ perspectives confirmed the findings of Doğan and Gülbahar (2018) that one useful way of sharing was addressed as creating groups. Hence, creating groups on Facebook facilitated following activities, announcements, and comments, as well as for communication and social support at any time. Only a few students did not use Facebook; however, the instructors created groups on Facebook without considering this negative situation. The archiving (storage) of shared materials was found useful for reuse. File uploads that were usually shared—with the exception of large files—made them easy to use, which was an important reason for instructors’ acceptance. In terms of sharing some of the instructors negatively addressed the time for uploading large files and difficulties in downloading assignments. In addition, the lack of file system of Facebook negatively affects the intentions of the tutorials using this application.

Collaboration and Socialization

The results of this study revealed that Facebook can promote collaboration in the learning process by connecting students and instructors. Studies documented that Facebook in student-student, student-teacher, student-content, teacher-teacher, and teacher-content interactions positively influenced learning (Ainin et al., 2015; McCarroll & Curran, 2013). Similar to prior studies joining various educational groups, as well as in sharing, Facebook also has been found useful for collaboration and creation of a comfortable classroom (Ainin et al., 2015; Mazman & Usluel, 2010; Milosevic et al., 2015; Sánchez et al., 2014). In this study, instructors’ perspectives about the discussion environment confirm the idea that Facebook can facilitate collaboration and communication that allow students to get engaged with the tasks. In the discussions, the support for students can contribute to meaningful learning and positively influenced their intention to use it.

One other function of Facebook was social support (Cadima et al., 2012). In this study, instructors believed that Facebook were able to facilitate students’ socialization. Gettman and Cortijo (2015) examined students’ acceptance of using Facebook for academic purposes and found that Facebook is a social medium instead of an academic tool. In this study, socialization was one of the prominent reasons that directed instructors to use Facebook; however, they did not think that their students believed it as only a social medium. As opposed to the findings of Gettman and Cortijo (2015) students felt uncomfortable interacting with instructors on Facebook; in this study, instructors believed that communication is easy when using Facebook for instruction.

Assessment

Facebook is also used for different activities such as discussion, peer assessment, and the sharing of individual
experiences or research summaries (Gülbahar & Doğan, 2018). While the formative and summative assessments were found useful among instructors, one prominent finding is that instructors’ perceptions of using Facebook for self-assessment for instructors and students. The ease of use of the survey feature of Facebook has come to the fore for the assessment issue. However, instructors considered that the features of Facebook are not capable of evaluating reports or projects provided individually or collaboratively. One reason for this may be their expectations about assessment experiences are similar to the face-to-face learning. Although instructors found Facebook useful for providing products together, exchanging knowledge or experiences, and also providing information about participation status for the assignments, some of the instructors noticed the lack of statistics about participants’ actions. It was one of the indicators for usefulness that negatively influenced instructors’ intention of using Facebook for educational purposes.

**Communication**

Facebook groups have potential to connect instructors and students when traditional forms of communication are limited (Bowman & Akcaoglu, 2014). Similar to this idea, this study confirmed that Facebook facilitates communication between students and instructors, and it and provides participation in class discussions. In this study instructors perceived that the students learned how to use social media tools effectively for an educational context in a social learning process. In accord with Sanchez and colleagues (2014), most of the instructors in this study perceived that Facebook empowered student-teacher communication easily.

**Management**

Instructors believe that management in terms of time and classroom was useful. The study has some inconsistencies about the management issue with some prior studies, and it was somewhat surprising that instructors had positive ideas about the management and organization process. For instance, Kalelioğlu (2017) considered management as a problem in which participants cannot be monitored directly. Manca and Ranieri (2016) also pointed out that instructors find it difficult to manage the instructional processes through Facebook. However, in this study instructors found it useful that they could observe students’ actions in or out of class activities. An interesting result was instructors intended to use Facebook regarding the senses of students, such as feeling boredom.

**Access**

Facebook provides access to content easily and quickly, and at anytime and anywhere (Doğan & Gülbahar, 2018). In this study, the fact that the students can access to Facebook as a learning tool anywhere and anytime was seen as one of the important reasons why the instructors use Facebook. Similarly, some other researchers reported that one major contribution of Facebook to the educational context is providing easy student access for certain class activities at any time so that students have the chance to repeat any or all parts of a course (Wang, 2012).

**Motivation**

According to O’Mahony and Garavan (2012), it is important that social media is just a tool that instructors can use to motivate students and to enhance the teaching process. In this study, some of the instructors believed that students developed positive attitudes to the course via Facebook and this triggered the active participation in the tasks. This also had a positive effect on instructors’ willingness to create a positive classroom environment. Focusing on engagement, Mazer, Murphy, and Simonds (2007) studied the impact of teachers’ self-disclosure on Facebook and found similar effects of Facebook on student motivation, affective learning, and classroom climate. Similar to some prior studies, instructors in this study also expressed that students can study at their own pace so that their stress is reduced while their satisfaction may increase (Manca & Ranieri, 2016).

Overall, Facebook studies have a general assumption that the strength in using Facebook to support and facilitate the instruction is its ability to support social constructivism. In this sense, Schrader (2015) emphasized that constructivist concepts blend with technological affordances provided by social media the technological affordances provided by social media. This study has not only confirmed the technological aspects of Facebook in the acceptance process but also pointed out some other human-based factors that are exploited in the following section.

**Evaluation of Instructors’ Perspectives through the Lens of TAM**

According to Davis (1989), perceived usefulness is considered to have a direct effect on the intention to use innovations. Perceived usefulness in this study was a prominent component for adopting Facebook in the courses. Similarly, in a relational study, Mazman and Usluel (2010) determined usefulness is the most important factor in predicting the adoption of Facebook. Also, Sánchez and colleagues (2014) in a quantitative study concluded that perceived usefulness, perceived ease of use, social influence, facilitation of conditions, and community identity have significant positive influences on the adoption of Facebook.
One of the most common positive effects of using Facebook for education is the enhancement of interaction among students and between students and instructors (Sánchez et al., 2014). In this study, according to instructors’ perspectives, facilitating factors such as the help menu or support services were found as relevant drivers of Facebook adoption. Hence, in the context of knowledge construction, group creation was perceived easy for Facebook adoption. Similarly, in this study, students’ consciousness and awareness somewhat influenced instructors’ perspectives in terms of usefulness. Instructors’ perspectives indicated that they learned how to use social media tools effectively for the educational context in a social learning process. Thus, through the principles of Davis (1989), almost all features of Facebook are not perceived as new for the instructors. Only, in some cases, such as the assessment process, they have limited knowledge about using an appropriate tool of Facebook. Instructors considered that allocating roles for the users about the sharing were easy and positively related to instructors’ perspectives about the intention of Facebook use. Positive relationships between usefulness and ease of use were also noticed in this study.

As noticed in the TAM model, some external factors also considered as influential were the perceptions of both ease of use and usefulness. Social influence was considered the most important factor in predicting the adoption of Facebook (Sánchez et al., 2014). In this study, it was somewhat different in that instructors perceived students’ use of Facebook as a role in their use of Facebook. That’s why influence of other people also becomes an important factor as an external factor. In addition, technical problems could be seen as non-motivational factors for students and instructors in the current study, which could cause a loss of time. Some features, such as the backing up of information or the uploading or downloading of large files, also appeared to be factors for adopting it in the instructional process.

While the TAM model suggests that attitude is a strong indicator of the behavioral intention, in this study none of the instructors’ perspectives were focused directly on attitude. One reason for this result may be that instructors’ perceptions are generally focusing on the cognitive aspects of Facebook use rather than on the affective ones. Overall, the results indicated that instructors’ perspectives about access, management, cooperation, and socialization were frequently focused on usefulness and sharing, and motivation was identified in both usefulness and ease of use. The relationships between the TAM constructs found in this study were summarized in Figure 1.

This research is not exempt from limitations. The study was exploratory in nature and is by no means for generalization. The focus of the study was on Facebook only, and the other social networking sites may have a different impact on instructors’ perspectives. The purposeful selection of the participants was based on the idea that they use of Facebook for various learning contexts, learning materials, or learning objectives (Niu, 2017). This study gathered data from instructors who were teaching a limited number of courses via using Facebook. Thus, additional research is required to better understand the perspectives for using Facebook.

Conclusions and Implementations

This study addressed potential links between purposes of instructors’ use of Facebook for instructional purposes and Facebook’s affordances. Although Facebook was not originally designed for educational purposes, it has a great potential to enhance the learning experience. The results indicate that when it is properly used, Facebook can improve the instructional process by promoting communication, interaction, collaboration, and resource sharing. While usefulness was prominent, ease of use was also frequently addressed in terms of TAM elements. Instructors’ perspectives about access, management, and cooperation/socialization frequently focused on usefulness, sharing, and motivation, which were identified in both usefulness and ease of use. The positive results reflect some clues that instructors take the affordances of Facebook in the cognitive domain into consideration.

While social networks are still changing, instructors inevitably use them in their courses. In this study, the “social” affordances of Facebook are related to the ease of use, and the “network” aspect is generally found related to “usefulness”. Attitudes were indirectly influenced by the ease of use and usefulness factors. Social influences and some technical affordances were external factors influencing on the adoption process.

This study also confirmed the prior quantitative relational results with its qualitative nature. Its major contribution is to understand the rationale for the main purposes of using Facebook for education. Based on the results, instructors may take advantage of the cognitive aspects of Facebook. With the rapid growth and use of social media in the educational context, we hope that instructors can have experiences of various social networks together with proper pedagogical approaches. Consequently, this research study was qualitative in nature and is by no means meant for generalization. Future studies can include more instructors, which would result in larger and more representative samples. This study, with the insight for using Facebook in the future, is hoped to contribute to the efforts to adapt social networks into the classrooms.

References


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Towards Personal Transformation: Faculty Social Justice Teaching in Doctoral Education

Ericka Roland
University of Texas at Arlington

While there has been an increased focus on designing and implementing social justice curricula and pedagogy in many graduate programs in education (Berkovich, 2017; Holsinger, 2016; Mayhew & Fernández, 2007). Given the continued social inequities related to race, gender, class, and much more that plague education at every level, preparation programs must provide graduate students with opportunities to interrogate injustices on both a personal and structural level. These opportunities may result in the development of being, relating, and leading for social change in various educational contexts for students (Shields, 2014).

Research indicates that graduate programs in education either avoided or limited teaching about social justice because of faculty lack of skills and knowledge on how to facilitate such learning (Diem & Carpenter, 2013; Pounder, Reitzug, & Young, 2002). Thus, university-based education programs remain under scrutiny by scholars, employers, politicians, and the public for failing to help future educational leaders develop knowledge and skills to address complicated aspects of social justice that include race, culture, gender, sexual orientation, socioeconomic status, and ability in relation to power, privilege, and oppression (Black & Murtadha, 2007; Normore & Jean-Marie, 2010). Barriers to engaging graduate students in topics of social justice are the dispositions, values, knowledge, and skills of faculty members to facilitate such topics (Aguiar, 2017; Edwards, Loftin, Nance, Riser, & Smith, 2014).

Many scholars insist that educational graduate programs can be environments for students and faculty to grapple with oppression and privilege on both personal and institutional levels (Dantley & Green, 2015; Furman, 2012; Gayles & Kelly, 2007; López, Magdaleno, Reis, 2006). Thus, faculty play important role in influencing the curriculum and pedagogy, both in and outside of the classroom, and serve as gatekeepers and/or gate-openers for doctoral students (Guerra & Pazey, 2016). Faculty hold an important role in the socialization of doctoral students for social justice, whether as an instructor in the classroom, a chair or advisor during the research process, a dissertation committee member, or a mentor. Along with other researchers, Byrne-Jimenez (2010) calls for faculty members to “rethink underlying assumptions, actions and policies, roles and relationships, pedagogical approaches, and levels of preparedness that challenge current modes of operation and force faculty to answer ’why’ and for ‘whom’” (p. 6). Within today’s political and social climate in which injustices are exacerbated, there is a need for education reform. Faculty within graduate education programs must possess knowledge, skills, and dispositions necessary to design and operate social justice-oriented programs inside and outside of the classroom (Aguiar, 2017; Edwards et al., 2014).

While much has been theorized about social justice curricula and pedagogy in graduate education (Brown, 2006; Furman, 2012; George, 2017), some gaps remain in the existing research on how education faculty who teach doctoral students navigate and play an active role in teaching on social justice. Also, much of the scholarship on teaching on social justice focuses on undergraduate or master’s level, for example, rather than on doctoral education (Adams & Bell, 2016). This article will help fill these gaps by focusing specifically on teaching about social justice with doctoral students in education programs. In this article, I examine how two education faculty members engage in teaching on social justice with doctoral students. I focus on the following research questions:

1. How do faculty navigate teaching on social justice?
2. In what ways do faculty engage in teaching strategies to develop students’ understanding and knowledge around social justice?

Social justice is an elusive concept with complex, frequently contradictory meanings (Adams & Bell,
To frame this study, I focus on social justice and injustice. Social justice is often defined as a process and goal towards equitability of resources (Adams & Bell, 2016). In other words, social justice focuses on liberation for all people. Within this article, I use the term injustices to refer to the intentional examination of oppression (Leibowitz, Naidoo, & Mayet, 2017). I maintain that to develop a capacity for educational transformation, there must be a focus on both injustices (oppression) and social justice (liberation) (Giroux, 2011; hooks, 1994). A more comprehensive and detailed understanding of faculty teaching approaches to social justice in doctoral education can serve as a guide for designing and implementing curricula and pedagogy aimed at providing students with opportunities for personal transformation and societal change in education.

**Conceptual Framework**

Rooted in critical theory, the conceptual framework for this study consists of critical pedagogy and transformative criticality. Inspired by Paulo Freire’s (1970) notion of education as an exercise of freedom that requires a critical approach to knowledge and reality, critical pedagogy views teaching as a political act and rejects the notion that knowledge construction is neutral. In this pedagogical approach, education is a form of personal and collective freedom grounded in students and faculty actively creating knowledge rather than simply consuming it. In critical pedagogy, educators are tasked with addressing important social problems, encouraging agency, and promoting critical consciousness for the purpose of personal and collective transformation (Giroux, 2011). The language of critique in critical pedagogy requires instructors and students to analyze macro and micro systems of power and injustices that go unchecked in traditional pedagogy, norms, values, and standards. Put simply, this approach to pedagogy allows for ongoing individual and collective grappling with knowledge, values, social relations, and political agency (Giroux, 2011). The mode of analysis in critical pedagogy interrogates text, institutions, social relations, and ideologies that impact all levels of society. Such a dialectical analysis allows for a critique of oppression and privilege and an understanding of how power relationships interact to affect lived experiences. Critical pedagogy uses education to consider broader societal change. Bell Hooks (2014) wrote, “[T]he classroom becomes a dynamic place where transformation in social relations are concretely actualized, and the false dichotomy between the world outside and inside of the academy disappears” (p. 115). Consequently, critical pedagogy takes into account that the classroom space is not neutral but a microcosm of society in which uneven power dynamics must be disrupted.

The usage of critical pedagogy aims to assist learners to imagine change on both the macro and micro levels (Giroux, 2011). The language of change or social justice goes beyond the recognition of power dynamics to offer opportunities to imagine power relations working for justice and freedom. Put differently, McArthur (2010) wrote that critical pedagogues have “a belief in the interrelation between education and society, and a commitment to change in education and society to ensure greater social justice” (p. 495). Critical pedagogy can assist in societal, educational, and personal transformation.

**Transformative Criticality**

Criticality centers on an individual’s ability to critique and challenge uneven power relations in everyday life and consciously seek justice (Brookfield, 2005). More specifically, criticality can be understood through the domains that are engaged by critical reason, self-reflection, and action, including formal knowledge, the self, and the world, (Barnett, 2015; Johnston, Ford, Mitchell, & Myles, 2011). According to Johnston et al., (2012), the transformative potential of education is in developing awareness of self in the context of wider social relations for political engagement. The development of transformative criticality specifically consists of students becoming critical beings who critique dominant knowledge, engage in reconstruction of self, and employ collective action to reconstruct a just society (Barnett, 2015; Johnston et al., 2012). In other words, criticality involves the development and application of critical consciousness, knowledge, and skills for social transformation.

The conceptual framework of critical pedagogy and transformative criticality addresses the relational aspects of the environment, interpersonal and intrapersonal relationships, content, and material delivery that assist in creating learning spaces for opportunities to interrogate injustices and imagine new, socially just systems. Critical pedagogy provides the broader context of transformative learning while transformative criticality delves deeper into the ongoing process of self-reflection and analyses for collective questioning, criticism, and creativity around social transformation. This framework builds upon existing literature in educational leadership preparation programs studies in education by providing a more nuanced look into both individual and collective development (Diem & Carpenter, 2012; Edwards et al., 2014; Furman, 2012). The framework is intended to be useful in the examination of the multidimensional aspects of teaching in which that faculty engage through doctoral education.

**Methods**

To conduct this study, I used a collective case study approach. Stake (1994) defined collective case...
study as having “a number of [individual] cases jointly in order to inquire into [a] phenomenon, population, or general condition” (p. 237). The use of such an approach provides analytical insights on things that are similar and different between cases. In this study I used two analogous individual participants (or cases) to highlight the particular phenomenon of faculty teaching approaches that engage doctoral students in issues of social justice. Baxter and Jack (2008) identified the importance of placing boundaries on cases to indicate breadth and depth of the study while delimiting what is being studied. The boundaries for this study are tenure-track faculty members who teach doctoral students in educational leadership/higher education programs and self-identify as employing social justice in their teaching approach. Doctoral teaching in this study means that faculty members are teaching courses, advising program students, overseeing dissertation committees, contributing to program design, and participating in department activities such as faculty recruitment and selection, program admissions, and other committee work.

Participants

To select participants, I engaged in purposeful sampling through specific criteria (Patton, 2015). I selected two faculty members for this study due to their teaching responsibilities with doctoral students and vulnerability to share and engage in critical reflection throughout the research process. Other participants were excluded from the study due to only working with master’s students, not serving as dissertation chairs, and/or self-selecting out. The faculty members who self-selected out did not respond to communication or communicated that they were unable to participate in the study. Faculty who participated in this study taught doctoral students in an education graduate program at institutions with a Carnegie classification of high research activity. Their teaching experience ranged from 4 years to 23 years in higher education through face-to-face or hybrid (face-to-face and online) instruction. The faculty taught doctoral seminar courses such as Educational Leadership, Qualitative Research, Student Development Theory, and Independent Study. Details of participants’ information and pseudonyms are shown in Table 1.

Data Generation Procedures

Given that the dialectical relationship is an essential component of this study design, data were co-created by the study participants and me through document analysis, semi-structured interviews, artifacts, the researcher’s reflective journal, and email correspondences. Hydén (2014) called for the partnership between the researcher and participants to be a “dance of balancing involvement” with shared responsibility of constructing knowledge (p. 8). Additionally, the use of multiple data sources provides rich data from which to draw analysis. Baxter and Jack (2008) noted that each data set in a study could be bound together to deepen the understanding of the phenomenon. Prior to the first interview, I analyzed each faculty member’s course syllabus, teaching philosophy, and curriculum vitae to gain insight into their teaching goals and experiences with social justice. Bowen (2009) noted that document analysis provides the researcher context into spaces participants occupy and how they operate within these spaces.

I analyzed these documents with close attention to language and groups of words that indicate the deconstruction of dominant knowledge that perpetuates injustice, critiques uneven power relations, notes opportunities for personal reflection, and focuses on the development or goal of emancipation, democracy, equity, and justice. Additionally, I used the data generated from the documents as an elicitation technique during the first interview that created additional personal interview questions related to each of the study participants and their contexts.

In a qualitative approach, interviews are an important data source for in-depth responses to people’s lived experiences (Crotty, 2015). The participants and I engaged in two 60- to 120-minute semi-structured interviews. I invited the participants to reflect on their journey to becoming faculty members, on how they prepare doctoral students around social justice, on what is involved in critical teaching, and on the reasons behind their teaching approaches in and outside of the classroom. In the second interview, I asked participants to provide artifacts to generate information-rich data. The use of artifacts as an elicitation technique enhances the interview interactions by creating space for the participants to explain the significance of the artifact in relation to their teaching. According to Barton (2015), the use of elicitation techniques invites participants to reflect, construct, name, and explain their lived experience in an innovative matter. I asked participants to share documents, objects, pictures, videos, art, and/or metaphors that demonstrate their teaching to develop students’ capacity to engage in critical teaching and learning.

Due to the topic of social justice, the participants and I engaged in a humanizing research processes that center lived experiences through storytelling, story gathering, relationship building, and reciprocal engagements with each other (Kinloch & San Pedro, 2014). More specifically, a humanizing research process in a collective case study allowed for the participants and me to push against visible and invisible uneven power relations that result in racism, sexism, classism, and other oppression throughout the
data generations process using dialogue, active listening, vulnerability, and critical reflections.

I wrote reflective journal entries to document my decisions, reactions, questions, and interpretations throughout the research process to maintain self-awareness. All journal entries became part of the data generation and analyses to preserve the integrity of the participants’ narratives. I shared some of my reflections with the study participants for opportunities to engage in relationship building and data generation. Throughout the research process, the participants and I engaged in email correspondence as follow-ups to interviews.

**Data Analysis**

The data analysis process was iterative and involved examining, categorizing, and tabulating to make sense of the data (Saldana, 2016). Preliminary data analysis consisted of me re-familiarizing myself with all the data sources through reading and re-reading transcriptions of interviews, journal entries, and documents. There were two cycles of coding. First, I created a priori codes that were influenced by the conceptual framework and literature. These codes included “power”, “privilege” “oppression”, “dialectical interaction”, “environment”, “content”, “content delivery relationship”, “self-reflection”, “critique,” and “social action”. I then used in vivo and pattern coding methods to assign second order, deeper codes from the conceptual framework subcategories. This approach helped me to make meaning of each participant’s lived experiences separately while exploring patterns and differences between the cases.

**Trustworthiness**

To conduct a trustworthy study, I engaged in reflective journaling, peer debriefing, and triangulation. Throughout the data analysis, as mentioned above, I kept a reflective journal with memos to note the method by which I was making sense of the data, my expectations, and my assumptions prior to data generation. I also engaged in peer debriefing, where colleagues commented on the research design and developing findings of the study. Finally, triangulation of the various methods—e.g., document analysis, interviews, artifacts, and researcher journals—allowed the phenomenon of the study to be explored from multiple contexts of the participants.

**Limitation**

There are some limitations concerning the findings of this study. First, I did not observe or interview faculty in their institutional environment. Instead, I relied exclusively on participants’ self-reported data about their teaching. Adding observations in the participants’ teaching environment would have added additional perspectives on faculty teaching on social justice. Additionally, I only included tenure track
faculty from high research activity institutions. The inclusion of teaching approaches of clinical faculty (non-tenure line) or other faculty from other institution types may result in different findings related to doctoral education. I did not include doctoral students in this study. Doctoral students would have provided insight on how they engage or disengage with the faculty teaching approaches. Lastly, I did not include education faculty who teach undergraduate education students as it is outside the scope of this paper. It is important to note that teaching on social justice is not limited to doctoral students; however, undergraduate teaching entails different challenges and strategies (see Cochran-Smith, 2010; Gay & Kirkland, 2003).

Findings

Through the research process three major findings were generated to answer the research questions. First, the participants acknowledged a responsibility to expose students to social justice through their teaching. Second, the participants engaged students in critical dialogue to analyze and reflect on social justice. Third, the participants established advising and mentoring relationships to engage students about power, privilege, oppression, and social change. I organized each finding section starting with in-classroom interactions, then to out-of-classroom engagements with students. In this study, teaching was not limited to the formal classroom environment.

Acknowledgement of a Responsibility

The study participants acknowledged a responsibility to expose students to social justice in their teaching. Both of the participants were explicit about including issues of power, privilege, and oppression in their teaching with the goal to assist students in consciousness-raising. For example, Dr. Moore commented that his teaching philosophy revolves around providing students with opportunities to raise their consciousness. He added, “My job is to not simply meet people where they are, which I do think is important, but then how do I help them grow… How do I raise consciousness in a way that's transformative, equity [sic], and consciousness based?” Similarly, Dr. Smith centered social justice and injustices in her teaching to invite students to consider ways in which, as educators, they influence just educational reform.

Dr. Smith discussed why she engaged students on both injustice and social justice:

Because I think if we ignore that [social justice and injustice], we focus on technical change rather than deep cultural and social change. And if we really want change that results in equity then we need to do something beyond the technical. The quote from Dr. Smith speaks to the cognitive development needed both to understand injustice and to enact social justice that causes societal change; therefore, the participant needed to engage in teaching that invokes cognitive development.

Both participants believed educators needed to have skill and knowledge to address the power dynamics of oppression and privilege and to establish socially justice practices and policies. Although Dr. Moore’s and Dr. Smith’s goals of radical educational reform were rooted in institutional changes, they focused on consciousness-raising at the individual level as well. Such a teaching approach indicates that engaging students in teaching about social justice is a journey or developmental process that starts on a personal level. This is in alignment with what Mezirow (1991) called a disorienting dilemma that creates space for critical reflection and personal transformation.

It is important to note that the participants taught students who were unfamiliar or uninterested with social justice personally and academically. Dr. Smith claimed, “I don’t shy away from talking about things like racism or homophobia or xenophobia,” no matter the knowledge base or dispositions of students. She is explicit about social oppression and privilege at the onset of each course she teaches in order to notify students that they would be engaging in tough conversations around these issues. Both of the participants spoke of engaging students on oppression such as racism, sexism, classism, ableism, heterosexism, and much more through an intersectional lens. Put differently, the participants did not focus on one type of oppression but asked students to consider how multiple oppressions impact each other. For example, Dr. Moore described questions he asks students to reflect on and discuss the following: “So if we're talking about gender, how would this look different if we talk about class? If we're talking about class, what if we add sexuality?”

For both participants, a responsibility of exposing students to social justice included intentional engagement of critical theories (e.g., critical race theory, critical spirituality, feminism) alongside seminal literature and theories in education. Through probing questions, Drs. Moore and Smith invited students to reflect on who is included and excluded and the roles students play in these systems (e.g., racism, capitalism, sexism), based on their lived experiences and values. Dr. Smith provided a story of a Black man student who refuted Black respectability politics in education and believed that the students he worked with should act the “right way”, in his words. Although the student pushed back in the class discussion, he had opportunities to engage with classmates and Dr. Smith on the root causes of Black respectability politics. She ended the story with this testimony:
Four weeks later and he came to class and you could tell just by the way he walked in that something was different. He came up after [class] and he said, “I’ve been thinking about our readings and our conversation… I realized that my parents are university educated, and I’ve often thought, well, why can’t these other Black kids be like me?,” and he said, “I realized now how wrong that was.” He totally changed. He changed his interest, his dissertation topic.

Even when students resisted conversations about social justice, both participants spoke passionately about still having a responsibility to expose students to the components of social justice through readings and class assignments so that when they are ready, students will have tools to reflect on past teachings and possibly act. Such an approach to teaching was not solely focused on students who lack a foundation or disposition on social justice but included students who sought out these faculty members to continue their growth both personally and academically. For example, Dr. Moore explained that he chaired committees for or mentored students who had chosen to do “mesearch” that consisted of research inspired by their lived experiences. Put differently, this finding shows that consciousness-raising can occur at any level of knowledge of power, privilege, and oppression, and exposure to these topics is beneficial to students at all levels. It is important to note that the participants had flexible pedagogical approaches and relationships with students that allowed for these faculty members to engage students appropriately in and outside the classroom. One of the ways the participants carry out their educational responsibility is through dialogue.

Engaged Critical Dialogue

The participants used students’ personal and professional lived experiences, theory, readings, faculty written feedback, group activities, spaces, and relationships to invoke dialogue on social justice. Guerra, Nelson, Jacobs, and Yamamura (2013) found that critical dialogue challenged students’ thinking, leading, and researching around social injustice. Dr. Smith explained the philosophy underpinning her teaching approach involving critical dialogue, “[D]ialogue isn’t for one thing. It's ontological; it's not just talking, it's a way of life. So, it's an openness to other perspectives and other people, and its goal isn't agreement. But understanding. And I think that's really important.” The participants used dialogue to engage students in analyzing injustices, imagining social justice, and challenging students’ positionalities. Similar to Metcalfe and Game (2008), the participants described dialogue as opportunities to “know and learn with rather than about others” (p. 347).

The use of dialogue through multiple pedagogical strategies (reading, feedback, etc.) invited students and faculty to share their lived experiences and interpretations of course readings to create what Giroux (2011) called a democracy classroom. Democracy classrooms move away from a banking model and allow for students and faculty to co-construct knowledge (Giroux, 2011). Both participants used probing questions in journal reflections, small group activities, and group discussions. Such questions included defining key terms, identifying scholars’ arguments, recognizing literature gaps, synthesizing multiple readings, analyzing for oppression and privilege, and connecting concepts and theory to lived experiences and real-world application. Dr. Smith used local and national events to provoke dialogue around social injustices. Dr. Smith insisted that helping students to understand what was happening locally was vital because it constituted their lived experiences and the educational context in which they will lead. She stated, “I ask them to really unpack and think critically about them [local events]. I think once they begin to do that they get that mindset.” This approach provided students with opportunities to participate in various dialogues that included theoretical, personal, and real-world contexts in which students analyze issues of power and consider possible actions for the communities they serve as educational leaders.

The participants’ critical approaches to teaching highlighted the dialectical relationship between theory and practice through the analysis of various frameworks. For Dr. Moore, students learned theories before conducting analysis of their possibilities and limitations. Dr. Smith used critical frameworks alongside seminal works to engage students in criticality around power, privilege, and oppression. Students developing criticality involved critiques of hidden injustices that are taken for granted in ways of knowing in the field of education. Both participants asked students to consider issues of race, gender, sex, and other social categories addressed within seminal literature. Such an approach to seminal work attempted to address dominant knowledge production that enabled oppressive educational conditions while engaging students in the historical context of the respective field, and thus engaging students in criticality.

To challenge dominant knowledge production, the participants discussed including literature from diverse authors in their syllabuses to provide students with various ways of knowing, theorizing, and conducting research. Scholars recommended using course readings as a tool to expose students to topics of social justice and injustice and to develop critical consciousness (e.g., racism, sexism, heterosexism) (Capper, Theoharis, and Sebastian, 2006; Marshall & Hernandez, 2013). Dr. Moore invited other scholars...
into the classroom to dialogue with students and share their knowledge and experiences. However, Dr. Moore was intentional about connecting scholars, content, and students together in ways that deepen learning. For example, Dr. Moore invited White scholars to guest lecture to teach on Whiteness and demonstrate ways that challenge White privilege:

[Be]cause I teach mainly White students. So, I always bring in a White scholar who does critical work around Whiteness somehow. It might not be the center of their work, but they're going to make comments. I think it allows White students, as they're going through their own development in class and consciousness raising, to see another White person who has a progressive stance on race... who are just regular people.

To engage with various theories such as student involvement theory and transformational educational leadership, Drs. Smith and Moore both incorporated questions about the multidimensional manifestation of privilege and oppression in order to engage students in a practice of critique. For instance, according to Dr. Moore, teaching students how to ask critical questions exposed them to power relations of oppression and privilege. He explained,

“We're not trying to check off the boxes, you're just trying to have a mode of being and practices, that ask the additional questions...” The act of questioning assisted students in developing a capacity to uncover the invisible, analyzing the complexities of injustices, and engaging in authentic dialogue.

Spaces in and out of the classroom mattered to the study participants in terms of assisting to facilitate dialogue around topics of social justice. Capper et al. (2006) noted that when a learning environment provides emotional safety, students are more likely to take risks in challenging their bias and lived experiences and are more open to personal transformations. Dr. Smith explained, “I want to sit in a square so we can all see each other, and we are all sort of equal again.” It was not how the space is arranged that made this comment unique; it was the reason for such a layout. Although space alone cannot promote equity, the spatial arrangements reinforced who was included or excluded. The arrangement communicated that everyone sitting at the table was visible and invited to engage in tough dialogue. Dr. Smith sat with students and engaged in dialogue without being in front of the room. This was an attempt to disrupt teacher-student hierarchy and allow for more than one voice or expertise in the room. The use of the space also allowed for the development of a collective dialogue and classroom community.

For Dr. Moore, he sought to create safe spaces within the classroom. He clarified:

My job is to manage a safe classroom. To me, a dangerous classroom is when something is said that could be very traumatic and also reproducing trauma and oppression for a member. My job is to make sure the learning and raising [of] consciousness for someone who, we all hold privileged identities, don't come too much at the expense of someone who holds that marginalized identity.

In the literature, creating “safe” classrooms has been critiqued for the impossible task of removing risk and discomfort around controversial issues for students with privileged identities (Cook-Sather, 2016). However, Dr. Moore’s articulation of a “safe” classroom protected marginalized students from continued oppression. He discussed how it was his job to “try to read that thin line of giving someone room to grow without letting them just go off the rails and say something oppressive,” which required engaging students around how to participate in dialogue on topics on power, privilege, and oppression. Such an approach aligns with Applebaum’s (2009) call for teachers to create safe classrooms for systematically marginalized students instead of for students who are systemically privileged. Dr. Moore explained how he guides students when conflicts arise in classroom dialogue:

...Listen to understand, instead of to respond...when someone says something that triggers you, which probably will happen, ask a follow-up question first...[be]cause you may have heard something, and they may be just using different language, right? So, ask them first what . . . they mean. Then, if they still say the same thing, then you should be critical of what they said, but give them an opportunity to be on the same page with you before you respond.

The above comment by Dr. Moore highlights how difficult having and facilitating dialogue around justice can be and the intentional work that is required of both faculty and students. Outside of the formal classroom, the participants used dialogue in their advising and mentoring approach. Although the participants were attentive to the learning environment, they did not discuss the invisible power relations that mediated such spaces and can limit such dialogue. Daloz Parks (2005) noted that learning environments, especially classrooms, are social systems “inevitably made up of a number of different factions and acted on by multiple forces” and which provide “an occasion for learning and practicing leadership with a social group” (p. 7). In
short, faculty and students can use the dynamics occurring within various learning environments through collective reflection and power analysis as a means to practice resistance to injustice and establish social justice interactions.

**Established Advising and Mentoring Relationships**

Advising and mentoring were other teaching activities the participants used to engage doctoral students in topics of social justice. Drs. Moore and Smith were not assigned students, but students were able to select them as advisors. The flexibility for open selection allowed the participants to be selective on students they chose to partner with. Dr. Smith noted the following:

I try not to take on students who aren’t interested in social justice. Because I just find the work boring if it doesn’t have that focus. That doesn’t mean that I don’t inherit a few from time to time. If people are exploring topics I always try and push them to see whether or not there’s an area that is really a just policy. Is it really just or are there equity implications and issues that need to be explored as well?

Dr. Moore implied something similar with students he preferred to work with as their advisor and mentor. Such a preference illustrates the participants’ unapologetic approach to engaging students in social justice. Notably, both participants conducted research and engaged in service that examined oppression, privilege, and social change in education. Consequently, Drs. Moore and Smith connected students to research and networking opportunities that would expand students’ knowledge and skills on social justice.

Dr. Smith described her relationship with students through development advising, which is a mutual process of shared responsibility for social and academic success. A development advising approach focused on the process of promoting students’ consciousness throughout the doctoral experience (Peña, 2012). Dr. Smith spoke about wanting to be friends with her students. Through this relationship there was mutual learning and talking about issues of social justice and injustices. Dr. Smith claimed that the relationship pushed the students in their critical consciousness raising. When she described her relationships with students, it was in the context of academic exercises, such as dissertation writing and publications. She stated the following:

I do try and engage them in all sorts of different ways. I stay in touch with them. They come to the house in groups so that as groups we talk about their research interests and what's happening. Really always try to have students go to conferences with me. To the extent that they want to when they're also working full time, I'll publish with any of them. Either they can work on my projects, or I’ll help them with their own papers.

While Dr. Smith emphasized advising, Dr. Moore focused on developing mentorship with students he advised. In fact, his approach to mentoring was inspired by his own experience of critical mentorship with a doctoral advisor. He mentioned that his mentoring relationship with students began with the identification and discussion of the roles that the student and he would play in the process. Dr. Moore said, “This is going to be a relationship that we're going to build over time to build trust and understanding.” All of his mentees were working on critical dissertations that centered on marginalized people’s lived experiences in oppressive structural systems. Due to the critical nature of his students’ dissertations, Dr. Moore mentored students on structural power analysis through the use of critical frameworks.

To support his students, Dr. Moore assisted them in their creation of a team of mentors from other institutions who had similar research interests and could provide guidance and collaborations. A team of mentors echoes Mullen, Fish, and Hutinger (2010) argument that a doctoral student should have multiple mentors due to the complexities of the emerging scholar’s experience. Dr. Moore explained, “I try to kind of outsource it but make it more [a] collaborative team of mentorship." Dr. Moore acted as a sponsor and assisted students with creating a network to support their critical inquiry.

The participants detailed how their relationships with students were reciprocal. Dr. Moore spoke with enthusiasm about being challenged and inspired by his students' critical work, such as incarcerated post-secondary students and undocumented Latino/a students. Meanwhile, Dr. Smith declared that she constantly learned from her students and used their stories and examples as pedagogical resources in her teaching. The faculty-student relationship allowed the participants to continue to develop their criticality around social justice and justices with students.

Both participants spoke of informal interactions that strengthen their relationships with students. For instance, Dr. Smith explained, she becomes friends with her students because of their shared interests that move beyond their time in the doctoral program. The relationship is not one-sided; the participants share their journeys as scholar and persons who hope to continue their development around social justice with the students they mentor and advise.

In the advising and mentoring relationship, the participants are in a more vulnerable position for critically engaging in social justice teaching because such a belief for social critique and justice was evident in their research, service, and ways of being. The participants are role models for students to learn how to integrate social justice into their ways of knowing and being. In alignment with work by Aguilar (2017) and Guerra et al. (2013), faculty must model anti-oppressive leadership
and participate in self-reflection for the development of critical consciousness in various learning environments.

Discussion

This collective case study examined how two education faculty members engage in teaching on social justice with doctoral students. Both faculty members acknowledged a responsibility to exposing students to social justice through critical dialogue and student-faculty relationships (advising and mentoring). Through these approaches to teaching, it is evident that faculty members intentionally aim to provide doctoral students with learning environments and relationships to encourage the understanding and analyzing of their individual socio-political positions that are influenced by, and have influence on, society, especially educational norms, values, practices, and policies. The multiple teaching approaches used by faculty members centered on assisting students in considering ways of being, knowing, and leading around racism, sexism, classism, and much more. The participants’ social justice teaching approach are in alignment with Mezirow’s (1991) and Brookfield’s (2005) call for meaning-making processes with adult learners that lead to a deep shift in perspective in which thinking, action, and discourse become more open to new ways of being.

The teaching approaches used by the faculty limited the external gaze of social justice. In other words, the curriculum and pedagogy did not center the unjust actions of others that students may have to navigate, but centered on personal responsibility of students, educators, and people. Additionally, a focus on personal critical consciousness and responsibility allowed opportunities to teach about the root causes and structural manifestation of oppression that provide a more complex analysis for social justice. Drs. Moore and Smith modeled critical consciousness through the way they made sense of their identities, positions, and relationships that enabled both oppression and liberation in their teaching approaches. Moreover, these faculty members were vulnerable with students in their shortcomings in relation to their teaching, research, and focus on social justice. Such vulnerability is important as both faculty members encountered resistance and obstacles to developing critical consciousness among students. Faculty serving as role models to engage with social justice and the discomfort of the topic significantly influences the socialization of a social justice culture in and outside of the classroom (Edwards et al., 2014).

Both participants acknowledge oppressive structures at their universities, colleges, departments, as well as in the process of promotion and tenure. Despite institutional barriers and resistance, Drs. Moore and Smith were strategic about how they navigated these political spaces and relationships to ensure they were in position to teach such approaches that engaged doctoral students in social justice. For these faculty members, teaching social justice with doctoral students was not solely part of their job, but it provided value that informs their lives and relationships in and outside of the academy.

Although various educational settings (e.g., Student Affairs, K-12 systems) created a shared experience or a reference point for students, the faculty paid less attention to students’ career aspirations. Dr. Moore proclaimed, “It’s about really having a lifestyle and really helping students get to a place where we’re really dismantling structures and not for the come-up.” Such a statement illuminates how the faculty used curriculum and pedagogy on social justice to encourage the development of critical being. The relational nature with which the participants approach their teaching echoes what Barnett (2015) wrote about taking students seriously as people. More specifically, the participants provided students with the following, as Barnett (2015) observed:

\[\ldots\] the space to become themselves, to bring their understanding to bear on situations and, in the process, make them their understanding; to understand themselves in relation to situation requiring insight and learning including their own limitations, and to develop the capacity for critical insight in action. (p. 69)

The development of individual critical consciousness was at the center of how the faculty navigated and implemented teaching on social justice. A focus on individual critical consciousness allows students to move from thinking of themselves as passive actors in society to a having sense of agency for social change.

Recommendations

Educational Programs

The purpose of doctoral education is to engage students in developing skills to analyze and produce knowledge. While engaging in the sort of teaching described by the faculty members in this study, students make the transition from being consumers of knowledge to becoming producers and constructors of knowledge aimed at transforming organizations and communities in which they live and work. Consequently, educational doctoral programs can be spaces where students and faculty can grapple with power, oppression, privilege, and social change.

Recommendations for Teaching on Social Justice with Doctoral Students

Faculty are in a sociopolitical position to play an important role in the socialization of doctoral students in
education for social justice, whether as an instructor in the classroom, a chair or advisor in the research process, a dissertation committee member, or a mentor. First, faculty members of all cultures and social identities should engage in self-reflection around oppression, privilege, and their power location as professors. As evident throughout this study, Drs. Moore and Smith constantly engaged in self-reflection as it relates to their teaching, research, service, and personal lives. To teach social justice, faculty must be willing to engage these topics in and outside of classrooms; thus, the engagement with self-reflection might assist in developing the confidence to teach about social justice. Second, doctoral faculty should seek out trainings in and outside of their institution (e.g., teaching & learning centers or professional conferences) to develop knowledge and skills to incorporate a sense of responsibility for exposing students to social justice, engaging and facilitating critical dialogues in various spaces, and developing critical advising and mentoring relationships. Also, through these opportunities, faculty members can connect with others who are committed to such teaching approaches, thus making teaching for social justice more collective rather than individualized in isolation.

As graduate programs consider curriculum and pedagogical strategies with a social justice orientation, there should be close attention paid to learning environments, relationships, and provision of time for students to grapple with their social location and the world around them for social change. For this reason, the last recommendation is that educational doctoral programs may have to rethink program design (e.g., course layout, program duration, advisor assignment) to support teaching and learning about social justice. Thus, teaching on social justice is not solely the faculty’s responsibility, but is a shared obligation between students, departments, universities, and communities who unapologetically challenge social oppression and seek justice.

Recommendations for Future Research

Future researchers should consider a longitudinal study of how faculty in doctoral educational preparation programs navigate teaching on social justice. Due to the short time period of the current study, the data was based on the faculty’s sense-making and contextualizing in the current time period. A longitudinal study may have the potential to utilize in-depth interviews with faculty and students, document analysis (e.g., reflection journal, teaching philosophy, emails), and observations to allow for a deeper understanding of the nuances of teaching on social justice. With regard to the participants, I would recommend studies including in-depth interviews with doctoral students at various levels within the graduate experience. These interviews would serve to illuminate students’ expectations of teaching and understand how they make sense of teaching on social justice. Lastly, I would recommend future studies focus on faculty social identities (e.g., Black woman) and how these identities influence the ways in which faculty navigate teaching on social justice.

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Collaborative Learning Techniques, Student Learning Outcomes, and Equal Workload within Groups in Different Teaching Modalities

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A Faculty Learning Community comprised of four faculty members evaluated their work of implementing collaborative learning techniques (CoLTs) into their graduate and undergraduate courses that included different teaching modalities (traditional classroom, hybrid, and online). Two research questions were examined: a) Did students perceive that the implementation of CoLTs facilitated their mastery of course-specific student learning outcomes?, and b) Did students perceive that their group members worked equally? A total of 133 students participated in this study by filling out a survey asking for their evaluation of mastery of student learning outcomes and peer evaluation of group members' collaborative effort. Results show that the implementation of CoLTs facilitated students’ perception that they mastered the course-specific learning outcomes and that the workload was equally distributed among their group members. The contributions of current work and the potential use of the student survey used in this study are discussed.

Collaborative learning is a form of group learning during which two or more students in a class work together and share workload equitably to complete assignments that are intentionally created to meet the student learning outcomes of the class (Barkley, Major, & Cross, 2014). Collaborative learning is rooted in two learning theories: one is social constructivism by Vygotsky (1978) stating that knowledge is constructed by socially interacting with other individuals; another is the observational learning theory by Bandura (1977) stating that knowledge is gained by imitating and modeling other individuals. By implementing collaborative learning, instructors engage three of the seven principles for good education practices suggested by Chickering and Gamson (1987): encouraging student-faculty contact, facilitating cooperation and learning among students, and active learning. Implementing collaborative learning in the classroom puts an instructor in a position of a facilitator and a guide of learning rather than a deliverer of knowledge, and it puts students in charge of their learning (Flannery, 1994). While instructors in higher education have utilized student collaboration in classes, collaborative learning techniques (CoLTs) represent planned and intentional methods to facilitate collaboration in the class. The CoLTs range from simple (e.g., think-pair-share) to complex (e.g., jigsaw) techniques, but all techniques must be individualized and customized to suit the contents taught in the class (Barkley et al., 2014).

Implementing CoLTs in college and university courses has consistently been shown to enhance learning. For example, a meta-analysis conducted by Springer, Stanne, and Donovan (1999) showed that STEM (Science, Technology, Engineering, and Math) classes in undergraduate-level courses improved student exam grades. Other studies have shown that CoLTs improved student’s critical thinking skills and engagement in classes (Clem, Mennicke & Beasley, 2014; Kilgo, Sheets & Pascarella, 2015; Nelson, 1994), enhanced student persistence in math courses after failure (Lan & Repman, 1995), increased student’s ability to transfer knowledge gained in one class to another (Loes & Pascarella, 2017; Wright, Millar, Kosciuk, & Penberthy, 1998), and deepened the level of learning (Vogt & Skop, 2017). In addition, a study found that collaborative learning generated higher benefits for students of color and students with educational challenges (Loes & Pascarella, 2017).

The benefits of CoLTs are not only academic but also extended to social and psychological aspects. For example, Johnson, Johnson, and Smith (2014) showed that the implementation of CoLTs facilitated liking among peers in the class, increased psychological adjustment (e.g., self-efficacy and self-esteem), and better attitudes toward the university and learning. Laal and Ghodsi (2012) showed that collaborative learning increased the awareness of diversity, reduced anxiety, and increased positive attitudes toward instructors. Courses with collaborative learning also facilitated students’ communication skills, problem-solving skills, innovative or creative thinking, and better working with their team in engineering courses compared with the traditional courses (Terenzini, Cabrera, Colbeck, Parente, & Bjorklund, 2001).

The majority of the studies on the effectiveness of CoLTs focused on STEM courses and traditional graduate or undergraduate courses. It is not clear whether the effectiveness of CoLTs can be expanded to different teaching modalities (traditional classrooms, hybrid, and online) and different course levels (undergraduate- and graduate-level courses). Therefore, in this study we intend to fill in the research gap by examining whether the implementation of CoLTs facilitated students’ perception of mastery of student learning outcomes in courses of different modalities and at different levels.
Furthermore, we investigated a part of the definition of collaborative learning, “sharing workload equitably,” by asking students whether they thought themselves and their peers in their groups contributed equally to the work during the CoLTs implemented activities. Based on our best knowledge, this part of the definition of collaborative learning has not been studied extensively. We found a study mentioning that despite the benefits of collaboration in the classrooms, many students complained about the unequal workload of group members to complete the collaborative activity (Chang & Brickman, 2018). Therefore, our study makes another contribution to the literature about the equal workload aspect of collaborative learning.

Methods

Three full-time and one part-time faculty at an urban, public university in Southern California, worked together over three consecutive semesters in a campus-sponsored, interdisciplinary Faculty Learning Community (FLC). The four faculty incorporated CoLTs into their classroom instruction and assessed its effectiveness using a student survey in the fall semester of 2017.

Participants

Table 1 contains details about the four courses chosen for this study, which included two graduate and two undergraduate courses.

One course was an asynchronous online course, another was a hybrid, and the remaining two were offered in a traditional classroom setting. A total of 148 students were enrolled in these courses that utilized CoLTs. At the end of the fall 2017 semester, 133 students completed the survey, resulting in a response rate of 90 percent overall, with both graduate classes
generating lower response rates of 81 and 80 percent, respectively, while both undergraduate classes generated response rates of 93 and 98 percent, respectively.

Undergraduate students comprised 64 percent of the sample, and 86 percent were female, as shown in Table 2.

Table 3 shows the race/ethnicity of the sample by class. This distribution mirrors the diverse student population of the university.

Materials

The student survey designed for this study contained three sections (see Appendix A). The first section solicited the student’s signature indicating whether or not the data could be used in this study (the informed consent text was included on the assignment guidelines, distributed to students before the survey). This section also asked for each student’s year of birth, gender, and race/ethnicity. The second section asked each student to rate how well the student and other students in the collaborative group collaborated. The third section asked each student to evaluate how well the class-specific CoLTs facilitated mastering class-specific student learning outcomes.

Due to the heterogeneity of the courses in this study, and after reviewing existing instruments, a publicly available assessment of student collaboration (Manis, 2010-2014) was chosen (See Appendix A – Section 2). In the second section of the student survey, the assessment consisted of eight statements about collaboration and asked the student to evaluate the student's work as well as the work of each member of the group of students who had worked together on a class assignment using a rating scale where 1 = weak, 2 = below average, 3 = average, 4 = above average, and 5 = superior. The questions addressed (1) participating in group discussions, (2) staying task-focused, (3) contributing usefully, (4) listening to others, (5) professionally and thoughtfully challenging seemingly incorrect responses, (6) noting the quality of contribution, (7) consistently and actively working toward the group goal, and (8) collaborating well. Two open-ended questions were included as well. The first asked the respondent to identify how to improve the collaborative work, and the other asked how the team of students might improve their future collaborative efforts.

The third section of the student survey was customized for each class. The section started with the following: “The purpose of this activity was to facilitate student mastery of the following course outcomes,” and it included a list of student learning outcomes of respective courses. This section asked each student to rate how well the CoLTs helped them master student learning outcomes in each respective course using a Likert scale (0 = Not at all; 1 = A little; 2 = A lot; 3 = Totally). A score of 2 or more on this question was evidence that the CoLTs helped facilitating the mastery of student learning outcomes based on students’ perceptions.

Procedure

The four faculty members who are co-authors of this study originally began collaborating in a one-semester FLC convened in spring 2017 after each member responded to a request to participate by the university’s Faculty Development Center. During that period, each faculty member designed an individualized CoLT in his or her respective class. We requested, and were granted permission, to continue our work together in Fall 2017, during which time we implemented one or more CoLTs, which are listed in Appendix B, and the survey for evaluation and assessment of CoLTs were given to the students in each of the courses. The types of CoLTs used in this study were introduced by Barkley and colleagues (2014).

To assess the reliability of the survey instrument, Cronbach’s alphas were conducted within each class and across all of them. Factor analysis was conducted to test whether all eight questions used in the survey instrument were necessary or if a more parsimonious number of questions could be used instead. Based on Cronbach’s alphas, the alpha coefficients were extremely high (the overall alpha was .96, .93 for Undergrad 1, .86 for Undergrad 2, .92 for Grad 1, and .94 for Grad 2), suggesting that the survey questions were reliable. Factor analysis of the eight questions evaluating collaborative activities yielded one factor explaining a total of 78.73% of the variance (see Appendix C), thus that the survey questions measured one concept, collaboration among students.

Results

CoLT effectiveness

To test the first research question about whether the implementation of CoLTs facilitated students’ perception of mastery of student learning outcomes taught in these courses, in the third section of survey questions students were asked to rate how well the CoLTs helped them master student learning outcomes in each respective course, and this was used as a dependent variable. Using a Likert scale (0 = Not at all; 1 = A little; 2 = A lot; 3 = Totally) across all classes and within individual course, students rated that the implementation of CoLTs helped them master the student learning outcomes as seen by the average rating (M = 2.53, SD = .60 for all courses; M = 2.68, SD = .58 for Undergrad 1; M = 2.56, SD = .62 for Undergrad 2; M = 2.15, SD = .63 for Grad 1; M = 2.42, SD = .53 for Grad 2). Majorities of students also rated this question as 2 (a lot) or more (Undergrad 1 = 98.2%, Undergrad 2 = 88.5%, Grad 1 = 92.3%, Grad 2 = 80%), suggesting that there was an agreement among
students on how helpful the CoLTs were for them to master the student learning outcomes.

To compare students’ perception of effectiveness of CoLTs based on class level, the student rating of student learning outcomes as a dependent variable and course level (undergraduate or graduate) as an independent variable were entered into ANOVA, which yielded significant differences in students’ ratings between undergraduate (M=2.64, SD=.59) and graduate levels (M=2.35, SD=.56) courses, F(1,129)=7.66, p<.01. This shows that students in undergraduate-level courses rated the implementation of CoLTs more favorably than did those in graduate-level courses.

To compare students’ perception of effectiveness of CoLTs based on teaching modality, the student rating as a dependent variable and teaching modality (traditional, hybrid, or online) as an independent variable were entered into ANOVA, which yielded significant differences in students’ ratings between traditional (M=2.58, SD=.57), hybrid (M=2.15, SD=.63), and online (M=2.56, SD=.62) courses, F(1,129)=3.02, p=.052.

Equal Workload

To test the second research question, whether students perceived the implementation of CoLTs made the workload among group members equally, we used the second section of survey in which students rated eight questions about themselves and their group members on how well they collaborated. To do this, we calculated the standard deviation of the rating given by each student to measure the variability in rating, which suggested the variability in workload or collaborative effort. Therefore, the smaller the standard deviation given by a particular student was, the better the student’s perception of equal workload among group members (including themselves) the student had. We counted how many students’ ratings fell between zero to one standard deviation and zero to 0.5 standard deviations for each course (see Appendix D for an example rating given by a student). Overall, 97.7% of students’ ratings fell into the range of standard deviation of zero to one (98.3% for Undergrad 1, 100% for Undergrad 2, 91.7% for Grad 1, and 97.1% for Grad 2), and 84.6% of students’ ratings fell into the range of a standard deviation of zero to 0.5 (89.8% for Undergrad 1, 84.0% for Undergrad 2, 50.0% for Grad 1, 88.2% for Grad 2), suggesting that students felt that they and their group members contributed to the activity equally.

To compare students’ perceptions of equal workload based on class level, the standard deviation of ratings as a dependent variable and teaching modality (traditional, hybrid, or online) as an independent variable were entered into ANOVA, which yielded significant differences among traditional (M=0.19, SD=.28), hybrid (M=.46, SD=.33), and online (M=.22, SD=.26) courses, F(1,129)=4.65, p<.05.

Conclusion

This study investigated two research questions. The first question asked whether the effectiveness of CoLTs expands to different teaching modalities (traditional, hybrid, and online) and different course levels (undergraduate- and graduate-level courses). For this question, we specifically tested whether the implementation of CoLTs facilitated students’ perceptions of the mastery of student learning outcomes. The second question asked whether students perceived themselves and their peers in their groups contributed equally to the workload during the CoLTs implemented activities. For the first question, we found that although undergraduate students perceived the CoLTs more favorably than did the graduate students, the majority of students across all classes (all modalities across all levels) perceived the implementation of CoLTs to be an effective way to master their course-specific student learning outcomes. For the second question, although there were differences by teaching modalities, we found that the majority of students perceived the workload among themselves and their group members during the CoLTs implemented activity to be equal. These findings strongly suggest that the CoLTs introduced in these classes facilitated students’ perceptions of mastery of course-specific student learning outcomes and effectively enhanced students’ abilities to collaborate by equalizing the workload among their group members.

This study contributes to the expansion of findings showing the effectiveness of CoLTs in different teaching modalities and different course levels. It also adds knowledge to a new line of research investigating the workload among students during the CoLTs-implemented activities, which by definition should make the workload equitable. Our findings confirm that by implementing CoLTs, students perceived the workload to be equal among group members. Another contribution of this study is the survey instrument, which is reliable and can be individualized to measure specific course outcomes for any type of course in any modality.

Limitations

There are several caveats to this study. First, the students examined in this study were not randomly sampled: they were students of the instructors who were committed and actively working to improve the
quality of their teaching. Thus, the findings of this study cannot be generalized to all students, but they can probably describe students in classes with faculty who devote time to designing and implementing CoLTs and those who would be just as enthusiastic and invested in their teaching as the four instructors in this study.

Second, this was a non-experimental, post-test only study with a design that relied exclusively on students’ perceptions for the dependent variables. The nature of this research effectively rules out using quasi-experimental or experimental designs. Future studies would benefit from triangulation, including student course grades, written comments in the instructor’s teaching evaluation, and a pre-test inventory of perceived collaborative skills would enhance the rigor of the protocol.

Finally, the effectiveness of the collaboration among students might differ based on the demographics of students, which we did not have enough samples to investigate. For example, a previous study has found that cultural backgrounds, such as individualistic or collectivistic cultures, influenced the students’ perception of collaboration (Popov et al., 2014). Another study found that immigration status influenced the effectiveness of collaboration (Stebleton, Soria, Alexixo, & Huesman, 2012). In addition to the demographic of students, we did not measure or evaluate how much learning climate might influence the effectiveness of CoLTs. For example, a previous study found that having staff support increased the effectiveness of collaboration in the classroom setting (Lizzio & Wilson, 2015).

**Recommendations for Future Research**

Replicating this study with other instructors who have designed and implemented CoLTs in their classes, and adding course grades, written comments from teaching evaluations, and a pre-test of perceived collaborative skills are recommended. A larger sample would also enable detailed analyses of student characteristics to evaluate whether gender, age, race, or ethnicity differences emerge in collaborative effectiveness. Ideally, systematically incorporating this survey into all courses that include a CoLT would enable the campus to develop a longitudinal database of CoLT effectiveness. As technological tools continue to grow, this database could be linked to overall student retention and graduation rates, allowing the university to model its work and to show that CoLTs enhance student retention and graduation rates.

**References**


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ROYA AZIZI received her doctoral degree in Policy, Planning, and Development from the University of Southern California. She is an adjunct assistant professor at California State University, Dominguez Hills and California State University, Fullerton and an advisory council member of the Advancement of Sustainability in Higher Education (AASHE). Her research interests are in the areas of sustainable policy and planning, mentorship, and collaborative learning strategies. Dr. Azizi has been featured in KIRN 670am Radio programs regarding her work in sustainable policy objectives.

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Appendix A

Student Survey

[Course Number and Title goes here]

Section 1

Your name_____________________________________________

Date_______________________________________

This evaluation of your class activity is routine component of higher education instruction and may be required by your instructor. You are being asked to allow your instructor to use your feedback in a research study that will include similar feedback from a minimum of 200 CSUDH students in undergraduate and graduate classes.

☐ I agree to allow this feedback to be included in the instructor’s research.

☐ I do NOT agree to allow this feedback to be included in the instructor’s research.

Your signature___________________________________________

Demographic Characteristics

Please write down the year in which you were born _____________________________

Please pick the one response that best describes your gender.

Female

Male

Trans

Other [Please describe ______________________________________]

Please pick the one response that best describes your race/ethnicity, which is presented using the nationally standardized classification system used by the US Census Bureau.

African American/Black, non-Hispanic

African American/Black, Hispanic

Asian or Pacific Islander

Caucasian/White, non-Hispanic

Caucasian/White, Hispanic

Other [Please describe ________________________________]
Section 2

Instructions: Write the names of your group members in the numbered boxes below. Then, assign yourself a value for each listed attribute. Then, do the same for each of your group members. When you have finished, submit this online on Blackboard.

Score:
- 5=Superior
- 4=Above average
- 3=Average
- 2=Below average
- 1=Weak

<table>
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<th>Myself</th>
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<th>2.</th>
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<td>Stayed task-focused (Not distracted or distracting)</td>
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<td>Listened to others</td>
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<td>Professionally and thoughtfully challenged responses that appeared to be incorrect</td>
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<td>Quality of contribution</td>
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<td>Consistently and actively worked toward a group goal</td>
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<td>Collaborated well</td>
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<td>TOTAL</td>
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Additional comments about collaborating with your classmates (optional):

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Open-ended qualitative questions

If you were to participate in this activity again, would you do anything differently to improve your work? Why/why not?

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### Appendix B

*List of CoLTs used in each respective course*

<table>
<thead>
<tr>
<th>Undergrad 1</th>
<th>Undergrad 2</th>
<th>Grad 1</th>
<th>Grad 2</th>
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<td>Test-taking Teams</td>
<td>Think-Pair-Share</td>
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<td>Learning Cell</td>
<td>Jigsaw</td>
<td>Jeopardy</td>
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Appendix C

*Reliability of Survey Questions: Principal Component Analysis for Eight Survey Questionnaire*

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| Eigenvalue                  | 6.298   |
| % of Variance              | 78.725   |
Appendix D

*Example rating given by a student based on the different standard deviation*

**SD = 0.5**

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<tr>
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<tr>
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**SD = 1.03**

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Students’ Global Mindedness and Cultural Sensitivity: Examining the Implications of a Semester at Sea Study Abroad Voyage

Nilufer Medora, Roudi Nazarinia Roy, and Tiffany L. Brown

California State University, Long Beach

As globalization increases and the international community moves toward greater interdependence, international learning experiences have become a core educational value for many American universities. Although there are various approaches to study abroad programming, the Semester at Sea (SAS) voyage is an understudied global education program. Using a sample of college students (N = 73), the present study examined differences between the cultural sensitivity and global mindedness scores of students prior to starting the SAS voyage and at the culmination of the voyage. The findings demonstrate significant increases in both global mindedness and cultural sensitivity at the completion of the program and support the positive role of cultural immersion experiences in student growth. Recommendations for future research and study abroad programming are also discussed.

International education has become one of the core educational values and missions of many American universities. As globalization increases, the international community is moving toward greater interdependence. As a result, institutions of higher education have an increased focus on preparing their students for the global work force (Wang, Peyvandi, & Coffey, 2014). One of the ways that colleges and universities have approached this is by providing global education opportunities for their students through study abroad programs.

Study abroad is a complex and dynamic topic with many implications for students, faculty members, administrators, and people in general as the world becomes more globalized (Harrell, Sterner, Alter & Lonie, 2017). Moreover, the American Association of Colleges and Universities recognizes the importance of global and international learning and has advocated for its integration into the academic curriculum (Hovland, 2009). Study abroad programs have diverse and far-reaching impacts. Overall, these global learning experiences have been found to increase students’ curiosity and appreciation for diversity, global awareness, and self-awareness (Young, Natrajan-Tyagi, & Platt, 2015).

As globalization increases, one of its most salient effects has been increased travel and the migration of individuals (Mapp, 2012). In the future, the number of Americans working in foreign countries will continue to increase (Salacuse, 1998; Santoro, 2009). Moreover, an increasing number of universities, organizations, companies, and social service agencies acknowledge the importance of cultural experiences in an international setting (Brandenburg et al., 2014; Kagan & Stewart, 2004; Al-Krenawi & Graham, 2000; Metzger, 2006; Xu, de Silva, Neufeldt & Dane, 2013).

A survey of the existing empirical scholarship demonstrates that study abroad programs result in students being more global minded (Clarke III, Flaherty, Wright, & McMillen, 2009; Redwine, Wagner, Rutherford, & Wingenbach, 2018; Take & Shoraku, 2018; Vandermaas-Peeler, Duncan-Bendix, & Bielh, 2018). These programs can also lead to students being more culturally and internationally aware (Harrell et al., 2017; Redwine et al., 2018; Senzaki, McChesney, Schwenj, & Steele, 2018; Williams, 2005). Furthermore, study abroad programs encourage student empathy and maturity while enhancing both critical thinking skills and problem-solving skills (Farell & Suvedi, 2002).

There are different types of study abroad programs spanning from two weeks to a year. Study abroad programs can be defined as all educational programs that take place outside the geographical boundaries of a students’ country of residence. A majority of study abroad programs in the social sciences involve a combination of course work, visits to NGOs, government organizations, social service agencies, orphanages, museums, schools, involvement in cultural activities, experiential activities and tours (Medora & Roy, 2017). However, the Semester at Sea (SAS) voyage program stands out as different from other study abroad approaches. More specifically, SAS includes students and faculty from multiple countries across the world on a semester long voyage at sea, stopping at several ports around the world to provide a rich global learning experience for the students. Although there are no other study aboard opportunities like it, there has been little empirical research done to assess the impact that SAS has on students’ professional and personal development.

Traditionally, the success and effectiveness of study abroad programs have been assessed by measuring increases in students’ levels of cultural sensitivity (Anderson, Lawton, Rexeisen, & Hubbard 2006; Gullekson, & Tucker, 2012; Li, 2013; Lumkes, Hallett, & Vallade, 2012; Wang et al., 2014) and global mindedness (Li, 2013; Lumkes et al., 2012; Wang et al., 2014) at the end of the program. Both of these outcomes have implications not only for a students’ academic success but also for a number of positive personal and interpersonal developmental outcomes (Li, 2013; Lumkes et al., 2012; Wang et al., 2014). In a general sense, cultural sensitivity consists of accepting cultural
differences without thinking that one’s culture is superior and preferred to other cultures. Cultural sensitivity also includes being open, adaptive, flexible, and accepting of different values, attitudes, beliefs, and practices. According to Straffon (2003), intercultural sensitivity describes a person’s response to cultural differences and varied perceptions of people from other cultures. Educators argue that students need to be equipped with this kind of cultural knowledge, skills, and expertise in order to effectively interact with and work with people from different countries (Anderson et al., 2006).

In terms of global mindedness, Hett (1993) defined it as having an ecological perspective of the world that promotes the unity and interdependence of humans and believing in universal human rights. Hett (1993) specifies that global-minded people perceive themselves connected to the world community and are aware of their responsibility for its members. Reysen and Katzarska-Miller (2013) describe global citizens as individuals who possess awareness and caring; promote cultural diversity, social justice, and sustainability; and have internalized a responsibility to act.

Based on the increasing relevance of study abroad programs and the implications that study abroad can have on the personal and professional development of students, it is imperative to continue to identify the high impact practices that are associated with the success of study abroad experiences. Moreover, while some study abroad experiences have received a great deal of scholarly attention, there are other programs that are under-studied.

Thus, the primary objective of this study is to examine whether there are significant changes in the global mindedness and cultural sensitivity scores of students enrolled in a Semester at Sea (SAS) study abroad program. More specifically, assessing these constructs before the SAS voyage and after the completion of the program will provide important insights into program effectiveness. Furthermore, if the SAS program is effective at significantly changing students’ cultural sensitivity and/or global mindedness, there should be greater emphasis on these types of educational experiences in higher education, and a greater amount of resources should then be channeled into such programs. The present study seeks to address an important gap in the extant research while generating knowledge of the ways in which students are impacted by particular study abroad experiences.

**Literature Review**

Study abroad falls into the category of high-impact practices that enhance students’ learning outcomes related to diversity and global learning (Kuh, 2008). Study abroad encourages students to experience an interconnected world and embrace differences rather than clinging to ethnocentric values and beliefs, and it highlights for the students the collective heritage of human beings (Mulvany, 2017). Furthermore, it encourages frequent contact and interactions with the faculty mentor and native people from place(s) they are visiting, contacts with their classmates, professors, and guest speakers who are likely to be from different backgrounds. Scholars propose, “Through global learning, students should (1) become informed, open-minded, and responsible people who are attentive to diversity across the spectrum of differences, (2) seek to understand how their actions affect both local and global communities, and (3) address the world’s most pressing and enduring issues collaboratively and equitably” (Hovland, 2014, p.6-7).

Munoz, Wood, and Cherrier (2006) contended that teaching about cultural sensitivity and global mindedness in a traditional classroom can be challenging because students need more “concrete experiences” with other cultures to actually prepare them to function in the complex, global environment. For example, these scholars state the following:

> Although an intercultural exposure could be attained within a single country, extending the classroom beyond the conventional campus setting to include an actual international encounter with other people and cultures has long been recognized as a valuable educational practice. The intercultural benefits of student engagement through experiential international encounters lead Schuster et al. (1998) to specify that one really needs to visit a country to understand it (p.173).

Achieving the aforementioned goals can be difficult in a traditional classroom as developing and instilling interculturalism requires that students engage in concrete experiences with other cultures. Although there are a number of study abroad programs, Semester at Sea (SAS) utilizes a unique context for cultural immersion and experiential learning.

Douglas and Jones-Rikken (2001) reported using a control group to study in order to examine the effectiveness of their study abroad programs. The students in the experimental group participated in the study abroad program while the students in the control group had no such experience. Their findings indicated that students in the experimental group were more world-minded and developed a view of the world that was less ethnocentric. Other researchers have found that participating in these programs can increase students’ global competencies (Li, 2013), change students’ outlook on global and political issues (Lumkes et al., 2012), enhance students’ global leadership skills (Montgomery & Arensdo, 2012), facilitate students’ intercultural growth (Gullekson & Tucker, 2012), and increase the students’ interests in further study abroad (Wang, Peyvandi, & Moghadam, 2009).
Socioeconomic factors often influence students’ decisions to study abroad. Horn, Jerome, and White (2008) specified that students coming from families who belonged to the upper-middle class or higher socio-economic statuses were more likely to engage in study abroad programs. As anticipated, students listed finances as the most important factor that affected their decision to study abroad (Lee, 2014). Therefore, it is not surprising to learn that students from low socioeconomic class are less likely to engage in study abroad opportunities (Schnusenberg, de Jong, & Goel, 2012). Likewise, Whatley (2017) concluded that generally, student loans negatively influenced the likelihood of a student studying abroad, but grant aid increased the chances of students studying abroad. Whatley (2017) also found that students with lower levels of expected family contribution were less likely to participate in study abroad programs. Those with greater financial need are also less likely to study abroad.

Most students who participate in short-term study abroad programs are interested in obtaining more information and understanding about the host country (Pederson, Skidmore, & Aresi, 2014). These students have also been found to be involved in clubs and organizations that focus attention on international topics before they leave for the program (Pederson et al., 2014). Furthermore, they also tend to work in fields that focus on international affairs (Lane-Toomey, & Lane, 2013). Lane-Toomey and Lane (2013) also found that students with previous travel experience within the U.S. and internationally, were more likely to study abroad.

The History and Structure of SAS

The Semester at Sea (SAS) study-abroad program differs from many other study-abroad program because the entire program is conducted on a ship for the duration of a semester. The ship circumnavigates the world and makes 4 to 5 day stops at different ports; totaling 10 to 12 ports in one semester. The objective of the SAS program is to encourage students to become more globally aware and to appreciate the similarities, uniqueness, and cultural diversity of each country they visit. The mission of the SAS program is to educate individuals with global understanding necessary to address the challenges of the interdependent world and appreciate cultural heterogeneity. With the world serving as the classroom, the program integrates multiple-country study, interdisciplinary coursework, and experiential learning for meaningful engagement in a global community (Multi-Country Study Abroad, 2020). Typically, SAS has approximately 650 undergraduate students on the ship during one semester, and they come from approximately 280 universities worldwide. There are two voyages a year, one in spring and one in fall.

The Semester at Sea program has as part of its mission statement a commitment to foster and enhance a shipboard community that includes all ethnic, national, and sexual identities (https://www.sas.com/en_us/company-information/diversity.html). The foundation of every SAS voyage is the diversity of people from different ethnic and international backgrounds, their varied perspectives, and the culture of the places the students are likely to visit. The SAS program aims to create an inclusive, welcoming, shipboard culture that facilitates a unified, compassionate, and empathic community valuing all people and perspectives (https://www.semesteratsea.org/life-at-sea/diversity/).

The entire SAS study abroad program is conducted on a cruise ship that has been converted into a floating and functional university. The ship has a student union, a library, a swimming pool, lounges, basketball arenas, dining rooms, and several classrooms. Since the inception of the program in 1963, the program has served 75,000 undergraduate students. During the spring and fall semesters, students have classes for 100 to 10 days while they circumnavigate the world. The Semester at Sea program itineraries are built around international challenges, trends, issues, and international theme. The M.V. World Odyssey serves as a traveling home and university campus. The program strives to give an in-depth meaning to cultural immersion and cultural diversity, experiential learning, and a sense of international community (Multi-Country Study Abroad, 2020).

Students attend classes in a variety of disciplines while the ship sails at sea. Approximately 20 to 25 classes in different academic disciplines are offered. Each course has an in-depth in-country “Field Class” component for 8-10 hours a day that the students are required to take with every course they take. The classes offered most frequently are those are in liberal arts, humanities, life span human development, music, fine arts, economics, geography, history, English literature and writing, theater, and business. It is mandatory that all students take an interdisciplinary core course entitled “Global Studies”. This course is considered as a core class for the Semester at Sea program because it provides an integrated and interdisciplinary introduction to each country visited on the itinerary. The course examines a brief history of each country that they are about to visit, including information regarding traditional and changing political systems, cultural traditions, customs, and values. This is done to prepare the students for field activities in the country where the ship docks.

The Global Studies course is expected to assist students to expand their understanding of world cultures and life in the selected countries on the itinerary. As part of this program students are
encouraged to think critically about their own societies and global change. Specifically, pre-and post-port lectures are held to better explain to the students both intercultural competency and global understanding.

The sponsoring university appoints the Dean from among the most accomplished faculty, oversees the curriculum, and approves the course syllabus for the Semester at Sea program. At the core of the Semester at Sea experience are 22 to 25 global-minded, knowledgeable, experienced, student-oriented educators who are passionate about international education. The educators engage the students in shipboard courses in combination with field classes that involve experiential learning and cultural immersion experiences.

Prior to arriving at port, students receive a pre-port briefing regarding the culture and cultural milieu of the country that they are about to visit. Upon arriving at the Port of Call, a special guest speaker who could be a community leader, someone from the American embassy or the American ambassador presents a lecture to the students and faculty. This prepares the students for what to expect in the country that they are about to visit. While the ship docks at various ports, no classes take place. Students are encouraged to travel on the Semester at Sea-sponsored excursions or participate in independent travel within the country. Travel outside the country where the ship is docked is strictly prohibited.

**Empirical Assessments of SAS**

Since the inception of this program in 1963, there are only five published studies on how the SAS program influences the lives of students. Caton and Santos (2009) commented that investigating the program further and studying the impact of the SAS program would be fruitful because its itinerary includes many destinations. More research is definitely needed to highlight how the SAS program is different from other study abroad programs, as well as how students benefit from participating in this program. Again, the SAS program is a non-profit global education study abroad program that emphasizes cross-cultural interaction and understanding between program participants and their international hosts.

As part of the SAS program, the students have direct contact with people and the cultures of the country they visit. These programs afford the opportunity to develop cross-cultural understanding of human commonalities and global interdependence while recognizing and respecting individual potentials and cultural diversities. The Institute’s approach to international and cultural education provides the framework for a lifetime of learning, concern and commitment to others (Multi-Country Study Abroad, 2020).

McCabe (1994) was the first researcher to publish research findings on the impact of the SAS program on the participants. Although McCabe’s (1994) work provided empirical insight into the impact of the SAS program, the sample was small, the methodology was unclear, and the results lacked clarity. The initial sample for the study included 23 students, which was then reduced to fourteen focal group members. Qualitative analyses were used, including participant observations, interviews, and student journaling. The students were asked what if anything that they experienced as part of SAS voyage assisted them to create a global perspective. Data were coded according to five thematic dimensions: (1) fear versus openness; (2) people being the same or different versus people being the same and different; (3) naivety versus cross-cultural knowledge and understanding; (4) pro or anti-Americanism versus pro and anti-Americanism; (5) ethnocentrism versus global centricism. The results of this study indicated that initially the students were apprehensive and fearful when the voyage started, but the students’ attitudes shifted when they experienced new countries and cultures. For all the respondents, the degree of “openness” increased as the voyage progressed.

For the second dimension, students were asked their opinions about people from other cultures being the same and/or different as Americans. At the start of the voyage, only three students saw people in the world as both the same and different. At the end of the voyage, however, a majority of the students saw people in the world as both the same and different, thus recognizing the differences that exist between cultures.

The results further suggest that as the voyage progressed, for the third dimension, students did not think that they were naive in understanding different cultures. More specifically, they mentioned that they were able to better comprehend cultural differences. Additionally, some students stated that they became more interested and aware of world events. For the fourth dimension, whether the students had pro- or anti-American attitudes or pro- and anti-American attitudes, the students expressed strong attitudes and feelings with regard to nationalism as they started their voyage and the SAS program. By the end of the voyage, most students viewed Americanism on a broader scale, and they were able to see both the positive and negative aspects. The last dimension was to measure ethnocentrism versus global centricism. Global centricism implies looking at issues from the standpoint of a citizen of the world, rather than looking at the world from a singular perspective. At the conclusion of the voyage, all the students had become more global centric. McCabe (1994) elaborated that the course work that students took on this ship, the in-port experiences, and field classes could possibly have contributed to the students being more tolerant and global minded.

Finally, as part of the same study, McCabe (1994) remarked that the students’ own prior travel
experiences, their experiences in the “ports of call”, the lectures given by the inter-port lecturers, and informal conversations with faculty members on board, may have also helped to enhance the students’ global perspective. Students consistently described the port experiences and the field classes as the most meaningful aspects of the SAS program in terms of contributing to the development of a global perspective. The students’ sense of global mindedness increased with the progression of the voyage and each “Port of Call” that they visited had repeated exposure to diverse people, cultures, and situations.

Dukes (2006) conducted a 22-year follow-up study with students who had participated in the SAS program during their college years. He interviewed 29 participants by phone and mail to see what type of impact the SAS program had on their lives 22 years later when these respondents were in their middle adulthood years. The respondents answered the questions relating to the outcomes of the SAS program and completed the Crumbaugh’s Purpose in Life test. The results indicated that the participants still had a high global perspective and high purpose in life test scores 22 years after they had completed the SAS voyage. Many of them had continued to travel internationally during the 22 years. A majority of them indicated that the voyage gave them a more accurate worldview and a more balanced world perspective. In short, Dukes (2006) concluded that as a group, former participants of the Semester at Sea program were doing well as indicated by the high Purpose in Life scores and positive open-ended responses. Many respondents were still drawing on experiences from 22 years ago, from the voyage. Dukes (2006) concluded that the Semester at Sea experience served as a springboard for enduring personal growth.

Global Mindedness and Cultural Sensitivity

Douglas and Jones-Rikkers (2001) concluded that students who participated in a study abroad program were more global minded than the control group who had no international travel experience. Their results further suggested that the greater the cultural difference between the host and home cultures, the higher the global mindedness scores tended to be. Similarly, Zhai and Scheer (2002) found that students who had more contact with people from other countries had higher levels of global mindedness.

Zorn (1996) concluded that the length of the study abroad program also influenced the extent of global mindedness in students with longer programs resulting in greater levels of global mindedness. Kehl and Morris (2008) in their study on nursing students found that males tended to be more global minded than females. These researchers also found that participants who reported their parents’ annual income to be over $100,000 had lower global minded scores (Kehl & Morris, 2008).

The concepts of cultural sensitivity and global mindedness have been studied in previous research using smaller samples and mostly with students who visited one locale for the entire study abroad program. However, these constructs have not been empirically investigated in larger samples of students who have participated in programs like the SAS program visiting multiple destinations.

Objectives

Students enrolled in the Semester at Sea (SAS) program, engage in cross-cultural immersion experiences when they participate in their field classes and regular SAS excursions. More specifically during the field classes, the students are encouraged to spend time with local host families, visit schools, have meals with families, mingle with college students, and engage in service-learning projects that require extensive interactions with the local people. Consequently, it is expected that the overall gain in cultural sensitivity and global mindedness will be significant because of these SAS experiences. Therefore, the present study is a descriptive study to investigate if students experienced significant gains in cultural sensitivity and global mindedness during the SAS program. As a result, the following research questions were developed to guide and examine the impact of SAS on participants.

1. Is there a significant difference between the cultural sensitivity scores of the students prior to starting the voyage and at the culmination of the voyage?
2. Is there a significant difference between the global mindedness scores for the students prior to the initiation of the program and the end of the program?

In this global and interconnected society, it is important and practical for professionals to be global-minded and to have intercultural proficiency. They need to be open to diversity and possess an understanding of intercultural communication. The objectives of the present study add to our understanding of how to cultivate these critical skills in college students and new professionals.

Method

Procedures and Participants

The present study took place on a semester at sea voyage where students spent a semester visiting several countries across the world, including Mexico, Hawaii, Japan, China, Vietnam, Cambodia, Myanmar, India,
## Table 1
*Global Mindedness Scale*

<table>
<thead>
<tr>
<th>Global Mindedness Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>I often think about the kind of world we are creating for future generations.</td>
</tr>
<tr>
<td>Americans can learn something of value from all different cultures.</td>
</tr>
<tr>
<td>It is very important to me to choose a career in which I can have a positive effect on quality of life for future generations.</td>
</tr>
<tr>
<td>The United States is enriched by the fact that it is comprised of many people from different cultures and countries.</td>
</tr>
<tr>
<td>It is important that American universities and colleges provide programs designed to promote understanding among students of different ethnic and cultural backgrounds.</td>
</tr>
<tr>
<td>In the long run, America will probably benefit from the fact that the world is becoming more interconnected.</td>
</tr>
<tr>
<td>I enjoy trying to understand people’s behavior in the context of their culture.</td>
</tr>
<tr>
<td>I generally find it stimulating to spend an evening talking with people from another culture.</td>
</tr>
<tr>
<td>I think of myself, not only as a citizen of my country, but also as a citizen of the world.</td>
</tr>
<tr>
<td>My opinions about national policies are based on how those policies might affect the rest of the world as well as the United States.</td>
</tr>
<tr>
<td>The needs of the United States must continue to be our highest priority over needs of other countries.*</td>
</tr>
<tr>
<td>I feel an obligation to speak out when I see our government doing something I consider wrong.</td>
</tr>
<tr>
<td>I think my behavior can impact people in other countries.</td>
</tr>
<tr>
<td>The fact that a flood can kill 50,000 people in Bangladesh is very depressing to me.</td>
</tr>
<tr>
<td>I am able to affect what happens on a global level by what I do in my own community.</td>
</tr>
<tr>
<td>I feel very concerned about the lives of people who live in politically repressive regimes</td>
</tr>
<tr>
<td>When I hear that thousands of people are starving in an African country, I feel very frustrated.</td>
</tr>
<tr>
<td>When I see the conditions some people in the world live under, I feel a responsibility to do something about it.</td>
</tr>
<tr>
<td>I sometimes try to imagine how a person who is always hungry must feel.</td>
</tr>
<tr>
<td>Americans have a moral obligation to share their wealth with the less fortunate people of the world.</td>
</tr>
<tr>
<td>I sometimes feel irritated with people from other countries because they don’t understand how we do things here.*</td>
</tr>
<tr>
<td>I feel a strong kinship with the worldwide human family.</td>
</tr>
<tr>
<td>I have very little in common with people in underdeveloped nations.*</td>
</tr>
<tr>
<td>The present distribution of the world’s wealth and resources should be maintained because it promotes survival of the fittest.*</td>
</tr>
<tr>
<td>American values are probably the best.*</td>
</tr>
<tr>
<td>Americans should be permitted to pursue that standard of living they can afford it only has a slight negative impact on the environment.*</td>
</tr>
<tr>
<td>Really, there is nothing I can do about the problems in the world.*</td>
</tr>
<tr>
<td>It is not really important to me to consider myself as a member of the global community.*</td>
</tr>
<tr>
<td>Generally, an individual’s actions are too small to have a significant effect on the ecosystem.*</td>
</tr>
</tbody>
</table>

*Negatively worded items that were reverse coded when calculating the overall mean
South Africa, Ghana, Morocco, and Germany. The student participants included in this study (N = 73) were 18—23 years of age (M = 20.23, SD = 1.09), were mostly female (n = 63, 87%) with 10 students identifying as males (13%). Most students self-identified as white (n = 52, 71%), with smaller portions of the participants identifying as Asian (n = 8, 11%), Hispanic (n = 5, 7%), and two or more races (n = 5, 7%). Two additional students self-identified as Black, and a final student self-identified their ethnicity as Pacific Islander. Over 60 percent of the participants in this study were born in the United States, and all participants indicated that they had previous experience traveling abroad. Although there were students at various levels of their academic careers in this sample, the majority of students were juniors (n = 34, 47%), an additional 16 (22%) students were sophomores, 15 (21%) were seniors, and one (1%) was a freshman. The remaining seven students indicated their year in school as “other.” This study was conducted with the approval and permission from the IRB board of one of the university partners and the permission of the Academic Dean of the SAS program.

Data for this study were collected from a survey administered at two time points over the semester. The initial survey was administered in January at the beginning of the voyage, and the second survey was administered at the end of the voyage. Both surveys consisted of the same demographic questions regarding race/ethnicity, age, major and GPA, questions regarding past international travel experiences, and measures of participants’ global-mindedness and cultural sensitivity. Students completed the pre- and post-study abroad surveys as part of their course assignments and received points towards their final grade.

**Measures**

**Global Mindedness**

An adapted version of Hett’s (1993) Global Mindedness scale as reported in Zhai and Scheer (2004) was used. This 29-item instrument uses a 6-point Likert-type response category ranging from 1 (very strongly disagree) to 6 (very strongly agree). The 29-item scale was used to create a composite score of global-mindedness for both Time-1 and Time-2. Eight of the 29 items on the scale were negatively worded, thus we reverse coded those items when calculating the overall mean. With the reverse coding, higher scores indicated greater global-mindedness and a lower response indicated less global-mindedness. For example, one item on the scale states “The needs of the United States must continue to be our highest priority over needs of other countries,” so these items were reverse coded such that a 1 = very strongly agree, and a 6 = very strongly disagree. The internal reliability, using Cronbach’s coefficient alpha, was 0.89 for the overall tool and alphas for the five subscales ranged from 0.47—0.66.

**Cultural Sensitivity**

Stanley’s (1996) Attitudes towards Cultural Diversity and Pluralism Scale was used to measure students’ cultural diversity attitudes. This was a 19-item scale (α = 0.95) with a 6-point Likert-type response category ranging from 1 (very strongly disagree) to 6 (very strongly agree). The 19-item scale was used to create a composite score of cultural sensitivity for both Time-1 and Time-2. Six of the 19 items on the scale were negatively worded, and thus were reverse coded when calculating the overall mean. With the reverse coding, higher scores indicated greater cultural acceptance while a lower numeric response indicated less cultural acceptance. For example, one item on the scale stated, “I am uncomfortable around students whose ethnic heritage is different from my own,” so the response category for this item was reverse coded such that a 1 = very strongly agree, and a 6 = very strongly disagree. The internal reliability, using Cronbach’s coefficient alpha, was 0.95.

**Results**

**The Influence of an SAS**

To test the objectives regarding the influence of an SAS on students’ cultural sensitivity and global mindedness scores respectively, a dependent sample t-test was performed. The pre-test cultural sensitivity mean (M = 5.34, SD = 0.49) and post-test cultural sensitivity mean (M = 5.43, SD = 0.48) were significantly correlated at r = .72, p < .001. The pre-test global mindedness mean (M = 4.74, SD = 0.49) and post-test global mindedness mean (M = 5.03, SD = 0.48) were also significantly correlated at r = .70, p < .001. Prior to conducting the analysis, the assumption of normally distributed difference score was examined, and the assumption was considered satisfied. A paired sample t-test resulted in significant changes in the pretest and posttest of both cultural sensitivity (t72) = -2.12, p < .05 and for global mindedness (t67) = -6.51, p < .001, illustrated in Table 3. The negative t values for both global mindedness and cultural sensitivity indicates that the mean scores for both scales were higher at the post-test than the pre-test. Thus, we assume that for the majority of students, the SAS experiences increased their global mindedness and cultural sensitivity as indicated by the statistical significances of these t-tests.
Table 2

Cultural Diversity Scale

<table>
<thead>
<tr>
<th>Attitudes towards Cultural Diversity Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>In education, it does not matter if a student is rich or poor, everyone should have the same chance to succeed.</td>
</tr>
<tr>
<td>Each student should have an equal opportunity to learn and succeed in education.</td>
</tr>
<tr>
<td>Education should help students develop respect for themselves and others.</td>
</tr>
<tr>
<td>Students should be taught to respect those who are different from themselves.</td>
</tr>
<tr>
<td>Students should feel pride in their heritage.</td>
</tr>
<tr>
<td>All students should learn about cultural differences.</td>
</tr>
<tr>
<td>Each minority culture has something positive to contribute to U.S. society.</td>
</tr>
<tr>
<td>Education activities should be representative of a wide variety of cultures.</td>
</tr>
<tr>
<td>I enjoy being around people who are different from me.</td>
</tr>
<tr>
<td>Educators are responsible for teaching student about the way in which various cultures have influencer this country.</td>
</tr>
<tr>
<td>Educators should plan activities that meet the diverse needs and develop the unique abilities of students from different ethnic backgrounds.</td>
</tr>
<tr>
<td>The perspectives of a wide range of ethnic groups should be included in the curriculum.</td>
</tr>
<tr>
<td>Minority individuals should adopt the values and lifestyles of the dominant culture.*</td>
</tr>
<tr>
<td>I am uncomfortable around students whose ethnic heritage is different from my own.*</td>
</tr>
<tr>
<td>Minority students are hard to work with.*</td>
</tr>
<tr>
<td>Cultural diversity is a valuable resource and should be preserved.</td>
</tr>
<tr>
<td>Cultural diversity is a negative force in the development of the U.S. society.*</td>
</tr>
<tr>
<td>There is really nothing that educational systems can do for students who come from lower socioeconomic groups.*</td>
</tr>
<tr>
<td>Students should give up their cultural beliefs and practices to fit in with other students.*</td>
</tr>
<tr>
<td>*Negatively worded items that were reverse coded when calculating the overall mean</td>
</tr>
</tbody>
</table>

Table 3

Pretest and Posttest Comparisons for Cultural Sensitivity and Global Mindedness

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>pretest M (SD)</th>
<th>pretest M (SD)</th>
<th>T value</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Sensitivity</td>
<td>73</td>
<td>5.34 (0.49)</td>
<td>5.43 (0.48)</td>
<td>-2.12*</td>
<td>0.25</td>
</tr>
<tr>
<td>Global mindedness</td>
<td>68</td>
<td>4.74 (0.50)</td>
<td>5.03 (0.49)</td>
<td>-6.51***</td>
<td>0.79</td>
</tr>
</tbody>
</table>

*p < 0.05; ***p < 0.001. Effect size calculated by Cohen’s d (Small, 0.20; Medium, 0.50; Large, 0.80 as offered by Cohen, 1992).

Cohen’s d for cultural sensitivity was estimated at -0.25, which is a small effect based on Cohen’s (1992) guidelines. Time-2 global mindedness reports were also statistically significantly higher than the time-1 mean. Cohen’s d for global mindedness was estimated at -0.79, which is a large effect based on Cohen’s (1992) guidelines.

Students Responses to Open-Ended Questions

Students also responded to a series of open-ended questions meant to assess the breadth and depth of their experiences during the SAS voyage. For the purposes of the present analysis, we will highlight only a few participant quotes to provide context for what was most relevant to cultural sensitivity and global mindedness. More specifically, when asked, “What type of impact did the program have on you personally, academically, socially, and professionally?”, one student indicated, “I am a better global citizen,” while other students focused on the importance of the cultural immersion experiences and aspects of the curriculum that required them to reflect and apply what they had learned. For example, one student stated that the biggest impact of the program came from “. . . homestays in Vietnam, India, and Ghana, where I was able to be integrated into the culture more than in other ports. Similarly, another student reported, “I enjoyed the application process in each of the countries, as well as focusing on the reflection aspect of what we learned.” Moreover, students appreciated that the SAS voyage offered exposure to experiences beyond that of traditional tourist attractions. One student offered, “Semester at Sea is different from traveling. I could do some impactful programs through SAS, and I think I’ve never been [sic] to villages in rural areas, nor to orphanages,
if it were not for SAS.” Another student listed the following as the most impactful parts of the experience: “Conversations that I had with most people from other countries/ethnicities around the world. Being a part of the SAS community. Gaining a lot of diverse knowledge and learning new things every day.”

**Discussion**

The purpose of this study was to examine whether the Semester at Sea program influenced students’ global mindedness and cultural sensitivity. We measured both of these constructs prior to the program starting and at the end of the voyage to determine if there was an increase, a decrease, or the scores remained the same. The findings indicated a significant increase in global mindedness and cultural sensitivity at the completion of the SAS voyage. The results of the present study support the positive role of global learning and cultural immersion experiences that contribute to student growth. However, given the nature of the SAS it can be difficult to pinpoint what specific aspects of the program might be responsible for the shifts seen in students.

Although we did not collect data on the specific impact of the course curriculum, the results seem to suggest that the Global Studies course that had the “cultural awareness” component during every class period for 15 to 20 minutes might have had an influence in the students’ culturally sensitivity. When the “cultural awareness” module was presented in class, various prejudicial and/or discriminating ethnic, gender, and cross-cultural scenarios were presented to the students by the course instructor. The students got into smaller groups, discussed the scenario, and generated options on how the students would approach the problem. In addition, the lecture classes focused on the specific culture of the country where the ship docked. For many of the field labs and class assignments, the instructors required the students to talk to local people about their own life challenges and strengths. These activities may have also contributed to increasing cultural sensitivity. Also, student responses to the open-ended questions in the present study further suggest that students were impacted most by the cultural immersion experiences they had at the ports and the field classes. Overall, the increases in cultural sensitivity found in the present sample mirror results from studies that measured cultural sensitivity at the conclusion of other short-term study abroad programs (Clark III et al., 2009; Kim & Goldstein, 2005; Williams, 2005; McCabe, 1994; Niehaus, & Wegener, 2019; Senzaki et al., 2018).

In terms of global mindedness, the Global Studies course, the field classes that were part of the courses being offered, and the SAS excursions made a significant impact on the students’ ideas of the world occurrences and, consequently, made them more global minded. For example, visiting the Third World countries—e.g., Myanmar, Vietnam, India, Ghana, and South Africa—may have increased their compassion, sensitivity, general knowledge, and global awareness at the same time. In Ghana, for instance, some students elected to do home stays with local families. In their home stay, the students realized that many families lived in small huts with no running water, and no electricity, and outhouses were still being utilized as makeshift toilets. As indicated in the participant responses to open ended questions, students reported that the homestays were an integral part of their learning experience.

Again, in Ghana, as part of an SAS excursion, the students visited fortresses where African slaves were captured and held until they were transported to American in the 1600s, 1700s, and 1800s. About half the students on the ship got to see the gigantic fortresses along the Ghana coast where the French and Dutch companies had monopolized the transport of slaves from Africa to the U.S. The slaves were captured, branded, and then held in these fortresses for as long as a month before being sent like cattle to the east coast of the United States. This was an impactful, demoralizing, emotionally disturbing, yet memorable moment for the students and faculty alike.

The visit to Cape Town in South Africa was another location that served as “an eye opener” for the SAS students. This visit made them more aware of prejudice and discrimination because of the color of a person’s skin. SAS conducted many excursions to Robben Island where Nelson Mandela was imprisoned for 27 years. By visiting this historic site, the students learned, saw pictures, and movies on the ways in which black, colored, and white people were treated. Many of the students later commented that they were aware of apartheid, but they did not know the intensity of the segregation.

Likewise, the first author of the manuscript took students on a class excursion to a township (slum area) in Cape Town. We walked through the entire township with our local guide, talked to residents living there, and visited the marketplace and the schools where the children studied and played. It was difficult to see the plight of some of these hutments and the close proximity of the hutments to each other, and the number of people living in the hutments. Students were moved by the perceived lack of privacy or personal space that these families had. On the tour, the group saw the hostel that fruit pickers, vegetable pickers, road construction workers, and menial job workers lived in when they came to Cape Town from adjacent cities and oftentimes countries close by. The experiences the students had during this visit to this township was very informative and increased their awareness of diverse ways of living daily life.
In India the students could select from a number of excursions that SAS had arranged. The most popular trip was the five-day excursion to Jaipur, Udaipur, Delhi, and Agra. In Agra the students saw the Taj Mahal, one of the Seven Wonders of the World. Another popular excursion was to see parts of rural India, spend 3 days in a village, and work on a service-learning project. This project entailed building a small room and stacking books on the shelves in it so that the children could use it as a library. For these students, seeing life in rural India was a novel experience because they saw the limited resources that most families had. Consistent with previous research (Munoz, et al., 2006; Zhai & Scheer, 2002), these kinds of hands-on, culturally immersive experiences have the greatest impacts on students. In particular, being part of this environment provided students with an increased awareness of the impact that poverty has on the lives of people in other countries.

Another SAS excursion involved sending students to an Indian dinner, followed by a showcase of different Indian dances from various states in India. The first author of this manuscript did a field class in Kerala where they visited an Indian University. The Dean of the college gave a presentation entitled, “Changes That Have Occurred in the Indian Family over Time”. This presentation was well-received by the American students. The group was taken to a soup kitchen where the elderly Indians who lived alone came once a week to have a group lunch, socialize, sing, and play games. The students spoke to the older adults via the services of a translator. The final activity for the day involved going back to the university where the students had the opportunity to engage in conversation with Indian students and ask them questions about everyday life. This was followed by five different faculty members sharing highlights of their research projects with the group.

Previous researchers investigated whether students’ sense of global mindedness had altered after the short-term study abroad program. Researchers (Douglas & Jones-Rikkers, 2016; Redwine et al., 2018) also concluded in their research studies that the students’ global mindedness increased after study abroad program. The results of this research study are consistent and in agreement with previous studies. Previous research (Zorn, 1996) has also indicated that longer study abroad programs have greater impacts on global mindedness, and as a result the findings from the present study could be linked to the duration of the SAS program. As pointed out previously, study abroad programs can range from a few weeks to a year, and the results here provide additional support for study abroad programs that give students more time to fully experience diverse cultures.

**Recommendations and Implications**

1. Since SAS is a semester long multiple-country program, more studies are needed to specifically address the benefits of this program. The extant literature is limited and does not address many of the advantages that students who participate in the program encounter. Similarly, more research on SAS programs will give important insight into the ways that the program might be improved to better support positive student outcomes.

2. Qualitative investigations need to be conducted to get at the depth of the students’ responses so that we know more about how the program influenced changes in the students and visiting which countries made the greatest impact. These kinds of study abroad programs can better tap into the specific aspects of SAS curricula and structures that are most beneficial. Moreover, studies should also examine the perceived challenges of SAS that may have interfered with student growth and development.

3. More financial supports in the forms of grants and scholarships need to be awarded to low-income and minority students on the basis of financial need and merit so that they too can take advantage of the same perks that are awarded to other students who come from more privileged backgrounds. Although SAS is already giving out scholarships to underprivileged students, universities, and foundations, the government needs to sponsor more students for study abroad programs as well.

4. Additional research is needed to determine which countries, cultural experiences, field classes, and SAS excursions had the greatest impact on students’ global awareness and cultural sensitivity. This will provide valuable information for SAS faculty and staff in the development of high impact activities and course curriculum.

5. Since participating study abroad programs have been proven to be effective and significant in the lives of undergraduate students, more administrators and educators need to make it an integral part of the students’ undergraduate program.

6. Most of the students that seem to be participating in the short-term study abroad program are students majoring in business, linguistics, nursing, social work, and social sciences. Students from the natural sciences, i.e., mathematics, physics, chemistry, microbiology should be encouraged to take advantage of this experience as well.
References


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Understanding College Students’ Perceptions of Effective Teaching

Connie Chuyun Hu
University of Kansas

The purpose of this study was to provide an integrated understanding of college students’ perceptions of effective teaching centering on students’ voices and learning experiences. Using a phenomenological approach, this study identified prominent attributes of effective teaching from interviews with undergraduate and graduate students at a Midwestern research university. The results concluded that a teacher-student relationship, engagement, and real-world experience are the most important qualities of effective teachers valued by students across disciplines and backgrounds.

This study offers insight into teaching effectiveness and a useful guiding mechanism for teachers in developing a repertoire of effective teaching skills. This study recommends longitudinal research to understand how perceptions of effective teaching change as students mature and how their learning objectives and experiences shape and reshape the definition of teaching effectiveness. The study also suggests future research by looking into the comparisons between both students’ and teachers’ perceptions in order to gain a holistic understanding of effective teaching.

Great teachers deliver knowledge, facilitate discussions, and entertain students to promote enjoyment and motivation for learning by teaching effectively. “What is effective teaching?” is a decade old question among educational researchers and teachers. Effective teaching is hard to define and measure, and its definition varies greatly among students and teachers (Miron & Mevorach, 2014). As it is students’ learning and academic future at stake, many believe that students should have the most influential voice in what is regarded as effective teaching (Alhija, 2017; Helterbran, 2008; Parpala, Ylanne, & Rytkonen, 2011). The most frequently used method to understand students’ perceptions of teaching effectiveness is the analysis of responses gathered from student evaluations of teachers (SETs) or teacher evaluation forms (TEFs) (Huang & Lin, 2014; Onwuegbuzie et al., 2007). Researchers have documented that the prominent characteristics of effective teaching are the interweaving of content knowledge and pedagogical knowledge, as well as a better understanding and appreciation of the multifaceted nature of students (Allan, Clarke, & Jopling, 2009; Aregbeyen, 2010; Helterbran, 2008; Keeley, Christopher, & Buskist, 2012). More recent research on the personal qualities and behaviors of excellent teachers has painted a intriguing picture of what effective teaching looks like, as it is not possible to separate the concept of teaching as a process and the characteristics of a teacher as a subject (Alhija, 2017; Keeley, Smith, & Buskist, 2006; Keeley et al., 2012; Miron & Mevorach, 2014). Personal characteristics play an integral piece in the overall description of an effective teacher. Subject matter expertise, the ability to deliver knowledge, and personal characteristics all blend into the meaning of effective teaching (Helterbran, 2008).

However, an increasing trend in literature suggests that SETs and TEFs are systematically biased against female instructors (MacNell, Driscoll, & Hunt, 2015; Miller & Chamberlin, 2000; Mitchell & Martin, 2018), and responses to SETs are heavily influenced by students’ conceptions of learning and other individual differences (Kember & Wong, 2000; Onwuegbuzie et al., 2007). Onwuegbuzie and colleagues (2007) argued that even if scores yielded by evaluation forms are reliable, the validity of SETs and TEFs is in question and “this potential threat to validity is disturbing and warrants further research” (p. 151).

While there is a plethora of research, mostly quantitative on students’ perceptions of effective teaching conducted by analyzing comments from SETs, TEFs, and online forums such as www.ratemyprofessors.com, not much scholarship can be found that explains college students’ perceptions of effective teaching centering on their unique learning experiences and the short-term learning outcomes. The purpose of this phenomenological study was to provide an integrated understanding of effective teaching from students’ own perspectives, learning objectives, and experiences without using the biased evaluation forms. This study was designed to answer the following research questions:

1. How do college students define effective teaching?
2. What are the important characteristics college students seek in effective teachers?

To address the research questions, I used social constructivism as the philosophical lens to connect the role teachers play in establishing a collaborative learning environment and facilitating learning in a college classroom to students’ perceptions of effective teaching. Knowledge is constructed within social contexts through interactions with a more knowledgeable other (teacher), and learning happens when the teacher facilitates collaboration among students (Vygotsky, 1980). The phenomenological approach was used to examine themes which emerged
from the interviews. The results concluded that some qualities of effective teachers are universal and valued across disciplines and students’ backgrounds. This study recommends longitudinal research to understand how perceptions of effective teaching change as students mature and how their learning objectives and experiences shape and reshape the definition of teaching effectiveness. The study also suggests future research looking into the comparisons between both students’ and teachers’ perceptions in order to gain a holistic understanding of effective teaching.

Literature and Conceptual Framework

Adopting effective practices, teachers maximize the probability of students’ engagement in learning. When students are more engaged, they tend to have greater academic and social success (Harbour, Evanovich, Sweigart, & Hughes, 2015). Emerging from the literature on effective teaching are two universal principles: (a) the technical aspect as it relates to knowledge and teaching pedagogy, and (b) the personal aspect as it refers to passion, the student-teacher relationship, and the personal qualities (Keeley et al., 2006; Keeley et al., 2012; Liu, Keeley, & Buskist, 2015; Liu, Keeley, & Buskist, 2016; Pan et al., 2009). The conceptual framework of this study was informed by literature in three areas: effective teaching attributes, effective teacher characteristics, and SETs, a biased approach to understanding students’ perceptions of effective teaching.

Effective Teaching Attributes

Literature has identified content knowledge, teaching methods, and connections between theory and practice to be the most important qualities of effective teaching (Allan et al., 2009; Huang & Lin, 2014; Keeley et al., 2012; Kember & Wong, 2000; Korte, Lavin, & Davies, 2013; Layne, 2012; Liu et al., 2016; Onwuegbuzie et al., 2007; Stronge, 2018; Stronge, Tucker, & Hindman, 2004).

Content Knowledge

Content knowledge refers to knowledge of the subject matter as well as a comprehensive understanding of other closely related disciplines (Anderson et al., 2012; Keeley et al., 2012; Layne, 2012; Onwuegbuzie et al., 2007). Studies support that students across all cultures and disciplines place emphasis on their teachers being knowledgeable (Alhija, 2017; Keeley et al., 2012; Layne, 2012; Liu, Keeley, & Buskist, 2015; Liu et al., 2016; Onwuegbuzie et al., 2007). Effective teachers demonstrate profound subject matter expertise, and students hold a strong belief that content knowledge is a necessary attribute of an effective teacher (Allan et al., 2009; Miron & Mevorach, 2014). In order to transform complex concepts into comprehensible and easily manageable information and to deliver knowledge clearly, teachers must be experts in their fields.

Teaching Method

Content knowledge is important; the ability to deliver that knowledge is equally important (Helterbran, 2008). Appropriate use of an array of teaching techniques is regarded as a substantial part of effective teaching. Teaching techniques are defined as clear systematic step-by-step instruction, good organization of information, well-delivered presentation, multifaceted teaching, and active class discussion and participation (Alhija, 2017; Allan et al., 2009; Helterbran, 2008). One cannot separate teaching from learning when reviewing the definition of effective teaching. If teachers believe and support the concept of different learning styles among students, it is logical that teachers demonstrate varied teaching styles to promote student learning (Kember & Wong, 2000). Teaching in an understandable and clear manner is fundamental in delivering information effectively as well as in communicating to the expectations, learning goals, and anticipated outcomes to students (Alhija, 2017; Allan et al., 2009; Anderson et al., 2012, Azer, 2005; Helterbran, 2008; Revell & Wainwright, 2009). Miron and Mevorach (2014) examined the perceptions of good teaching among graduate students in education and reported that professors’ teaching methods had a huge impact on students’ advancement of critical and scientific thinking, especially first year graduate students. Effective teachers adapt to the various backgrounds of students, take different learning styles into account, and incorporate both into their lesson planning and teaching.

Connections between Theory and Practice

Effective teachers who are knowledgeable and adept at presenting knowledge clearly in an engaging fashion are those who can make connections between theory and practice for the students. The connections between theory and practice refer to the knowledge students take away from a class that is applicable to the real world, as well as relatable to students’ future practice (Anderson et al., 2012). In the analysis of preservice teacher students’ perceptions of effective teaching, Helterbran (2008) concluded that students were willing to put in the hard work when assignments and class activities were pertinent to the real world and applicable to future teaching. Literature that highlights the connection between theoretical knowledge and
future practice is especially pivotal for medical and education students. Medical students are expected to apply the knowledge learned in school to critical situations in patient care, whereas students in education need the theoretical knowledge to prepare lessons tailored to students’ needs, to provide clear instructions, and to motivate students when placed in an actual classroom (Allan et al., 2009, Azer, 2005; Helterbran, 2008; Minor, Onwuegbuzie, Witcher, & James, 2002).

**Effective Teacher Characteristics**

James H. Stronge (2018) placed a focus on the teacher as a whole person “who brings to the classroom unique beliefs, values, attitudes, aspirations, motivations, knowledge, and skills, all rolled into one” (p. 3). What teachers do and how students perform intersect, making teachers a critical factor in determining student success because the teacher is the key in students’ academic performance, school improvement, and quality education (Parpala et al., 2011; Riley, 1998; Stronge, Ward, & Grant, 2011). The most prominent traits found in an effective teacher in general belief and literature are approachability and respect (Darling-Hammond & Bransford, 2007; Delaney, Johnson, Johnson, & Treslan, 2010; Huang & Lin, 2014; Keeley et al., 2006; Keeley et al., 2012; Leibowitz, Schalkwyk, Ruiters, Farmer, & Adendorff, 2012; Liu et al., 2015).

**Approachable**

Students care the most about whether a teacher is approachable and understanding (Allan et al., 2009; Helterbran, 2008; Huang & Lin, 2014; Keeley et al., 2012; Layne, 2012; Liu et al., 2016; Onwuegbuzie et al., 2007; Revell & Wainwright, 2009). For some students, the notion of approachability is linked to promoting self-efficacy and a trustful learning climate (Miron & Mevorach, 2014). Teachers who are approachable have the ability to create a rapport and a closer relationship with the class. The more approachable the teacher, the less intimidated the students feel about asking or answering questions and admitting when they do not understand a lesson or have difficulties completing assignments (Allan et al., 2009; Anderson et al., 2012; Azer, 2005; Helterbran, 2008; Frisby & Martin, 2010; Revell & Wainwright, 2009). Approachable teachers pay close attention to students’ needs, relate to students on a personal level, and are sympathetic to the challenges students face (Allan et al., 2009; Keeley et al., 2012; Liu et al., 2015; Liu et al., 2016; Miron & Mevorach, 2014; Onwuegbuzie et al., 2007; Stronge, 2018). Teachers who genuinely care about each and every student show real interest in the student as a person and wants the student to succeed.

**Respectful**

An effective teacher is a teacher who respects students’ different learning styles and opinions and treats each student as an equal individual (Allan et al., 2009; Azer, 2005; Cook-Sather et al., 2015; Korte et al., 2013; Miron & Mevorach, 2014). Keeley and colleagues (2006) defined a respectful teacher as someone who is always polite, does not humiliate or embarrass students in class, and never interrupts or talks down to students. The study conducted by Liu and colleagues (2016) using the Teacher Behaviors Checklist (TBC, Keeley et al., 2006) to understand Chinese students’ perception of excellent teaching concluded that students across three disciplines (psychology, education, and chemical engineering) regarded respectfulness to be the most important personal trait. Showing respect to students is being ethical, and no teacher should take this characteristic lightly (Anderson et al., 2012; Onwuegbuzie et al., 2007). As learning is an active process of constructing knowledge and making sense of the world, teachers are expected to provide a safe respectful learning environment with ample opportunities for students to share their knowledge and voice their concerns (Cook-Sather et al., 2015; Revell & Wainwright, 2009; Scarboro, 2012).

**SETs- A Biased Approach to Understanding Students’ Perceptions of Good Teaching**

Evaluation forms such as SETs or TEFs have been commonly used instruments to examine students’ opinions of effective teaching. However, a growing body of literature has suggested that SETs and TEFs are systematically biased against female instructors (MacNell et al., 2015; Miller & Chamberlin, 2000; Mitchell & Martin, 2018), and responses to SETs are heavily influenced by students’ conceptions of learning and other individual differences (Kember & Wong, 2000; Onwuegbuzie et al., 2007).

**Gender Bias**

Women in academia tend to be viewed as less competent and less accomplished than their male counterparts regardless of their actual capabilities and achievements (MacNell et al., 2015; Mitchell & Martin, 2018). MacNell and colleagues (2015) examined gender bias in SETs by falsifying the gender of assistant professors in a five-week online course held in a public four-year university. The results of the study showed that the male identity professor received higher scores than the female identity professor on all questions that measured effectiveness and personal traits. The purported female professor received much
lower ratings on the overall quality as a teacher in six of the 12 personal traits (promptness, fairness, enthusiasm, encouraging, professionalism, and respectful).

Mitchell and Martin (2018) conducted a study examining students’ comments on their instructors from two different sources: the end-of-the-semester course evaluations and www.ratemyprofessors.com. The findings showed the male instructor received higher evaluations in every aspect except for administration in the identical online course. Female instructors were evaluated more on personal characteristics such as niceness, unapproachability, and physical appearance, whereas male instructors were evaluated more on intelligence and competence. Female instructors were referred as “teachers” more often by students while male instructors were referred more frequently as “professors” (Mitchell & Martin, 2018). This result resonates with the findings of Miller and Chamberlin’s (2000) study that female instructors are devalued, and their status and credentials are less recognized and counted.

Other Biases and Inadequacies

Aside from being biased against female instructors, SETs and TEFs are not the most appropriate objective means to understand teaching effectiveness because the items in SETs and TEFs are defined vaguely and are subject to inconsistent interpretations. For example, students and faculty might view “keep[ing] the class interesting” differently. Professors may assume that varying teaching methods is the same as keeping the class interesting, whereas students might define an interesting class as one in which a professor often shares jokes (Helterbran, 2008; Parpala et al., 2011). Other students may consider a class interesting when the instructor incorporates various new technologies in teaching (Liu et al., 2015). The large variance in perspectives reinforces the need for clearly defined questions on surveys and evaluation forms and for caution in the interpretation of results (Layne, 2012).

Onwuegbuzie et al.’s (2007) study discovered that many individual differences—such as race, gender, years in school, preservice teacher status, and numbers of credit hours—exist with respect to students’ perceptions of the characteristics of effective teachers. Their study concluded that female students tend to place more weight on student centeredness than do male students, and students with higher GPA’s considered content knowledge and teachers’ approachability more important. Moreover, a class with primarily Caucasian American students is more likely to positively assess the instructor’s level of enthusiasm than a class made up of minority students (Onwuegbuzie et al., 2007). Traditional questionnaires and evaluation forms may be biased against student-centered teaching and other innovative teaching methods as most questionnaires fail to relate descriptions of a variety of teaching approaches because they implicitly focus on the traditional style lecture (Onwuegbuzie et al., 2007).

Kember and Wong (2000) stated that SETs are biased because of variables like class size, workload, and prior subject interest and experience. Other factors influencing perceptions of good teaching include students’ backgrounds, and their beliefs about teaching and learning as opposed to those of the teachers. Kember and Wong (2000) concluded that students with an active learning focus judged these qualities to be important in effective teaching: stimulation of interest, promotion of interaction in class, and variety in teaching methods. Passive students, on the other hand, gave a lower rating to teachers who displayed these qualities in their teaching.

These are all factors suggesting the use of evaluation forms and questionnaires to be inadequate in understanding students’ perceptions of effective teaching. To eliminate biases, differences in interpretation, and problematic assumptions, interviews designed with clearly defined and straight-forward questions are not only adequate but much needed. Taking the phenomenological approach, this study served as a direct investigation via interviews to delve into college students’ perceptions of effective teaching through their unique learning experience (Giorgi, 1997; Giorgi, 2012).

Method

This phenomenological study centered on the voices of college students to understand teaching effectiveness from the perspectives of 14 participants and focused on achieving a sense of the meaning that each participant gave to his/her unique situations and learning outcomes (Merriam, 2002). A Midwestern research university was chosen as the primary site to collect data. Using random sampling (Marshall, 1996; Patton, 2005), all participants were self-selected as they showed interest in sharing their definition of effective teaching in a video-recorded interview. Participation was voluntary, and the students consented to their participation and the use of their real names and images. Gender and other potential biases were mitigated as students’ perceptions of effective teaching were collected by way of interviews with clearly defined and straight-forward questions. Interview questions included, “Given your learning experience and objectives, what is effective teaching?” “What are your expectations of an effective teacher?,” and “Have you had an effective teacher? Why do you consider him/her to be effective?”

Participants and Site

This study investigated students’ perceptions of effective teaching at a Midwestern research university.
Table 1
Participants’ Demographics

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Sample</th>
</tr>
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<tbody>
<tr>
<td>Male</td>
<td>42.9%</td>
</tr>
<tr>
<td>Female</td>
<td>57.1%</td>
</tr>
<tr>
<td>Freshman</td>
<td>21.4%</td>
</tr>
<tr>
<td>Sophomore</td>
<td>14.3%</td>
</tr>
<tr>
<td>Junior</td>
<td>35.7%</td>
</tr>
<tr>
<td>Graduate Students</td>
<td>28.6%</td>
</tr>
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</table>

Table 2
Participants’ Backgrounds

<table>
<thead>
<tr>
<th>Name</th>
<th>Race</th>
<th>Year of study</th>
<th>Field of study</th>
</tr>
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<tbody>
<tr>
<td>Jacqueline</td>
<td>Caucasian</td>
<td>Freshman</td>
<td>Film</td>
</tr>
<tr>
<td>Jasmine</td>
<td>African American</td>
<td>Freshman</td>
<td>Secondary English Education</td>
</tr>
<tr>
<td>Joavaugn</td>
<td>African American</td>
<td>Freshman</td>
<td>Pre-Occupational Therapy</td>
</tr>
<tr>
<td>Marke</td>
<td>African American</td>
<td>Sophomore</td>
<td>Applied Behavioral Sciences</td>
</tr>
<tr>
<td>Regan</td>
<td>Caucasian</td>
<td>Sophomore</td>
<td>Applied Behavioral Sciences</td>
</tr>
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<td>Erika</td>
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<td>Biochemistry</td>
</tr>
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<td>Parke</td>
<td>Native American</td>
<td>Junior</td>
<td>Secondary Education</td>
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<tr>
<td>Thomas</td>
<td>Caucasian</td>
<td>Junior</td>
<td>History</td>
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<tr>
<td>Feifei</td>
<td>Asian</td>
<td>Graduate student</td>
<td>Educational Administration</td>
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<tr>
<td>Junfu</td>
<td>Asian</td>
<td>Graduate student</td>
<td>Curriculum and Instruction</td>
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<tr>
<td>Katelynn</td>
<td>Caucasian</td>
<td>Graduate student</td>
<td>Latin American Studies</td>
</tr>
<tr>
<td>William</td>
<td>Caucasian</td>
<td>Graduate student</td>
<td>Higher Education</td>
</tr>
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Three freshmen, two sophomores, five juniors, and four graduate students were recruited for this study. The participants represented a wide range of racial backgrounds and 13 different degree programs. Tables 1 and 2 show the demographics and background of the participants.

A few limitations must be mentioned. The first limitation is the relatively small sample size of fourteen participants ranging from freshmen to graduate students. Although the demographics were similar to the university’s student body, no senior students were recruited. Two explanations to this limitation are the possibility that there happened to be very few senior students around the recruiting locations during the seven-week period and the nature of the self-selecting aspect of random sampling. The generalizability to the larger student population is limited to some extent and is disproportionate when considering the distribution of students across fields and years of study. However, based on the findings from this study in combination with existing literature on effective teaching (e.g., Keeley et al., 2012; Liu et al., 2016; Onwuegbuzie et al., 2007), the qualities are likely to hold true across disciplines and students’ background.

Data Collection and Analysis

The data collecting process began after receiving approval from the Institutional Review Board (IRB) in Fall 2017. At 12 times over a seven-week period, a table with a poster was set up outside of the student union building and on a major road with high volume foot traffic on campus. The poster was designed to describe briefly the study purpose and to attract the attention of passersby. Interview participation was voluntary, and all participants agreed to use their real names and to sign a consent letter with an image release agreement. Informed consent was discussed thoroughly and agreed upon before the interview. Each of the 14 students participated in a seven- to nine-minute semi-structured video-recorded interview.

I adopted Van Manen’s (2016) phenomenological approach to analyze participants’ transcriptions. Each transcription was read thoroughly several times to

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1 Two colleagues and the author collected data and carried out the first round of data analysis. Two investigators could not continue with the study, therefore the author carried on completing this study alone.
identify significant texts that directly pertain to students’ experience of effective teaching. This approach allows meanings to be formulated from participants’ own language (Gibbs, 2018). Themes common to all participants’ transcriptions were emerged from the formulated meanings. Selective coding was used to determine the main themes and how they related to other subthemes (Glaser & Holton, 2004). In Vivo coding was used to highlight the voices of participants (Saldaña, 2015). I kept analytical memos after each interview and throughout the data analysis process to facilitate critical thinking about the data and to assist with documenting my thoughts and responses to each participant’s feedback. These analytical memos played an important role in converting my perceptions and thoughts into a visible form that allowed deeper reflection and further manipulation (Maxwell, 2012).

Audit trail and thick description were used to ensure the trustworthiness and validity of collected data (Maxwell, 2012). An audit trail highlighted every step of data analysis that was taken in order to provide reasoning for decision making on the themes. Thick description illustrated that the study’s findings might be applicable to other situations and contexts. Once transcriptions were completed, I confirmed the transcriptions’ accuracy by comparing them with the interview video-clips several times and having participants read the interview summary.

Findings and Discussion

The findings of this study indicated that students from diverse backgrounds and fields shared similar views on teaching effectiveness and that the essential personal characteristics of good teachers are their desires both to learn and to be treated with respect. These are also the desires of all students. Both undergraduate and graduate students across 13 disciplines highlighted the importance of teachers’ personal characteristics, teaching strategies, and adaptive teaching, as well as the meeting of students’ learning needs. Some students believed teachers must engage students in order to be effective while others believed a lesson can be effective without actually engaging students in the process. Three overarching themes emerged from the data that encompassed all aspects of effective teaching that participants addressed in the interviews: teacher-student relationship, engagement, and real-world experience.

Theme 1: Teacher-Student Relationship

“I don’t want to feel like a number in any of my classes.” – Jasmine.

Know the Students

The top overarching theme from the data was the teacher-student relationship. All 14 interviewees emphasized the importance of professors really getting to know the students and being involved in their learning. Developing a relationship with students starts with understanding their backgrounds because some teaching methods might not be effective for certain populations. When the instructors make the time and effort to understand students’ learning needs and their life outside of the classroom, teaching methods and presentation skills can be adjusted to become more effective in the classroom. Without truly knowing the students and having a genuine interest in helping students to learn, teachers are not able to deliver knowledge effectively (Darling-Hammond & Bransford, 2007; Delaney et al., 2010; Keeley et al., 2006; Leibowitz et al., 2012; Liu et al., 2015; Stronge et al., 2004). Students stressed the importance of effective teachers who care about their learning and about the different ways people learn. “Effective teaching involves sitting down with your students and understand[ing] how people best learn. Because you care about any ways that students can learn and want students to learn,” Regan explained. Jasmine elaborated on the vital role the teacher-student relationship plays in differentiating effective teaching from engaging teaching in her statement:

I think effective teaching can be in almost any kind of situation when engagement is involved. The teacher has to definitely put in more outside responsibilities… to actually take the extra step forward. So you can be an effective teacher and I can get an A in class, but if you are not engaged [with] me and there is no personal bond, no personality then it is…ugh.

Michael gave a wonderful example of how his professor created a personal bond with students:

He is very animated. He plays music in the beginning, and it is usually motivational. He plays motivational videos and kind of tells you that if you are struggling, it’s okay. We are gonna get through this. And [he] just know[s] how to build a relationship with students. That is effective.

Respect

Effective teachers are respectful. As Jacqueline defined, “Effective teaching is to relate to your students at a deeper level to make teaching engaging and
effective while also being equally respectful to them as they (students) are to you.” Being respectful to students and their opinions was a valuable personal trait identified in literature and was confirmed by the participants in this study to be an approach to building a trusting relationship with students (Cook-Sather et al., 2015; Revell & Wainwright, 2009; Scarboro, 2012). Jovaugn believed that a good teacher has to be a “people person and friendly” to build a real connection, a relationship with students. Parke said a good teacher is someone who “allows students to open up, speak their minds, and be themselves,” while Junfu concurred, “The professor is really trying to listen to all the perspectives from international students and we feel valued in that class.” Statements from these students further supported the evidence that effective teachers care about students’ views and their contributions (Allan et al., 2009; Korte et al., 2013).

**Approachability**

Being approachable was another way to create rapport and relationships with students, and this was reiterated by the participants in this study and literature (Anderson et al., 2012; Frisby & Martin, 2010; Miron & Mavorach, 2014). Erika said, “[M]eeting with students outside of the classroom is very effective.” Thomas shared the same sentiment by stating, “[P]rofessors would take the time to meet with students and now you would feel more intimate in the classroom setting.” Jovaugn simply put it like this: “[J]ust be that person and try to have a bond with your class.”

Understanding how students best learn, creating an intimate and safe learning space, being approachable, and respecting students as equals, as well as what they bring to class, builds the foundation of a positive teacher-student relationship. Teachers who aspire to be effective can start with making the effort to know the students, meeting students outside of class, and simply investing in their learning (Stronge et al., 2011).

**Theme 2: Engagement**

“Everybody in the process is engaged; everybody in the process is getting something from the other person.” - Parke.

**Participation and Group Work**

Effective teaching is teaching with varied methods that engage and allow students to actively participate. Active participation means students engage in genuine and meaningful conversations and interact with both the teacher and peers. Participants in this study placed a high importance on engagement within the lesson and concluded that learning was more effective when they worked together in groups to solve problems and apply different theories to different contexts. William explained the following:

Effective teaching is teaching that is engaging. I was a teacher for a little bit and the way I was taught was to present the information first, you know the PPP goals. You present the information, and you practice the information, and you produce the skills. Instead of having the teacher lecture the entire class.

Effective teaching does not happen when teachers pour information into students and make students take notes; it happens when students are allowed to share opinions and feedback and are involved throughout the process. Marke stressed the importance by way of this straightforward message, “If it is not engaging, it is not gonna be effective!” She further explained, “Not a lot of teachers facilitate discussions as they should, and that is another reason why lots of kids don’t remember the things they are taught.” It was clear from the participants that effective teaching requires presenting the concepts to students clearly, facilitating discussion, and providing interactive activities to allow students to take the knowledge and relate it back to themselves (Keelley et al., 2012; Layne, 2012).

To have an engaging class, teachers must know the subject matter well and prepare meaningful interesting materials and useful assignments that promote collaboration. Teachers should be “[e]ngaging the students in more hands-on activities instead of just lecturing and just PowerPoints and notes; I like to move around, work in groups... [J]ust have more of an interactive experience,” said Erika. Erika’s statement conformed with the literature in which PowerPoint presentations are viewed as unengaging and dull (Helterbran, 2008). Group work and discussion play a huge role in an engaging lesson, as Jovaugn explained:

So breaking us into groups and the teacher just come[s] around and talk[s] to us, relating to what your teacher is saying and what your peers are saying, that really helps you engage and understand a little bit more. And you are more interested because you are getting opinions from people similar to you and peers... it is very effective.

**Meaningful Use of Time**

All four graduate student participants emphasized meaningful assignments. Junfu stated, “[D]esign assignments that are meaningful and [make] sure that they are not wasting our (students’) time.” Not only should assignments be a good use of students’ time, but the execution of lecture or instruction should also be time effective. Students felt frustrated to sit through a long
dragged-out lecture or activity that could be completed in 20 minutes. William explained with frustration:

I mean if you are looking at how much money it costs per hour per class, it is really difficult to think about those are my tuition dollar kind of going down the drain. I have a few classes like that in the past (chuckled then sighed).

Another notion related to time is flexibility. Time is precious, especially to graduate students because a majority of graduate students works full time and bears teaching and/or parenting responsibilities. Making good and meaningful use of time in and outside of class should be a consideration for teachers when designing activities and planning lessons. While asked about her general expectations of good teachers, Katelynn responded “I expect teachers to help me achieve the goals or the learning outcomes of the class, but they would be willing to work with me with a flexible time schedule. Just flexibility and willing to work with my schedule.”

Learning is Mutual

Another important aspect of engagement to note was that learning is not a one-way street; teachers should feel comfortable learning from their students and not be fearful of making mistakes. Students and teachers both benefit from an engaging lesson. Parke expressed:

Effective teaching to me is an engagement between the student and the teacher to the point where both of them become learners. It is supposed to be primarily from the teacher down to the student. But an effective teacher will also learn from the students so that that teacher may become better in the future. Do not be dogmatic in your lesson plan and your ways of presenting. Listen to your students because sometimes they know things that you don’t.

Parke’s statement aligns with social constructivism as learning is a reciprocal experience for both students and teacher (Vygotsky, 1978). Feifei explained how effective teaching means engaging teaching and how it could benefit teachers:

Learning is not always fun (laughs). When the teaching and the learning is more engaging, I mean we must make it easier for our students to stay engaged and to get involved. And I think from teachers’ perspectives, when the teaching is engaging it is easier to be fun, and it is easier for teachers to be enthusiastic and motivated to share their knowledge.

Feifei continued and reinforced the significance of teachers being knowledgeable and well prepared to deliver an effective engaging lesson with clear instruction. She also explained that effective teachers tailor their teaching strategies to different students’ levels and even personalities. Adapting teaching methods to meet students’ learning styles and needs is a prominent attribute identified in relevant studies (Allan et al., 2009; Kember & Wong, 2000). Effective teachers are able to incorporate various strategies to make their teaching lively by preparing engaging class activities which support collaboration among students and facilitating discussions (Keeley et al., 2006; Kember & Wong, 2000; Stronge et al., 2011). Making an effort to pay attention to students’ needs and small adjustments in one’s teaching strategy will make huge impacts on students’ perceptions of the quality of one’s teaching (Keeley et al., 2012).

Theme 3: Real World Experience

“Students are able to bring out what they have learned in class outside the classroom and future use.” – Junfu

Theory and Textbook Connection

Connecting theory and textbook knowledge to real-world practice was highlighted by multiple students in the study. Effective teachers provide content that is relevant so that students can use it in real life situations. Michael emphasized the use of organic teaching materials to help make sense of what students are learning and to relate to real life experiences or matters that they deal with on a daily basis. Making the connection between now and future practice is also engaging and helpful for students to think critically. As Regan elaborated:

The professor in my physiology class is very engaging. What she does is…she makes so many analogies and so many connections with the content that’s new that we are learning with real life experiences. The way she communicates like I said, she just connects things with your real-life experience or makes analogies. I had another guy who taught me Chemistry, he was a GTA. Basically, he broke it down to the most basic level and built it up from there, not assuming that you knew every piece. And they both tailor lessons to students’ learning and help us think outside the box.

Real Life Examples

Using interesting hands-on materials is an effective way to bring real-world experience into the classroom. Erika explained:
I currently have a class where we draw a lot of hands-on materials and it is great for my field, I am an elementary education major. We are actually doing the assignments that we would give to our students. So I am actually getting to learn how to facilitate it.

Haris told us that his business communication professor was passionate about her work and designed interesting real-life activities to keep her students engaged. Feifei further noted that the lessons connected to real-life situations were the ones that were most fundamentally engaging. Junfu’s statement about meaningful assignments also highlighted the importance of the connecting theory to future application as useful assignments are those that do not waste students’ time. This resonates with findings from Helterbran’s (2008) study that students would put in extra time and effort when assignments were pertinent to the real world and applicable to future practice. Students are able to break out of the passive receiving mode of learning that they naturally fall into when teachers get them involved in meaningful discussions relevant to the real world (Keeley et al., 2012; Layne, 2012; Revell & Wainwright, 2009).

**Students as a Knowledgeable Source**

Having students provide information from real world examples was identified as an effective and engaging way to connect the classroom to the outside world. Parke described this method:

Say I have a young person from India in my government class. I can find out from them directly because they know how the government in India is set up, how it’s run. Is it any different from the United States, is it similar? How? And then I can use that (example) in the next year or next semester as [a] comparative.

The above example simultaneously illustrates that ostensibly the teacher is not the only source of knowledge in a classroom and that learning is a two-way street. Respecting and making good use of students’ knowledge benefits both teachers and students and has been suggested to be an integral part of becoming an effective teacher (Revell & Wainwright, 2009; Scarboro, 2012).

Other personal characteristics and qualities pinpointed in this study included teachers being passionate, being fair in grading, giving grades and feedback to students promptly, and setting clear learning goals. These attributes cohere with what has been identified in literature (Allan et al., 2009; Liu et al., 2015; Scarboro, 2012). Some believed that personal traits are inherent, but it is important to note that teachers can and should work on the technical aspect of teaching such as fair grading and adopting varied teaching methods in order to become truly effective.

**Conclusion and Future Research**

The use of a phenomenological approach to understanding college students’ perceptions of effective teaching is scant in literature. This study is unique and significant in two ways. First, the study used the phenomenological approach, a method rarely used in literature on the topic, to understand college students’ perceptions centering on students’ own learning experience and short-term learning outcomes. Using individual perspectives and phenomenological analysis as the fulcrum, college students are positioned as experts on what constitutes effective teaching. Second, this study avoided the broadly defined language in course/teacher evaluation forms because students’ comments were collected from clearly defined, straightforward interview questions such as “Given your learning experience and objectives, what is effective teaching?” and “What are your expectations of an effective teacher?” The three overarching themes from the study included teacher-student relationship, engagement, and real-world experience, which addressed the two research questions of college students’ definition of effective teaching and the prominent characteristics of effective teachers. The results of this study suggest a diverse palette of definitions of effective teaching. Focusing on the principles concluded from this study is a useful guiding mechanism for teachers in developing a repertoire of effective and engaging teaching skills as well as in reaching their full teaching potential.

Effective teaching matters. Teachers are facilitators of learning, the central reason for schools to exist. Competent, caring, and committed teachers are the most fundamental part in quality education (Riley, 1998; Stronge et al., 2011). Students’ perceptions of effective teaching matter. As students continue to grow and learn, their perceptions of learning and good teaching change. Therefore, longitudinal research is recommended to examine how these perceptions develop and evolve over time and with more learning experiences, as well as how any residual effects also change with time and in light of more technological innovations in the classroom. Future researchers on the topic are advised to examine closely how individual differences, such as preferred learning styles and prior course experience, influence students’ perceptions of effective teaching in order to gain a more holistic picture of teaching effectiveness. An in-depth comparison between the perceptions of effective teaching from both students and teachers is limited in literature and warrants future research. It is valuable...
for administrators and course developers to orchestrate opportunities to provide professional developments for teachers based on the definitions of teaching effectiveness gleaned from research. Ultimately, an objective and thorough understanding of effective teaching benefits teachers, administrators, and most important of all, students.

References


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Learning on the Move: Making Meaning Through Movement

Tricia Nolfi and Karen Gischlar
Rider University

Enrollment in graduate programs continues to rise at a steady pace in the United States with a 9% increase over the past 10 years, a pace that is expected to continue through 2026. Among these students, 56% are “adult learners” between the ages of 25 through 39 years. With this in mind, instructors need to be mindful of the unique needs that these students have as they pursue advanced education. These learners require and are motivated by classroom experiences that are interactive, draw upon their professional and personal experiences, and through which they partner with others in the knowledge creation process. By leveraging adult learning theories and instructional approaches from the K-12 environment, the authors present classroom activities for adult learners that meet their unique needs. Examples are provided for how the activities can be used in a variety of disciplines.

Over the course of the past decade, there has been a 9% increase in enrollment in graduate programs across the nation and growth at this pace is expected to continue through 2026 (National Center for Education Statistics [NCES], 2017). A recent study indicates that 56% of all graduate students can be considered “adult learners,” (Merriam & Bierema, 2014) between the ages of 25 and 39 years (NCES, 2018). In the field of education, it is standard practice to connect theory to instruction as learning and assessment activities are designed. As theory and practice evolve, so must pedagogical approaches. However, as noted by Gouthro (2019), educators who work with adults may not spend as much time learning about advances in theory, as do their peers who teach children. Furthermore, Boshier (2006) observed that less is discussed about the process of adult learning; the quality of the interactions between teacher and the adult student are not always fully explored in practice and in the literature base. The complexities of the teaching and learning process for adults can only be understood by having a knowledge of theory and its intentional link to practice. The authors work with graduate students in a college of education who are pursuing careers in the K-12 setting, higher education, and other for-profit and nonprofit organizations. In developing their practices, they recognize the important role that informal and formal theories of learning and pedagogy play in their practice.

Assumptions About the Adult Learner

The authors believe that adults learn as adolescents and young adults do, however, the contexts for learning and the outcomes desired are different. These differences are driven in part by experiences adults have, including environmental conditions such as globalization, working in a knowledge-based society, changing demographics, advancement in technology, and the motivation and need for learning (Boshier, 2008; Merriam and Bierema, 2014). Additionally, as noted by Keller (2018), the motivation for learning of adults is different from that of younger individuals as it reflects students’ attention and perceived relevance of the experience, the confidence of their roles in the experience, and satisfaction with the learning experience. Adult learners will be motivated to achieve learning goals if they believe there is value in doing so and if they can address any obstacles they perceive in the learning process. They will seek out and engage in learning experiences that are relevant to their current needs and experiences (Boshier, 2006). Therefore, the learning environment and strategies used to promote adult learning need to be adapted accordingly.

Adult learners in formal educational experiences—whether in degree-seeking or continuing education programs—require an environment that meets their unique needs. Those needs reflect current personal or professional demands. Adult learners desire to gain knowledge, learn new skills, improve practices, advance in their vocations, and draw from their accumulated reservoir of life experiences to aid learning (Boshier, 2008; Connolly, 2008; Knowles, 1980; Merriam & Bierema, 2014). Further, as Knowles (1980) notes, the adult’s learning shifts from one of subject-centeredness to one of performance-centeredness. Certainly, the approaches to designing educational experiences require the instructor to be cognizant of these needs to ensure that a conducive environment for development and learning is occurring.

Learning in the Graduate Classroom

Knowles & Associates (1984) suggests that the adult learning environment needs to be cooperative and collaborative where both the learner and teacher contribute to the methods and resources for instruction. Because adults learn by doing, instructional strategies should focus on performance of tasks and application of concepts rather than memorization of content. The role of the teacher is to draw out the internal motivators of students in an effort to create an environment where knowledge can be formed and, because learning is
socially created, students understand and are entered into the learning process (Knowles et al. 1984).

Experiential learning—learning through reflection and doing—is a central focus of the adult learning experience. Kolb (1984) notes four stages that learners go through in the experiential learning process: concrete experience, reflective observation, abstract conceptualization, and active experimentation. Individual learning preferences will prompt the learner to favor one of the stages over the others (Kolb & Kolb, 2009; Kolb, 1984). For students to be prepared for experiencing, they must open their minds to the current experience and be present in the moment. This allows for the development of interpersonal relationships, critical for the group learning experience (Ghaith, 2002). Preparing for reflection not only requires the space and time to do so, but a stillness and quieting of the mind to foster introspection. Developing a capacity for thinking requires the ability to conceptualize and manipulate ideas, and to do so without distraction from internal and external forces. Finally, initializing the ability of action calls on the adult learner to connect the prior stages to take decisive action. However, key to this is the ability to be courageous in the process and not to be inhibited by self-doubt, which can be fostered by a safe, supportive environment (Downer et al.).

Experiential learning can take many forms, but for the adult learner, should focus on creating linkages with their immediate work environment, such as action learning. Action learning is a pedagogical approach borrowed from managerial and professional training in the private sector and has gained momentum in the higher education environment in recent decades. Davidson & Major (2014) provide clarity to the muddy waters of action learning by delineating the various forms often used in higher education. Cooperative learning allows students to work together in small groups, in real time, so that all group members can participate in a collective task. Students who engage in collaborative learning work together in groups, alongside a teacher, to develop knowledge. Through active learning approaches such as collaborative problem solving and team learning, the adult student should be motivated to learn (Revans, 1982).

Active engagement with the learning process is associated with positive academic outcomes, including academic achievement and persistence, commitment, and investment in learning (Fredricks, Blumenfeld, and Paris, 2004). The goal of the instructor should be to promote three types of engagement: behavioral, emotional, and cognitive. Behavioral engagement encompasses behaviors associated with positive conduct, involvement in learning and academic tasks, and participation in extracurricular activities. Emotional engagement pertains to the learner’s affective reactions within the classroom, including interest, boredom, and anxiety. Finally, cognitive engagement relates to self-regulation and the metacognitive strategies used to plan, monitor, and evaluate learning (Fredricks et al.).

In high quality classrooms, instructors promote active engagement in lessons through small group work, hands-on activities, writing, and responding to questions that encourage behavioral engagement. This behavioral engagement is critical to academic success and is thought to be related to emotional (e.g., attitude and interest) and cognitive (e.g., thoughtfulness and persistence to task) forms of engagement (Downer, Rimm-Kaufman, & Pianata, 2007). Further, instructors in engaging learning environments form warm, personal connections with students that encourage autonomy in learning, reinforce desired behaviors, and establish clear expectations for learning and behavior (Downer et al.).

Certainly, active engagement with the curriculum is critical to the development of knowledge and skills, no matter the age of the learner. Kolb (1984) suggests that experience is at the heart of understanding and that learners must be able to involve themselves fully and openly in new experiences. Just as for young children, active learning experiences are also necessary for older learners, including undergraduate and graduate students (Draper, Cargill, and Cutts, 2002). In fact, college classes mostly comprised of lectures that involve content dissemination promote passivity, as students record lecture notes without thinking deeply or interacting with the material (Draper et al.). As such, it is important for university faculty to provide active learning opportunities for adult learners.

Regardless of the teaching method, it is the instructor’s role to provide opportunities for the student to progress through the learning stages, from experiencing, to reflection, to thinking, and, finally, to acting. Learning spaces for the adult learner must encourage the individual’s readiness to learn and promote her social role in the learning process. Students will respond favorably to environments where they are co-creators in the learning process and where they can draw upon prior experiences in making linkages between knowledge creation and practice (Boshier, 2008; Merriam & Bierema, 2014). Spaces need to be open and accessible and free of any barrier that may hinder learning. Here, comfort and connection are key (Connolly, 2008).

**Embodied Learning in the Classroom**

Embodied learning, or using the whole body in learning, creates a unique opportunity for the adult learner. Embodiment is form of experiential learning where our physical selves contribute to meaning-making (Lawrence, 2012) and where our intuitive and tacit knowledge comes into play (Merriam and
Bierema, 2014). Our bodies and minds are certainly connected and should be considered equally when creating learning experiences for adults, encouraging them to draw upon their emotional and imaginative connection with the self. Although much research has focused on the relationship between cognition and movement, it has primarily focused on adolescent learning or adult experiences such as sports, dance, or other aerobic activities (Erlauer, 2003; Oppezzo & Schwartz, 2014). However, emerging scholarship is making the connection between the affective and cognitive domains and how, when working in tandem, they promote creativity.

The brain-body relationship in learning is important, as movement decreases fatigue and increases concentration. The increased oxygen in the brain that comes from movement gives the brain more energy and reduces stress, allowing the adult to be ready for learning (Erlauer, 2003; Merriam & Bierema, 2014). In recent years, the “walking meeting” (Clayton, Thomas, and Smothers, 2015) has become commonplace in the workplace as a way to multitask but can be considered a form of embodied learning. The Clayton, et al. study, which focused on the workplace, concluded that the use of “walking meetings” reduced barriers between supervisor and employee, removing hierarchy from the experience. Much like the employee, an adult learner in the classroom desires a learning environment where the hierarchy between teacher and student is minimized. Key for the adult learner is to be a co-partner in the knowledge-creation process (Ghaith, 2002) and embodied learning can help facilitate this rich learning environment.

Gilson, McKenna and Cooke (2008) also note that walking while working provides many benefits to individuals, including improved mental focus, a greater sense of community, enhanced mood, and increased energy. Movement relaxes the brain by releasing chemicals when an individual is walking while mentally attending to work tasks. This aids in executive functioning which governs how individuals focus on tasks. Clayton, et al. (2015), Oppezzo and Schwartz (2014) and Gilson, et al. (2008) also found that adults who walked while completing mental tasks demonstrated more creative output than while sitting. These effects remained the same regardless of being indoors or outdoors. Moving while engaging in mental activities may facilitate both divergent and convergent thinking, requirements for creative problem solving. Learning how to identify and use both divergent and convergent thinking, and knowing appropriate uses of each, promotes creativity (Puccio, Mance, & Murdock, 2011). As noted previously, adult learners are motivated by problem-based learning, and moving while engaging in cognitive tasks can facilitate the development of problem-solving skills. Additionally, an individual who is engaged in embodied learning may be pushed beyond his or her comfort zone, opening up opportunities for new explorations and relationships (Meyer, 2012; Oppezzo and Schwartz 2014) This improves interpersonal relationships and creates a sense of community among colleagues as noted by Gilson, et al. (2008).

**Examples of Active Engagement and Embodied Learning**

In light of the many benefits of active and embodied learning experiences, the authors posit that integrating these two forms of learning creates a rich learning environment for graduate students. The activity descriptions that follow build upon the practice of adult learning in groups, wherein the instructor uses an approach that creates energy and engagement among the learners. Additionally, with a shared learning goal, the dialectic approach to learning allows for all group members to change and develop skills (Connolly, 2008; Schein, 1996).

**Walk and Talk**

Walk and Talk encourages adult learners to move from landmark to landmark while discussing and reflecting upon course content and readings. At each landmark, the course instructor asks small groups to report on their discussions and prompts with follow-up questions, which promotes collaborative learning. Walk and Talk incorporates embodied and social learning research and can be applied to various learning objectives from simple recall to creative problem solving.

Following is an example of Walk and Talk for recall in a school psychology course on academic assessment. Students had read about the five “big ideas” in reading skill development prior to the class session. During the Walk and Talk, small groups of three to four students discussed the idea assigned to their group and how a reading skill deficit in that area might manifest. At checkpoints, the instructor asked the groups to share discussions with the larger class. This activity was extended the following class session when students were asked to engage in creative problem solving. During the second Walk and Talk activity, the groups brainstormed interventions to address skill deficits in their assigned skill areas. These activities enabled students to collaborate and learn from one another while moving, which fosters concentration (Merriam & Bierema, 2014) and risk-taking (Meyer, 2012).

Within a student affairs course, the activity was used for students to explore student development theories with teams moving to various checkpoints. Each checkpoint was identified by a piece of easel paper on the wall with a specific theory and the same guiding prompts for each: In your own words, describe
the theory. What about the theory is confusing to you? The latter, “muddiest point” reflection, promotes metacognition as it encourages learners to describe what is most confusing about a topic (Mosteller, 1989). Students who recognize where their understanding is “muddy” can experience cognitive redefinition (Schein, 1996) by opening themselves up to new information, which positions them to direct their learning to expand knowledge and understanding.

**Four Corners**

In the children’s game Four Corners, the corners of a room or drawn square are marked with numerals one through four. One child is designated as “it” and sits in the center of the square. He hides his eyes and counts to ten while the other players select a numbered corner in which to stand. After the child who is “it” has counted, with eyes still closed he calls out a number, one to four, and the players standing in the corresponding corner are “out” and must sit. This sequence repeats until one player is left standing; that player then assumes the role of “it” and all players reenter the game.

A modified version of Four Corners has been designed for use with students in a school psychology graduate program who are required to take the Praxis® (Educational Testing Service, 2019) for state and national certifications. To start, the instructor sits in the middle of the room with index cards that include multiple choice questions that mirror those on the Praxis®. Questions are both recall and application and the four corners of the room reflect the answer choices. After a question is read, students stand in the corner that corresponds to the answer they believe to be correct. In each corner, students are given the opportunity to talk to one another and to formulate a rationale for the response selected. After a few minutes’ time, students are asked to share their group’s rationale. The correct answer and reasoning are then provided. Students who selected the incorrect response sit and take notes on the proceeding questions. This sequence repeats until there is one student remaining, who then becomes the questioner. It should be noted that the cap for class size in this course is 12 students; the rounds move quickly, so that no individual student is sitting for an extended period of time.

This collaborative learning experience has also been adapted for courses where adult learners are required to demonstrate understanding and application of key concepts, theories, or approaches within an organizational leadership program. For example, in a strategic planning course, this activity was used to describe steps in the Strategy Change Cycle (Bryson, 2011) and how they are applied in the organizational setting. Questions were focused on the purpose, features, and behaviors required for specific steps in each of the corners. A question posed included, “At what step of the strategic planning process do leaders identify internal and external requirements, expectations, and pressures?” and students moved to one of the corners identifying each of the four steps in the planning process.

The Four Corners activity reflects the research on the brain-body relationship. The movement about the room and ensuing discussion keeps students engaged in the learning process more fully than simply reviewing questions at desks. Moving in this way helps to decrease physical and cognitive fatigue and provides students with more energy for learning (Erlauer, 2003; Merriam & Bierema, 2013). This arrangement also promotes social interaction, as students talk to one another and form a rationale for their response choice for each question. Interaction of this nature fosters interpersonal relationships and creates a sense of community (Gilson, McKenna, & Cooke, 2008) through which students can learn from one another. Informal feedback from students indicates that they really enjoy this learning “game.”

**Around the World**

Around the World is another children’s game, typically played in the classroom for recall of facts. For example, it is often used to reinforce math computation facts. To start, the teacher presents a math question, such as “What is 2 x 7?” to two students at the head of a column of desks. The first to answer correctly moves to the next person in the column to challenge that individual. The teacher then asks a new question. Once again, the first to answer correctly moves to the next challenger in the column and so forth. If a student answers five consecutive questions correctly, she sits with the fifth challenger and a new round starts with the next two students in the column. Play continues until the first student makes her way around the room to her original seat.

In a graduate classroom, Around the World can be played for course content that requires recall. For example, we have utilized the game with students who need to know education and related laws. Students are presented with brief scenarios and asked to name the relevant court decision (e.g., Larry P. v. Riles; Tarassoff v. Regents of the University of California). Given the mixed results on game-based competition in the classroom (Chen, Liu, & Shou, 2018), students in our courses have played Around the World in teams of two, which enables them to consult with one another prior to providing a response. This reduces the negative impact that competition may have on self-efficacy, motivation, and performance (Chen et al., 2018). Teaming also promotes peer-to-peer learning and an environment that is collegial.

Other examples of how Around the World has been used include public administration courses where
students are expected to know and apply theoretical concepts, and practices in nonprofit and government organizations. For example, students in these courses need to know various types of public policy. Offering examples of policies (e.g., prohibiting texting while driving, developing federal highways, low-income housing), students state the type of policy (e.g., distributive, regularity, redistributive). Within leadership and management courses, the activity has been used to recall specific employment laws and regulations at the state and federal levels. Here, students are challenged to identify and delineate if the provisions of the law (i.e., family leave, harassment) are the state or federal version.

Students have noted that they remember the case law better through this instructional method than when they sit in lectures. Although the game involves recall from assigned readings, rather than creative problem-solving, Around the World promotes active engagement with the content. Listening to a lecture and recording notes about case law promotes passivity; learners do not need to think deeply or interact with the material (Draper, Cargill, & Cutts, 2002). Around the World, on the other hand, requires the students to consider the scenarios and which court decisions are reflected. Further, despite the negative findings related to classroom competition noted above, there exists other research that suggests that some competition is motivating. When competing in a game, it is assumed that all students will work harder, which enables the group to improve knowledge and progress (Chen et al., 2018). Our teaming arrangement motivates yet ameliorates the potential negative effects of competition. Around the World can be used with any course content that requires recall of factual information.

Discussion

The authors have explored new approaches to engage adult learners in the classroom whether it is in the university setting or workplace training environment. There is a recognition that as both theory and pedagogy evolve, teachers must explore alternatives to their standard practices. By drawing upon practices common in the K-12 setting, the authors have designed activities that will meet adult learner needs and allow them to reflect on personal or professional experiences. Through the activities described above, learners engage in interactive experiences that promote knowledge creation, skills development, and relationship-building. By considering new ideas and drawing from their life experiences, they become co-partners with teachers in the learning process.

Informal feedback from graduate students who have engaged in these experiences suggests that they gained a broader meaning of concepts and theories and their applications to the organizational environment. This supports what is known about adults and how they are motivated in the classroom and the social environment needed to promote learning. It is also important to note that graduate students take courses in the evening, often after a full day of work. The authors recognize that the opportunity to move while recalling information and testing ideas with others increases the energy of the classes and creates a greater sense of community among the students. This point cannot be underscored enough as graduate students experience high levels of stress due to challenges from academic requirements, work-life balance, burnout and compassion fatigue, and anxiety, among others (El-Ghoroury, Galper, Sawaqdeh, & Bufka, 2012). This sense of community creates a positive social experience for the students, which can counter the effects of emotional exhaustion and stress (Boren, 2013). As the graduate student population continues to grow and students balance multiple responsibilities, teachers need to consider creative ways in which to engage adult learners. Our activities are easily adaptable to a wide range of theories and concepts, are easy to implement, and do not require the purchase of materials, making them accessible and feasible to a variety of instructors.

References


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3D Printing and Service Learning: Accessible Open Educational Resources for Students with Visual Impairment

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Students with blindness or visual impairment face learning barriers in the typical higher education classroom where a great deal of information is conveyed visually. Instructors can use a variety of strategies to accommodate such students and make visually presented information accessible. One common and inexpensive strategy is the use of tactile graphics, which are graphics created with raised lines or bumps printed on special paper. However, due to the ways tactile information is processed, pedagogically these two-dimensional tactile graphics are not always ideal for understanding course concepts and developing mental models. We describe the benefits and logistics of a promising recent technology, 3D printing, that can benefit visually impaired students. The use of 3D printable designs shared as open educational resources can increase accessibility in the higher education classroom, even for instructors who have no interest in designing tactile learning aids themselves. The technology allows for incremental, iterative improvement and customization. For example, we describe our experience using a 3D printed learning object in an introductory statistics course with a blind student, and we also describe our experience teaching an interdisciplinary service-learning course in which student teams worked with visually impaired individuals to design new 3D printable educational models.

The average higher education course relies heavily on visually presented information which is often inaccessible to students who are blind or visually impaired (BVI). In the classroom itself, for example, a BVI student will commonly hear an instructor refer to slides, handouts, or board work involving graphs, photos, diagrams, animations, artwork, and other visuals. Outside of the classroom these students encounter textbooks full of visuals (including subtle uses of visual information like text formatting and color usage), websites or software teaching important concepts through visualization, and so on. Without proper accommodation from instructors to make materials accessible to BVI students, these learners face significant barriers and inequality in the classroom (Bell & Silverman, 2019; Jones, Minogue, Oppewal, Cook, & Broadwell, 2006). Due in large part to these barriers, students who are BVI are less likely than their peers to attain a degree and are underrepresented in many fields like science and math (Blackorby, Chorost, Garza, & Guzman, 2003; Erickson, Lee, & von Schrader, 2016; Hasper et al., 2015).

Below we summarize many existing accommodations instructors with BVI students should consider, including converting visuals to hands-on tactile graphics when appropriate. However, considering the limitations of solutions like tactile graphics for learning some concepts, we describe the benefits of incorporating a newer technology -- three-dimensional (3D) printing -- for hands-on learning. While 3D printing may sound intimidating to many instructors, we describe how easy and affordable the technology has become (existing 3D designs can be printed from a file analogous to an inkjet printer printing from a digital file onto paper). The fact that 3D printing designs can be shared freely online as open educational resources (OER) means it can also remove cost barriers that currently limit some assistive technology for learners.

We also briefly describe our experience teaching a blind student in an introductory statistics course in which a 3D printed object (iterated with feedback from the student) was found to be very helpful for building a mental model of a central course concept and assisting during solution of some problems. We also describe our efforts to scale that process up in an innovative interdisciplinary service-learning course where student groups learned to design accessible 3D printable educational models in collaboration with BVI community members. These models can be provided for free online as OER that are ready-to-print for instructors who find themselves with BVI students in their classes.

We end with a call for instructors to consider implementing similar courses or projects where students create or improve 3D printable educational models to help build a more accessible world.

Existing General Accommodations

Existing general accommodations to make learning accessible to BVI students come in many forms. For example, instructors may need to alter some of their in-class behaviors such as reducing reliance on gesture and deictics ("as you can see HERE"), verbalizing equations in unambiguous ways, describing important graphics aloud, and possibly setting up one-on-one time with BVI students outside of class (Chang, White, & Abrahamson, 1983; Quek & McNeill, 2006; Spindler, 2006). Just as important, though, is ensuring course materials and resources are accessible. We briefly
survey best practices for many common accommodations here, but we would direct readers to the cited work for more detailed discussions.

First, visual impairment does not always imply blindness, and blindness does not imply a complete lack of vision. BVI students with some residual vision may use magnification devices or software, or they may require versions of materials with large font size or high contrast (this is good practice for making readable and accessible slides anyway: Richardson, Drexler, & Delparte, 2014).

Instructors can have text material translated to Braille (and specialized versions like mathematical Braille codes), usually by coordinating with the campus's educational access center or disability resources staff (if not, instructors should reach out to nearby government organizations or non-profit/advocacy organizations related to blindness, as those often have translation services). Braille translation can make textual material for things like handouts accessible, though instructors may need to plan for ample time to get materials translated. Braille versions of textbooks in many fields already exist, though they may not exist for a given book or may be for an old edition (AMAC Braille Library, 2020).

However, many – likely most – blind students are not actually fluent in Braille, so an instructor with a BVI student should communicate with the student about their needs (American Federation of the Blind, 1996). Auditory accommodations may be more essential for many students. Text-to-speech programs – commonly referred to as screen readers – allow BVI students to access electronic textbooks, text-based handouts, and properly designed websites by automatically converting to spoken language (WebAIM, 2015). Thus, for equitable access to class materials, instructors should allow BVI students to use a digital device such as a laptop or tablet even if other students in the course are barred from using such devices.

Instructors who use slides in class may want to share their slides with BVI students ahead of time where possible so that the student can follow along with a screen reader during class (e.g., with one earbud headphone in). Slides shared with students should be constructed with a layout accessible to screen readers and graphics should include alternative text ('alt text') descriptions; PowerPoint includes an Accessibility Checker tool to help with this (WebAIM, 2020). In addition, instructors should beware of using file formats that are inaccessible or poorly accessible to screen readers (PDFs, especially of scanned text, are notoriously bad, while the file formats of typical word processing programs are better).

In laboratory courses, one typical approach is to pair a BVI student with a sighted student (peer or teaching assistant); the BVI student then directs the sighted student to carry out lab tasks and describe what is happening (Pence, Workman, & Riecke, 2003; Sahin & Yorek, 2009). Of course, this may not lead to the same learning as carrying out the procedure directly, and hearing a description of, say, what is seen in a microscope may be less useful than a hands-on tactile model (Bell & Silverman, 2019; Supalo, Isaacson, & Lombardi, 2014).

Many courses utilize specialized software, and this software may range from highly accessible to completely inaccessible for BVI students; instructors may want to consider this when selecting software for their courses even if they don’t currently have BVI students. For example, in the field of statistics, R is a very accessible statistical program with extensions available specifically for BVI users (Godfrey, 2013; Godfrey 2016, Godfrey 2020). Making other statistical and mathematical material (e.g., equations, formula sheets, online homework systems) accessible to BVI students may require more targeted solutions (for a general review, see Stone, Kay, & Reynolds, 2019).

Of course, most higher education courses utilize a variety of visual material which cannot be adequately translated into words and numbers; hence, screen readers and Braille may not suffice. Thankfully, tactile graphics (i.e., raised lines and bumps printed on special paper) can make many visuals accessible to the haptic modality, as described in the next section, though limitations inherent in the process mean that this won’t be an ideal solution for all visuals.

**Tactile Graphics and Their Limitations**

Static visuals from textbooks, slides, handouts, and websites can often be converted into tactile graphics through methods such as a Braille embosser or thermal paper that creates raised lines and bumps when passed through a special printer. Many postsecondary campuses will have, or be able to easily acquire, such a printer (e.g., Pictures In A Flash is an affordable printer supplied by Humanware). Tactile graphics can certainly make some visuals accessible to haptic exploration if designed with best practices in mind, though studies have found significant errors and discrepancies when comparing textbook visuals to their tactile graphic equivalent (Braille Authority of North America and Canadian Braille Authority, 2010; Smith & Smothers, 2012).

More fundamentally, due to the limitations of tactile acuity and haptic processing, tactile graphics work best for simple visuals while complex and detailed graphics may not be easily translated to tactile form without significant adaptation (e.g., simplifying or converting to many simpler sub-components) (Edman, 1992; Quek & McNeill, 2006). One major limitation of embossed or raised-line printing is that the output is generally binary: each part of the paper is either raised or not raised. This can work well for simple line diagrams, but not for more complicated figures. Hasper
and colleagues (2015) showed that adding more depth (i.e., extending the Z-plane) for a tactile graphic or raising the surface to various levels using a more 2.5-dimensional (2.5D) plastic model, allowed the tactile display of differences in shading or brightness from original images. For example, they used this to create more detailed tactile versions of spectra for an astronomy lab and skull morphology for a taxonomy lesson in biology. By comparison, raised-line versions of those same diagrams printed on thermal paper were not as durable and did not have the same level of detail. Other work has shown that adding 3D elements to tactile graphics can make them more effective. For example, blind users demonstrate better memory (fewer errors) for a tactile map when the legend symbols are 3D as compared to when they are 2D (Gual, Puyuelo, & Lloveras, 2014); Giraud, Brock, Mace, and Jouffrais (2017) likewise show the benefits of 3D printed maps over raised-line tactile graphics for BVI students.

Another reason that it may not be sufficient to simply convert pedagogical visuals to tactile graphics is that visual representations often embed cues like depth and perspective to represent three-dimensionality. While it is standard for the visual modality to convert 2D representations to 3D mental models in the brain (vision, after all, starts with a 2D projection of light on the retina, which the brain reconstructs into representing a 3D world), processing through touch does not work the same way. Objects rendered as raised lines may allow simple extraction of contour information, for example, but the conversion of 2D contours to 3D shape representation doesn't work as straightforwardly for haptic processing in the brain (Klatsky & Lederman, 2011). Experiments show that the more 3D information is restrained, the less effective haptic object recognition and understanding is (Klatsky & Lederman, 2011). Indeed, tactile graphics of familiar objects like a comb or carrot are very hard to recognize through touch (even for those with extensive visual experience and a long time to explore); the lines and spatial relations can be encoded, but not turned into object perception (Lederman, Klatsky, Chataway, & Summers, 1990; Wijntjes, Lienen, van Verstijnen, & Kappers, 2008).

Tactile Learning in the Third Dimension

In other words, tactile graphics alone won't always be sufficient for making pedagogical visuals accessible; BVI students won't necessarily be gaining the same understanding or building the same mental models as sighted students if information is presented in a format that isn't conducive to haptic understanding and learning (Jones & Broadwell, 2008). Instructors may need to find ways to represent important concepts in 3D form.

In some cases, low-tech 3D tactile models can be created from cheap, everyday materials or by repurposing existing objects like cheap children's toys (see Fig. 1 for some examples we created when teaching introductory statistical concepts to a student who was blind). For some concepts, this will be sufficient, but for many topics in higher education, a proper hands-on model for effective learning will require a custom-designed object created from scratch specifically to teach that concept. Reynaga-Pena (2015), for example, documents many custom-made, low-tech, 2.5D and 3D tactile biology models made for BVI students using fabric, paper, resin, and so on; however, many of these educational models are patented (which can imply learning objects that are accessible in a sensory but not a financial sense), and none are available outside of the institution at which they were created. On the other hand, a major benefit of 3D printed objects is that the design can be distributed freely over the internet as OER and printed any place on Earth that has a consumer-level 3D printer. In a field like chemistry, for example, commercially produced and proprietary models do exist for teaching many concepts, but (1) the existing models may be inaccessible due to relying on color and other visual elements, and (2) they cannot be easily adapted or improved by instructors. For this reason, 3D printed artifacts are starting to see wider use in chemistry to teach about molecules, proteins, crystals, and so on, where a simple low-tech stick-and-ball model isn't sufficient and commercial products can't easily be iterated and improved by instructors (Rossi, Benaglia, Brenna, Porta, & Orlandi, 2015).

Benefits for BVI students

While 3D printed models can certainly help all students learn and develop mental models by presenting materials that engage more than one sensory modality (Horowitz & Shultz, 2014; Reiner, 2008), the technology is especially promising for BVI students. Powell and colleagues (2013), for example, successfully utilized 3D printed objects in conjunction with auditory resources to accommodate a blind student learning programming. Jo and colleagues (2016) used 3D printed objects and side-by-side hands-on instruction by a teacher to guide BVI students exploring 3D maps and relics in a fifth-grade history class. In that case, scaled down models allowed tactile exploration of relics otherwise too large to explore haptically (and normally presented visually in a picture); map details were expressed with different heights of plastic contours. The 3D objects had to be simplified during creation to find the optimal size and level of detail (e.g., to highlight core features), and by the end both students and teachers were highly satisfied with the convenience and learning effect of the 3D printed models.

While 3D printing can be a great tactile solution for making many higher education concepts accessible to
BVI students, it is important to understand that designing objects for tactile learning requires more than just haphazardly converting a 2D representation to a 3D object. Designing for genuine learning can require creativity and thoughtfulness, but perhaps more importantly, input and feedback from actual users (for examples of such participatory design and user-sensitive inclusive design with BVI users, see Gooda Sahib, Stockman, Tombros, & Metatla, 2013; Newell, Gregor, Morgan, Pullin, & Macaulay, 2011). Thankfully, a benefit of 3D printing technology is that designs can easily be adjusted and iterated based on feedback or new needs, not just by the original creator, but by a community of others online. Creating and customizing 3D printed models for educational use has become surprisingly easy and affordable and thus should be considered as one useful accommodation strategy – where appropriate – for instructors of BVI students in higher education. Below we describe the technology and how to use it (whether as a designer or just printing existing designs), present a call for more designs as OER, and finally, as a model for others, we present our experience teaching an interdisciplinary service-learning course where student teams created 3D printed models in collaboration with BVI users.

**Logistics of 3D Printing**

3D printing is a process for manufacturing three dimensional objects by adding material layer by layer based on a digital model. A wide variety of 3D printing technologies exist today, ranging from laser sintering (using a high-power laser to fuse a powdered material into the desired shape) to stereolithography (using ultraviolet light to selectively solidify layers of a photopolymer resin) (Griffey, 2012; Melchels, Feijen, & Grijpma, 2010). The most accessible form of 3D printing available commercially at low cost is fused deposition modeling (FDM; also known as fused filament fabrication) which deposits melted thermoplastics through an extruder nozzle that moves horizontally and vertically within the build space to lay...
down thin cross-sectional layers of the object one at a time. The digital model of the object to be printed is typically stored as an .stl file (from stereolithography). The model itself can be created in a variety of software programs, many of them free to use while others may be free or discounted for faculty and students or offer an affordable institutional license (McGahern, Bosch, & Poli, 2015). Overall, the cost of FDM-style 3D printers has dropped dramatically in recent years, bringing the technology within reach of hobbyist communities while simultaneously becoming commonplace in public libraries and the libraries of educational institutions (Scalfani & Sahib, 2013). For the purposes of this article, we will focus on FDM-style 3D printing.

Learning to use 3D design software may seem like an imposing task to handle alone, even with the extensive support and tutorials of online hobbyist communities. Thankfully, as 3D printing widely comes to the libraries of educational institutions, the library itself can provide support for instructors or their students learning to design and print 3D objects. As cost has come down and libraries integrate the technology, 3D printing on college campuses has moved from gated access (often only available to students and faculty in selected departments like engineering) to general access for all. "A library can provide a central point of access and support for 3D printing for students and faculty across disciplines and programs beyond engineering and technology" (Van Epps, Huston, Sherrill, Alvar, & Bowen, 2015, p. 16). For example, Scalfani and Sahib (2013) report success implementing a 3D printing studio into a campus library; they describe a two-step training procedure where librarians assist students and faculty in learning the basics of 3D printing, after which users can experiment independently in an open access environment (see Groenendyck and Gallant, 2013 for another example of successfully integrating a 3D printing space in a university library).

Makerspaces: A Case Study in Collaborative Design

That said, librarians are not the only resources for instructors learning to 3D print; many campus libraries have formed active and exciting makerspaces (sometimes called maker labs). A makerspace is "a place where people come together to create and collaborate, to share resources, knowledge, and stuff. Maker spaces […] evolved from a desire to understand, tinker, remake, and share" (Britton, 2012a, p. 30). In other words, it is a collaborative community space where anyone can be a creator as well as a consumer, a space that encourages an informal or even play-like atmosphere for learning (Britton, 2012b). The culture around makerspaces (often considered a marriage of do-it-yourself culture and hacker culture) places a high value not only on collaboratively learning and using practical skills, but also on sharing, remixing, and in general on free, open access to tools and knowledge (Forest et al., 2014; Lakhani and Wolf, 2005). Public libraries have been integral in bringing 3D printing to communities as part of makerspaces. While many post-secondary libraries have started to follow suit in terms of bringing 3D printing to the campus community (Scalfani & Sahib, 2013), we think the most promising model will incorporate the technology into a makerspace (perhaps within a library) where members of the campus community can support each other in learning 3D printing.

For example, our institution houses 3D printers within a makerspace in the campus library so that beyond the initial training and user authorization by librarians, there is also extensive informal peer support, mentoring, and resource sharing within a collaborative community of students and faculty. Librarians support, facilitate, educate, and advocate, but putting the people – the community members – of a makerspace at the heart of learning skills like 3D printing makes the process much less an imposing individual task and more a collaborative and fun experiment.

In our case, author DK, an undergraduate teaching assistant in our statistics course, became an integral member of the makerspace community based out of the library, and through that community he learned and honed the skills to create 3D printed objects for pedagogical use. A blind student in our course had reported finding our low-tech models of the normal curve helpful, but due to the materials used, those models had to remain in the professor's office, whereas a 3D printed object would be robust enough to travel in the student's backpack and be usable both in class and outside of class. The author in question started with an existing 3D printable normal curve design freely available on the internet (Ayoung, 2013) and improved upon it with feedback from a blind student in the course, for example by replacing raised lines representing standard deviations with channels cut into the curve (Fig. 2A-2D)(Kay, 2016). He also added a removable brim to the design for better printing on the local printers, in this case a Lulzbot TAZ 5 (Fig. 4E-F).

As part of this iterative process, librarians and members of the campus makerspace were very helpful in learning to create successful designs.

Open Educational Resources

Of course, as Jo and colleagues (2016) point out, designing models for 3D printing has a significant learning curve and time investment, and for many instructors of BVI students this may be prohibitive. Thankfully, there is a solution for instructors who do not want to create their own designs: use existing designs created by others. This extends to the hobbyist
and online communities surrounding 3D printing. For example, one of the largest online communities, Thingiverse (https://www.thingiverse.com) is a huge database of 3D designs hosted by MakerBot, where all designs are encouraged to be shared under a Creative Commons license (i.e., a copyright license emphasizing free and open reuse and alteration of work)(Griffey, 2012). An instructor who desires free 3D printed resources for a BVI student could in theory just download the desired design from such a database and print it at their campus library, a public library, or any other local makerspace with a 3D printer.

The current barrier to wide-spread use of 3D printed objects for teaching higher education concepts to BVI students is not the technology itself, nor the cost, nor the learning curve of creating 3D models, but rather the scarcity of designs publicly available. While many designs do exist for, say, simple science and math concepts, they represent only a tiny fraction of the topics covered in even introductory-level courses. Horowitz and Schultz (2014) present some examples of models they created for astronomy and the geosciences, and they end with a call for data centers and research departments in STEM fields to create libraries of 3D models for the use of students and researchers. They suggest that these could be shared online in an open-access database like Thingiverse and printed as needed. This aligns with the movement in education toward open educational resources which has been gaining momentum (Littlejohn & Hood, 2016). Rather than
reinventing the wheel, instructors could find appropriate resources already designed and print them easily and cheaply without the learning curve necessary to create their own designs.

**Service Learning as Sources of 3D Printable Models**

Of course, these open-access designs must come from somewhere, so we urge instructors to participate in creating new education models or iterating, improving, and remixing existing ones. However, another idea which may scale up for even wider participation is to have other students on campus create 3D printable models which they subsequently share freely online. Faculty in engineering, design, art, computer science, and many other fields could assign project-based learning activities that ask their students to create 3D printable models for accommodating BVI students in a variety of other courses. Projects like this would not only provide OERs for wider use; rather, they would also build useful and marketable skills for the students themselves (McGahern et al., 2015). For example, a data analytics company recently reported that 35% of engineering job advertisements across a variety of fields asked for familiarity with additive manufacturing like 3D printing (Platt, 2015). Student projects designing 3D educational models may work best in a team setting (see our example below). Teamwork is not only pedagogically valuable but increasingly an important skill for future employment (in fact, employers have specifically called on universities to better prepare their graduates to work in team-based environments; Riebe, Girardi, & Whitsed, 2016).

Projects like this could also fall under the umbrella of service learning and help the students develop social awareness (Suchow, 2016). For example, Kostakis, Niaros, and Giotitsas (2015) describe a project in two Greek high schools where sighted students created 3D printed artifacts (using open-source 3D printers) with the goal of communication and collaboration among BVI and non-BVI students. Ideally, students creating or improving designs for 3D printable tactile learning aids could work directly with BVI students or other stakeholders (e.g., a nearby school for the blind, an advocacy organization, or a government commission for the blind).

**Figure 3**

*Example prototype designs created by students in a service-learning course*

An Example Course

To give one example of how accessible 3D printing design can be scaled up by students, we developed an interdisciplinary service-learning course where student teams created accessible 3D printed models in collaboration with BVI community members. In the course, titled "Perception, Design, Accessibility," students learned about visual impairment, including assistive technology, history/advocacy, and the science of tactile and haptic perception. Through guest speakers, readings, podcasts, and webcasts, the students heard directly from a wide variety of BVI voices, and they gained experience using assistive technology like screen readers to successfully accomplish everyday tasks.

A large focus of the course was the educational barriers faced by BVI individuals, so students also read about those challenges, surveyed BVI individuals on educational barriers, analyzed use of visuals in standard textbooks, and collected observational data on pedagogical reliance on the visual modality in a variety of actual college classrooms. Meanwhile, through a partnership with the university library's Maker Lab (which houses many consumer-level 3D printers), the students learned about and got experience with basic 3D design and 3D printing. Then, in partnership with the state's Commission for the Blind and Visually Impaired, student teams designed accessible 3D printed models and used input, feedback, and user data from BVI community members to iterate and improve their designs. For example, one group created interactive graph prototypes for making (or interpreting) simple histograms while another group created accessible hands-on models for stereoisomers that could be used in a chemistry class (using shape and Braille labeling to convey information conveyed visually with color and print)(Fig. 3). By creating these as digital OERs shared in a free online database, the teams ensured that the models could be accessed -- and improved upon -- by anyone, anywhere.

We urge instructors to consider incorporating assignments like this into their courses with the goal of contributing or improving open educational resources for worldwide access in the form of digital models for 3D printing. Instructors of BVI students, especially those who find themselves with a BVI student for the first time and feel unequipped to provide tactile accommodations for concepts they usually present visually, could then print these models with minimal technical knowledge or perhaps just assistance from a librarian or the helpful community at a makerspace.

Conclusion

Students with blindness or visual impairment face barriers to learning within higher education, and instructors have an obligation to make their classes accessible and provide accommodations to lessen those barriers wherever possible. While technology like screen reader software and tactile graphics work well for many learning purposes, the increasing consumer-level accessibility of 3D printing offers a promising complement to other existing accommodations and in some cases can mitigate the limitations of tactile graphics. 3D printing allows for an endless variety of highly customized tactile learning aids tailored to specific pedagogical needs, and these objects are cheap to produce and often are robust and mobile enough to travel in a backpack. While there is a learning curve to create new 3D printable designs, libraries, makerspaces, and online hobbyist communities offer extensive support for those who want to create new designs or iterate existing ones. More importantly, though, open educational resources (making 3D designs widely available for free) mean that instructors can use 3D printed objects without having to create their own designs. We call specifically for more contributions to open online repositories of 3D designs, either by individual instructors or by students completing service-learning projects in other courses. Together, we can create a more accessible curriculum for all students.

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Not Just Reading About It, But Doing It: Graduate Students Learning the Case Study in a Cross-Disciplinary, Co-Taught Course

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This article describes a year-long doctoral course on ethnographic case study research in which a communities of practice approach helped non-traditional students manage the challenging identity negotiations of entering a new academic field. Co-taught by faculty in two disciplines—Rhetoric and Composition and Teaching, Learning, and Culture—the course enabled the students who were from both disciplines to work in research teams as they applied what they were learning about ethnographic research to actually conducting research in the site of required first-year university writing classes. The article describes the process of setting up the course, along with the challenges encountered. Excerpts from two students’ research notebooks and student interviews offer insights into how this pedagogical approach can assist non-traditional students in navigating their initial forays into research.

Every field of study has its own methods of inquiry that reflect particular values regarding the production of knowledge. As undergraduates, students are usually expected to be consumers of this knowledge, or in other words, to understand the research in the field and to apply their understanding to their own future professional contexts. Graduate students, however, are typically taught to contribute to knowledge in their fields by conducting research, usually as part of a capstone project such as a practicum, thesis, or dissertation (Lovitts, 2005; Ozay, 2012). Though it is likely that they would have taken methodology courses before conducting their own research, many students still struggle, despite assistance from their major professors. As a result, students may take a long time to earn a degree, acquire significant debt, or even not get the degree at all (Casanave, 2014; Cassuto, 2013).

To help graduate students in their journey of becoming researchers, we created a doctoral course in which students conducted an ethnographic case study through an apprenticeship model. We believe that one reason students often get stuck when they begin their own research is that doing research is more than learning approaches and procedures. Doing research is about students becoming researchers by entering an academic community of practice with specific routines, values, and habits of mind. This process is inherently social because becoming a participant in a new community is a sociocultural process that involves interactions with others (Lave & Wenger, 1991; Wenger, 1998). In most methods courses, students learn about research approaches in the field, and they might even conduct a mini-pilot study. However, they are less likely to have participated in gathering data for a research project or to have analyzed data with peers and faculty. One of the best ways to prepare students for doing research is to give them opportunities for collaborative research while they are guided by faculty. Even better, cross-disciplinary collaborative research offers students opportunities to compare the practices of different fields, better understand their own positionalities, and see their own fields from a new perspective.

In this article, we use a Communities of Practice (CoP) lens (Lave & Wenger, 1991; Wenger, 1998) to understand a cross-disciplinary graduate course that we developed and taught together and called Literacy/Biliteracy: A Case Study. In this course, students from two different disciplines (Rhetoric and Composition and Teaching, Learning, and Culture) became integrated into research teams and conducted an ethnographic case study. The two of us had an approved Institutional Review Board (IRB) proposal for the study and had secured research sites in two first-year college composition classes, one during the day and one in the evening, to accommodate our students’ schedules. In this course, students from interrelated disciplines worked together as they entered their new, respective academic communities. We will describe the course, explain its strengths and challenges, and analyze examples of students’ work from their research journals and from interviews. Our description and analysis of this course can be seen as one model for cross-disciplinary collaborative teaching and learning in a variety of instructional contexts.

Team Teaching and Learning

Team teaching in higher education can be challenging because of the disciplinary silos that exist on many university campuses (Meizlish & Anderson, 2018; Trust, Carpenter, & Krutka, 2017). Nonetheless, fruitful collaborations have existed in different formats depending on the subject matter, class size, and administrative structures. Dugan and Letterman (2008) described two main models: a co-teaching model with both faculty either in the classroom at the same time or at alternative times, or a panel model consisting of three or more faculty. In the co-teaching model, two faculty collaborated on a single course;
these faculty were consistently present in each class session or took turns being present. When in the class together, they took turns leading the class or spent the entire class interacting together in a kind of dialogue. In the “panel” modality, faculty from various disciplines were assigned a segment of the course, and only they were present during their segment. For instance, in a Humanities course faculty from History, Literature, and Art each taught a separate unit. Variations on these models have occurred, as when the faculty instructor and an industry professional co-taught (Higgins & Litzenberg, 2015) or when faculty team taught with their students (Gray & Halbert, 1998). The workload and responsibilities of faculty have varied as well, ranging from one faculty taking on most of the grading and communication with students to equal sharing of responsibilities between the team members (Benjamin, 2000; Dugan & Letterman, 2008). Usually cross-disciplinary team-teaching has involved disciplines that have some overlap, such as Criminal Justice and Psychology (Bucci & Trantham, 2014) and Education and Sociology (Arrington & Cohen, 2015). Our two fields (Rhetoric and Composition and Teaching, Learning, and Culture) shared topics of study and methodological approaches, despite our speaking to different scholarly audiences. We used the co-teaching model.

Whatever the discipline or pedagogical model, the teaching team needed to share a similar teaching philosophy and perspective on how students learn (Morelock et al., 2017). Communication was key so that the co-teachers discussed their teaching philosophies, course goals, perspectives on assessment, work schedules, and so on before beginning to develop a course (Volger & Long, 2003). They also needed to discuss how to handle disagreements, difficult students, and other potentially emotionally charged issues (George & Davis-Wiley, 2000; Robinson & Schaalbe, 1995; Shibley, 2006). The learning climate established by the teaching team was correlated with student satisfaction and subject matter competency (Killingsworth & Xue, 2015). When effective communication did not occur, instructors’ philosophies failed to mesh, or when a member of a teaching team did not fulfill important obligations, then student learning was inhibited (Shibley, 2006). When this happened, students reported confusion about course expectations and evaluation criteria (Jones & Harris, 2012; Smith & Winn, 2017). Also, team teaching can be challenging from a logistical perspective; for instance, our university has no way of dividing up teaching load credits so that co-teaching faculty can share them, a fairly common situation according to Morelock et al. (2017). We were able to co-teach because one of us had an administrative appointment and did not need teaching load credits, which allowed the other instructor to take the course-equivalency credit necessary for her assigned workload.

When successfully implemented, team teaching was found to be beneficial for both students and faculty (Jones & Harris, 2012). The presence of two or more instructors, each with different expertise and experiences, increased students’ depth of knowledge, understanding of professional contexts, and critical thinking skills (Bucci & Trantham, 2014; Gosetti-Murray & Schneider, 2009; Higgins & Litzenberg, 2015). Students also learned different modes of inquiry when the co-teaching faculty were from distinctive areas such as the Humanities and the Sciences (Nikitina, 2006). Students also received more individualized instruction (Vogler & Long, 2003) and were exposed to different points of view (Harris & Harvey, 2002). When students saw their co-teachers learning from each other, team teaching served as a model for professional collaboration and intellectual growth (Blanchard, 2012). Faculty who co-teach benefited as well. Blanchard (2012) found that through co-teaching, faculty became more reflective and deliberate about their pedagogical practices and philosophies through communicating with their collaborators and the process of creating a different kind of course. Novice faculty benefited when teaching with a fellow novice teacher (Channugam & Gerlach, 2013) or when they were mentored by a more senior teaching partner, while experienced teachers felt renewed by learning from someone new to their field or from a different field altogether (Blanchard, 2012). A more extensive team of instructors was also effective (Iломaï & Toom, 2018). For example, Pharao, Davison, McGregor, Warr, and Brown (2014) described the work of a team of instructors at four different Australian universities who each taught classes on climate change using a Communities of Practice approach. Though they taught their courses individually, they shared approaches and materials and helped each other feel less isolated. With the aid of a paid facilitator, they created a community of practice that benefited both the faculty and their students.

**Communities of Practice (CoP)**

As we have noted, learning to become researchers—or learning to master a new subject matter in general—is a process involving learning new rituals, norms, behaviors, and belief systems that is situated in a particular community of practice (Farnsworth, Kleanthous, & Wenger-Trapner, 2016). People just entering a CoP engage in activities usually on the periphery of the group but over time can make more significant contributions as they gain more expertise and validation (Lave & Wenger, 1991; Wenger, 1998). Studies have shown that university students taking coursework and conducting research were in the process of gaining entry and acceptance into their academic discipline (Danowitz, 2016; Lee, Chang, Chen,
Identities were negotiated and adapted as learners gained access to and enter into new scholarly communities (Wenger, 1998). A CoP is also a learning trajectory in which people draw on past experiences and future opportunities, beginning as novices and through engaging in legitimate peripheral participation, coming to be experts (Prior, 1998). This trajectory can be disorienting and difficult (Patton & Parker, 2017). As Casanave (2002) noted, this process of identity change often led to tension and loss of self-esteem; in her words, “identity construction and learning to belong go hand and hand . . . and both take time and effort and may never be complete” (p. 23). Coffman, Putman, Adkisson, Kriner, & Monaghan (2016) found that the CoP established in their doctoral-level course gave students opportunities for self-reflection and mutual support that facilitated this challenging shift from student to scholar. Similarly, we found that our course, with its focus on faculty and student collaboration, provided students with a space in which they could share their anxieties about entering and succeeding in their doctoral programs.

Why This Course?

Co-teaching when faculty are from different disciplines can help to fill in the gaps that academic programs might have because of teacher shortages, changes in curriculum, or, in our case, because of gaps within the curricula themselves. Our two programs, Rhetoric and Composition and Teaching, Learning, and Culture, both needed to strengthen students’ research expertise, though for different reasons. Rhetoric and Composition, with origins in English Departments in the 1970s and 1980s, is a multidisciplinary field with strong roots in the Humanities (Skeffington, 2011). Historical and theoretical scholarship has tended to dominate the field (McComiskey, 2016). Scholars in the field need to conduct more empirical research in order to strengthen its alignment with the research-oriented higher education arena (Driscoll & Perdue, 2014; Haswell, 2005; Johanek, 2000). However, as of 2008 (the most recent data available), only 34 percent of doctoral programs in Rhetoric and Composition required a course in research methods (Brown, Enos, Reamer, & Thompson, 2008).

Doctoral preparation in Education, in contrast, has had less emphasis on theory and more focus on research methods, in particular the need for both understanding and expertise in qualitative and quantitative methods, and epistemological diversity (Fenstermacher, 2002; Florio-Ruane, 2002; Metz, 2001; Page, 2000; Popkewitz, 2002; Wilson, Floden, & Ferrini-Mundy, 2002; Young, 2001). The question remains: how do students acquire research skills? Pallas (2001) argued that students acquire these skills through formal study, coupled with legitimate peripheral participation in a research project, as seen through a CoP framework (Wenger, 1998). What was key was apprenticing on a research team, according to Pallas (2001). By co-teaching this course, we were able to offer our students the chance to work in research teams and to fill in a crucial gap within their academic programs. As co-teachers, we each contributed our expertise, with Ullman being the more experienced ethnographer and Mangelsdorf the more knowledgeable about the research site of first-year writing courses. By combining our strengths, we enriched this project.

Description of the Course

Overview

Our primary goal in this course was to help graduate students start the journey of becoming researchers through an apprenticeship model in which they conducted an ethnographic case study. We set them up with an approved IRB proposal to explore the construction of identities, ideologies, and texts in two different sections of a first-year writing course at our university. None of the students had examined this topic before, and this would be most of the students’ first experiences doing qualitative research rather than simply reading about it. Since part of the process of becoming a researcher involves presenting research to professional colleagues, the students also wrote conference proposals about their research, and several of the team members presented their research at national and international conferences. They also drafted manuscripts in their teams in which they reported on their research findings. Students learned to conduct procedures for ethnographic data gathering such as taking field notes, conducting interviews, and gathering artifacts. Along with data collection, they learned to analyze their data and wrote initial manuscripts.

The students also dealt with the same issues that experienced researchers encounter, such as developing relationships with research participants and examining their own positionalities. We took the perspective that helping students through an actual research process would help to demystify research and writing and help them to feel more confident about the process (O’Hara, Lower-Hoppe, & Mulvihill, 2019; Turner et al., 2012). This was especially important because our students were very different from the “traditional” demographics of graduate students: White, middle-class, in their twenties, and able to devote themselves full-time to their studies (Jackson, 2018). Most of our students were first-generation college students, all but two were Latinx1, the others being a straight Black woman and a

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1 We are using this term to avoid gender binaries.
queer White man from Appalachia with a hearing difference. Ranging in age from their late twenties to their early fifties, all of them worked, many of them in demanding full-time positions, while earning their doctorates. Half were parents, and one had left her young children with her husband in another state for a year so that she could focus on her doctoral studies. Non-traditional graduate students such as these, with family and job responsibilities weighing on their time and energy, encounter more challenges than “traditional” students (Gardner, 2008; Leyva, 2011; Pierce & Hawthorne, 2011).

Throughout the course we both talked about our own missteps in conducting research in order to demonstrate the realities of conducting qualitative research. We shared stories about the nuances of maintaining relationships with study participants and about going back to interviewees to ask important questions that had been initially forgotten. There were two research teams, each focusing on a particular classroom (one daytime and one evening class) in order to accommodate the student researchers’ schedules. The students in each research team observed classes, took field notes, conducted interviews with first-year students and instructors, reviewed the course text, and collected student writing, as well as writing instructor feedback. Each research team shared their data collection experiences with the whole class, which enhanced the collaborative nature of the experience. At this point we have taught this class twice, with 14 students in the initial class and 9 students in the second iteration. After having taught the class once, we realized that we needed to extend the course into two semesters in order to give students sufficient time to code and analyze their data and to draft manuscripts.

Course Preparation

The exigence for team teaching, as noted earlier, can vary. In our case, we ourselves decided to teach this class after several discussions about our respective graduate programs in which we realized that both groups of students could benefit from more practice working together in research teams. We also realized that we had similar philosophies of teaching and learning, preferring discussion-based classrooms and inquiry-oriented assignments. It became immediately apparent to us that in order to accomplish our goal of students from both disciplines learning about and conducting research, we needed to start the semester with a research site already chosen. The university’s first-year writing classes were suitable because they could be easily accessed by busy graduate students since the classes were offered at a variety of times right on campus. Before the semester began, we secured permission from the Director of First-Year Writing for the for the project, as well as the writing instructors for two sections of the course. We also had an approved IRB proposal before the semester started. Finally, we recruited the doctoral students through flyers and email solicitations and created the syllabus and calendar. One of the most successful aspects of our co-teaching was that we contributed specific readings that were thematically related but which reflected the different emphases of our disciplines. Many of the course readings came from a scholarly journal that is renowned in both of our fields, the Journal of Language, Identity, and Education. In a way, this journal represents the Venn-diagram intersection of our disciplines.

During the Course

Throughout the course we used a co-teaching model in which we were both in class at the same time, taking turns presenting information and leading discussions based on our areas of expertise. We also collaboratively evaluated our students’ writing assignments through long work sessions in which we each reviewed the students’ papers and shared our assessments, remaining open to changing our perspectives through our discussions. After reaching an agreement on the quality of each student’s assignment, we both commented on each student’s paper. Though labor intensive, this co-teaching model helped to maximize the benefits of combining our different areas of expertise.

In the first month of the course, the doctoral students read about and practiced ethnographic research techniques such as taking field notes and conducting interviews. Since this kind of research emphasizes self-reflection, the students kept research journals in which they reflected on the course readings and the research they were preparing to conduct. Students selected the writing class they wanted to study based on their schedules, and we made sure there were students from Rhetoric and Composition, as well as from Teaching, Learning, and Culture in each research team in order to promote the sharing of skills and perspectives. After the first month, each team started their actual data collection by doing participant observations of one of the two first-year writing classes and taking extensive field notes. The doctoral students also interviewed as many of the first-year composition students as agreed to participate, along with the writing instructors for each class. Our doctoral student researchers arranged these interviews outside of class time and learned that undergraduate students sometimes made appointments and forgot to show up, which meant that the researchers had to respectfully chase the first-year students down. In our doctoral course, we analyzed the textbook used in the first-year composition course, and we collected artifacts such as student writing, instructor feedback, and the course textbook. With our guidance, we drew the doctoral students to the themes of ideologies,
identity, and texts. By midway through the semester, our class periods were devoted to discussing the data that each team had collected alongside discussions of the articles we were reading from the Journal of Language, Identity, and Education that dealt with the themes we were researching. In our class discussions, we helped the graduate students recursively review their data for emerging themes and also encouraged the teams to brainstorm for solutions for problems they were encountering, such as getting first-year writing students to respond to requests to participate in the study. The notion of positionality was threaded throughout these discussions as we encouraged our doctoral students to consider how their identities as researchers, such as race, class, gender, sexuality, and (dis)ability, affected the way that they viewed and understood the world.

We found that our doctoral students had the most difficulty using theory to understand their data and listening to what the data revealed. Their difficulty highlighted some of the differences between the disciplines of Teaching, Learning, and Culture (educational research) and Rhetoric and Composition. The graduate students in Teaching, Learning, and Culture tended to focus on power dynamics between teachers and students, including some of the negative assumptions that instructors made about students. These graduate students noted, for instance, that in an interview the instructor called students who dropped the class “lazy” when in fact the first-year students who dropped the class were all English Language Learners who were not well served by the course curriculum. In contrast, the Rhetoric and Composition graduate students concentrated more on the language choices of the first-year writing instructors and students, many of whom were bilingual. Students from both disciplines noticed that in interviews, it was common for first-year students to express the belief that speaking Spanish in the classroom was inappropriate or detrimental to their learning to write in English. At the same time, our student researchers observed that writing students translated the teacher’s directions into Spanish for each other and that Spanish was the primary language for group work and talk amongst themselves. These different observations—one on the first-year writing course curriculum, the other on classroom language practices—enriched our class discussions and helped the research teams see that their observations were not the only way to understand what was happening in the classrooms. And just as our students were deepening their understanding of their research practices and questions, we were learning more about our two disciplines, which has helped to rejuvenate both our teaching and research.

In the second iteration of the course, we realized that it made sense for us to conduct a meta-study—that is, a study of how the graduate students were learning to become qualitative researchers. That means we obtained IRB approval for the graduate students to conduct their research study in the first-year writing classrooms, with students and teachers there, and we had another IRB proposal approved to study our own graduate students who were taking this class with us. We invited a graduate student who had taken the course with us the first time to be a preceptor and to teach the second iteration of the course with us. We also asked him to collaborate with us on researching the graduate students, and he was the one who asked the student researchers if they wanted to participate in the project, as he did not have grading authority for the course. It turned out that all of the students in our course agreed to participate in the study. So while we were teaching this course, we were also gathering data, which included taking field notes during classes and conducting individual interviews and focus groups with the student researchers after the course had ended. We, along with our graduate student, have published a book about our students’ experiences becoming qualitative researchers (Ullman, Mangelsdorf, & Muñoz, 2021).

**End of the Course**

Both times that we taught the course, students drafted research reports about their findings. Before this occurred, however, we helped the students write conference proposals based on their research to submit to the Ethnographic and Qualitative Research (EQR) conference, an annual gathering of interdisciplinary qualitative researchers. We considered this a student-friendly conference where the feedback was likely to be constructive and supportive, and fortunately that turned out to be the case. For all of the students, this was the first time they had written a conference proposal to present original research. During this process we shared with the students several conference proposals we had written in the past, and we described the objectives and norms of academic conferences. We gave them feedback on their proposals before submission, and we discovered that conferences in our respective fields were quite similar in their expectations, so in this instance the similarities in our fields helped to reinforce our ideas. All of the proposals were accepted, and all but two of the eight students were able to attend the conference to share their work. We met with the students beforehand to help them rehearse their presentations and to give feedback. The students were still in the process of analyzing their data and drafting research reports when they presented at the EQR, so the students were able to think about the feedback they received from conference attendees to help them develop their
analyses. Indeed, this first research conference presentation was a rite of passage for all of the students.

As noted above, we realized the first time that we taught the class that the students did not have sufficient time to thoroughly analyze their data and compose their research reports, so the second time we taught the course, we required that they take it for two semesters. In the second iteration of the course, we again had students write proposals for the EQRC as well as for a panel with a discussant (whom one of us invited) for the annual meeting of the American Anthropological Association (AAA). Before this conference the students talked about their insecurities regarding their competence in research methods and their analysis of their findings, as well as about the possible questions from the discussant and the audience at the AAA conference. The panel at the AAA was another hurdle for them, and this time the student researchers received both written and oral feedback about their papers, along with questions from the audience, which they dealt with nervously, but with confidence.

**Apprentice Researchers and Collaborative Learners**

Both times that we taught this class, our student evaluations were positive; students said they had learned a great deal and had found the class well organized. However, these student evaluations were standard across the university and failed to ask specific questions about the course content and design. To learn more about the students’ views of the course, we reviewed the data that we had collected for our meta-study, including field notes, interviews, and the students’ research journals. We discovered that the students’ research journals, which they kept throughout the class and in which they reflected on the readings and research in the course, were the most helpful in telling us the students’ thoughts about the class. In particular, the students’ journals revealed much about their feelings and experiences as novice researchers who were working with fellow students from another discipline and being taught by two instructors. These research journals were self-reflective spaces where students could become more aware of their experiences and feelings as they entered new professional communities (Elbaz-Luwisch, 2010). Because space limitations prevent us from describing all of the students’ responses, in the following section we will focus on two students: Dalia, a more experienced student who found the process of team research intellectually beneficial, and Hector, whose disorientation upon entering a new doctoral program was eased by working with others.

When Dalia took the course, she was at the end of her second year in the Teaching, Learning, and Culture doctoral program and had come to the program with a strong orientation toward action research (Borda, 2007). She also had a government-sponsored scholarship from her country (Colombia) to complete a doctoral degree that would produce useful knowledge for national universities. She had conducted a pilot study for her dissertation with English language instructors at her university in Medellin through Skype, in which she explored their teaching philosophies and identities. At the time she was taking this course, Dalia had transcribed her interviews, and she thought that her pilot study might be expanded into a dissertation that would look at teacher identities and assessment. However, at this point, Dalia was still unsure as to what her dissertation would address. She also knew her university department in Colombia was hoping she would look at language assessment practices. From her perspective as someone analyzing data from a pilot study and looking toward her dissertation work, Dalia could appreciate the philosophy of our course, which was about learning to become a researcher. She wrote in her notebook:

I am glad we are having the opportunity to follow the whole research cycle in this class, from recruiting participants through preparing a paper to submit\(\text{[ing]}\) to a conference... Research is done by doing it definitely. Not only do we need to read about research, but we also need to start to put into practice the research procedures we are reading about and then experience research in real-life situations. There is no other way to learn. Not to mention the important role that interactions and group work play in this learning to do research experience.

From her vantage point as an advanced doctoral student—and as someone who had studied the framework of CoP for the theoretical framework of her dissertation proposal—Dalia was able to articulate the learning theory behind our course design. Also, since she was embarking on the individual process of writing an article using data from her pilot study while writing her dissertation proposal, she could appreciate the value of working in a research team. This was especially true during the brainstorming process. In this entry Dalia described what she saw in class as the teams thrashed out ideas:

I was just fascinated to see how ideas and confusions flowed to make all that mess become clearer and how we were building ideas together with the group members and the professors. I think that class environment is more similar to what really life in academia could be like if we try to work with others.

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2 We have lightly edited these selections from the students’ research notebooks for clarity and space.
This last comment—“what really life in academia could be like if we try to work with others”—reflected Dalia’s own experience as a language teacher and fledgling researcher in Columbia. She had worked on a research team in Colombia with one of her professors, but this was something that was done during their “free time” and was not part of the everyday work of Dalia’s position among the language faculty.

Dalia perceived working as part of cross-disciplinary research as a messy but exciting process that would improve the intellectual quality of all of the team members’ work. As she expanded in another notebook entry:

I liked that we had time in class to know a little bit more about our classmates, and I see a connection with this identity exploration we are called to do through the study the class has to develop. The students seem to be very interesting, too, and our background and experiences are as varied as they are enriching.

In contrast to Dalia, who focused in her notebook on the intellectual benefit of team research, Hector, a new student in the Rhetoric and Composition doctoral program, wrote that working in a team bolstered his confidence because some of his fellow students were also new to research. In his first research journal entry, Hector wrote:

I am starting to feel a lot better about this course. In all honesty, a large portion of that has to do with my teammates. In the few times that we have gotten together, I have had the opportunity to relax a little bit knowing that some of them are also feeling a little bit lost. It is comforting in the sense that I know we will be able to find our way together.

Here Hector is demonstrating a key aspect of a CoP: apprentices learn through relationships with other apprentices (Lave & Wenger, 1991). At the beginning of the course, Hector explained that he understood the phenomenological nature of ethnographic research, but he still expressed fear about delving into the research process. According to several other research journal entries, he initially felt disoriented and even inadequate in the class. Hector wrote:

In all honesty, I have questioned to myself whether I am even qualified to be doing this type of research. Again, I have no formal education in rhetoric, or education, for that matter… At best, I am just some dude who signed up for a class with nary a clue of what to expect.

At this point Hector was struggling to see himself as potentially a legitimate student in the course (and in his new field at large). Learning is a social process involving the whole person (Wenger, 1998), including one’s sense of identity. Bridging the gap between multiple identities is a struggle for graduate students as they try to find a place for a new academic identity (Coffman et al., 2016). It is by actively engaging in a CoP that newcomers can begin to imagine themselves as belonging within the community (Wenger, McDermott, & Snyder, 2002). Hector, who identified as Latinx, struggled to connect his life outside of school with the classroom—to imagine himself as belonging to his new discipline. He wrote:

[M]e and my mind that are [sic] leading me astray. I say this because I genuinely feel as though I have an understanding of the material in class. Once I get out of class, however, I feel as though I am navigating an entirely unknown field. While I grasp the concepts, my biggest problem I feel is my reluctance to engage my own personal views and experience.

This disconnect between Hector’s different identities was shared by several other students in the course, who were also at the beginning of their doctoral studies. In many of our class discussions, students talked about their anxieties as they were learning the norms of academic work. The more advanced students—in CoP terms, those who were closer to the center of the discipline—sometimes served as mentors when they talked about their experiences their first semester in their programs.

When Hector and his three teammates (Elsa, a fellow Rhetoric and Composition student, and Jerry and Sebastian, who were in Teaching, Learning, and Culture) collaborated on their conference proposal and presentation, their different disciplinary backgrounds at first seemed to interfere with their collaboration. While Jerry said that he appreciated working with others who were in Rhetoric and Composition—for one thing, they could help him with the writing of the proposal—he noted in his research journal that his group, which was struggling to find a time when everyone could meet, had decided to each work on distinct sections of the presentation that did not seem to mesh. When the group practiced the presentation in class, Jerry said he knew his part but was “unsure of how it fits in with the rest of the group.” But by the time they presented their work at the conference, Hector, Elsa, Jerry, and Sebastian had found common ground by focusing on language ideologies in the composition class they had studied. For this topic, the Rhetoric and Composition students contributed their knowledge of language capital, a theoretical concept, while the Teaching, Learning, and Culture students contributed their knowledge of language practices, a more applied understanding. As co-teachers from these two disciplines, we were able to give feedback to the students as they wrote their conference proposals and practiced.
their conference presentations. We helped them mesh these two disciplinary subjects as they came to better understand how to analyze their data. In the final section of this article, we describe the challenges that we faced in teaching the course and suggest ways that this course can be adapted to be successful in other academic contexts.

Conclusion

Research Team Problems

Throughout this article we have talked about the benefit of students working in cross-disciplinary research teams. However, we admit that at times these teams failed to work optimally. We discovered that we needed to explicitly make connections between the two disciplines in order to remind students to work together. The students’ tendency was to work with fellow students they knew from their program since they knew each other and were in other courses together. Sometimes the teams had problems working together because of differing schedules (as Jerry noted in the previous example) or because they were hesitant to offer criticism, even when it was constructive. Perhaps because the students had a longer time to get to know and trust each other, the teams in the second iteration of the course worked together better as a whole. Certainly, working in research teams can help with the labor of conducting research because students can take turns making class observations and conducting interviews. We recommend careful monitoring of research teams, perhaps by meeting individually with students to learn their concerns or by having them create a classroom blog (Williams & Jacobs, 2004).

Entering a New CoP: It Takes Time

Wenger et al. (2002) describe a CoP as a living entity with its own rhythm and patterns. The design of our course, in which students initially read about and practiced research procedures, followed by conducting research, then making their research public through a professional conference, did follow a logical pattern of entry into the CoP and practicing the habits and norms within the community. The first time we taught the class, however, we found that a semester did not provide enough time for students to proceed through these steps. The second time around, we made the class into two semesters; students enrolled into the course for one semester, and then for the second semester they enrolled in a group Independent Study that met as an organized class. With this additional time, the students were not only able to learn to gather data and to begin to analyze it, but also to reflect on their own learning processes. The second group met more often in their research teams, received feedback on their conference proposals and research drafts, and practiced and got feedback on their conference presentations. Because we were the students’ program directors, we naturally gave the students credit for both semesters, which we understand might not be possible in other teaching situations. If this is not possible, students could continue their work over a holiday term or a summer break, especially if they realized that this could help them publish their research or serve as a pilot study for their dissertation research. In fact, two students have drawn on the course in their dissertations, one by conducting further research in first-year writing classes, and the other by using some of her research data from the course in a chapter of her dissertation.

Overcoming Logistical Hurdles

Junior faculty might not have the luxury that we had in designing the course and enrolling students. However, arguments can be made about the course effectiveness. Since writing projects can prevent students from completing their degrees (Casanave, 2002, 2014; Kamler & Thomson, 2008), a course such as this can improve retention and graduation rates, particularly for students from non-traditional backgrounds or students who might be distracted from the work of their degree programs due to work or family obligations. Faculty can benefit as well since they can not only learn from their teaching collaboration, but they can also end up conducting their own research with their co-teacher, as has happened with us. Moreover, if teaching load credits cannot be shared, co-teachers can take turns being in the classroom or commenting on student work to alleviate the workload.

What is most important for faculty is communication, the sharing of expertise, mutual support, and intellectual rejuvenation. What is most important for students is learning to do research by actually doing research. Doing that research in a CoP, with professors, as well as more advanced classmates who can mentor them, can make all the difference. Producing a manuscript to be submitted for peer-review, and of course, a thesis or a dissertation, are all high-stakes projects. Since conducting research is a requirement for most graduate programs, a course such as this can help students to complete the requirements for their degrees. Versions of this course can easily be imagined for other instructional contexts. While this course focused on the ethnographic case study, other methodological approaches could be employed, depending on the professors’ expertise. Something similar to this course could even be used as a capstone course with undergraduate students, as the work is highly scaffolded. Perhaps if undergraduates were to take a course such as this one, it could encourage them to pursue graduate study, as experience is sometimes the best teacher.
References


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