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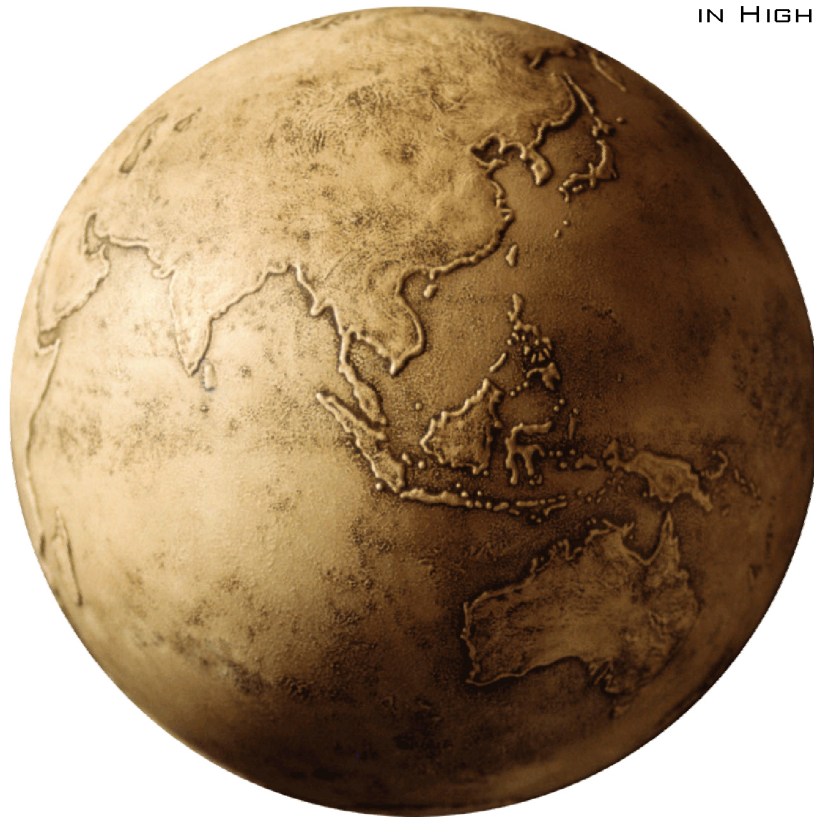
INTERNATIONAL JOURNAL OF

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# TEACHING & LEARNING

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### **Purpose**

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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### **Submissions**

The focus of the International Journal of Teaching and Learning in Higher Education is broad and includes all aspects of higher education pedagogy, but it focuses specifically on improving higher education pedagogy across all content areas, educational institutions, and levels of instructional expertise. Manuscripts submitted should be based on a sound theoretical foundation and appeal to a wide higher education audience. Manuscripts of a theoretical, practical, or empirical nature are welcome and manuscripts that address innovative pedagogy are especially encouraged.

All submissions to IJTLHE must be made online through the Online Submission Form. In addition, all manuscripts should be submitted in English and in Microsoft Word format. The following Submission Guidelines pertain to all manuscript types, that is, Research Articles, Instructional Articles, and Review Articles. Ultimately, authors should follow the guidelines set forth in the most recent edition of the Publication Manual of the American Psychological Association (APA).

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### **Review Process**

Following a brief editorial review, each manuscript will be blind reviewed by two members of the Review Board. The review process will take approximately 90 days. At the end of the 90-day review process authors will be notified as to the status of their manuscripts - accept, revise and resubmit, or reject - and will receive substantive feedback from the reviewers. Manuscript authors are responsible for obtaining copyright permissions for any copyrighted materials included within manuscripts.

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## The Effects of a Suggested Online Course on Developing ELT Student Teachers' Competences Regarding Oral Corrective Feedback: Evidence from Peer Reflections

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Kemal Sinan Ozmen  
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This study involves the design of an online course on oral corrective feedback (ONOCF) and its implementation through flipped classroom with a view to finding out if it exerts any impact on ELT student teachers' competencies regarding oral corrective feedback (OCF). Having conducted a needs analysis, the ONOCF was developed and then administered to thirty ELT student teachers by flipping the classroom. In this flipped model, first, the students took the ONOCF input outside the school. Then they enacted this input in their microteachings alternately in formal classes. Following each performance, reflection papers were gathered from the non-performing student teachers (NPSTs) in order to evaluate their performing peers' (PSTs) OCF practices and thus reveal the ONOCF components in their microteachings. Content analysis of the reflection papers demonstrated positive effects of the ONOCF on both the PSTs' and NPSTs' competences concerning OCF. Through the ONOCF, the PSTs were able to provide OCF effectively and use different OCF strategies while the NPSTs were successful locating their performing peers' non/corrections and identifying the shortcomings in their OCF practices. As a result, the ONOCF proved to be an effective online tool to help pre-service ELT teachers promote their competences regarding OCF.

Simply defined as any teacher response to L2 learners' erroneous utterances, oral corrective feedback (OCF) has a complex and challenging nature, especially for novice teachers, with regard to the unresolved questions of whether, when, and how to provide it. This complexity experienced by novice L2 teachers might derive from the limited information in the research literature to help them deal with what to do in reaction to learners' oral errors (Lyser & Ranta, 1997). From a more recent perspective, in parallel, there is a need for specific research on what OCF-related information student teachers (STs) are provided with during pre-service foreign language teacher education (Russell, 2009). Therefore, Russell (2009) informs, there are several questions in need of scrutiny, including who decides what information to disseminate to STs and whether this information is based on current research. The teacher educator is assigned several roles, such as instigating and guiding discussions on OCF and helping STs see the link between their notions of OCF and teaching philosophy (Ellis, 2009). However, no doubt, such formal instructive underpinnings are in need of going beyond the theory if they are to guide STs through pedagogically appropriate OCF practices in formal L2 classes. Obviously, a body of declarative knowledge about the nature of L2 teaching and learning and its components often fail to turn a novice into an effective teacher, and the content of academic courses in second language teacher education (SLTE) is often decontextualized (Tarone & Allwright, 2005). Therefore, it is necessary to blend the knowledge base with the inclusion of the social context of learning and teaching, i.e., classrooms, because experiential and received knowledge together take the novice teacher to professional competence (Wallace, 1991). In the context of the current study, i.e., in some of the pre-

service ELT teacher education programs in Turkey, as a part of the difficulties facing ELT STs in applying their campus-based learnings to school-based practical courses (Yeşilbursa, 2011), insufficient amount of procedural OCF input provision leads STs to fail to make informed choices of OCF as they start teaching profession. As a remedy for pre-service ELT teacher education in this regard, therefore, the present study had a motive to design and implement an online course on oral corrective feedback (ONOCF) for ELT STs in an effort to combine the theory and practice of OCF. With this concern in mind, the ONOCF includes the theoretical accounts of OCF, relevant research findings, authentic instances of OCF from real EFL classes, and several classroom implications.

### The Reflective Approach

Among other models of teacher education, reflective approach is widely promoted in pre-service teacher education, and it is granted a large place in the contemporary understanding of teacher training and teacher research (Özmen, 2010). Simply put, in the context of teacher education, reflective teaching is "the practice of thinking analytically about an experience or an activity" (Bullock & Muschamp, 2004, p. 32) and "a disposition to think about one's teaching practice, instead of passively following routinized procedures that one has established over the years" (Sze, 1999, p. 133). In other words, reflection involves helping STs think about what happened and why, as well as what else could have been done to reach their goals (Cruikshank & Applegate, 1981). Incorporating reflective practice into SLTE programs ensures the following reciprocity: received knowledge provides the theoretical underpinnings for thinking about

experiential knowledge, and experiential knowledge offers opportunities to try out received knowledge (Day, 1993). The ultimate purpose of teaching STs reflectively is therefore to enable them to act in deliberate ways to come up with new ways of teaching rather than becoming strictly dependent on tradition, as well as to interpret new experiences from a fresh perspective (Posner, 1989). In this respect, the proposed ONOCEF, coupled with its input-giving, implementation, and evaluation phases, has the potential to make the relationship between received knowledge and experiential knowledge reciprocal, not one-way (Wallace, 1991), given the opportunities to reflect on the received knowledge in the light of the input received from the ONOCEF.

### Online Courses in Pre-Service Teacher Education

One corollary of the enhanced learning possibilities afforded by Information Communication Technology (ICT) is that conventional teaching methods become questioned as expectations change (Rienties, Brouwer, & Lygo-Baker, 2013). Also, the rapid pace of technological innovations, reinforced by the global fascination with the Internet, has paved the way for the integration of web technologies into higher education institutions (Caner, Yüksel, & Keçik, 2013; King, 2002). Among a series of technological contributions to the field of teacher education, such as synchronous or asynchronous online courses (Caner et al., 2013; Gakonga, 2012), blogs (Çakır, 2013), e-assessment (Hung, 2012), etc., as one of the most favored instructional tools, online education is the act of giving a course partially or totally through the Internet (Ko & Rossen, 2001). As a medium of online delivery, online courses can take the name and form of “web-facilitated, hybrid [online and face-to-face (f2f)], or totally virtual” (Blake, 2011, p. 19) courses, and can be utilized in language learning and SLTE (Banegas & Busleiman, 2014). Whether synchronous or asynchronous, online courses not only offer the advantage of eluding time and place constraints (Caner et al., 2013), but they also help to construct a collaborative and learner-friendly framework for those across a wide geographical setting (Caywood & Duckett, 2003). Online courses make it possible for pre-service teachers to reflect on different classroom practices and in this way to build further on their available master plan for future teaching. Through online videos, “preservice students can view complex, interactive situations and can begin to acquire pedagogical tools for situations in which there are no easy, clear-cut answers” (Bayram, 2012, p. 1010). STs, by viewing complex interactive situations, gain the opportunity to get a head start on teaching in exceptional cases. An equally important benefit of utilizing online tools in pre-service education would be

that if/when STs are made subject to live experiences of online instructional applications during their pre-service education, they will be more likely to utilize those tools for their own students in their future teaching practices.

### Significance and Purpose of the Study

In an attempt to fill the gap between declarative and procedural knowledge of OCF in the present pre-service ELT teacher education context, as well as lacking others, and to cater to the need for more training on OCF pedagogy (Adugo, 2014), the present study proposes the ONOCEF as a remedy. In addition to fostering reflection-in-action (through the microteachings in the implementation phase) and reflection-on-action (through peer observation in the evaluation phase), the ONOCEF bridges the gap between theory (with its theoretical content) and practice, and received and experiential knowledge. In addition, the ONOCEF utilizes a flipped classroom environment throughout its implementation, which requires ELT STs to receive the ONOCEF input outside the school online and in return display the evidence of this input (i.e. OCF practices) in their microteachings in formal classes. Having designed a reflective online course (ONOCEF) geared towards promoting ELT STs’ competences regarding OCF, this study aimed to investigate its effectiveness in the present research context. To this end, the following research question was addressed:

Does the proposed ONOCEF exert any impact on ELT student teachers’ competences concerning OCF?

### Methodology

The ADDIE Model for instructional system design was adopted throughout all the phases of the ONOCEF. It is a five-step instructional design model commonly used to develop, implement, and evaluate performance improvement services (Danks, 2011). These steps include the design of the online course, as well as its implementation to the STs and evaluation procedures.

### Analysis Phase

The first step of the model, i.e., the analysis phase, involves determining “the needs and the difference between knowledge, skills and behaviors, which the learners presently have, and behaviors which they must have or they are expected to have” (Arkün & Akkoyunlu, 2008, p. 4). To this end, in the very beginning a needs analysis survey was administered to 182 3<sup>rd</sup> grade STs attending the ELT programs at one private and two public universities in Turkey, including the one which hosted the present study. The needs analysis revealed ELT STs’ needs and willingness to



Figure 1  
*Stages of the ADDIE model*

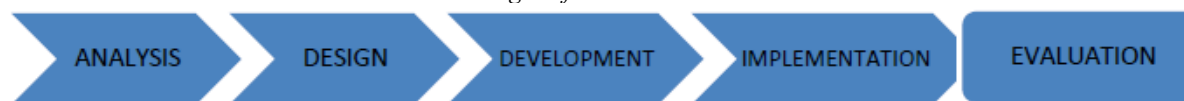


Table 1  
*Content of the ONOCEF*

<p><i>Part I: Should learners' errors be corrected?</i>  <i>Issues Covered:</i></p> <ul style="list-style-type: none"> <li>- Certain concepts (error, types of error, OCF and types of OCF, uptake, repair etc.)</li> <li>- Approaches to error correction</li> <li>- The role of error correction in L2 development</li> <li>- Considerations in giving OCF</li> </ul> <p><i>Duration: 29 minutes</i></p>
<p><i>Part II: How should errors be corrected?</i>  <i>Issues Covered:</i></p> <ul style="list-style-type: none"> <li>- Different taxonomies (Reformulation and prompts, explicit and implicit OCF)</li> <li>- Pros and cons of different OCF types</li> <li>- Learner perceptions on different OCF types</li> <li>- Several ways of giving effective OCF</li> </ul> <p><i>Duration: 32 minutes</i></p>
<p><i>Part III: Which errors should be corrected?</i>  <i>Issues Covered:</i></p> <ul style="list-style-type: none"> <li>- Errors revisited (Global and local errors, error vs. mistake etc.)</li> <li>- Prioritization of errors to be handled</li> <li>- Effective error type-OCF type matchings</li> </ul> <p><i>Duration: 27 minutes</i></p>
<p><i>Part IV: When should learner errors be corrected?</i>          Who should correct errors?  <i>Issues Covered:</i></p> <ul style="list-style-type: none"> <li>- The analytical process of error treatment (from the emergence of error to teacher's ultimate decision)</li> <li>- The timing of correction for different course orientations (immediate and delayed OCF)</li> <li>- Error correction by different agents (OCF by the teacher, self- and peer correction)</li> </ul> <p><i>Duration: 30 minutes</i></p>

benefit from an online OCF course since they mostly scored in the survey that they need an online course on OCF and would consider benefiting from it. This process paved the way for the following phases.

### Design and Development Phases

In the design phase which requires addressing how instructional goals and objectives shape instructional strategies within the model (Lohr, 1998, p. 441), a set of

general objectives was formulated for the ONOCEF. Alongside more general objectives such as promoting knowledge-based reasoning and building knowledge on how to interpret and reflect, the ONOCEF mainly sought to reach more specific course objectives specified below:

- To acquaint ELT STs with error and OCF-related concepts and ideas;
- To boost STs' knowledge and repertoire of different OCF strategies;

- To provide first-hand, creative examples of effective OCF strategies which they can draw from as they start their professional careers;
- To inform STs about the theoretical and hypothetical underpinnings of error correction, focus-on-form and different OCF types; and
- To highlight some essential findings from OCF research literature.

The ultimate goal was to help STs develop their own understanding of providing OCF effectively with regards to Hendrickson's (1978) seminal questions, which also comprise the units of the ONOCEF:

- Should learners' errors be corrected?
- How should learners' errors be corrected?
- Which errors should be corrected?
- When should learners' errors be corrected?
- Who should do the correcting?

The development stage of the ONOCEF required a large amount of preliminary preparation. A thorough review of the relevant literature with the concepts "error [correction], [oral] corrective feedback [and second language teacher education], [and foreign language teaching methodology (pedagogy)]" on a selective basis resulted in a set of close to sixty resources as the corpus of the course, including theses, books, book chapters, articles, conference proceedings, and presentations. Following the comprehensive reading of the relevant sections of these materials, cyclical scanning was performed on them. This process gave way to plenty of memos and underlined hints to be placed into different parts of the course. Then the resources were sorted in accordance with the separate issues to be covered. With the ELT STs' needs for OCF information in mind, the texts for each part of the course content were prepared separately in a logical order. Next, it was the time to appear before the camera. Initially, raw course videos were made by using a professional video camera. Afterwards, these videos were montaged through adding small clips, tables, figures, pictures, and audiovisual files. Microsoft Movie Maker program was utilized for montages. After completing this process in six months' time, the following online ONOCEF contents emerged, each covering different topics and subtopics regarding error correction and OCF provision.

The resulting ONOCEF is intended to serve as a content-rich online course to be utilized by ELT teacher trainers as a part of f2f instruction in SLTE methodology courses, lending itself to blended learning as well as flipped instruction. The ONOCEF includes a number of course elements exemplified below.

**Theoretical and Hypothetical Underpinnings.** Relevant theories are highlighted in the course so as to

provide a scientific base for the preferred focus-on-form practices. Below is a narrative taken from the course:

Lyster and H. Mori (2006), in their Counterbalance hypothesis, assert that using the OCF type that is opposite the communicative orientation of the classroom will momentarily shift learners' attention to the error correction. This OCF practice, they state, would allow for noticing OCF and language awareness (Part II).

**Suggestions and Classroom Implications.** Suggestions and implications provided in the ONOCEF were directly related to OCF classroom practices. Below is an example:

Make them learn from their own errors. Initially, make audio or video recordings of your classes. For the next lesson, get them to listen to the recordings and ask them at which points they committed errors and get them to correct these errors. If they fail to do so, provide the correct forms as well as alternative forms, if any. Another possible activity might be to ask them to edit the video that includes their linguistic errors.

Ultimately, students, with edited videos for each, work out each other's errors collaboratively (Part II).

**Evidence from the Relevant Research.** At the beginning of the Part I of the ONOCEF, ELT STs were advised to integrate the research findings to be introduced in the ONOCEF into their own future language classes, with the caveat that every class has its own variables and it is necessary to screen out the research findings before actually applying them in their classes. A provided example of these research findings is given below:

Sheen (2008) investigated the effects of language anxiety on the effectiveness of recasts. She found that low-anxiety learners receiving recasts significantly outperformed the high-anxiety group. Therefore, provide a warm and friendly atmosphere in language classes so that students do not feel anxious or discouraged by corrections. They will feel OK in time, thinking that such instructional interventions are expected and pedagogically necessary for their L2 development (Part I).

**Authentic OCF Practices.** Drawn from the classroom audio recordings collected for the research phase of the current study, several authentic OCF examples were also embedded in the ONOCEF. They were placed into the videos with a simulated picture of a classroom environment and the transcription of what

Figure 2

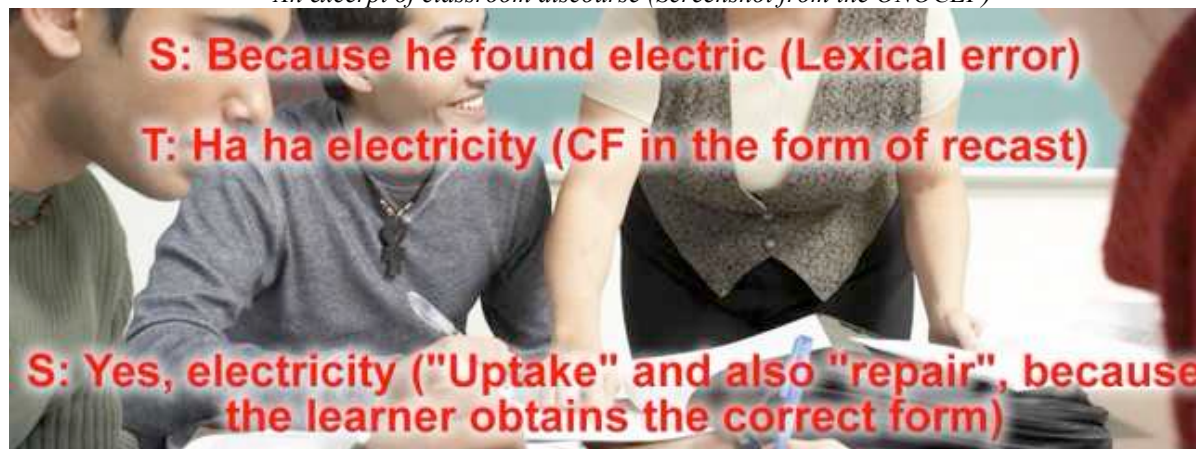
*An excerpt of classroom discourse (Screenshot from the ONOCEF)*

Table 2.  
*Schedule of the Flipped Process*

<i>Before the first microteachings:</i>	PART I-II uploaded	→	videos watched
<i>1<sup>st</sup> week:</i>	1 <sup>st</sup> microteachings completed	→	reflection papers collected
<i>Following the first microteachings:</i>	PART III-IV uploaded	→	PART I-II-III-IV watched
<i>2<sup>nd</sup> week:</i>	2 <sup>nd</sup> microteachings completed	→	reflection papers collected → PART I-II-III-IV watched again
<i>3<sup>rd</sup> week:</i>	3 <sup>rd</sup> microteachings completed	→	reflection papers collected

the observed teacher and her/his students were communicating at that time. Above is an example of authentic OCF episode.

#### **Participants: Implementation (Flipped classroom) and Evaluation Phases**

The implementation phase of the ONOCEF included a flipped classroom “in which students can watch instructional videos outside the classroom and can do the assignments and other engaging activities inside the classroom” (Başal, 2012, p. 8). The subjects were thirty 3<sup>rd</sup> grade ELT STs at a public university in Turkey. The application of the flipped model started with the outside step, which required STs to watch the online course content in an informal platform outside the school. Videos were uploaded to Google Drive, a cloud storage platform, which allowed the STs to have access to, and watch, the videos with the authorization.

The inside part of the flipped model was integrated into the Teaching Language Skills course in the ELT program. The class of thirty STs was arranged in pairs, totaling 15 pairs. Occupying three

weeks of the semester in total, five pairs performed microteachings each week. Each performance lasted 20 to 25 minutes. The idea was that the STs were to watch the online course input (ONOCEF) outside the class and then display the evidence (i.e., correction and OCF practices) in their microteaching performances (speaking microteachings) in the formal classroom. These speaking demos were based on a lesson plan which included pre-, while- and post- stages. The demos were drawing on communicative tasks/activities and materials such as role cards, worksheets, and posters. Throughout the microteachings, the performing student teachers (PSTs) took the role of EFL teachers, while the non-performing student teachers (NPSTs) acted as EFL learners at the proficiency level proposed in the lesson plan. Each ST experienced the role of a teacher once (therefore they became PSTs) and the role of a learner many times (therefore they became NPSTs). More or less, several phonological, lexical, and grammatical errors occurred in the NPSTs’ speech while engaging in the activities. Naturally, the errors made by the NPSTs represent the language

proficiency they were acting out. In response, the PSTs often corrected the NPSTs' errors, though not necessarily.

### Data Collection Tool: Reflection Papers

Following the performance of each pair of PSTs, the NPSTs wrote reflection papers by drawing on a peer evaluation form in order to evaluate the PSTs' focus-on-form techniques in the speaking microteachings based on the content of the ONOCEF. The reflection papers included items to elicit the NPSTs' responses with regards to what their peers (the PSTs) were actually able to do in terms of corrective practice, what they fell short in, and what the NPSTs would do if they were performing instead. The reason for utilizing peer reflection papers in the evaluation of the ONOCEF by the STs is that they would provide observational evidence of what was genuinely practiced by their peers, contrary to a set of questions or items in a questionnaire or interview form which could not yield information beyond the perceptual or affective levels.

### Schedule of the Flipped Process

Although the subjects might have been taught previously about error correction in methodology courses in broad terms, it was assumed that any evidence of error correction and OCF practice that appears in their microteachings is a gain from the ONOCEF on the grounds that the STs have not taken any specific OCF-focused course before. The schedule of the implementation of the whole flipped model is shown in Table 2.

The input (watching the ONOCEF), output (microteachings), and data collection (reflection papers) procedures realized a cyclical process. In this process, not all the parts (I-II-III-IV) were administered to the STs in one go, so that overloading of information was avoided and the STs were given time flexibility to assimilate new knowledge. After the flipped process ended, the ONOCEF Quiz was delivered to the STs. The reason for giving out this quiz was to make sure that they watched the whole set of the ONOCEF course. They were told in advance that the quiz scores would comprise 20% of the total grading of the *Teaching Language Skills* course. The mean quiz score was 70.5 out of 100, which led to the satisfaction that the course was mindfully taken by the STs.

### Data Analysis

The purpose of analyzing the peer reflections gathered through the reflection papers was to reveal the ONOCEF components in the PSTs' microteachings. It served to find out which OCF strategies the PSTs were

able to apply and at which points they showed incompetencies regarding OCF in their performances. Of the three parcels of reflection papers collected successively, the second- and third-party peer reflections were picked for the analysis. Being the last two of the three-party peer reflections as can be seen in the schedule above, they were assumed to include more informed and experienced peer evaluations than the first-party reflections that were projected only through the viewing of PART I-II, not the whole set of the ONOCEF. Therefore, the second and third-party reflection papers were chosen as the optimal documents to be analyzed. Of the 234 reflection papers collected, one third of them, amounting to 78, were randomly selected as the sampling of all the second and third-party reflection papers. They were subject to content analysis which "describes a specific context within which a distinct type of data can be gathered and analyzed" (Suddaby, 2006, p. 636). In order to make an ideal description of this specific context which includes evaluating the PSTs' OCF practices in the eyes of the NPSTs based on the content of the ONOCEF, direct quotations were put to use as a way of reporting data in qualitative analysis. The subjects' own words were selected to augment the vivid description of the qualitative set of data (Crocker, 2009). It was thought that the NPSTs' observational evaluation of the PSTs' performances could best be portrayed this way in order to lead to crystal clear descriptions rather than make an interpretive summary of their observations.

### Findings

The reporting of the peer observational data included three basic categories based on the four items provided in the reflection papers, as the outline below indicates:

- I. What was done (by the PSTs regarding error correction and OCF provision based on the ONOCEF as viewed and expressed by the NPSTs) was revealed through the first two items:
  - A: My friend showed evidence of the input provided in the ONOCEF, some of which are:
  - B: My friend applied the following OCF strategies in her/his performance:
- II. What was not done (by the PSTs regarding error correction and OCF provision based on the ONOCEF as viewed and expressed by the NPSTs) was revealed through the third item:
  - C: My friend fell short in applying the following OCF strategies in her/his performance:
- III. What I would do (regarding error correction and OCF provision based on the ONOCEF, if I were performing in place of the PSTs) was revealed through the fourth item:

D: If I were, I would correct the specific errors in this demo, as follows.

### What was Done

Serving the same purpose of revealing what was done by the PSTs with reference to error correction based on the ONOCEF, findings of the Item I and II are reported jointly. Pseudonyms were used throughout the direct quotations to ensure the STs' anonymity. It was seen that the NPSTs did not have difficulty locating and labelling the PSTs' OCF moves whenever they occurred. More importantly, these labellings show that the PSTs had significantly used the large repertoire of OCF strategies introduced in the ONOCEF and that they were successful noticing and correcting the errors. Some examples are:

- "She corrected the pronunciation of 'auctioneer' during the fluency activity."
- "Gülsüm and Seda used recast and implicit correction."
- "Oğuz corrected some errors, for example: 'busy, psychologist, goals'."
- "Arzu used recast. She didn't stop the conversation, corrected the errors after students finished the conversation."
- "The student mispronounced 'regularly', Merve corrected it."
- "In Canan's part, there is no error because students didn't speak. Canan explained the vocabularies. Özgür corrected one word, 'scrawny'."
- "Ayla corrected the pronunciation of 'birthday' explicitly."
- "Merve and Demet used repetition."
- "Duygu corrected the pronunciation of 'penalty', she did recast. Gizem didn't hear the mistake so she didn't correct."
- "They used implicit and explicit corrective feedback strategies."
- "Özgür stopped the student and repeated the student's error. Then the student corrected his error."

In addition, the NPSTs also made subjective evaluations of their peers' error correction and OCF giving patterns. Some examples are given below:

- "Merve and Demet were good at using oral corrective feedback methods. They used some of them well."
- "Sevgi and Tülay didn't have trouble in correcting errors."

- "They used oral corrective feedback methods effectively."
- "My friends did some right corrections. They corrected errors rightly" [*sic*].
- "They told the correct forms of the errors gently and in a natural way."
- "Arzu and Selçuk were good at oral corrective feedback methods. They used some methods of feedback."
- "Ayla and Meltem used corrective feedback strategies perfectly."
- "They corrected the pronunciation of 'news' very well."

Taken together, the NPSTs provided a high response rate to the Items I and II which elicited what the PSTs did in relation to error correction and OCF provision. Item I was filled in 72, and Item II in 71 of a total of 78 reflection papers, which amounts to a response rate of 92% and 91% respectively. The missing percentages were determined to be a result of there being no error and OCF episode in a small number of microteachings, thus leading to no reflections. In conclusion, it can be commented that the PSTs were able to provide correction through several OCF methods introduced in the ONOCEF when the errors occurred, and the NPSTs noted them down. Whether the PSTs were at full strength in their efforts to correct errors or they showed some incompetencies is projected below.

### What Was Not Done

In some of the peer reflections, the PSTs were reported as not reacting to some errors due to some reasons. In addition, some of their OCF preferences were reported to be improper. Yet, in general, the NPSTs did not observe too many flaws in the PSTs' OCF practices. Only in 19 out of 78 reflection papers was Item III filled in with the purpose of specifying imperfections (24% response rate). Several of these reflections were nothing but the recurrences by different NPSTs that targeted the shortcomings of the same correction moves. Overall, the number and percentage of the negative peer reflections on the PSTs' OCF practices point to an insignificant amount of shortcomings. Some examples of these reflections are provided below:

- "Gülsüm could have recast while one of the students made a phonological error."
- "In fluency activity, I think they shouldn't correct the errors directly."
- "Generally, they didn't use them because they were excited."

- “In the beginning of the presentation, Meltem didn’t care about the students’ errors so much.”
- “They corrected only one word ‘penalty’, but students made more than one error.”
- “They stopped the student in fluency activity. They should use delayed feedback because it is a fluency activity. It is not necessary to interrupt the speech.”
- “Duygu and Gizem didn’t focus on which student made an error and which error they made.”
- “They should have used delayed feedback in fluency activity.”

### “What I Would Do”

As a response to Item IV, it was observed that the NPSTs did not only express how they would react to some of the errors as different from the PSTs’ actual OCF applications. They further explained some pedagogical attitudes they would exhibit in the class, as well as voicing their approvals of the PSTs’ OCF moves in the microteachings.

In 31 out of 78 reflection papers, the NPSTs considered the PSTs’ OCF moves congruent with their own pedagogical beliefs about error correction. In this sense, Item IV was simply filled in as a means of approving the PSTs’ correction moves with sentences such as, “I would do the same thing,” “I would correct like my friends,” and “They used methods effectively; I would also do like them.” In 12 of the reflection papers, this item was left blank, probably because there was no error and correction episode in the related performance(s) and thus nothing to reflect on.

On the other hand, in 35 of the reflection papers, Item IV was returned with the operational statements of what I would do (unlike their friends), if they were in their performing peers’ situation. Seventeen of these responses touched, not upon the issues of error correction, but upon different shortcomings including the activity types, the use of materials etc. in the course of targeting the sub/skills handled in the microteachings. For example:

- “If I were, I’d make an info-gap activity for accuracy.”
- “Şenol and Zeki can prepare role card or flash card in accuracy activity.”
- “They didn’t observe the class carefully. If I were, I would observe more carefully.”
- “If I were, I would use a higher tone of voice.”
- “Arzu and Selçuk should manage the class for activity.”
- “I wouldn’t make them watch so much video (about the sub/skill practised in the

microteaching) because they can lose their attention after a while.”

- “If I were, I would debate for fluency activity.”
- “I would let the students use the expressions or stick them on the board.”

Only 18 of the “what I would do” responses (23% of all the responses to Item IV) had specific focus on the PSTs’ error correction and OCF practices. As can be understood from the examples below, the NPSTs reported what else, how, and when to correct as different from the PSTs’ actual OCF practices:

- “I would correct the pronunciation of some words, but after the activity finished.”
- “I would correct with recast and elicitation.”
- “In accuracy activity, I would correct the errors directly. In fluency activity, I would correct them indirectly. I would take notes about them, later I would correct them.”
- “I wouldn’t stop the student while she was speaking to correct the error. I would wait till her speaking finished, then I would make an error correction.”
- “‘Crime’ and ‘penalty’, I would correct them.”
- “I wouldn’t use explicit correction in fluency activity.”
- “I would correct with repetition or elicitation.”

The number of “What I would do” responses that centered exclusively on the PSTs’ error correction moves ( $n=18$ , 23% of all the responses to Item 4) did not occupy a significant rate in the total responses. And what is more, this percentage was almost the same as the number and rate of response to Item III ( $n=19$ , 24%), which pointed only to a small number of imperfections specified in the PSTs’ OCF moves. Eventually the results of the responses to Item IV showed an overlap with those of Item III. Taken together with the responses to the items I and II, these results suggest that the corrections and OCF moves by the PSTs have, to a large extent, been approved by the NPSTs. To conclude, findings obtained from the reflection papers showed that, through the ONOCEF, the PSTs were able to (a) correct oral errors effectively and (b) employ different OCF strategies as perceived by the NPSTs, while the NPSTs were able to (a) identify the PSTs’ non/corrections successfully, (b) label the types of OCF, (c) reveal the shortcomings in the PSTs’ OCF practices, and (d) build ideationally on the PSTs’ OCF practices.

### Discussion and Conclusion

This study investigated whether the proposed online course on oral corrective feedback (ONOCEF)

exerted any impact on ELT STs' competences regarding OCF. Two main bilateral findings of this study emerged as a result of the NPSTs' observational evaluations of the PSTs' OCF practices in delivering microteachings based on the content of the ONOCEF. First, the PSTs were able to correct oral errors effectively and employ different OCF strategies as perceived by the NPSTs. Second, in consideration of the reflection papers delivered, the NPSTs were successful identifying the PSTs' non/corrections successfully, labelling the types of OCF, and revealing the shortcomings in their peers' OCF practices, as well as offering in some cases how they would provide OCF if they were in the PSTs' situation. Considering these findings, as an online instructional tool the ONOCEF has contributed to the pre-service ELT teachers' competences regarding OCF in the present context. However, in order to claim its effectiveness further, it is necessary to diagnose the long-term effects of the ONOCEF by observing the pre-service teachers' classroom OCF practices as they start in the teaching profession.

Two more recent online-driven studies investigated the effectiveness of online course components in SLTE. Neither of these studies focused on improving pre-service teachers' focus-on-form practices as in the present study, but rather, they centered on the utilization or creation of online course contents. One of them evaluated the effectiveness of the web component of a methodology course through the lens of Turkish ELT students. For this purpose, Caner et al. (2013) redesigned face-to-face methodology course to provide an interactive web-enhanced course alongside face-to-face instruction. As a result, the STs showed positive attitudes toward the integration of a web-enhanced component into the methodology course. Furthermore, they considered the web component effective, motivating, and useful for their professional development. In the other study, Masats and Dooly (2011) implemented a four-pronged holistic approach to STs in the TEFL course, consisting of video-viewing, video-modelling, video-coaching and video-making, with an aim to guide STs toward professional development by placing them "in the role of both teacher and student for the co-construction of teaching knowledge and the acquisition of digital competences and media literacy" (p. 1151). Analysis of the STs' reactions to the video activities made clear that they became critically aware of their own teaching strategies, promoted their understanding of the complexity of teaching in different situations, figured how to design and plan project-based learning sequences and felt sure that they would integrate different uses of video into their teaching. The results of these studies are important in terms of reflecting pre-service teachers' positive attitudes and increased

awareness of the pedagogical value of videos and online courses, lending support to the present study which considered these online benefits to be a prerequisite for the creation of an online course for pre-service teachers. In conclusion, in SLTE programs, pre-service teachers need to be provided with opportunities for grasping theoretical understanding about OCF and translating it into classroom practice (Rahimi & Zhang, 2015). To bridge this theory-practice gap, as suggested by Abell and Cennamo (2004), videos serve as important and pedagogically useful tools. Therefore, it is essential to equip pre-service teacher education programs with contextualized video proposals integrated into curricula (Masats & Dooly, 2011). At this juncture, it is argued by the researchers that the ONOCEF offers a contextualized online content by providing (1) the theoretical and hypothetical underpinnings of OCF, (2) suggestions and classroom implications, (3) evidence from the relevant research, and (4) authentic OCF instances, all of which can contribute together to pre-service ELT teachers' competences regarding OCF on their way to professional development.

As a recent trend, short-term seminars and trainings (online or face-to-face) are becoming increasingly popular to acquaint pre- and in-service ELT teachers with recent theories and advances in language teaching. One benefit of such trainings may be that they can help teachers generate new ideas to implement more informed focus-on-form practices. Both in pre- and in-service ELT teacher training, teacher trainers can make use of the ONOCEF as a viable online instructional tool. This is also because the resulting ONOCEF has emerged from the ELT STs' stated needs, and it has lent itself to the adaptation of flipped learning. From this point forth, it may further be suggested that the effectiveness of face-to-face teaching can be enhanced by the integration of online courses into the SLTE program in the form of flipped or blended learning. The findings of the present study, coupled with the insights gained from the preparatory process, have also generated a handful of important possibilities for further research. First, the resulting online product of this study, i.e. the ONOCEF, can be an instrument of experimental studies in similar and different contexts with pre- and post-test designs as distinct from the methodology it was tested through in the present study. In this way, its effectiveness can be validated with statistical measures and can thus be complementary to the qualitative findings of the current study. In addition, the results of the ONOCEF content being offered face-to-face is also worthy of investigation.

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# Long-Term Chinese Students' Transitional Experiences in UK Higher Education: A Particular Focus on their Academic Adjustment

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The global population of students pursuing studies abroad continues to grow, and consequently their intercultural experiences are receiving greater research attention. However, research into long-term student sojourners' academic development and personal growth is still in its infancy. A parallel mixed method study was designed to investigate the academic adjustment of international Chinese students who had studied in the UK for more than three years. Using interview data collected from both Chinese students and British teachers and questionnaire data collected from a wider sample of the Chinese students, the researcher examined the relationship between their academic, psychological, and social adjustment and provided a more holistic view of Chinese students' intercultural adaptation process. The results showed that the big challenge for the Chinese students during their early adjustment was to deal with the different perceptions of teaching and learning within their own culture and within the culture of their host country. Changes were found in their language ability, learning approaches, and sense of self over time. In particular, social support and their agency as a learner played an important role in their academic development.

Universities around the world have become more internationalized. According to the UNESCO statistics (2014), the number of international students in tertiary education increased significantly from 2 million in 2000 to 4 million in 2012. In the case of the UK, Chinese students make up the largest group of international students, and the number of Chinese students is continuing to rise, with a 44% increase predicted over the next decade (British Council, 2013). Research on the intercultural experience of Chinese students has been conducted to explore various issues, such as psychological consequences of cultural change (e.g., Gallagher, 2013), language skills (e.g., K. Wang, 2015), learning shock (e.g., Gu & Maley, 2008), and social networks and support (e.g., Yu & Wright, 2016), and it has also reported considerable difficulties in adjusting to academic and social life and dealing with life stress in the UK. Chinese students' academic, psychological, and social adjustments appear to intertwine together, but there has been a lack of empirical research to address the interrelationship. The study abroad experience also provides students with the opportunity for personal growth. While researchers have attempted to examine the impact of the study abroad experience in terms of students' intercultural development, much of the work focused on the outcomes of the study abroad experience on student sojourners rather than their actual adjustment processes (Beaven & Spencer-Oatey, 2016). In particular, long-term (i.e., more than three years) student sojourners' transitional experiences are often neglected. Furthermore, 'the Chinese students' are often viewed as culturally determined; however, this seems to stereotype international Chinese students' characteristics (Gill, 2007). There is a growing

literature about considerable variation in the way Chinese students adjust to an unfamiliar culture (Li, 2012; Wu, 2015), and more insightful analysis of individual Chinese students' intercultural experiences needs to be provided.

In response, a mixed-method study presented in this paper offers not only insights into Chinese students' intercultural experiences, but also an in-depth account of how long-term student sojourners, who had already studied in UK higher education for a few years and been continuing a transition, change and develop over time. In particular, it addresses the issue of intercultural adaptability and continuity. By comparison with other intercultural sojourners, such as business people and volunteers, academic life appears to be a major concern among international student sojourners (Ward, Bochner, & Furnham, 2001). Therefore, this study aims to explore Chinese students' academic adjustment, as well as the relationship among their academic, psychological, and social adjustments, in order to provide a holistic view of their intercultural adaptability process. It seeks to address the following three research questions:

- RQ1: What are the key challenges for Chinese students studying in the UK?
- RQ2: How do Chinese students cope with their academic challenges?
- RQ3: How do Chinese students change as they undergo the process of intercultural adjustment?

## **Intercultural Experiences of Chinese Students**

Academic adjustment plays an important role in their academic success and overall intercultural

experiences (Wu, Garza, & Guzman, 2015). International students experience challenges, especially those students whose learning culture distinguishes greatly from the host culture. Academic problems and difficulties faced by Chinese students while studying abroad have been addressed, such as difficulties adjusting to unfamiliar teaching methods, the problem of active participation in communicative activities, and mismatches between the perceived roles of teachers and students (e.g., Wu & Hammond, 2011; Xiong, 2005). When Chinese students experienced a loss of their familiar culture in the new educational environment, researchers also reported different psychological consequences of culture changes among them, such as confusion, anxiety, and helplessness (e.g., Tian & Lowe, 2013). Much of the work appears to focus on the academic challenges experienced by short-term student sojourners or the learning shock during Chinese students' initial contact with the host culture, but few studies have explored the transitional experiences of long-term student sojourners who have studied abroad for more than three years. By comparison with short-term sojourners, long-term sojourners tend to experience more challenges, conflicts, and changes during their adjustment (Sobre-Denton & Hart, 2008). To explore the complexity of academic adjustment further, besides investigating long-term students' academic challenges during their initial time period, the dynamic processes of their adjustment over time could be an important aspect for researchers to investigate.

Attempts have been made to explore factors that affect Chinese students' academic adjustment. Apart from English language proficiency, Chinese students' cultural and educational backgrounds are considered as important factors (Jin & Hill, 2001; L. Wang, 2015). Drawing on research on work-related values in more than 50 countries, Hofstede (1980) compared Western with non-Western countries' cultural values and identified four key dimensions of country-level variation across different cultural groups, including high-low power distance, individualism-collectivism, masculinity-femininity, and high-low uncertainty avoidance. The Chinese culture was characterized by high power distance, collectivism, and long-term orientation. By contrast, low power distance, high individualism, and low long-term orientation tended to be found in the British culture. Hofstede (1986) further suggested cultural differences in teacher/student and student/student interaction with reference to these four dimensions. For example, in the collectivist societies, individual students would avoid speaking up in class and prefer to bring harmony to interactive learning situations as they tend to maintain strong ties in a group and give priority to the needs of the group, whereas in the individualist societies, individual students are willing to speak up in large groups and view confrontation in learning situations

positively as they are likely to keep loose ties between individuals who give priority to their own needs. While the dimensions have been used to explain behavior differences in many cross-cultural studies, Spencer-Oatey and Franklin (2009) cautioned that individual differences in each cultural group should be taken into consideration in order to avoid cultural stereotypes and that Hofstede's dimensions are likely to explain a tendency at the country level as a whole rather than individual behavior.

With regard to the Chinese culture, Confucian traditions remain influential in the basic values of Chinese civilization and learning culture and can have a significant impact on Chinese students' learning approaches and views of classroom roles (Holmes, 2006). For example, the Confucian educational tradition emphasizes memorization and repetition, and memorizing classic texts is strongly supported by many Chinese teachers and students (Chien, 2014). Chinese mechanical learning without meaningful understanding is often questioned by western researchers (e.g., Martinsons & Martinsons, 1996; Turner 2013), and they claim that the students' over-reliance on the classics could lead them to be less involved in critical thinking. This seems to be one of the reasons why international Chinese students encounter difficulties in writing papers to earn better grades. However, westerners might mistake repetition for rote learning; many Chinese learners do achieve academic success through using traditional Chinese learning styles (Biggs, 1996; Wu, 2015). Marton, Dall'Alba and Tse (1996) found that memorization and understanding were integrated in the Chinese learning culture, and they argued that "memorizing was what was understood and understanding was through memorization" (p. 77). There appear to be both strengths and weaknesses of Chinese approaches to learning.

"The Chinese learner" is often viewed as culturally determined. A study by Sun and Richardson (2012) was conducted at six British business schools to compare the British and mainland Chinese students with regard to their perceptions and approaches to studying in UK higher education. The study revealed that there were no significant differences between the two groups in their learning approaches. There was also no evidence in the Chinese students for a distinctive approach to studying that combined memorialization with understanding. Like British students, Chinese students were also less likely to use learning approaches in isolation. Rather, they tended to combine different learning approaches. The authors argued that variation in students' learning approaches appeared to be attributed to characteristics of their educational context (e.g., teaching methods) rather than to characteristics of their culture or ethnicity. Furthermore, there is substantial evidence in the literature to suggest that factors other than cultural

backgrounds alone influence student sojourners' adaptive process, including their goals and motivation (e.g., Wu, 2015); their specific learning contexts (e.g., K. Wang, 2015) and individual personality (e.g., Ryan, 2013). Hence, the influence of cultural and educational backgrounds in their academic adjustment should not be overemphasised.

Intercultural adjustment is a dynamic process which involves stress, challenges, and also changes and growth. This transitional experience was primarily looked at by Oberg (1960). His famous U-curve model was designed to explain sojourners' ups and downs of adaptation in a new culture. This model focuses on sojourners' emotional reactions to cultural change: initial reactions of curiosity towards the new culture, followed by stereotypical feelings towards the host culture and the feelings of confusion, and then recovery and adjustment. The U-curve pattern particularly offers a common sense for understanding intercultural adjustment from a psychological perspective and remains influential in this field (Ward et al. 2001). However, scholars argue that the model is over-generalized and does not recognize a high degree of variability of intercultural adjustment (e.g., Black & Mendenhall, 1991; Brown & Holloway, 2008). Adler (1975) provided a further explanation of intercultural adjustment with progressive depth. According to his model, sojourners tend to follow an initial contact with a new culture, pass a period of confusion of the new culture, and then enter into a phase of the development of coping skills towards personal growth. Unlike the U-curve model, this model emphasizes the growth-facilitating function rather than the problematic nature of intercultural experience. Kim (2001) also viewed the intercultural experience as an important aspect of culture learning and self-development. Her model highlights that intercultural adjustment is a cyclic and continuous process rather than a smooth and linear process, and it reveals the complexities of sojourners' adjustment process. However, there has been a lack of empirical research to explore the dynamic interrelations between international students' learning performance and their changed learning environment from a developmental perspective, as well as provide a complex picture of their adaptation through study abroad (Wu, 2015).

Student sojourners' learning approaches and strategies appear not to be fixed and can change within a different cultural environment over time. Vygotskian sociocultural theory has the potential to contribute towards the understanding of their change. The theory highlights the dynamic interaction between learning approaches and learners' cultural, historical, and institutional settings and suggests that learning approaches and strategy use can be mediated through culturally constructed artifacts (e.g., learning materials)

and sociocultural practices (e.g., classroom tasks) (Lantolf & Thorne, 2006; Wertsch, 1985). A study by Gao (2006) revealed that Chinese students studying in Britain adopted different learning approaches and strategies from those studying in China, and they developed their strategies in order to adapt to a new learning context. From a sociocultural perspective, he stressed the important role that mediating agents (such as language teachers and friends) and mediating objects (e.g., assessment methods) play in their academic development. This shift, from focusing on the problems which international Chinese students encountered to the process of how they manage academic challenges in relation to their learning contexts and how their coping strategies develop over time, has been seen as an important development in future research.

### Method

This paper describes a parallel mixed-methods study which explored the experiences of Chinese students studying in the UK. The research project is taken aimed to provide a deeper understanding of intercultural transitions of long-term student sojourners from an academic, social, and personal point of view. In order to achieve the aim, interviews with both Chinese students and British teachers were carried out. Meanwhile, a questionnaire was conducted with a wider sample of the Chinese students. Both interview and questionnaire data were collected and analyzed in a complementary manner.

### Participants

Interviews were conducted with 6 Chinese students and 6 British teachers at two British universities. Also, a questionnaire was collected from 82 Chinese students at five British universities. The choice of the five universities was related to a high proportion of international Chinese students, and the universities were also geographically accessible. The Chinese students who participated in this study had completed an undergraduate degree in the UK and were taking a master's course or doing a PhD. Some of the students also took a one-year International Foundation Program prior to starting a degree course. Their length of stay in the UK ranged from 4 to 6 years, and their age ranged from 24 to 27. The subjects which the students were studying varied, such as Chemistry, History and Finance. With regard to the six interview participants, the sample selection was based on two criteria. Firstly, all participants had taken a pre-university course (e.g., International Foundation Programme) and had been living in the UK for over 5 years. Secondly, in order to provide richer insights into academic experiences of international Chinese students, the researcher chose the six participants from a variety of majors, both science

and non-science. The British teachers who participated in the teacher interview were teaching at both undergraduate and postgraduate levels and specialized in different subjects. Their teaching experience of Chinese students was all more than three years. The reason for choosing these six British teachers as the participants is due to the fact that they all had rich experience in teaching international students as well as working closely with international Chinese students in UK higher education.

### Data Collection

The data collection for this project lasted for approximately 7 months, between March 2010 and September 2010. A total of 18 in-depth narrative interviews were conducted with 6 Chinese students. An interview guide was used to help the students to organize their memory and reflect on their experiences in a more narrative way. The interview questions were derived from the following 6 issues:

1. Expectations prior to departure,
2. Academic challenges and stress,
3. Views about the teaching and learning that they receive,
4. Daily life and social life issues,
5. Coping strategies and adjustment, and
6. Perceived changes and personal growth.

The students were encouraged to talk about any issues that they wanted to address or considered important. The in-depth narrative interview was used as an important method to explore the dynamic process of student sojourners' intercultural adjustment (see also Fougère, 2008). The students were interviewed individually in their mother tongue, Chinese, and the length of each interview ranged between 40 and 60 minutes. 12 semi-structured interviews with 6 British teachers were also conducted in English in order to explore their experience of teaching Chinese students and the factors that may affect the students' adjustment processes. The length of each interview ranged from 30 to 40 minutes. With the interviewees' permission, all the interviews were audio-recorded.

The questionnaire included four main sections. The construction of the questionnaire items was inspired by the Gu and Maley's (2008) Questionnaire for Chinese Students, the Sociocultural Adaptation Scale (Searle & Ward, 1990), and Carver, Scheier, and Weintraub's (1989) list of coping strategies. Section 1, which had two questions, explored Chinese students' early academic adjustment. The first question requested the respondents to choose at least three aspects which they found unexpected from a list of seven and give comments. They were also invited to provide further information on how they adjusted to these aspects.

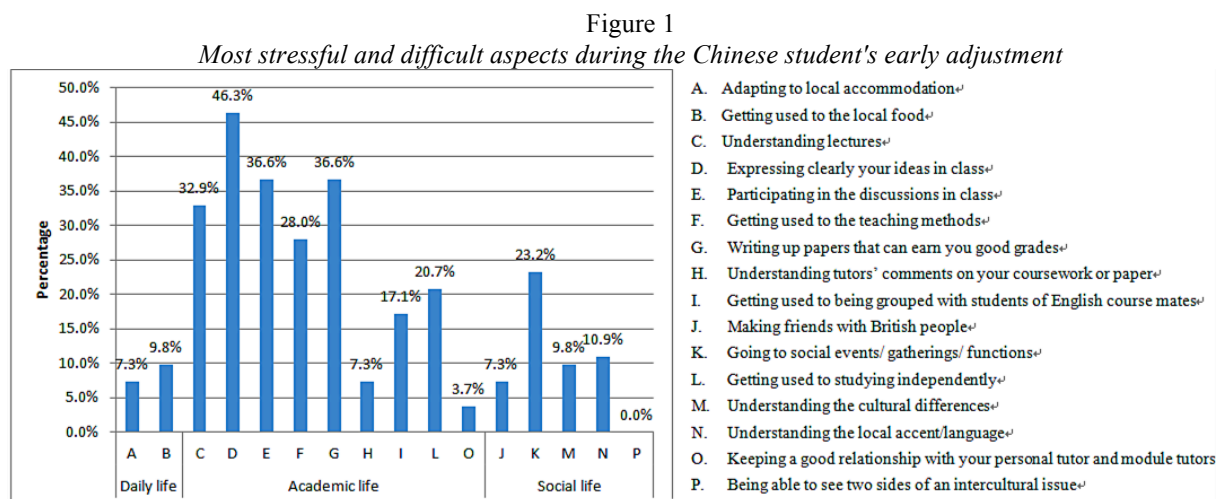
Section 2 was constructed to identify what difficulties Chinese students experienced in three areas, including daily, academic, and social life. The respondents were asked to select the three most difficult aspects they perceived during their early period and the three most difficult aspects they perceived after three years from a list of difficulties (16 items). Section 3 explored which of the coping strategies (12 items) Chinese students perceived as helpful. The respondents were asked to choose the coping strategies which they used and found helpful. In the final section they were invited to comment and reflect on their changes and personal growth as they moved from the Chinese to the British context. They were also asked to provide their background information, including their gender, age, length of study in the UK, and subject of study. Two hundred fifty questionnaires, including both Chinese and English versions, were distributed via internal mail to the members of the Chinese student unions at five British universities, and 82 long-term student sojourners responded to the questionnaire. All data was anonymized, and pseudonyms were assigned to the participants.

### Data Analysis

There were two stages of data analysis. Firstly, a direct analysis of data gained from each instrument was carried out. The data which was collected from student and teacher interviews was analyzed manually, and the process of direct analysis included coding the data in order to put it into categories, reflecting on the data, organizing the data in order to look for patterns and themes, and connecting discoveries to an analytical and conceptual framework (Richards, 2003). In order to make the interpretation closer to the interviewees' original ideas, the interview data was transcribed and analyzed in their original language. With regards to the questionnaire data, the Chinese students' responses to the open questions in Sections 1 and 4 were mainly analyzed inductively and were also examined for similarities and differences in their views and experiences. Responses to Section 2 and 3 were analyzed quantitatively as the frequency of perceived difficulty studying abroad, as well as usefulness of coping strategies. After a direct analysis of the data was gleaned from each instrument, the next level of data analysis included the synthesis and interpretation of different data sources.

### Results

This section will describe the intercultural experiences of the long-term Chinese student sojourners in the UK. In presenting the data, the sections that follow will describe what challenges and problems the Chinese students experienced over time, how the Chinese students managed their difficulties, and what changes they underwent as they moved from the Chinese to the British context.



### Perceived Difficulties and Stress

The Chinese students who participated in my study encountered a wide variety of challenges in adjusting to daily, academic and social life in the UK. The questionnaire respondents reported that adjusting to academic life was the major concern during their first year. Figure 1 shows that the most frequently reported difficulties and stressful aspects were expressing clearly ideas in classes (D), participating in class discussions (E), writing up papers (G), and understanding lectures (C).

The participants in the student and teacher interviews also highlighted a number of language-related issues, such as weak reading skills, difficulty in taking notes, and the understanding of lectures, which gave rise to academic problems. In particular, most student interviewees addressed linguistic challenges in verbal interaction in the classroom: "I knew I wasn't able to speak fluent as native speakers. I felt nervous to speak up in class or talk to local students. It was difficult to express myself clearly when I felt nervous" (Ying).

Due to inadequate speaking ability, the students felt less confident and their anxiety increased when they spoke up publically or interacted with local students. The language weakness was considered as one of the biggest barriers to international students' academic performance: "Language is the key factor to make them more or less successful than domestic students... if they feel more comfortable in using English, they can remove the stress of working in the second language" (Adam, lecturer).

Apart from language weaknesses, the teacher interviewees further suggested that a lack of participation in interactive activities could be also attributed to cultural differences, as noted by the following lecturer: "Their participation in the group

discussion is always lower. I'm wondering whether that is a cultural barrier or is a feature in the way which they were taught in China, because normally the language is not a big problem after six months" (Richard).

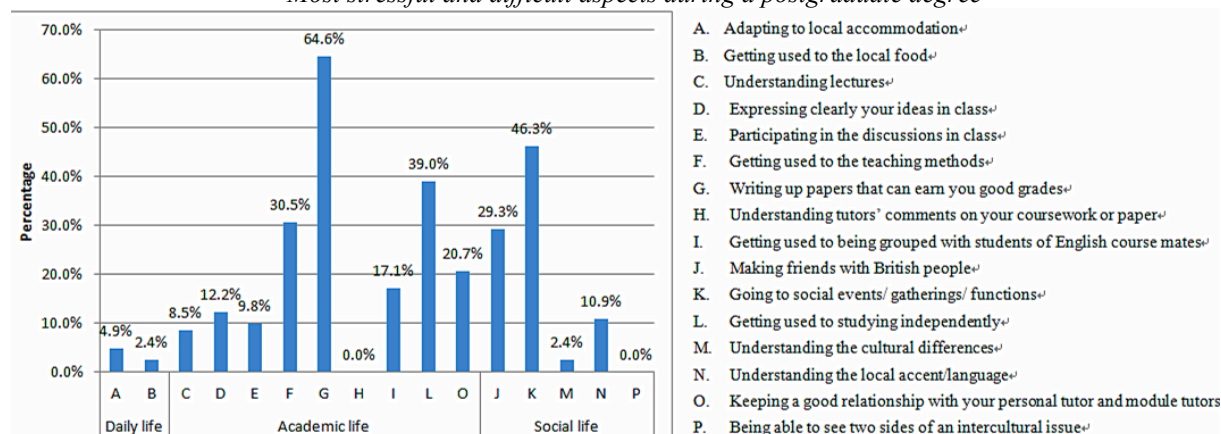
Evidence from responses in the student interviews also indicated that the Chinese students' cultural values and traditions, such as collectivism and harmony, influenced their ways of learning and interaction. The student interviewees described that they tried to control their emotions, avoid conflict, and maintain inner harmony with their teachers and peers: "Many Chinese students are good listeners, but seldom ask questions. We could have lots of worries that stop us from questioning others' opinion. Group harmony is always considered. We think if it's polite to interrupt when people are talking. If I challenge their opinion, I may make them lose face" (Ming).

Their interaction style was also related to the concept of "mian-zi," or "face" (see also Spencer-Oatey, 2000). In order to maintain others' "face," most student interviewees tended to ask few questions and avoided challenging their teachers' and peers' opinions. By contrast, Hua sought opportunities to interact with her peers and enhanced her learning through discussion and questioning. She highlighted in the interview that the Chinese learner should not be stereotyped and that teacher-student interaction was a two-way process. In particular, a close relationship between her British teacher and peers and a relaxed classroom interaction motivated her to actively engage in group discussions.

After moving on to postgraduate study, both interview and questionnaire data revealed that the students' language barrier decreased over time, but other challenges arose (see Figure 2).

Compared with Figure 1, there was a noticeable decrease in language-related problems in academic life,

Figure 2  
*Most stressful and difficult aspects during a postgraduate degree*



such as understanding lectures (C) and expressing clearly ideas in classes (D). Writing papers that earn good grades (G) was still regarded as the most difficult and stressful aspect. The students' language problems reduced in academic writing; however, in order to write better papers, presenting a critical argument was viewed as a more difficult aspect to deal with: "My supervisor often asks me to provide more critical argument. I think being critical doesn't just mean criticise. Thinking critically is not easy. I need to seek further advice from my supervisor and develop my critical thinking skills" (Lily).

Like Lily, other student interviewees also realized that their critical thinking skills needed to improve and played a vital role in their academic achievement. The tradition of rote learning and memorization could affect Chinese students' independent and critical thinking, as noted by a PhD supervisor: "Some of my students are from China. They told me that they got used to believing teacher's answers or often followed the model answers. I often encourage my students to challenge the conclusions of other writers more and establish their own conclusion" (Maggie). Maggie's comment indicates that some Chinese students were less likely to question knowledge, and tended to rely on the textbook and follow their teachers' instruction. They needed to engage more in the process of critical writing and develop their critical thinking skills with continuous support and feedback from their teachers.

When the students moved on to postgraduate study, they were given more opportunities to engage in independent research and more responsibility for learning:

- "The idea of the course is to enable students to become an independent researcher... They may start some confusion, but they will gradually discover their own research areas through our direction" (Mary, lecturer).

- "They often want me to tell them what to do but I always ask them to get their own plans first. As a teacher, you need to encourage learner autonomy" (Adam, lecturer).

The British teachers advocated autonomous learning and expected their students to play an active role in learning. By contrast, many students expected their British teachers to give them more explicit directions and found it difficult and stressful to study and research independently:

- "I have more time to do my own research now. My supervisor gives me lots of freedom, but I feel confused and unsecured. I often wonder whether I'm on the right direction" (Hua, interview).
- "Independent study is challenging. My supervisor won't tell you how to do the experiment. You have to discover the rules by yourself" (Lan, questionnaire response).

In Figure 2, going to social events (K) was reported as the second most difficult and stressful aspect. The stress which was caused by making friends with British people (J) and keeping a good relationship with your module tutors and supervisors (O) also increased. Many students noted in the questionnaire that they had few opportunities to socialize with local people and lacked social language. This made them feel uncomfortable in attending social events and interacting with local people. Some student interviewees also commented that they found it very difficult to keep real friendships with host students:

- "My British friends often asked me to go to pubs. I didn't enjoy clubbing and drinking,

maybe because of our cultural differences. Now I only have two British friends I stay in contact with” (Lin).

- “We know their culture a lot, the problem is that my British friends don’t know much about ours or sometimes misunderstand our culture. It’s hard to maintain our friendship” (Lily).

Due to different lifestyles and their perceived cultural distance, the Chinese students became less willing to interact with host students and maintain their friendship. Some teachers also suggested that a situational constraint could influence their social network: “There are lots of Chinese in British universities. There is no pressure for them to learn about other cultures by social means. If you are from somewhere like Russia, there would be a few on the campus. You will be forced to mix with people from other groups” (Andrew).

Most teacher interviewees commented that Chinese students tended to stick together and interact less with people from other countries. However, Ming, Hua and Tao stated in the interview that they made great efforts to stretch beyond their comfort zone and expand their social network:

- “I know it’s difficult to make local friends, but it’s nice to meet more people and know more about the British culture from them. I try to build closer relationship with them. Reading local magazines can be a good way to know their life and find common topics to talk about” (Tao).
- “The more I communicate with them, the more proper I can acquire at English, particularly in terms of idiomatic expressions” (Hua).

The interview data indicated that increasing contact with local people was viewed as an important way to enhance their cultural and language learning by the Chinese students.

As can be seen from the questionnaire and interview responses above, the students were still adjusting to academic and social life in the UK after they completed an undergraduate degree, and the transition to the host environment which the students underwent appeared to be slow and continuous. Although some language-related problems which occurred at the early stage reduced, the students also encountered new challenges when they became more involved in social and cultural activities in the UK.

### Managing Stress and Problems

Although the Chinese students encountered many difficulties, they made strategic attempts to deal with

their stress and problems and managed to survive in the new environment. According to the questionnaire data, social support played an important role in their psychological, social, and academic adjustment. In particular, contacting with co-nationals (e.g., their Chinese friends and course mates) was perceived as the most useful strategy to support them emotionally and academically. More than 50 % of them also highlighted the importance of contact with module tutors and other international students for their academic support, although they sought little emotional support from people from other countries. Apart from social strategies, planning (e.g., making a study plan) and mental disengagement (e.g., listening to music to take the mind off things) were selected as helpful personal coping strategies by about half of the students. By contrast, the smallest proportion of them found behavioral disengagement (e.g., giving up the attempt) helpful.

Evidence from the student interviews supports the use of coping strategies identified from the questionnaire data. Social support was also perceived as an important resource for coping. During their early adjustment, the student interviewees were more likely to seek academic support from co-nationals rather than host nationals due to language barriers. Hua and Tao later increased opportunities to build closer relationships with their British teachers and socialize with their peers outside the classroom. As a result, they were more willing to participate in classroom interactions: “I try to let my tutors know about my stress and progress. When I communicate more with my tutors, I feel more comfortable to interact with them. I find it very helpful to talk with them. They don’t simply tell me the answer. Instead, they direct me to find out the solution” (Hua). Hua consciously formed social relationships with her tutors outside the classroom. The attempts were viewed as important affective strategies to help her build on her intrinsic motivation and lower her anxiety (Oxford, 2011). She also experienced the benefits of using social strategies and developed her learning strategies through interacting with her tutors.

One of the teacher interviewees further commented that not all Chinese students wanted to seek support from their teachers and that it varied considerably. She expected the weaker students to seek more advice, but the good students normally asked for more help: “I know some Chinese students, who are struggling, but they never ask for help. They shouldn’t feel that they’ll be judged. Good Chinese students tend to seek more advice from us” (Mary).

Compared with other student interviewees, Ming felt more willing to seek support from international students from different cultures. He found that other international students could show more patience and empathy to his problem than domestic students. Most



student interviewees tried to seek academic help from different social networks, but they preferred to gain emotional support from their co-nationals. As they shared the same language and culture, they felt closer to their co-nationals and more comfortable to talk about their personal issues with them: “I can communicate with my Chinese friends in the way I cannot speak in English. They understand my problems and feeling more easily” (Lily).

Besides social strategies, the student interviewees also combined with other personal strategies to support their adjustment:

- “I keep thinking that stress can be good too and it enables me to work harder and helps me reorganize myself” (Ying).
- “Managing time effectively and making plans are important strategies for me to manage stress” (Tao).
- “I often draw cartoons when I feel lonely and watching films is also a good way to reduce stress” (Lin).

As can be seen, attempts to focus on the positive aspects of a situation, make plans about their coping actions, and reduce stress and loneliness through engaging in other activities were deployed as useful strategies to help them cope with their stress. In particular, some students highlighted that devising a clear study plan could be an effective strategy to deal with their study stress.

### Academic Development and Personal Growth

Although the Chinese students encountered a variety of difficulties in the UK, their intercultural experiences enabled them to develop academically and personally. In particular, the Chinese students’ listening and reading skills improved noticeably, and self-confidence in using English increased:

- “I heard English every day. I have no problem understanding lecturers and daily life conversations. I can’t say that my speaking has improved greatly, but I’m more confident to communicate with local people” (Lin, interview).
- “I tried to understand every word when I read an article, but now I use skimming and scanning to increase my reading speed. These two strategies really work for me” (Jia, questionnaire response).

Increased contact with the English-speaking environment and the effective use of language learning

strategies were reported as two important factors that promoted their language learning. However, not all language skills improved greatly, and the improvement in speaking did not match their expectation: “I expected to speak English fluently. But, actually, I spend more time studying and don’t have many opportunities to speak English. I don’t think my speaking has improved a lot” (Han, questionnaire response). As their academic life was stressful, participants described that they devoted considerable amount of time and effort to strengthening their subject knowledge and doing their academic work. However, they had much less time to attend social events and socialize with people. Consequently, they lacked social language and skills and suffered great loneliness in their social life.

The questionnaire responses and interview data also revealed that there were noticeable changes in the students’ learning strategies and approaches. In order to achieve better academic performance, many students evaluated their learning and made a continuous effort to strengthen their existing strategy use:

- “I used to follow the reading list which my teacher gave, but I found that I need to read more in relation to my own needs. Discussing ideas with my coursemates is also a useful way to help me understand the reading material” (Lin, interview).
- “I’m quite good at preparing my exams now. I tried to talk to my learning advisors and gained great insights from them. I realize that memorizing the textbook is not always effective. I need to review my schedule and leave more time to revise” (Cai, questionnaire response).

Lin and Cai became more selective in what they read and revised, and they improved their strategy use in relation to their learning needs. They reflected upon their own learning and developed their strategic awareness. Interaction with more capable others (e.g., peers and learning advisors) also played an important role and promoted their potential development.

The students experienced a more teacher-centered way of teaching in China and had fewer opportunities to learn through interaction. By contrast, they were engaged in more learner-centered teaching in the UK. Although some students experienced difficulties in adjusting to the teaching style, they also recognized the value of autonomous learning:

- “When we weren’t sure about what the ‘text’ is referring to. Our teacher didn’t offer assistance straightway; rather, she directed us to explore the answer by ourselves. I realized that my own discovery is better. I really enjoyed my achievement” (Hua, interview).

- “No one can do the learning for us from a lifelong perspective. It’s important to develop my own problem-solving skills. Copying other people’s work won’t help. We shouldn’t waste our time repeating others’ opinion” (Long, questionnaire response).

The context of teaching and learning in the UK, including the teaching style, classroom interaction and teacher-student role, appeared to be an important factor influencing their learning approaches. As can be seen, their learning approaches were not fixed, but rather, were socially constructed and could change over time. With regard to Hua and Long, the process of autonomous learning engaged their personal agency in thinking and analyzing the problem, and this in turn increased their motivation to discover the answer or solve the problem. The students also recognized that independent learning did not mean learning without help, and negotiated interaction with others can enable them to engage more in the thinking process and enhance their understanding: “The best thing to enhance our learning experience is to talk about our work to the people around us so we can learn new things how other people do [*sic*]” (Tao, interview).

Communicating with people from different cultures also provided the Chinese students with more opportunities to recognize their cultural uniqueness and helped them grow in terms of sensitivity to cultural differences:

- “Although I’m proud of my culture, this experience makes me become tolerant to cultural differences. I really enjoy knowing about their cultures” (Lin, interview).
- “I got an impression of British people who are cold and a bit elegant...but I change my mind. Now I don’t think they are elegant, they may be shy. Sometimes they don’t talk to you, because they don’t want to disturb you” (Ming, interview).

Lin became more tolerant of cultural differences than before. By contrast, Ming reflected on his preconceived opinion about British people and tried to avoid a cultural misunderstanding. Their intercultural experiences also brought some challenges to their identity in terms of their personal characteristics and interpersonal relationships:

- “I reconstruct my perception of myself. I was a confident person. However, when I encounter many unexpected difficulties, I become less confident and very dependent now” (Lily, interview).

- “The longer I stay here, the less common topics I have with my friends in China. I start to lose my old friends. This is the change which I don’t want to accept” (Ying, interview).

The Chinese students experienced many changes in their personality and social life during their stay. Their identity also changed over time and they had a less clear sense of their original identity. Ying, Tao, and Hua further commented that their re-entry experiences provided them with opportunities to reflect on their identity: “Last year when I went back China, I found it difficult to adjust to the lifestyle in China. I also have to admit that I can’t fit in the British culture. However, I enjoy my own space now. I have made lots of friends from other cultures. I’m happy to talk to them and share experiences with them” (Hua, interview).

The interview data suggested that their length of stay did not affect the degree of the acceptance of other culture(s), but the long-term sojourners needed to respond to more dynamic identities and experienced more complex issues about their identity. As can be seen from Hua’s comment, she made further efforts to expand her social networks and created a new space in which they felt more comfortable to have contact with each other. She negotiated her cultural experience with others, and the process of exploring a new space seemed to bring a different formation of life.

## Discussion

The key findings from both the interview and questionnaire data can be summarized as follows:

1. The language barrier was perceived as a key challenge to academic, psychological, and social adjustments.
2. Cultural differences in educational perceptions were seen as one of the biggest challenges in fitting into the British education context during the students’ early adjustment.
3. Changes were found in the students’ perceived stress and difficulties when they had better language ability.
4. Social contact with co-nationals and British teachers was perceived as the most helpful strategy to manage academic and personal difficulties.
5. The students’ academic development was mainly in three aspects: language ability, learning strategies, and learning approaches.
6. The sojourn experiences helped the students grow in terms of intercultural sensitivity and identity.

### Difficulties and Stress

The main aim of the Chinese students studying abroad was to obtain the best possible degree. Academic life was of greatest concern among the students during their early adjustment. In particular, they perceived inadequate language proficiency as one of the biggest obstacles constraining their academic adjustment. Weak language skills caused many language-related problems, such as expressing clearly ideas in classes, understanding lectures, and writing papers. These findings support the previous research of Tian and Low (2012) and Griffiths (2013). The students also showed that inadequate language proficiency brought psychological distress when they had to produce any kinds of spoken discourse in classroom activities. With regard to the long-term student sojourners, the teacher interviewees further suggested that a cultural barrier was more likely to prevent their participation in classroom interaction when their language ability had improved.

After the students moved on to their postgraduate study, some daily life issues and academic problems were reduced considerably, and they were overtaken by social problems. Although some studies showed that there was a continued social development among Chinese students when they stayed longer in the host country (e.g., Li, 2012), the social adaptation of the long-term student sojourners in this study seemed to be more daunting than what they had expected. In particular, going to social events and making local friends brought stress to them, and they also suffered loneliness due to an isolated social network. The more they interacted with local people, the more cultural and lifestyle differences they found. Due to cultural differences, they found it difficult to build a social network with British people or develop a lasting friendship. Furthermore, although their confidence in using English increased over time, they also claimed that they needed to improve their social language which could help them engage in everyday conversation. Some of the students made continuous efforts to expand their social network with British people and the people from other cultures and recognized the social interaction as an important aspect of cultural and language learning.

Moving on to a postgraduate degree, the students had better language ability and increasingly adjusted to the convention of the academic writing. They aimed to write more critically and enhance the quality of their academic writing. They tried to shift from reproducing other people's work to presenting more critical argument. Many students showed that they needed to improve their critical thinking skills, which played a vital role in their academic achievement. This is also supported by other studies (e.g., Paton, 2005; Turner,

2006). However, the Chinese students cannot be generalised as less critical learners, because the findings of this study also showed that some Chinese students' critical thinking skills developed over time through their effort, as well as through their teachers' support.

This study further revealed that the students' academic adjustment, social adjustment, and psychological adjustment were all interrelated. Their linguistic competence can be improved greatly through socializing with people from other groups. Consequently, the students can become more relaxed and confident to produce spoken discourse in different kinds of situations. Few studies on international students have related social adjustment to academic performance. Gill (2007) showed the importance of social adjustment in both psychological and academic adjustment. By contrast, this study further suggested that weak language skills and perceived cultural differences caused the students' stress to interact with host students and limited their opportunities to exchange ideas for greater learning.

### Coping Strategies

Social contact was identified as a major coping strategy in student sojourners' intercultural adaptation, and three distinct types of social networks served different functions (see also Yu & Wright, 2016). However, not all three networks played an important role in their academic, psychological, and social adjustment. The students stressed the significance of friendship with co-nationals in all three aspects of adjustment. With regard to academic support, interacting with British teachers and other international students also played an important role, although little emotional support was sought from these two types of social networks. They particularly appreciated the teachers' great encouragement and effective learning advice. Compared with domestic students, they seemed to feel more comfortable to seek academic help from other international students. However, social needs were not benefitted greatly from host nationals and international contact.

### Changes and Growth

The results of this study indicated cross-cultural differences in educational expectations between the Chinese students and British teachers. In particular, the differences were found in their teaching style, classroom interaction, and teacher-student roles. Consequently, the students experienced learning shock and felt a loss of their familiar teaching-learning culture during their early adjustment. Several studies (e.g., Durkin, 2011; Jin & Hill, 2001) reported similar findings and suggested that

cultural and educational backgrounds influenced students' academic adjustment. However, this study also showed that the influence of cultural and educational backgrounds in the students' academic adjustment became less influential when they had more exposure to the academic culture in the UK. Cultural differences cannot be used to stereotype the Chinese learner, and there are considerable individual differences in social interaction, learning approaches, and strategies.

The students' academic adaptation appeared to be a dynamic process rather than a static picture. Their academic stress and the challenges which they experienced could be beneficial to their academic development. The process of their academic adaptation was generally seen as a positive development over time (see also Wu, 2015). In particular, their motivation, teachers' effective pedagogical skills and a good teacher-student relationship were perceived as important factors for their academic adaptation.

Their sojourn experiences also enabled them to develop their tolerance of cultural differences (see also Anderson, Lawton, Rexeisen, & Hubbard, 2006). However, the degree of their intercultural sensitivity varied among individual students. The long-term sojourners also experienced more complex issues in terms of their identity. As mentioned above, the students experienced a conflict between the need to adapt to British culture and resistance to losing their original identity. Their identity development underwent a process of transformation rather than one of replacement. It would seem that the longer they stayed in the UK, the more confusion they experienced as to where they belonged. Yet, this also provided a great opportunity for them to explore a third "space" in which their intercultural identity developed. Creating a "third space" appeared to be an important route for them to manage the interrelationship between the old and the new culture (see also Fougère, 2008).

Many British universities have offered orientation programs which help international newcomers settle into university life, as well as academic and emotional support for their early transition (e.g., the first year). However, the findings of this study revealed that some international Chinese students who had studied in UK higher education for a few years continued to experience problems in adjusting to academic and social life in the UK, while they achieved personal growth over time. Therefore, universities need to provide ongoing programs, continuous support, and a variety of resources which help international students accelerate their adjustment to UK higher education. In particular, the results showed that the long-term Chinese students perceived academic writing and social interaction as the most difficult aspects. Apart from academic writing classes, universities need to offer a

series of workshops for international students and encourage them to discuss their writing problems at different stages of their degree programs. Furthermore, universities need to run some training programmes which provide practical advice for their social interaction problems and more explicit critical thinking instruction. To help students who are long used to a teacher-centered approach, it is crucial for teachers to modify a communicative approach in relation to students' needs and culture. Chinese students should seek more opportunities to engage with target language speakers, as well as with people from other cultures, and expand their social networks. They also need to make deliberate and continuous efforts to develop their language skills and intercultural awareness, as well as to reflect on their changes (e.g., keeping a reflection journal).

There are limitations to this study which suggest directions for future research. Firstly, the number of questionnaire responses received was a relatively small, and thus the results cannot be generalized to represent all international Chinese students. Secondly, the Chinese students were asked to describe their experience of study abroad over a period of three years. It is possible that they might make generalizations about their adjustment processes and reinterpreted what had happened during the process. Thirdly, since the study was undertaken in 2010, changes that have occurred in UK higher education, such as the changing costs of overseas study, investment in additional support, and further funding opportunities for international students, could affect the quality of learning and of the student experience. Further longitudinal research, involving collection of data at different points during student sojourners' adjustment process, is needed in order to obtain more specific information about their adjustment and trace their actual changes over time. The findings of this study also stress the need for further study of re-entry adjustments of international students to their home cultures, as well as changes in their identity after a long stay in the host country.

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## Academic Relevance: College Students' Perspective

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This study examined academic relevance from the perspective of college students. A qualitative focus group method was used to explore how students perceived the applicability and usefulness of their academic courses and coursework. Two focus groups of college students (N = 22) with varied class rank and academic majors were conducted. Data suggests that academic relevance is a complex construct; six distinct domains of academic relevance were identified. Students perceived their course work as relevant to their current and future academic endeavors, vocational preparation, and personal growth and development. Results provide a preliminary factorial structure to an underdeveloped yet important learning construct. Implications are discussed, and suggestions are offered to bolster students' perceptions of academic relevance.

Throughout the history of higher education in America, various stakeholders have scrutinized the curricula of colleges and universities in an attempt to ensure that a college education remains relevant to their interests (Bok, 2006; Shapiro, 2005). The report titled, "A Test of Leadership: Charting the Future of U.S. Higher Education," put forth by the Commission on the Future of Higher Education (2006) serves as an example of this scrutiny. In this report, the federal government explicitly advanced the notion that a relevant post-secondary academic curriculum is one that prepares graduates with skills necessary to enter into a 21st century workforce and maintain the global economic fortitude of the nation. Colleges and universities also have well-documented statements that outline specific qualities of an academically-relevant curriculum. For example, the Association of American Colleges and Universities (2010) suggested that an academically relevant curriculum is one that is grounded in the ideals of a liberal education (i.e., it facilitates social responsibility, civic leadership, and ethical fortitude) which are needed to maintain an effective democracy. However, while college students are most directly affected by the curricula of colleges and universities, literature reporting college students' perceptions of the relevance of their academic experience is sparse.

The small body of research that has examined academic relevance from students' perspectives was conducted in the 1960's and 1970's. During that time, post-secondary enrollments swelled with an increasingly diverse student population that demanded coursework that was relevant to their past experiences and future aspirations (Bok, 2006). A 1971 Carnegie Commission Survey highlighted students' concerns; 91percent of the 70,000 students surveyed wanted their academic coursework to be more relevant to contemporary life and current social problems (Trow, 1971). In light of this report, two empirical studies were conducted that examined the underlying factor structure of academic relevance to better understand the

concept and develop a measureable construct for psychometric investigation (Menges & Trumpeter, 1972; Permut, 1974). These studies suggested that academic relevance is a multidimensional concept with the most well-defined dimensions being *applicability* and *usefulness*. That is, when students seek relevance in their academic work, they are most concerned with whether they can directly apply the knowledge and learning resulting from this work to address their personal concerns, as well as social issues they deem important. No follow-up studies examining the relevance of academic work as a distinct construct have since been conducted.

As the idealism and activism prominent on campuses simmered during the 1970's and economic concerns began to emerge as a focal issue in the early 1980's, academic relevance became synonymous with the practical vocational value of college coursework. A prominent strand of research examined students' perceptions of the usefulness of their academic work as a predictor of persistence (Bean, 1983; Terenzini & Pascarella, 1977). The results of several studies suggested that students' perceptions of their academic experience as relevant for future employment is positively associated with persistence toward the achievement of academic goals (Bean, 1983; Metzner, 1984). Interestingly, the two most prominent national reports during this time (i.e., *A Nation at Risk*, NCED, 1983, and *To Reclaim a Legacy*, Bennett, 1984) stressed the need to minimize the growing vocational influence of college curricula and to reestablish the humanities and liberal arts as a central curricular feature in higher education.

Since the early 1990's two constructs related to academic relevance and grounded in motivational theories generated a fairly deep body of research. Identified regulation, derived from self-determination theory (SDT; Ryan & Deci, 2000), is an internalized extrinsic motivation. It is extrinsic in that it is related to the performance of activities for the purposes of satisfying external demands, or as a means of acquiring



an end result aside from the enjoyment of the activity itself. It is internalized in that the individual has identified with the personal importance (i.e., relevance) of the activity in terms of their own value system (Jang, 2008). Similarly, the expectancy-value model of achievement choices (Eccles & Wigfield, 2002) posits that the values individuals ascribe to tasks (i.e., task values) contribute to achievement and performance. Utility values are a type of task values that are extrinsic in that their value is perceived as instrumental. However, like identified regulation, utility values can be integrated into one's personal value system and thus become more personally relevant. Both identified regulation and utility value have been associated with greater interest, sustained effort, and achievement in academic settings (Hulleman, Godes, Hendricks, & Harackiewicz, 2010; Jang, 2008; Reeve, Jang, Hardre, & Omura, 2002).

This body of quantitative literature underscores the associations among academic relevance, academic motivation, academic engagement, and performance. Qualitative research may illuminate deeper and more personal meanings individuals hold about their academic endeavors. For example, it is not known if, or to what extent, students seek academic relevance within different life-domains (i.e., career, civic membership, personal development). Moreover, it is not known to what extent the meaning students generate around academic work is related to students' individual and societal values. In 1971, 73 percent of entering freshman stated that developing a meaningful philosophy of life was very important while in college (American Council on Education, 1971). Therefore, it could be assumed that college students at this time perceived a relevant curriculum to be one that facilitated the development of skills needed to search for a meaningful life philosophy.

The call for a more relevant curriculum appears to be on the rise again as the competitiveness of a "high tech" globalized market drives students' and parents' current demands for colleges to provide the most marketable skills available, as well as the business community's demands for a highly skilled and productive workforce (Bok, 2006; Chace, 2009; Grubb & Lazerson, 2005). Current calls for a curriculum providing clear connections to career paths seem congruent with findings from recent research suggesting that students' motivations for attending college are increasingly centered on job obtainment and earning potential (Astin, Oseguera, Sax, & Korn, 2007; Nathan, 2005; Schneider & Humphreys, 2005). Yet it appears that college students do perceive relevance in their academic course work beyond being a means to increase occupational and financial viability. Relatively recent research (Henderson-King & Smith, 2006) indicates that while students are highly motivated by obtaining future earning potential and workforce

preparation, they also ascribe broader meaning to the college experience (e.g., opportunity for personal growth, exploration of one's self, and exposure to diverse ideas). However, the notion that students look directly to the academic curriculum as a viable means for making these meanings tangible is highly suspect (Grigsby, 2009; Nathan, 2005).

The purpose of this study was to qualitatively investigate the scope of academic relevance from the perspective of college students. We examined how college students described the relevance of their academic courses and coursework. Investigations reporting the "student voice" can illuminate and challenge premises held by educators and policy makers about learning, engagement in the academic enterprise, and future directions of curriculum reform (Cook-Sather, 2006). Specifically, they can provide insights that guide educational interventions intended to facilitate greater academic motivation and engaged behavior. We also hope to lay an empirical foundation for future quantitative studies designed to develop the construct of academic relevance and the quantitative measurement of this construct.

## Method

This study used a focus group research design. Focus groups are a qualitative methodology often used by social science researchers to obtain information about opinions, attitudes, and beliefs around a specific topic or issue (Kitzinger & Barbour, 1999). Focus groups involve informal discussions on a particular topic with a relatively small number of individuals. They are helpful in understanding individuals' unique experiences in specific settings or during specific events (Krueger & Casey, 2000). Further, focus groups can be particularly useful in the investigation of constructs that have yet to be effectively operationalized (Kress & Shoffner, 2007). Academic relevance is vaguely defined within the educational research. Focus groups allowed us to explore the breadth and depth of the concept of academic relevance.

## Participants

Participants were 22 undergraduate students enrolled in one of two sections of a course titled Life Skills for College at a large research university in the southeastern United States. This is a popular elective course designed to develop skills deemed necessary for a successful transition through college and into the world of work. The course focuses on direct application of psychological principles as a means of facilitating students' personal, academic, and professional growth. It is open to all majors and all class ranks. The researchers were deliberate in recruiting participants from these courses as discussion

related to academic experiences and relevance is part of the curriculum. Moreover, due to its elective status, students enrolled in this course usually have a diversity of academic experiences and goals. Referred to as intensity sampling (Patton, 2002), this method of selection is a purposive sampling procedure that is appropriate for focus group research as it furthers the researchers' ability to understand participants' experiences. There were a total of nine men and 13 women represented in the sample. The class rank of the participants included six seniors, five juniors, two sophomore, and nine freshmen all of whom were in good academic standing within the university. Ages of the ranged from 18 to 23 years old. There were 13 distinct declared majors among the participants (e.g., statistics, political science, communications, international affairs, accounting). Two participants were undecided about their major.

### Procedure

**Data Collection.** Prior to data collection, the study procedures were approved by the university's Institutional Review Board. Data was collected during two separate focus group sessions each lasting approximately 45 minutes. Each focus group session consisted of students who were recruited exclusively from one specific session of the aforementioned courses. Recruitment consisted of the second author gaining permission to enter each class to explain the goals and scope of the research, and then to invite students to be participants. One focus group was conducted midway through an academic semester. The second focus group was completed toward the end of the academic term. Each focus group was conducted outside of class time. No incentive was offered for participation other than refreshments. The first author served as moderator and ensured that the experience encouraged open participation while discouraging monopolization of discussion. The second author recorded session results, took field notes, and offered support to the moderator (Krueger & Casey, 2000).

During both sessions, the lead researcher read an informational letter to the potential participants explaining the purpose and procedure of the study, as well as the voluntary nature of participation in the study. Informed consent was obtained from those who chose to participate. At the commencement of the focus groups, the researchers briefly defined relevance as the perceived usefulness, purpose, and/or applicability of academic courses and the related academic course work. A series of questions were discussed for the duration of the focus group. The three questions that precipitated the focus group discussions were as follows: In what ways are the courses that you are presently taking, or have taken in the past, relevant

to your life? How are the homework assignments or academic tasks within the courses you have taken relevant to your life? Can you provide examples of classes and related course work that you did not find particularly relevant to your life? Follow-up questions were often asked to clarify, and semi-structured conversations often pursued. The answers given by the students were recorded with a tape recorder and were later transcribed verbatim by the lead researcher.

**Data Analysis.** The constant comparative method (Glaser & Strauss, 1967) was used to analyze data. This method is an iterative process used to identify themes and understand meaning from qualitative data. The constant comparative method is commonly used for analyzing focus group narrative data (Leech & Onwuegbuzie, 2008). First, complete transcriptions from each focus group were read several times by both researchers. Then the researchers independently engaged in a process of open coding, whereby descriptors or codes were attached to chunks of data. After creating separate codes the researchers discussed their codes with each other. Discrepancies were discussed, and codes were refined until agreement on a list of defined codes was reached. Then researchers returned to reading the transcripts independently to apply the refined codes to the entire data. Finally, researchers again collaboratively combined codes into overarching categories and subcategories that reflected themes that emerged from the data. To ensure the credibility of the results, a member checking procedure was employed (Lincoln & Guba, 1985). Several participants were given data analysis results along with a questionnaire and rating form. These participants were asked to provide written feedback regarding their perception of the accuracy of the findings.

### Results

Two types of academic relevance emerged from the data: direct relevance and indirect relevance. Within each type of relevance, three distinct categories were identified representing specific life domains: academics, occupation, and personal development.

#### Direct Relevancy

Participants described academic endeavors that required little to no inference to understand their usefulness. Students clearly verbalized the direct and immediate applicability of their academic endeavors in terms of meeting current and future goals. Students often talked about academic courses and their experiences without specifics (e.g., course titles, subjects). However, they also mentioned specific academic tasks (e.g., group projects, math problems, and reading assignments) associated with their

coursework. The students discussed both past and present academic experiences.

**Direct Academic Relevancy.** Eight students provided a combined total of 12 comments reflecting the notion that specific courses or academic tasks were relevant because they were necessary for accomplishing their academic goals (i.e., obtaining a degree, entering a specific major). That is, specific courses or specific academic tasks were directly relevant because they were institutionally assigned prerequisites. For example, Participant 14 remarked:

I mean not [relevant] so much for another class, but for overall being able to get my degree. Like because it is required by the University, I was, like, okay I have to sit down. I have to do this.

When asked why he decided to take a geology class he found uninteresting, his response was, "If you want to graduate, you have to take it. It's just like a required course, you know, and I had to pick a physical science." Participant 6 also described direct academic relevancy:

Well, I'm taking pre-cal [calculus] right now, and I'm really struggling with that class...I came in as a pre-business major, so pre-cal is required, but I'm thinking of switching to something like political science where it doesn't matter, so you know the relevancy of pre-cal just really drops.

**Direct Occupational Relevancy.** Six participants mentioned a total of seven experiences where academic tasks were perceived as being directly applicable to future occupational or career goals. These students conveyed the belief that academic content or tasks were essentially offering them a job skill or occupational knowledge they would use at work in the future. Perceptions of direct occupational relevancy were usually mentioned when referring to upper-level major classes, but they also included references to lower-level courses that taught specific knowledge and tasks needed in an occupation. For example, when mentioning an introductory course on the fundamentals of Microsoft Excel's application in the business world, Participant 10 stated, "You know, Excel is not the most exciting subject to learn about but if you eventually run a business, you are going to need to know how to use databases and spreadsheets, and stuff." Participant 5 mentioned how specific knowledge gained through academic work had direct occupational relevance by stating the following:

I mean I had a class and the way he showed us it was relevant was kind of harsh because [it was] the law of communications class and basically every

time you gave an answer that was wrong or, I guess, yeah anytime you gave an answer that was wrong, he was like, "you just got sued," or "you're fired from your job!"

Participant 7 also discussed direct occupational relevance in more general terms:

I am here to learn, not just to learn to get to another class, you know, so I can get through my major. But I'm here to learn, you know, about the real world so I can get out there and you know do whatever I need to do.

Finally, Participant 19 reflected that her special education class was directly relevant to her future occupation. "Well, my major is communication science and disorders, and I'll be working with special education children so that's why it's relevant."

**Direct Personal Relevancy.** Four participants mentioned six distinct experiences in which their course work directly facilitated their personal development, whether this referred to honing a tangible skill such as money or time management, or more abstract benefits such as increased self-awareness or psychological growth. Participant 5 offered an example of direct personal relevancy:

I currently am in a class, which is household and consumer economics, and it's really boring, but it's completely relevant to my life, um. She [the teacher] basically gives examples of either a young single person or a young married couple and then we have to learn how to do our finances, decide whether we are going to, you know, buy or rent, how to do a mortgage, how to decide what kind of mortgage you want. Like it's really boring but I am going to need it every [sic] single piece of information that's in that class.

Similarly, Participant 7 stated how an academic experience was directly relevant to his personal growth:

I found it, you know, very relevant to find out, you know like, what type of personality type I am....I think finding yourself is really important in this stage of life. Still people, you know, go through all these classes and it's just, you know, numbers and words and you know, you don't really discover who you are.

### Indirect Relevancy

The participants in this study also described academic activities that were not immediately or directly applicable to the accomplishment of a life goal.

In many of these instances students extrapolated or made inferences to clarify how specific academic activities would eventually lead to the development of new skills (i.e., critical thinking) that would be relevant to their lives. As with perceptions of direct relevancy, students talked about academic courses generally, as well as specific academic tasks.

**Indirect Academic Relevancy.** Two participants referred to specific coursework that facilitated the development of a skill they needed for a future course or for a future academic endeavor. For example, Participant 14 stated, “I’m a statistics major right now... Three or four years ago when I started taking my core classes, I didn’t need to apply anything I learned to other classes. Now the knowledge from my pre-recs [required prerequisites] for my major are the things I need to know for my major classes right now.” Participant 14 also referred to indirect academic relevancy by stating his difficulty finding it: “Half way through the semester you’re like this stuff is so boring. Is this class really relevant to my degree? Am I really ever going to use this information in law school? It doesn’t mean anything.”

**Indirect Occupational Relevancy.** Four participants referred to a specific course or a specific academic task they perceived as useful because the course or task facilitated the acquisition of new skills that would eventually be needed for the world of work (i.e., career exploration, critical thinking, problem solving), but not for the accomplishment of a specific work task. The comments that reflect this domain tend to refer to courses in general. Participant 4 stated the following:

But I also think it is important to have them [freshman core classes] because as freshmen they come in [to the university] not having any idea what they want to do, so it’s like because you do have to take all these different types of classes, you kind of find out what you want to do. Like I’m an accounting major and I didn’t even know what an accounting major was until I came here and took my accounting class because it was required, and then I fell in love with it.

Participant 7 referred to an assignment he had completed for an elective class: “It’s relevant just because I think trying to find out how you really are goes a long way in deciding, you know, what your career path may be and what you want to major in.” Finally, participant 18 mentioned how the knowledge from a philosophy class can be applied as a lawyer:

It teaches you like how to think and how to analyze in different situations. And I don’t know. I want to be a lawyer, so that’s helpful. Just like

when I get into arguments: it’s good to know how to think critically.

**Indirect Personal Relevancy.** The most common type of reference made by students regarding the indirect relevancy of their academic experiences was in relation to how these experiences facilitated their personal development. Six participants made references to this domain. Participant 10 stated, “I think there are certain courses that people don’t want to take but I think you might be a better person for taking them.” Participant 4 reiterated this sentiment by stating:

Biology, never in my life will I use that information again. Like things like that, I just think it’s important to become a well-rounded individual and have a lot of different knowledge about a lot of different things, like political science, science, or government.

Participant 5 further reinforced this perception: “I really strongly think everyone should have some knowledge of political science or history or something like that.” When pressed to defend her position, she continued:

Because I think that history is happening right now. You need to know what happened and why things are the way they are before you can just go, before you can really live a, I can’t think of the right word, I don’t want to say productive. I guess yeah, an informed life.

When probed to clarify this statement, Participant 5 added, “I think that people need to know that they just can’t turn a blind eye to and let other people run their life for them.” Participant 7 added, “I think it’s very good to have history and politics...at least a general understanding of how things are in life so you can be an informed citizen.”

## Discussion

We used focus groups to explore academic relevance among college students and extend results from previous quantitative studies. The results suggest that academic relevance is more complex than previously reported. Most notably, students described specific life domains in which they thought their academic work and experiences would be directly or indirectly applicable. The experiences shared by participants offer descriptions of this complexity.

The most prevalent dimension of academic relevancy to emerge was direct academic relevancy, which is the notion that specific courses or academic tasks are relevant because they are necessary for achievement of specific institutional requirements such as a curricular prerequisite or degree requirement. Each

reference to direct academic relevancy was coupled with three specific feelings; lack of autonomy, disinterest, and displeasure resulting from engagement in coursework. For example, when conveying reasons that his geology class was relevant, Participant 14 stated, "You're in constant drudgery. I'm never going to study what a rock is. It's just like a required course, you know, and I had to pick a physical science course....I don't really like science classes. So I am like stuck in it."

In this light, direct academic relevancy is similar to external regulation, which is the least autonomous form of external motivation within the aforementioned self-determination theory (Ryan & Deci, 2000). External regulation is related to behaviors that are performed with the purpose of satisfying external demands or as a means of acquiring an end result. Although purposeful, these behaviors are not integrated into one's value system and therefore are often related to feelings antithetical to psychological well-being (Ryan & Deci, 2000). For example, Pisarik, 2009 reported finding that higher levels of external regulation were associated with higher levels of cynicism regarding engagement in academic activities among college students.

Direct occupational relevancy was the second most frequently reported category. This category referred to students' perceptions that their academic coursework provided a specific job skill or specific knowledge they could directly transfer to their desired occupation. This dimension reflects the growing emphasis in American society on the vocational purpose of higher education in which higher education is predominantly viewed as a means of securing individual occupational prosperity and stability (Grubb & Lazerson, 2005). The participants however, seemed to convey two differing perceptions of relevancy within this dimension: academics as a means to get a job and academics as a means to do a job. The first is indicative of a reward contingency and congruent with Ryan and Deci's (2000) aforementioned motivational dimension of external regulation located in the occupational realm of life. One participant stated that it was simply important to spend time taking classes and picking a major that will lead to a specific job. The second perception connotes a process of internalizing the value of academic work. For example, some participants spoke about how the content of specific courses would help prepare them to be competent, effective, and successful in their future occupations. This provides an example of Ryan and Deci's (2000) internalization process indicative of identified regulation in which individuals deepen the degree of meaning and value they ascribe to their behavioral goals.

Direct personal relevancy, which was modestly reported, depicted participants' perception that their academic coursework was directly applicable to the

accomplishment of a personal goal. These personal goals were tangible (e.g., managing money), as well as abstract (e.g., gaining self-awareness and growing personally). The purpose of higher education in America has historically been perceived more broadly than simply a forum for intellectual development (Bok, 2006). In fact, a college education is often characterized as a combination of vocational training, intellectual development, and personal development. Research has suggested that college students increasingly perceive the importance of college in terms of social learning and personal growth and development (Schneider & Humphreys, 2005). However, they are inclined to believe that experiences outside of the classroom and aside from academics are more significant in facilitating this learning (Arum & Roksa, 2010; Nathan, 2005). Our results suggest that some students may still perceive a connection between the academic experiences related to the college curriculum and their personal growth and development.

Indirect academic relevancy refers to participants' perceptions that the skills they gained by engaging in academic course work (e.g., self-exploration, critical thinking, objective analysis, ethical decision making) would be applicable to current or future academic pursuits. This was the least frequently reported category, and the few students who made reference to academics as being relevant in this way had difficulty doing so. This difficulty seems to highlight the fragmented nature of the college curriculum within large universities (Coye, 1997). The current general education model adopted by most American colleges and universities attempts to facilitate a breadth of knowledge by requiring students to take two or three courses within several disciplines of knowledge. However, faculty rarely teach across disciplines, academic departments rarely collaborate, and courses are rarely co-taught by instructors from differing academic disciplines (Bok, 2006). The results of this study may point to the consequences of this fragmentation. That is, students may find it difficult to grasp central themes within a curriculum, and they may not recognize the skills of critical inquiry that are congruent and transferable across classes, majors, and disciplines.

Indirect occupational relevancy, a dimension endorsed by several participants, refers to perceptions that specific academic tasks are useful in acquiring non-tangible skills that will be essential for entry into the world of work. These skills again include intellectual skills such as critical thinking, problem solving, analytical thinking, and personal developmental processes such as career exploration, self-exploration, and self-discovery. Many students enter college undecided about their academic major and their future vocational pursuits, and over 50 percent change majors before graduating (Gayle, 2005; Gordon, 1995). Our results suggest that students are able to view the

academic curriculum, and more specifically the general education curriculum, not solely as a venue for acquiring tangible occupational knowledge and skills, but also as a means of acquiring the intellectual and self-exploratory skills that are increasingly being reported as essential for continued career self-management and sustainability in the 21st century (Niles, 2011).

Finally, participants endorsed the notion that their academic coursework was relevant because it was a means of gaining knowledge and skills needed to develop into a well-rounded and functioning adult. We labeled this dimension indirect personal relevancy. When referring to this dimension, students mentioned the importance of acquiring a broad base of knowledge and developing intellectual skills much like they did when referring to indirect occupational relevancy. However, this dimension was unique in that students perceived that this knowledge and skill set would be applicable to their personal lives and eventually to their ability to engage in civically-oriented goals. Recent scholarly commentary has suggested a widening rift between the instrumental and vocationally-driven educational goals endorsed by college students and the intellectually, morally, and civically inclined curricular goals of college faculty (Arum & Roksa, 2010; Grubb, & Lazerson, 2005). The desire to earn an education as a means of becoming a well-rounded person and a contributing participant in society contradicts a current belief that intellectual development and civic engagement are no longer educational goals of many college students. Although participants had difficulty articulating academic relevance within this dimension, they clearly implied that what is considered a hallmark of a liberal education, such as foundational knowledge of culture, nature, and our society (Association of American Colleges and Universities, 2010), was relevant for living a good life and being an active citizen.

### Implications

As the twenty-first century unfolds, public discussion continues regarding the ability of colleges and universities to prepare students to embark on the economic and civic challenges ahead. Central to this discussion is an examination of the relevance of academic curricula. The most recent comprehensive discussion regarding the relevance of a college education stems from the LEAP (i.e., Liberal Education and America's Promise) initiative sponsored by AAC&U. LEAP proposes that a relevant college education facilitates essential skills beyond specific occupational knowledge, including critical and creative thinking, written and oral communication, intercultural competence, and civic knowledge. LEAP deems such skills essential for successful performance in highly skilled work

indicative of the 21<sup>st</sup> century, maintenance of a healthy lifestyle in a complex world, and engagement as an active citizen in a pluralistic democracy.

Interestingly, past research suggests that these values are not generally espoused by students (Humphreys & Davenport, 2005). Few of the participants in our study came close to articulating the relevancy of academics in these terms. These findings put forth the notion that while educators, administrators, and policy makers may articulate the most noble and beneficent positions regarding the relevance of academics, the message may not be making it to the students in terms they can understand or articulate. Given the exorbitant cost of higher education and crippling debt many students accrue while in college, it becomes a moral imperative that colleges and universities communicate the educational goals and objectives of their institutions effectively. That is, every attempt should be made to clearly convey the desired outcomes of each academic task and the curriculum as a whole to each student.

When the participants were able to clearly articulate the relevance of their academic experiences, they did so in instrumental terms (i.e., a means to fulfilling academic requirements, obtaining degrees, and securing eventual employment). This mindset was often accompanied by feelings of disengagement. While past research reinforces this relationship (Jang, 2000), suggestions on how to engender relevancy beyond this basic instrumental mindset can be found in the literature. For example, when educators simply and directly communicate the relevancy of specific academic tasks (e.g., the usefulness of algebra for dosage calculation in nursing), students report perceiving greater value in the activity, greater competence, and increased involvement (Shechter, Durik, Miyamoto, & Harackiewicz, 2011). This should be considered minimal good practice for all educators in higher education. Yet it should be noted that this practice still focuses on extrinsic task values and therefore may simply postpone feelings of disengagement and boredom. A more effective approach is to provide students opportunities to develop their own ideas and meanings for why academic tasks are relevant to their lives, as this has a greater impact on interest and involvement as students internalize the value of the academic work at hand (Hulleman & Harackiewicz, 2009). This practice therefore should be considered a commonly used best practice for educators.

However, the findings of this study suggest that when task values become more abstract, students at worst may have no awareness of the essential "indirect relevancy" of their academic endeavors, and at best may struggle to articulate this relevancy. This level of abstraction is most prevalent in the first two years of

college when students often embark on their general education requirements that comprise the liberal education curriculum. For example, while faculty may see the development of critical thought and civic understanding as the most salient outcomes of a history class, the accounting student may contemplate on the age-old question, “Why do I need to take this class?,” as there seems to be no applicability of studying history to “doing” accounting.

Curriculum wide initiatives may be more effective at facilitating such indirect relevancy. Several universities have engaged in efforts to adopt a general education curriculum that includes courses that instill indirect relevancy. The University of Florida now offers a humanities course that focuses on relationships between students’ natural inclinations to explore their developing self-identities and the enduring philosophical questions such as, “What is The Good Life?” Such curriculum changes can help students abstract up and facilitate “indirect personal relevance.” When pre-pharmacy students reported difficulty in understanding the relevance of the physics prerequisite to the overall pharmacy curriculum at St. Louis College of Pharmacy, the faculty redesigned the course. The new learning objectives are to facilitate greater understanding of the human body as a means for comprehending principles related to physics, as well as critical thinking in general. This speaks to the participants notions of “indirect occupational relevance.”

Lastly, institution wide initiatives aimed at increasing students’ understanding of the learning outcomes of their courses and a college education can impact students’ ability to perceive the concrete and abstract relevancy of their academic work. The University of Georgia, for example, instituted a first-year seminar program aimed at introducing the purpose and importance of the academic enterprise to all incoming freshmen. All freshmen enroll in a seminar of their choice that is developed and taught by a tenured faculty member and that focuses on the research and teaching interest of that faculty. Faculty are called to encourage students to develop an awareness of the university’s mission, and the purpose of engaging in academic endeavors related to that mission. Butler University’s Liberal Arts Matters program has multiple initiatives aimed at transforming the student culture so that students have greater understanding and appreciation for how academic work, and the curriculum at large, facilitates abstract outcomes of a liberal education (i.e., problem-solving, critical thinking skills, and a civic mindset). Initiatives include essay contests in which students are invited to consider the relevance of liberal education outcomes, statements of academic relevance provided by each faculty member and posted on all syllabi, and an omnipresent college core values statement that pays tribute to the purpose

and aims of a liberal arts education. Such initiatives can be considered good faith efforts and best practices related to an institution’s attempt at being forthright and intentional regarding not only the educational process, but also the product that students can expect at the end of their endeavor.

### Limitations and Future Research

This study, as with all qualitative studies, has specific limitations regarding the generalizability of the findings. The sample, as with most qualitative studies, was small and not randomly selected. The participants were traditional-aged college students attending a competitive public research university. The results should be interpreted in this context. This sample represented students from a wide range of majors. Future studies might examine differences between majors, for example, liberal arts majors and business majors. Future studies might also examine the generalizability of these findings to different populations such as non-traditional or part-time community college students. Also, qualitative studies are inherently subject to the biases of the researchers. Although we attempted to minimize these biases through prolonged engagement with the data and member checks, possible bias due to our unique cultural perceptions should be recognized.

The six domains of relevancy that emerged in this study provide a template for exploring academic relevancy more closely in the future. However, a couple of the domains were underrepresented and thus lack depth and definitional clarity. For example, the domains of indirect academic and indirect occupational relevancy emerged from experiences shared by two to four participants. Future studies may focus specifically on examining these domains using a more directed qualitative research method such as direct content analysis using semi-structured individual interviews to garner more participant details regarding their experiences. As the concepts become more clear, steps can be taken to develop measurement tools with the goal of quantitatively exploring the extent to which both students and institutions of higher education are achieving their desired learning outcomes.

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# The Effect of Google Earth and Wiki Models on Oral Presentation Skills of University EFL Learners

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This article reports the results of an experimental study that investigated the effectiveness of Google Earth and Wiki tools in improving the oral presentation skills of English as a Foreign Language (EFL) learners and boosting their motivation for learning. The participants (n =81) are enrolled in writing classes at two English-medium institutions. The study employed the factorial mixed methods pre-test/post-test control group experimental design. The experimental conditions included the experimental group's use of Google Earth and Wiki dynamics in conducting research and delivering oral presentations whereas participants in the control group were given the regular oral presentation and the research paper instruction. The findings of the study underscored the effectiveness of the integration of Google Earth and Wiki into classroom practices. Google Earth and Wiki allowed active learning with information. As such, Google Earth and Wiki improved learners' oral presentation skills and perceptions. Wiki visualization devices and structure could increase scaffolding and collaboration. Google Earth could facilitate critical thinking and true spatial analytical operations. The integration of Google Earth and Wiki could promote student-centered learning and motivation.

Telecollaboration can be also defined as the integration of online communication tools into classes with the intention to improve learners' foreign language skills through collaboration (O'Dowd, 2015; O'Dowd & Ritter, 2006). Burniske and Monke (2001) also corroborated the significance of "...the telecollaborative projects as medium for learners' communication and an environment that fosters exploratory discourse rather than the recitation of homogenized thought" (p. 57). E-assignments improve the skills and the motivation of learners (Farshi & Safa, 2015). Google Earth is an efficient inquiry-based tool needed to rapidly discover valuable spatial and cultural information, resolve vital problems, and then convey the solutions to others (Nicholson-Cole, 2005). Wiki is also an innovative online tool that can improve competencies and provide quality education (Reich, Murnane, & Willett, 2012). Learners can employ wikis "...to publish homework assignments, maintain portfolios, peer review writing, post artwork, download music for rehearsals, and review drills for physical education" (Reich et al., 2012, p. 10). The Wiki model, with its features, discussion forum, pages, and projects, along with the Google Earth features and exploration tools will help learners improve their presentations. The use of both, Wiki and Google Earth, will facilitate the inquiry and exploration process and will help students collaborate and reflect their findings in an appealing manner. In alignment with the abovementioned, the study aims to address the gap in the extant literature review by investigating the effectiveness of the integration of Google Earth and Wiki tools in the classrooms to help students improve their oral presentation skills.

## 1.2 Statement of the Problem

Teachers need the pedagogical skills to carry out the necessary mentoring tasks of social constructivism

(O'Dowd, 2015). Social constructivism denotes acquiring knowledge which focuses on the importance of Lebanese culture and context constructing knowledge pertinent to the use of Google Earth to explore the tourist sites in Lebanon and the use of Wiki to present the project. In the Lebanese context, information communication technology (ICT) tools in general, and Wiki and Google Earth in particular, have not yet been used for improving the oral presentation skills of learners and for increasing their motivation for learning due to the slow digital adoption. Therefore, this study aimed at investigating how the Lebanese EFL learners and teachers could employ the designed Wikis and Google Earth to enhance university students' oral presentations skills and to increase their motivation. The study investigates the usefulness and the challenges of integrating Wiki and Google Earth as educational tools in EFL classrooms and their effect on students' attitudes towards EFL learning. Wiki and Google Earth ICT tools also provide the students with an opportunity to have more control over their learning and to extend learning beyond the traditional classroom walls while fostering a student-centered environment where learners can collaborate and learn at their own pace.

## Literature Review

### Theoretical Framework of the Study

The study was framed within active learning, social constructivism (Glaserfeld, 1995; Vygotsky, 1978), language development (Vygotsky, 1986), and situated learning (Lave & Wenger, 1991) theories. Social constructivism and language development assert that knowledge is vigorously acquired through social interaction, and individuals construct knowledge when

they interact with others (Glaserfeld, 1995; Vygotsky, 1986). Vygotskian sociocultural theory underscores that the technology-supported learning environment is determined by the sociocultural context of the classroom and a communicative framework based on achieving higher-order learning outcomes using computers. A social learning network integrates the "...innovative pedagogy through internet-connected communities, digital resources, and a series of Web 2.0 tools that empower students to master the curriculum and to learn issues beyond the classroom" (DiScipio, 2008, p. 10). Teachers also scaffold the construction of knowledge in telecollaborative classrooms (Lewis, Chanier & Youngs, 2011; Pegrum, 2009). Therefore, the structure of the Wiki fosters a collaborative learning environment with the aim to reduce time and resource constraints (Kovacic, Bubas, & Zlatovic, 2007). The internet search engines in general provide the learners with the learning resources which help students to engage in producing their own projects, and Wiki increases motivation to work on interesting collaborative projects (Larson, 2010). Google Earth, through using visuals, increases students' geographic awareness while developing problem-solving and inquiry skills (Patterson, 2007).

### **Google Earth as Interactive, Collaborative Technological Tool in ESL Learning**

Technology might widen learners' knowledge and enable learners to apply external learning to situations presented within the classroom (Cates, Price, & Bodzin, 2003, p. 155). There is a need for short, mid and long-term goals in higher education in order to ensure having innovative environments. First, allowing students to bring their own devices should be one of the short-term goals. Then supporting "Virtual Reality" and "Makerspaces" should be a midterm goal, while having "Affective Computing Robotics" should be a long-term goal in order to ensure innovation in HE classrooms (Becker, Freeman, Hall, Cummins & Yuhnke, 2016, p. 6). EDUCAUSE offers a toolkit to help "...universities, colleges, not-for-profits, and organizations that serve the higher education landscape in assessing their policy environment to create better policies that reward innovative behaviors" (NMC Report, 2016, p. 13). As such, Google Earth, a free application, "...utilizes satellite imagery, maps, and terrain information to create a global view of the world. Google Earth users can access additional information, such as historic imagery, panoramic photos, locations of national parks, and ecosystem data" (Guertin & Neville, 2011, p. 1). Google Earth is an entertaining tool which incorporates appealing visuals, which in turn make learning enjoyable. Google Earth provides the learners with the uses of atlases in addition to extending

the interactive components in apparently endless dimensions. However, unlike atlases, Google Earth provides a collaborative forum through the Keyhole Bulletin Board System (BBS). Google Earth provides the user with information related to a place, increases the level of interactivity, and enhances the user's experience as a novice explorer (Patterson, 2007). Using Google Earth, teachers can plan lessons which help learners understand the natural and cultural phenomena while using an interactive tool with vital applications and features critically explaining the place, movement, and regions (Guertin & Neville, 2011).

### **Wiki as an Interactive, Collaborative Technological Tool in ESL Learning**

Technology may contribute to promoting learners' autonomy and to increasing students' motivation since it provides learners with the opportunity to work at their own pace (Beatty, 2003; Owston, 1997; Skinner, 1968; Valmont, 2000). Institutions such as universities should create new policies that reinforce innovative tasks based on the integration of technology into classrooms (Johnson et al., 2016). As such, Wikis will be a good model to be used in university classes as they support instruction (Reich, Murnane & Willett, 2012), provide collaborative learning forums (Miyazoe & Anderson, 2010), and enhance learning in an anxiety-reduced environment (Kuteeva, 2011). "...[O]nline experiences may enhance face-to-face experiences, and vice versa" (Bransburg, 2002, p. 3). The computer-assisted language learning tools may result in increased collaboration and inquiry-based learning (Brush & Uden, 2000) and in boosted motivation (Morrow & Gambrell, 2001). In a study that sampled 255 public school Wikis, Reich and colleagues (2012) concluded that Wikis provided effective instruction for grades K-12: "...Wikis were used not just in computer classes; they supported instruction throughout the curriculum" (p. 10). Wikis also provide collaborative learning forums that facilitate scaffolding, increase learning (Miyazoe & Anderson, 2010), and enhance student writing, observation, and text analysis in an anxiety-reduced environment (Kuteeva, 2011).

### **Research Questions**

There is scarcity in the literature pertinent to innovative oral presentation skills instruction. This study is based on the premise that Wiki and Google Earth contribute to the oral presentation skills of students as well as increase their motivation for learning in university EFL classrooms. The study addressed the following questions:

1. What is the relative effect of using the Google Earth tool in comparison with the control group regular instruction and the Wiki tool on

improving the oral presentation skills of university EFL learners?

2. What are the perceptions of the experimental group participants of using the Google Earth and Wiki technological models in a Study Skills class?

### Method

#### Design

The study employed a factorial mixed methods pre-test/post-test control group experimental design whereby the treatment conditions (control versus experimental) were used respectively as independent and moderator variables and the participants' research skills and oral presentation skills as dependent variables. The experimental conditions included application of the Google Earth and Wikis dynamics, whereas participants in the control group were instructed according to the regular procedures of their class. Three classes were randomly assigned to control, and two experimental conditions and the treatment continued for six weeks of instruction at the rate of 4 class periods per week to teach the oral presentation presentation skills.

#### Participants

The study was conducted at two private leading institutions in the Middle East. A convenient sample total of 81 EFL learners was randomly assigned to control and experimental conditions. Wiki and Google Earth mediation were newly integrated into the instruction given at the two experimental classes at the two private universities. The control group participants were unaware of the use of Wiki and Google Earth instruction. The experimental group sample using Google Earth included 11 males and 16 females, while the experimental group sample using Wiki included 11 males and 16 females. The control group sample included 11 males and 16 females. All the participants are native speakers of Arabic who received the treatment for a period of 6 weeks while studying study skills, including oral presentation skills of different tourist places in the world at a rate of 3 hours per week in accordance with the curriculum requirements proclaimed by the university program. A total of 81 students had been assigned the successful fulfillment of the Study skills course with two fundamental requirements: delivering oral presentation and conducting research aiming at developing the cultural awareness of the learners. The participants were 27 students in the control group and 54 in the experimental groups, and the age of the participants ranged from 19- 23 years.

#### Instruments

Two instruments were used to collect data and measure the variables of oral presentation skills and perceptions under investigation. These included an oral presentation skills rubric and reflection logs. The oral presentation skills rubric had its validity reported by NCTE/IRA. The rubric was used to measure the pre-test and post-test presentation skills of the participants in the control and experimental groups. Finally, reflection logs investigated the participants' perceptions of their experience in using Google Earth and Wiki tools. The rubric comprised five main sections: organization, topic knowledge, audience adaptation, language use, and nonverbal effectiveness. Three experienced teachers of EFL, each with more than six years of in-service teaching of EFL, were selected to evaluate the pre-and post-oral presentation tasks of the participants and agreed on reporting a score out of 100.

#### Wiki and Google Earth-Based Instruction

The experimental Wiki and Google Earth-based Instruction addressed the following Technology (ISTE) Standards: "creativity and innovation, communication and collaboration, research and information fluency and critical thinking, problem solving, and decision making." The ISTE Standards are standards for the integration of technology in teaching and learning, and they are published by the International Society for Technology in Education (ISTE) (Martin, 2015). The Wiki and Google Earth-based Instruction lasted for six weeks at the rate of three contact hours of instruction per week. The study participants of both the control and experimental groups were asked at the very beginning of the course to present, in groups of 4, a project on the tourist sites they like in a certain place. After collecting the pre-test scores, the project and the presentation instructional components of the control group consisted of regular research writing and PowerPoint presentation practices. Meanwhile, the two experimental groups' participants received instruction employing the use of Wiki in one experimental group and Google Earth in the second. Given directions for using Google Earth, the Google Earth experimental group participants practiced project writing and presentation through using the Google Earth procedures to incorporate recorded tours, maps, audio podcasts, pictures, screenshots, land masses, events, heritage, and other physical features provided by Google Earth. When using Google Earth, learners could send e-mail attachments or screenshots of the current Google Earth view; save, send, or share pictures; record the tour; and view historical imagery and all the places and events related to any particular region (See Figure 1.).The Wiki experimental group learners practiced project writing and presentation through the Wiki tool, which involved using computers to collaborate with each other to discuss and

Figure 1  
*A Sample of a Wiki Page Post*

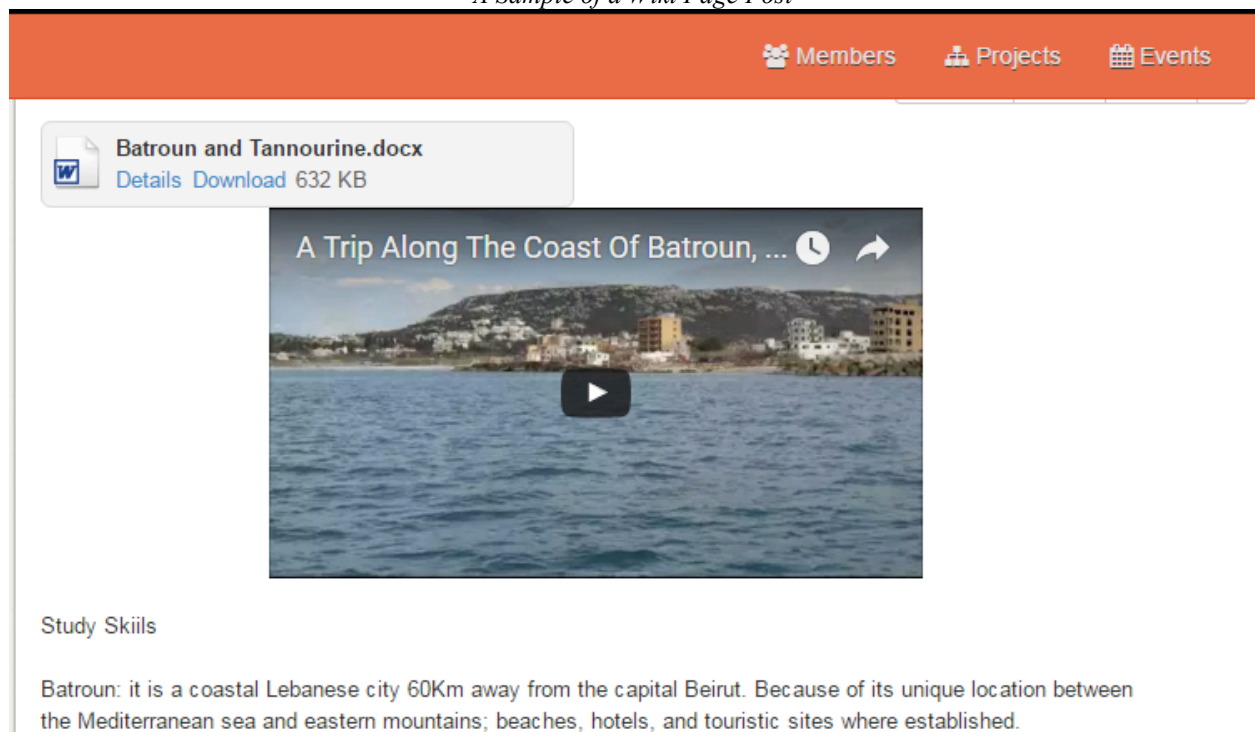
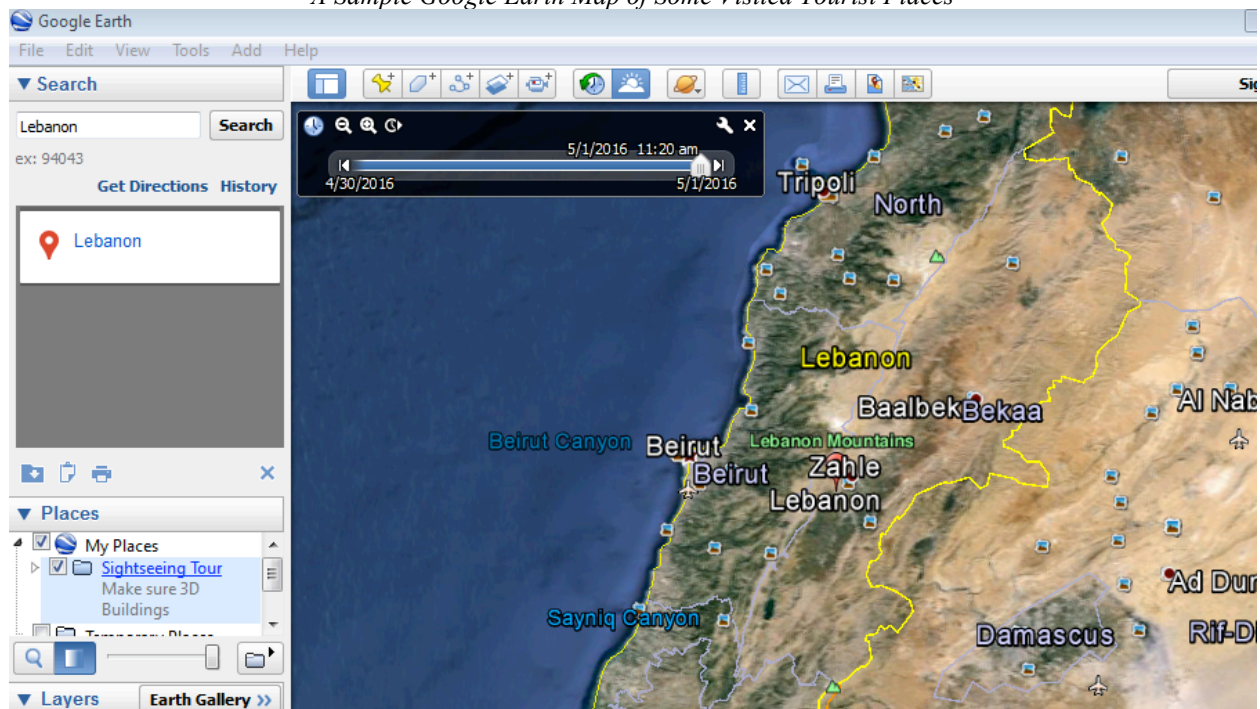


Figure 2  
*A Sample Google Earth Map of Some Visited Tourist Places*



exchange information on the identified historical sites, to note the problems encountering tourism inside different countries, and to eventually give recommendations through digital, written collaboration with community members. Using Wiki pages, learners could insert interesting videos, pictures, text, word files, and PowerPoint presentations, as well as send and receive private messages (See Figure 2.).

### Data Analysis

Descriptive statistics (means and standard deviations) were calculated based on the pre-test and post-test performance scores of participants in the control and experimental groups. The study employed a factorial mixed methods experimental design whereby the treatment conditions (control versus experimental) were used respectively as independent and moderator variables and the participants' oral presentations as dependent variables. Additionally, content analysis was employed as the method of data analysis of the qualitative data collected from learners' written reflection logs about their perceptions of the Google Earth and Wiki experiences. The reflection logs were employed to write up the study results describing participants' perceptions.

## Results

### Testing the Questions Pertinent to Oral Presentation Skills

A series of hypothesis tests using different statistical tools (paired t-tests, Single Factor ANOVA, Two Factor ANOVA, and Chi-Squared tests) were done. The null and alternative hypotheses along with the conclusions of the tests were reported. In summary, a significant difference in the pre- and post-test scores was reported which indicated a significant difference between the Wiki and Google Earth instruction and that of the control group. This difference was found consistently across the tests through examining the mean post-test score, the mean difference between post and pre-tests, and the study of those scoring more than 75 and those scoring more than 85. The Wiki and Google Earth tools yielded the same average post-test score as per a two-sample t-test (See Tables 1, 2, 3, 4, & 5).

At a p-value of 0.288283, the averages of the pre-test scores were 79.77778, 81.66667, and 79.92593 respectively for the control, Wiki, and Google Earth groups (see Tables 1 & 2). The averages of the post-test were 76.6, 82.9 and 85.6 respectively for the control, Wiki, and Google Earth groups; the standard deviations of the post-test were 2.3, 3.9 and 2.5 respectively for the control, Wiki and Google

Earth groups. Tested using ANOVA: Single Factor, the comparison of post-test scores across the three groups showed that the study rejected H0: there was a difference in the mean post-oral presentation test scores across the three groups (See Table 5). There was a difference in the scores of the pre-test relative to the post-test of the Google Earth experimental group. Tested using a two-tailed paired t-test, the *P-value* is 0.288283, which indicates a significant result, and the mean difference between the groups is 29.79012, whereas the mean difference within the groups is 23.57075 (see Tables 1 & 2). Tested using a two-tailed paired t-test at a *P-value* 3.09389E-11 and a t-test 10.60222, the study rejected H0. There is a difference in the scores of the pre-test relative to the post-test. Testing using Pairwise Tests, the study failed to reject H0. There was no difference in the average post-test scores of the Wiki group and the Earth group. Tested using a two-tailed paired t-test, at a *P-value* of 0.298368 and a T test of 0.535675, the study rejected H0: There is no difference between the average post-test scores for students in the Wiki group and students in the Google Earth group and accepted H1: There is a difference.

### Findings on Perceptions of Google Earth and Wiki Presentation Experience

The results of the content analysis of qualitative data from reflective logs about learners' experience with the Google Earth and Wiki suggested three themes: 1) the significance of using Google Earth and Wiki models in conducting and presenting research; 2) the usefulness of Wiki in sharing information, boosting collaboration and communication, raising cultural awareness, and improving presentation skills, and 3) the significance of Google Earth and Wiki educational tools in teaching EFL presentation skills in general and project presentations in particular. Specifically, the theme of the significance of the Google Earth and Wiki emerged from the data as many learners in the experimental group expressed their positive perception of the experience. The samples of the learners' reflection logs on Google Earth were as follows:

- "Google Earth is credible, easy to use."
- "Google Earth gives accurate measures and routes, and it is accessible from all devices."
- "Using Google Earth, people can easily look for places. Information is added for tourist places, and people can get information they never knew about."
- "Google Earth and Wiki facilitate students' life; they have a lot of varieties; they provide challenges and rewards, and people can look for other opinions."
- "Google Earth is easy to access, [find] lots of information, [and] see parts of the world."

Table 1  
*Summary of Pre-test Scores*

Groups	Count	Sum	Average	Variance
Control	27	2154	79.77778	22.41025641
Wiki	27	2205	81.66667	19.92307692
Earth	27	2158	79.92593	28.37891738

Table 2  
*ANOVA*

Source of Variation	SS	dt	MS	F	P-Value	F-Crit
Between Groups	59.58025	2	29.79012	1.26385979	0.288283	3.113792
Within Groups	1838.519	78	23.57075			
Total	1898.099	80				

Table 3  
*ANOVA Single Factor*

SUMMARY		Sum	Average	Variance
Groups	Count			
Control	27	171	6.333333	38.69230769
Wiki	27	174	6.444444	29.02564103
Earth	27	131	4.851852	32.05413105

Table 4  
*Post Test Results*

Row Labels	Control	Earth	Wiki	Grand Total
F				
Average of Post-Test	76.6	85.6	82.9	81.7
StdDev of Post-Test	2.3	2.5	3.9	4.8
M				
Average of Post-Test	76.1	82.3	83.9	80.8
StdDev of Post-Test	3.7	2.1	2.5	4.4
Total Average of Post-Test	76.4	84.2	83.3	81.3
Total StdDev of Post-Test	2.9	2.8	3.4	4.6

Table 5  
*Summary of Post-test Scores*

Groups	Count	Sum	Average	Variance
Control	27	2063	76.40741	8.250712251
Wiki	27	2250	83.33333	11.38461538
Earth	27	2274	84.22222	7.948717949

- “...after checking Google Earth, I have discovered that it has a lot of advantages but disadvantages too on the other side. The advantages of Google Earth are: it can make

you explore and see the places you love or want to go to from[for] a better perception. It has many languages – easy to use – has time lapses – accessible without internet connection.”

- “Google Earth is a good technological tool for being able to reach infinite distances with a press of a button.”
- “Google Earth makes you discover places, streets, buildings, sites, and much more.”
- “You [save] a lot of time using Google earth rather than searching for places on the web.”
- “Google Earth gives high resolution images and dimensions.”
- “Google Earth facilitates your work, shows you regions, [is] easy to [access], and . . . is fun.”
- “Google Earth is very good for finding common locations easy; the resolution is very [good]. You can see the streets and buildings in a clear way that feels almost lifelike in a 2D way.”

Concerning Wiki, the logs were as follows:

- “Wiki can enable us to access various courses, connects colleagues together, and enhances our projects material, and Wikis are a good entertainment means.”
- “... Wiki has many good uses: connecting people through mails; opening easy chats and exchanging pictures, files, and info; and improv[ing] communication skills with others in a more professional manner.”
- “Wiki ensures easier access and communications for group members and [the] group leader. Better resources and communication skills. It could boost confidence and self-esteem.”

On the other hand, a few participants highlighted some disadvantages for using Google Earth and Wiki:

- “Using Google Earth, some regions are not accurately visualized; some pictures are outdated; everyone can access it and add photos.”
- “Sometimes Google Earth tends to mix locations up and you might be searching for a place in Lebanon and end up in Korea by mistake. Google Earth also has specific spelling for certain places that we might not know of, thus making finding the place harder.”
- “Google Earth takes time to load- pictures; unupdated (updated) information isn't available for certain regions - downloading it is a hassle.”
- “Google Earth gives some information which is false. Some places are getting more importance than other touristic sites...”
- “As for the use of Wiki, it requires too much information- only can access Wiki via the internet.”

- “Wikis are complicated to use, not very popular in Lebanon and doesn't have a mobile app.”
- “One can access Wiki using the internet. It's not a common application, so people are not familiar with its functions.”

### Discussion

The study results proved to be positive given that the learners who produced EFL presentations using the Google Earth and Wiki outperformed their counterparts who produced the same content according to the dynamics of regular research paper presentation. These findings corroborate those of O'Dowd (2015); Reich and colleagues (2012); DiScipio (2008); Kovacic and colleagues (2007); Miyazoe and Anderson (2010); Kuteeva (2011); Guertin and Neville (2011); Farshi and Safa (2015); Peterson and Kennedy (2006); Ducate, Anderson, and Moreno (2011); and Li and Zhu (2013), all of whom have reported that Wikis could be vital for language teachers because Wikis could help learners improve learners' skills and motivation for learning. The findings of the study also corroborated those of Guertin and Neville (2011), Patterson (2007), and Nicholson-Cole (2005), who asserted the importance of Google Earth as an efficient tool which facilitates critical thinking and active learning through information. However, the present study doesn't corroborate the findings of Patterson (2007), who reported constraints of using the Google Earth as having limited capabilities in supporting true spatial analytical operations.

A probable explanation of the perceived effectiveness of Google Earth and Wiki, as well as the positive perceptions of the Google Earth and Wiki projects and presentations, could be attributed to the opportunities for students to be fully engaged while conducting research and delivering oral presentations. Therefore, the present study adds to the literature in that it asserts that Wikis and Google Earth tools improve the learners' oral presentation skills when presenting their projects. EFL instructors are encouraged to use the Wiki and Google Earth tools in order to achieve the cognitive and non-cognitive outcomes of their curriculum. Teachers can integrate the Google Earth tool in classrooms to teach students how to search and discover a variety of Earth related topics, facilitate the exploration of the geographic occurrences, improve students' oral presentation skills, and raise the cultural awareness of learners whose research projects pertain to the exploration of locations, places, and events. Moreover, the Wiki tools improve communication and collaboration skills of learners whose creativity and motivation will be tremendously enhanced by the variety of visualization devices allowed by the Wiki tool. Scaffolding provided by the Wiki page allows the



more learned and more skilled to help and support the less learned and less skilled learners who share the same Wiki page. Above all, the structure of Wiki builds the positive competition among the participants who can easily access and view the Wiki pages of their peers. As such, using Google Earth and Wiki, the teachers can easily emphasize the basic concepts and key ideas of the required themes; learners, using the Wiki and Google Earth tools, will collect, analyze, and interpret data. The photos and videos posted by Google Earth can show an event and help students learn about the event, and students can write analyses of its implications, which provide students with an implied understanding of spatial information while promoting critical thinking, analysis, writing skills, and oral presentation skills. Wiki facilitates the teacher's preparation and saves time that can be tremendously shortened, and Wiki discussion forums can tremendously assist the learners to evaluate the data's accuracy and applicability. The study has practical significance in enhancing the quality of English instruction covering research and oral presentation skills, an area of research that is still underdeveloped. As indicated earlier, the research context of the present study is two private institutions in Lebanon, which is characterized by enrolling students with good opportunities to use ICT tools in daily life. English is considered an important international language in Lebanon to be studied starting with kindergarten and up to postgraduate studies, especially now that computers are available and used in the classrooms of many private institutions, including the sites of the present study. More importantly, the present study is significant as there is scarcity in the studies conducted to investigate the effectiveness of Wiki and Google Earth tools in such a context.

### Limitations

Further research with a larger and more representative sample size should be conducted in order to test the generalizability of the findings, as well as to examine the interaction of the treatment effects—with other contextual variables such as students' level of language presentation skills and technology apprehension.

### Conclusion

The findings of the study revealed that the Google Earth and Wiki technological tools could be useful in improving learners' oral presentation skills, motivation, and interest in research projects. It is probable in the future that Google Earth and Wiki as CALL tools would continue to be significant tools in teaching research and presentation skills. As such, language teachers should be fully aware of how CALL tools in

general, and the Google Earth and the Wiki tools in particular, can benefit language teaching, research project and oral presentation skills, and learning outcomes. Wiki might be a vital ICT tool which has great potential for interaction, collaborative skills, and project processing. Wikis stimulate peer interaction and expedite the dissemination of knowledge among learners working at their own pace in an anxiety-reduced environment. Wiki and Google Earth tools promote collaborative learning exercises which are student-centered and allow learners to participate in making decisions pertinent to their own learning. Users of Wiki and Google Earth can visit, upload pictures, and change and update the content (text and pictures) as they consider fit. More importantly, the Wiki model allows learners to use the functionality called "open editing" while working on a collaborative project, and it develops the learners socially while collaborating with their more skilled peers. Furthermore, the Wiki model allows the teacher to post different materials, texts, pictures, PowerPoints, and videos which would enhance students' criticality and meet students' needs. In this context, it is highly recommended to conduct further research investigating the significance of Wiki in promoting inquiry and problem-solving skills. The Google Earth model aims at enhancing learners' involvement in online content creation with special focus on developing autonomous learning skills. The structure of Google Earth allows for creative work using lively pictures and events. As such, it is also recommended to investigate the significance of Google Earth in improving the digital narrative skills of learners. Above all, it is crucial for ESL and EFL teachers to use Google Earth and Wiki models to ensure motivation, creativity, and innovation in classrooms, especially given that today's learners prefer utilizing Internet engines for learning resources, although they might experience great anxiety and speaking apprehension during oral presentations; however, the interesting nature of Wiki and Google projects might engage learners, increase their motivation for learning, and allow them the entire learning experience in an anxiety-reduced environment.

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## Appendix

## Oral Presentation Rubric as adapted from



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## Oral Presentation Rubric

TRAIT	4	3	2	1
<b>NONVERBAL SKILLS</b>				
EYE CONTACT	Holds attention of entire audience with the use of direct eye contact, seldom looking at notes.	Consistent use of direct eye contact with audience, but still returns to notes.	Displayed minimal eye contact with audience, while reading mostly from the notes.	No eye contact with audience, as entire report is read from notes.
BODY LANGUAGE	Movements seem fluid and help the audience visualize.	Made movements or gestures that enhances articulation.	Very little movement or descriptive gestures.	No movement or descriptive gestures.
POISE	Student displays relaxed, self-confident nature about self, with no mistakes.	Makes minor mistakes, but quickly recovers from them; displays little or no tension.	Displays mild tension; has trouble recovering from mistakes.	Tension and nervousness is obvious; has trouble recovering from mistakes.

COMMENTS:

<b>VERBAL SKILLS</b>				
ENTHUSIASM	Demonstrates a strong, positive feeling about topic during entire presentation.	Occasionally shows positive feelings about topic.	Shows some negativity toward topic presented.	Shows absolutely no interest in topic presented.
ELOCUTION	Student uses a clear voice and correct, precise pronunciation of terms so that all audience members can hear presentation.	Student's voice is clear. Student pronounces most words correctly. Most audience members can hear presentation.	Student's voice is low. Student incorrectly pronounces terms. Audience members have difficulty hearing presentation.	Student mumbles, incorrectly pronounces terms, and speaks too quietly for a majority of students to hear.

COMMENTS:

<b>CONTENT</b>				
SUBJECT KNOWLEDGE	Student demonstrates full knowledge by answering all class questions with explanations and elaboration.	Student is at ease with expected answers to all questions, without elaboration.	Student is uncomfortable with information and is able to answer only rudimentary questions.	Student does not have grasp of information; student cannot answer questions about subject.
ORGANIZATION	Student presents information in logical, interesting sequence which audience can follow.	Student presents information in logical sequence which audience can follow.	Audience has difficulty following presentation because student jumps around.	Audience cannot understand presentation because there is no sequence of information.
MECHANICS	Presentation has no misspellings or grammatical errors.	Presentation has no more than two misspellings and/or grammatical errors.	Presentation has three misspellings and/or grammatical errors.	Student's presentation has four or more spelling and/or grammatical errors.

COMMENTS:

## Educational Cloud Services and the Mathematics Confidence, Affective Engagement, and Behavioral Engagement of Mathematics Education Students in Public University in Benue State, Nigeria

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This study investigated the impact of cloud services on mathematics education students' mathematics confidence, affective engagement, and behavioral engagement in public universities in Benue State, Nigeria. Ex-post facto research design was adopted for the study. The instrument for the study was the researcher-developed Cloud Services Mathematics Attitude Scale - CSMAS (Cronbach Alpha Coefficient = 0.92). The CSMAS was administered to a sample of 328 mathematics education students drawn from the two public universities having operational cloud service delivery system in Benue State. Mean and standard deviation were used to answer research questions while t-test was used in testing the hypotheses. In-depth analysis of data revealed that there is a positive high level of impact of cloud services on the mathematics confidence (cluster mean = 2.85), affective engagement (cluster mean = 2.87) and behavioral engagement (cluster mean = 2.92) of mathematics education students in public universities in Benue State. The t-test analysis of mean attitude ratings established a statistically significant difference between the public universities; as well as male and female students. The outcome of this study has shown that the adoption of cloud services for augmenting learning results in strong positive mentality and confidence among mathematics education students in public universities in Benue State.

Education has always been considered as a means through which a society communicates its norms, values, and morals to her young ones to ensure active participation in the society (Iji, Abah & Uka, 2013). Education imparts knowledge, teaches skills, and instills attitudes to the recipients (Ifenkwe, 2013). Singh (1991) maintained that in its widest sense, education is at a cross-roads of societal development and knowledge, and importantly, of dynamic change processes and the capacities to make choices.

Education is at the center of social and economic development because it provides knowledge and skills, encourages new behavior, and increases individual and collective empowerment. Edukugho (2012) observed that educational institutions exist to impart high-level skills to a reasonable proportion of the workforce; develop the intellectual capability of individuals; and engage training of competent, honest, patriotic and responsible professionals needed virtually in all spheres of human endeavor. Intellectual institutions are knowledge generators, centers of innovation, and importantly, service centers for their communities, facilitating and promoting change and development.

Mathematics education is a field of study concerned with the tools, methods and approaches that facilitate the practice of teaching and learning mathematics. Mathematics education, particularly at the higher education level, prepares students for quantitative and symbolic reasoning and advanced mathematical skills through general education, services, and major and graduate programs. Odili (2012) argued that mathematicians can be categorized into two

groups: mathematics educators and professional mathematicians. The mathematics educator is concerned with curriculum development, instructional development, and the pedagogy of mathematics. Mathematics education basically prepares students to become innovative mathematics instructors, professionally prepared to communicate mathematics to learners at all levels.

Mathematics educators see mathematics not simply as a body of knowledge or an academic discipline but also as a field of practice. According to Kilpatrick (2008) this is because they are concerned with how mathematics is learned, understood, and used as well as what it is, they take a comprehensive view. Mathematics education looks beyond applications to ways in which people think about mathematics, how they use it in their daily lives, and how learners can be brought to connect the mathematics they see in school with the mathematics in the world around them.

Present-day mathematics education is reactive and future-oriented. It actively promotes innovation amid dynamically evolving social needs (Singh, 1991). Education has risen to become the fulcrum on which the competitiveness of the nation in the global community rests. Higher education, therefore, must be tailored towards success in communities and workplaces. To attain success, emphasis must be placed on higher education that develops in the individual a high sense of global awareness; financial, economic and business literacy; civic literacy; and technological prowess (Partnership for 21<sup>st</sup> Century Skills, 2002). This calls for efficient integration of modern

technology in strategies for communicating knowledge in general, and mathematics education in particular, to a new generation of students.

### Cloud Use

One of the specific ways technologies is enhancing present day mathematics teaching and learning is through the utilization of the cloud. The cloud is a set of hardware, networks, storage, services, and interfaces that enable the delivery of computing as a service (Hurwitz, Bloor, Kaufman & Halper, 2010). Cloud services include the delivery of software, infrastructure and storage over the internet, reducing cost and providing flexibility and mobility (Kovachev, Cao & Klamma, 2011). These services are delivered via the internet from high-specification data centers in locations remote from the end user.

The educational cloud involves all the learning students carry out on mobile phones, smartphones, tablets, palmtops, laptops, and PCs while connected to wi-fi. It may include downloading materials for assignments and research, studying online, and other individualized learning done via connectivity to the wireless cloud within the campus or elsewhere. The cloud services of public universities provide mathematics education students access to infrastructure and content, increased openness to new technologies, and general support for teaching and learning. With such support readily available, students' perspectives of mathematics, which have been usually attested to be skeptical, may be influenced.

Attitude itself is defined as the positive or negative emotional disposition towards a subject (Gomez-Chacon & Haines, 2008). It represents an emotional response, beliefs regarding the subject, and behavior towards the subject. Specifically, mathematics attitude has been described as aggregated measures of liking or disliking mathematics, a tendency to engage in or avoid mathematical activities, a belief that one is good or bad at mathematics, and a belief that mathematics is useful or useless (Neale, 1969 as cited in Chapman, 2003). It refers to the way one uses general capacities that are relevant for mathematics—such as mental openness, flexibility when seeking solutions to a problem, reflective thinking—aspects which are all more closely related to cognition than affect (Palacios, Arias & Arias, 2014). Attitudes are learned; they are moldable and may change with experience of the stimulus objects and with rules or institutions (Binder & Niederle, 2007).

Engendering positive attitudes in mathematics education students is an implicit objective of many mathematics education programs. Over the years the disposition of students towards mathematics has been very discouraging (Saritas & Akdemir, 2009). This has been linked to the myth that mathematics is difficult

and hardly needed in life careers (Okafor & Anaduaka, 2013). Also, the fact that employment anxiety among higher education students has been on the increase has contributed to the negative attitude of mathematics education undergraduates towards the discipline.

Gaining insights into student attitudes and beliefs has been described as the most important and crucial step in understanding how the learning environment for mathematics is affected by the introduction of computers and other technology. Modern pedagogies of mathematics education lay emphasis on adoption of active-learning strategies that put students in charge of their own learning. Such instructional strategies entail the efficient blend of technologies in the teaching and learning process. Cloud technology in particular lets both the teachers and students stay abreast of current issues in mathematics education while enriching the learning experience.

The ICT Directorates of public universities are usually charged with the responsibilities of anchoring these cloud services. This provision of standard internet services must have influenced the way mathematics education students perceive their discipline. The issue then was, do the availability of cloud services in public universities in Benue State affect students' attitude towards mathematics education? Specifically, how has the educational cloud affected the mathematics confidence and the affective and behavioral engagement of mathematics education students? Would its impact on attitude of mathematics education students be associated with gender?

### Literature Review

Mathematics is an aid in representing and attempting to resolve problem situations in all disciplines. It is an interdisciplinary tool and language (Moursund, 2014). Mathematics education concerns the activity or practice of teaching mathematics (Ernest, 2014). According to O'Brien (2002) mathematics education is a good school of thinking. Doing mathematics entails building the right attitude for problems, ranging from simple to more complicated ones. One of the aims of mathematics education is to develop in society the general attitude of customization of mathematical principles to satisfy human needs (Dudley, 2010).

Students' attitudes toward mathematics reflect the pattern of beliefs and emotional dispositions associated with mathematics (Zan & Di-Martino, 2007). It is the positive or negative degree of affection towards the subject mathematics. Whitin (2007) maintains that what students believe about mathematics influences what they are willing to say publicly, what questions they are likely to pose, what risks they are willing to take, and what connections they make to their lives outside the classroom. Attitude entails confidence and engagement.

How students feel about mathematics is an outcome that is heavily dependent on the local culture and context, age and stage (Pierce, Stacey & Barkatsas, 2007).

Attitudes towards mathematics have been described as inclinations and predispositions that guide an individual's behavior in mathematics (Mohamed & Waheed, 2011). Learners form views about their own competence and learning characteristics, which have considerable impact on the way they set goals, the strategies they use, and their achievement (Zimmerman, 1995). Chamberlin (2010) posited that attitude towards mathematics comprises components such as mathematics confidence, affective engagement, and behavioral engagement.

Mathematics confidence is a measure of students' personal belief in their own ability to handle learning situations in mathematics effectively, overcoming difficulties (Mohamed & Waheed, 2011; Santos & Barmby, 2010). Mathematics confidence affects students' willingness to take on challenging tasks and to make an effort and persist in tackling them.

Generally, engagement in mathematics refers to students' psychological investment in, and effort directed toward, learning, understanding, or mastering the knowledge, skills, or crafts that academic work is intended to promote (Santos & Barmby, 2010). In the mathematics classroom, engaged students are actively participating, genuinely valuing, and reflectively involved in deep understanding of mathematical concepts, applications, and expertise (Attard, 2012). Affective engagement is students' own interest and enjoyment of mathematics, as well as reactions to external incentives (Organization for Economic Co-operation and Development - OECD, 2004). Subject motivation is often regarded as the driving force behind learning. Interest in, and enjoyment of, mathematics is a relatively stable orientation that affects the intensity and continuity of engagement in learning situations, the selection of strategies, and the depth of understanding.

Students are active participants in the learning process, constructing meaning in ways shaped by their own prior knowledge and new experiences. Behavioral engagement in mathematics refers to students' disposition to manage their own learning by choosing appropriate learning goals, using their existing knowledge and skills in mathematics to direct their learning, and selecting learning strategies appropriate to the task in hand (OECD, 2004). To do this they must be able to establish goals, persevere, monitor their progress, adjust their learning strategies as necessary, and overcome difficulties in learning. According to Abd-Wahid and Shahrill (2014), behavioral engagement is expressed in dimensions such as attentiveness, diligence, time spent on task, and non-assigned time spent on task. Behavioral engagement draws on the idea of participation; includes

involvement in academic, social, or extracurricular activities; and is considered crucial of achieving positive academic outcomes and preventing dropping out (Fredricks & McColskey, 2012).

Another perspective in the literature considers attitude towards mathematics as being unique. Palacios et al. (2014) mentioned that attitude towards mathematics also refers to the valuation, the appraisal, and the enjoyment of mathematics, underlying the affective facet more than the cognitive one. Attitude towards mathematics is a predisposition to respond favorably or unfavorably to mathematics. This perspective, according to Abedalaziz, Jamaluddin and Leng (2013) implies that attitudes possess cognitive (beliefs, knowledge, and expectations), affective (motivational and emotional), and performance (behavior or actions) components. In this regard, some works have found that students with better attitudes towards mathematics have higher perceptions of the utility of mathematics, denoting intrinsic motivation towards study (Perry, 2011); they have a better mathematical self-concept (Hidalgo, Maroto & Palacios, 2005); they are more confident they can learn mathematics (Rusinov, 2012), and, especially, they display approach behaviors towards mathematics (Fennema & Sherman, 1976 in Pierce et al., 2007).

Several attempts to measure attitude towards mathematics have shed further light on the components of attitude. In a review by Palacios et al. (2014), it was observed that these components started out as broad aspects such as pleasure and fear of mathematics. These subscales were considered the extreme poles of the same continuum, leading to the introduction of factors like enjoyment of mathematics, value of mathematics, mathematical motivation, and utility of mathematics. One vital contribution in identifying constituents of attitude towards mathematics came from Tapia and Marsh (2004). Their Attitude Towards Mathematics Inventory (ATMI) attempts to assess six aspects of attitude: confidence (i.e., self-concept, anxiety, utility), the value of mathematics, motivation, the enjoyment of mathematics, parents' expectations, and teachers' expectations.

Attitudes toward mathematics have the potential to be modified. Larsen (2013) observed that the learning environment, teacher quality, and meaningful teaching methods have been considered as factors of change in studies on modification of attitude. This implies that the introduction of technological tools into the learning environment to aid teaching and learning of mathematics has the potential to influence the way students view mathematics. A study by Dix (1999) generated results that support the efficacy of technological tools in modifying students' attitude towards mathematics. The study observed that the use of computer-based technology in mathematics does appear to positively influence student motivation. But

the extent to which specific computer technologies improve students' attitude towards mathematics education enjoys little coverage in the body of available literature. The role of cloud services, in particular, on students' attitude towards mathematics education in Nigerian public universities is yet to be verified.

Despite speculated claims, the subject of gender difference is of grave concern with no clear-cut answer as to the questions of sex disparities in mathematics (Halpern, Benbow, Geary, Gur, Hyde & Gernsbacher, 2007). After considering evidence from studies of infants, children, and adults, Spelke (2005) maintained that available data yields little support to these claims. The psychologist added that although research on older children and adults has revealed differences between the performance of males and females on specific cognitive tasks, her research provides no evidence for sex differences in overall aptitude for mathematics at any point in development. She further expounded that research on selected groups of highly talented students reveals some disparities in performance on speeded tests of quantitative reasoning, but highly talented male and female students also show equal abilities to learn mathematics.

Fatade, Nneji, Awofala, and Awofala (2012) hold a different perspective. They assert that mathematics is considered a male dominated domain from which females tend to shy away. Males tend to "show a natural positive attitude to school mathematics while females display negative attitude" (p.105). The researchers concurred that the negative attitude is situated in the stereotypical belief which is a common phenomenon in Nigeria. Another perspective on mathematics attitudinal difference between males and females lies in school type. In this view, a cross-sectional study by Norton and Rennie (1998) on single-sex and co-educational school dichotomy indicated that there was no significant difference between the attitude towards mathematics among male and female students in co-educational schools. But there were small variations on the scales measuring effects relating to grade level and school type. The general observation, however, was that, overall, boys have more positive attitudes toward mathematics than girls.

In another study to investigate the attitude towards mathematics of male and female students in Nigeria, Adebule and Aborisade (2014) arrived at the conclusion that attitude of students towards mathematics did not depend upon sex. The researchers recommended that sex should not to be considered as a factor influencing attitudes of students towards mathematics and that teachers should teach mathematics freely among all category of students. This outcome is in agreement with the work of Lindberg, Hyde, and Petersen (2010), which held that due to cultural shifts in recent years, the gender gap is closing. A close review of the trend indicates that the common denominator in the dynamics

of educational change in recent times is computer technology. What does this blend of technological innovations into instructional strategies portray for mathematics education? How does this trend impact on the attitudes of students towards mathematics?

When technological tools are introduced into mathematics instruction directly or indirectly, Dix (1999) found that differences in attitude between male and female students are significant. Longitudinal changes in attitude reveal a significant positive change in male attitude towards mathematics. Male students were more willing to experiment with technology. Pierce and colleagues (2007) while testing their attitudinal scale, also established that boys have statistically significant positive scores than girls for attitude to learning with technology.

A study by Ursini and Sanchez (2008) sought to compare changes in girls' and boys' attitude towards computer-based mathematics. The longitudinal comparison spanning three years showed attitudinal change in students subjected to technology augmented mathematics instruction. Significant gender differences favoring boys were found in attitudes towards mathematics for the group using technology. Similarly, this present study extends the blend of technological tools, such as the educational cloud in mathematics education, to observe the attitudinal impact on both male and female students in public universities in Benue State.

Pierce and colleagues (2007), in an attempt to develop scale for monitoring students' attitudes to learning mathematics, polled 350 students from 17 intact classes across 6 secondary schools in Victoria, Australia. The intent of the study was to authenticate the Mathematics and Technology Attitude Scale (MTAS). The MTAS was built from a cross-section of items meant to cover five attitude subscales, namely, mathematics confidence (MC), confidence with technology (TC), attitude to learning mathematics with technology (MT), affective engagement (AE), and behavioral engagement (BE). Reliability analysis yields satisfactory Cronbach's alpha value for each subscale (MC, 0.87; MT, 0.89; TC, 0.79; BE, 0.72 and AE, 0.65), indicating a strong or acceptable degree of internal consistency in each subscale. The results of the study indicate that students gave maximum possible MT scores. In every school, most students agreed rather than disagreed that it was better to learn mathematics with technology. The researchers also established a statistically significant difference between attitude towards mathematics of boys and girls. A breakdown of scores by gender reveals that boys have higher scores than girls for each sub-scale except for BE. The differences are greatest for TC and MC, with MT and AE demonstrating less difference. In interpreting all the gender differences, the researchers noted that only a



few girls actually expressed negative responses to any of the factors, but there were more highly positive responses from the boys. Whereas boys may experience learning mathematics more positively simply because technology is present, some girls may value it when they feel it has the potential to compensate for self-perceived shortcomings. Although the work of Pierce, et al. (2007) refined an important attitude scale, it failed to streamline the aspect of technology which elicits the positive attitude in students. This present work intends to narrow the technology integration to the utilization of cloud services. Also, the target sphere of this study is the university environment where individualistic learning approaches are encouraged.

Wu (2013) embarked on a study to observe the difference between the learning behavior and attitude of students before and after exposure to the IT education environment of a cloud computing service. The study applies a quasi-experimental design on 110 fifth grade students who were selected from Tunglo Elementary School in Miaoli County, Taiwan. Fifty-five of the students were placed in an experimental teaching class spanning four weeks with one period per week. Before and after the four weeks of experiment teaching, all participants had to fill out the "Scale of Using IT Education Environment of Cloud Computing" (Cronbach's  $\alpha = 0.953$ ). Students were given user accounts to access cloud services hosted inside the school. The results showed the means of pretest and posttest of each scale was greater than the reference value. The outcome indicates that after using the cloud service, students had more positive attitude towards using it, even after school. This study by Wu (2013) relates to the present work in its direct usage of cloud services in instruction. Also, the allocation of user accounts to students for cloud access is a similarity shared by both works. However, students used for the study are from a lower level education, and the subject of interest was IT education. This present work intends to poll the impact of using cloud services on the attitude of mathematics education students in public universities towards the subject of mathematics.

In addition, Adeyeye, Afolabi, and Ayo (2014), in a study canvassing for enhanced academic standards, affirmed that cloud networks are commonplace in Nigerian tertiary institutions and act as a good platform for distributing and disseminating instructional materials. The study, which employed a system analysis and implementation design, was a detailed presentation of the development of a virtual campus in Covenant University, Ota, Nigeria. All the students of the school's College of Science and Technology (CST) have access to personal computers, with 70% having personal laptop PCs. Students access the university cloud via wireless access points (hotspot zones) connected through a backbone network of fiber-optics.

The work seeks to improve quality through online provision of learning resources based on Free Open Source Software (FOSS), wired and wireless access to contents, discussion forums, and mail services. The researchers recommend efficient propagation of similar systems in higher educational institutions in Nigeria to reduce students' idle time and get them engaged in productive academic discourse. The study, however, left out the use of any program within CST to test the efficacy of the virtual campus. Another obvious discrepancy between the work of Adeyeye et al. (2014) and this present study is the fact that the target school is a private university. This present work is subject-area-specific (mathematics education) and draws its sample from the domain of public universities.

From the review of literature, it is clear that different forms of technological innovations enjoy different affective acceptance. This points to the fact that human-computer interaction is a complex phenomenon and that the attitudes and feelings involved with the relationship are not easy to identify. As the role of computer technology expands in the global society, it is imperative that educators become aware of the anxiety of integration among students. Several researches considered so far indicate a high likelihood that students' attitude towards subject area like mathematics are generally boosted with the adoption of computer technology. However, as observed throughout this review, the body of available literature holds little evidence of usage of technological tools such as educational cloud services in specific areas of study like mathematics education. This present work on the impact of cloud services on students' attitude towards mathematics education in public universities in Benue State intends to bridge this gap.

## Method

### Questions

The following research questions guide the study:

1. To what extent do cloud services affect mathematics confidence of mathematics education students in public universities in Benue State?
2. To what extent do cloud services affect the affective engagement of mathematics education students in public universities in Benue State?
3. To what extent do cloud services affect the behavioral engagement of mathematics education students in public universities in Benue State?
4. Which gender's attitude towards mathematics was more affected due to cloud services

among mathematics education students in the public universities in Benue State?

### Hypotheses

The following research hypotheses were formulated and tested at 0.05 level of significance:

1. There is no significant difference in the mean response of mathematics education students on how cloud services affect students' attitude towards mathematics education in the public universities in Benue State.
2. There is no significant difference in the mean response of mathematics education students on how cloud services affect male and female students' attitudes towards mathematics education.

### Methodology

Ex-post facto research design was adopted for this study. The study was conducted in Benue State. The State is located in North Central region of Nigeria. The population of the study was comprised of all mathematics education students in public universities in Benue State. The target population size was 1807 students. The sample included 328 mathematics education students drawn from the two out of the three public universities in Benue State. The two selected institutions were chosen based on having operational cloud service delivery systems. Proportionate stratified random sampling was used to select 82 mathematics education students from the State University and 246 mathematics education students from the Federal University, resulting in a total sample size of 328.

The instrument for data collection in this study was an attitude scale tagged Cloud Services Mathematics Attitude Scale (CSMAS). The CSMAS is a mathematics attitude scale adapted from a set of existing mathematics attitude scales, including Modified Fennema-Sherman Mathematics Attitude Scale (Doepken, Lawsky, & Padwa, 1993), Mathematics and Technology Attitude Scale (Pierce et al., 2007), and Attitudes to Technology in Mathematics Learning Questionnaire (Fogarty, Cretchley, Harman, Ellerton & Konki, 2001). The CSMAS consists of 40 items, structured on a four-point scale of Very High Impact (VHI), High Impact (HI), Low Impact (LI), and Very Low Impact (VLI). The items of the CSMAS cover basic components of mathematics attitude such as mathematics confidence, behavioral engagement, and affective engagement. Positive items were scored 4, 3, 2, and 1, for VHI, HI, LI, and VLI respectively. The scoring for negative items are reversed in the order 1, 2, 3, and 4, for VHI, HI, LI, and VLI respectively.

The validation of the instrument for this study was done by two experts in Mathematics Education and one expert in Measurement and Evaluation. To ensure reliability, the CSMAS was trial-tested on 50 mathematics education students at a conventional university within Nigeria's North Central region. Results obtained from the trial testing were subjected to reliability analysis yielding a Cronbach's alpha coefficients of 0.80 for the mathematics confidence sub-scale, 0.83 for the affective engagement sub-scale, 0.89 for the behavioral engagement sub-scale, and 0.92 for the summated CSMAS.

Data was collected and analyzed using both descriptive and inferential statistics. The research questions were answered using mean and standard deviation. The benchmark for decision on each item of CSMAS is a mean of 2.50, indicating that a mean of 2.50 and above imply acceptance while a mean value below 2.50 implies rejection. The research hypotheses were tested at 0.05 level of significance using the t-test.

### Results

The presentation of data analysis and interpretation for this study was done according to the research questions and followed by related hypotheses.

#### Research Question One

To what extent do cloud services affect mathematics confidence of mathematics education students in public universities in Benue State?

In Table 1, the result shows that there is a high level of impact of cloud services on the mathematics confidence of mathematics education students in public universities in Benue State, considering the high cluster mean of 2.85 for the sub-scale, as compared to the benchmark of 2.50.

#### Research Question Two

To what extent do cloud services affect the affective engagement of mathematics education students in public universities in Benue State?

The results in Table 2 indicate that the affective engagement of mathematics education students in public universities in Benue State is highly impacted by the utilization of cloud services. This was established by the cluster mean attitude score of 2.87 for the affective engagement sub-scale, which is higher than the benchmark of 2.50.

#### Research Question Three

To what extent do cloud services affect the behavioral engagement of mathematics education students in public universities in Benue State?

Table 1  
*Mean Attitude Ratings of Mathematics Confidence of Mathematics Education Students in Public Universities in Benue State*

S/No.	Items	Mean	SD	Remark
1	I am sure that I can learn mathematics using cloud services.	2.63	1.09	High
2	Mathematics is hard for me even with the use of cloud services.	3.13	1.03	High
3	I find mathematics frightening even with cloud services.	2.78	1.00	High
4	I know I can handle difficulties in mathematics with the aid of cloud services.	3.47	0.87	High
5	It takes me longer time to understand mathematics than the average person even with the aid of cloud services.	3.81	1.01	High
6	I'm not the type to do well in mathematics.	2.91	0.70	High
7	I am proud of my abilities in mathematics when aided with cloud services.	2.92	1.12	High
8	I have a mathematical mind which is enhanced with the aid of cloud services.	2.71	1.05	High
9	I find mathematics confusing even with the aid cloud services.	2.41	0.86	Low
10	Most subjects I can handle OK, but I only manage to endure mathematics even with cloud services.	3.03	0.92	High
11	I know I can do well in mathematics by using cloud services.	2.85	1.21	High
12	I know cloud services are important but I don't feel I need to use them to learn mathematics.	2.48	0.81	Low
13	I can get good grades in mathematics with the aid of cloud services.	2.88	0.97	High
	Cluster Mean	2.85		High

Table 2  
*Mean Attitude Scores of Affective Engagement of Mathematics Education Students in Public Universities in Benue State*

S/No.	Items	Mean	SD	Remark
1	I like using cloud services for mathematics.	2.54	1.13	High
2	In using cloud services to study mathematics, you get your answers correct as rewards for your efforts.	2.79	1.01	High
3	Cloud services aid my interest in learning new things in mathematics.	3.05	0.97	High
4	I find many mathematics problems interesting and challenging with the aid of cloud services.	3.06	0.72	High
5	Learning mathematics through cloud services is enjoyable.	3.01	1.05	High
6	I get a sense of satisfaction when I solve mathematics problems with the aid of cloud services.	2.58	0.71	High
7	I feel good about using cloud services to study mathematics.	2.92	1.13	High
8	Mathematics is more interesting when using cloud services.	2.77	1.00	High
9	I have never been excited about mathematics even with cloud services.	2.94	0.82	High
10	I like the idea of exploring mathematical methods using cloud services.	2.61	1.18	High
11	I always look forward to using cloud services to study mathematics.	2.82	1.15	High
	Cluster Mean	2.87		High

The results shown in Table 3 indicate a cluster mean attitude score of 2.92 for the behavioral engagement sub-scale, which is higher than the benchmark of 2.50. This implies that cloud services highly affect the behavioral engagement of mathematics education students in public universities in Benue State.

#### Research Question Four

Which gender's attitude towards mathematics was more affected due to cloud services among mathematics education students in the public universities in Benue State?

The result in Table 4 shows that the mean attitude score of male mathematics education students is 2.782 while that of female mathematics education students is 2.956.

Although both male and female mathematics education students scored reasonably high across the CSMAS, a mean difference of 0.174 in favor of female mathematics education students was observed.

#### Research Hypothesis One

There is no significant difference in the mean response of mathematics education students on how cloud services affected students' attitude towards mathematics education in the public universities in Benue State.

Table 5 shows that the p-value of 0.000 affirms that there is a significant difference in the mean response of respondents on how cloud services affected students' attitude towards mathematics education in the

Table 3  
*Mean Attitude Ratings of Behavioral Engagement of Mathematics Education Students in Public Universities in Benue State*

S/No.	Items	Mean	SD	Remark
1	If I can't solve a mathematical problem, I use cloud services to try out different ideas on how to solve the problem.	2.73	1.15	High
2	I always try to do assignments with the help of cloud services.	3.21	0.92	High
3	Cloud services make me versatile in mathematics.	2.75	0.95	High
4	When studying mathematics using cloud services, I often think of new ways of solving mathematics problem.	2.80	1.01	High
5	I think using cloud services waste too much time in the learning of mathematics.	3.03	1.18	High
6	When learning mathematics with the aid of cloud services, I try to understand new concepts by relating them to things I already know.	2.80	1.02	High
7	Using cloud services to study mathematics makes it easier for me to do more real-life applications.	3.16	1.05	High
8	When I cannot understand something in mathematics, I always use cloud services to search for more information to clarify the problem.	2.65	0.83	High
9	Having cloud services to do routine work makes me more likely to try different methods and approaches.	3.14	0.92	High
10	Using cloud services in mathematics is worth the extra effort.	2.86	0.99	High
11	When I study for a mathematics test using cloud services, I try to work out the most important parts to learn.	2.87	0.84	High
12	I prefer to study mathematics by myself, without using cloud services.	2.66	1.17	High
13	When I study mathematics using cloud services, I try to figure out which concepts I still have not understood properly.	3.34	0.89	High
14	If I have trouble in understanding a mathematics problem, I go over it again using cloud services until I understand it.	2.74	1.14	High
15	When I study mathematics with the aid of cloud services, I start by working out exactly what I need to learn.	2.04	0.94	Low
16	I find reviewing previously solved problems using cloud services to be a good way to study mathematics.	3.27	1.02	High
	Cluster Mean	2.92		High

Table 4  
*Mean Attitude Ratings of Male and Female Mathematics Education Students in Public Universities Due to the Use of Cloud Services*

Gender	N	Mean Attitude Score	Remarks
Male	202	2.782	High
Female	126	2.956	High
Mean Difference		0.174	
Total	328		

Table 5  
*t-test Analysis of Mean Attitude Ratings of Mathematics Education Students from the Two Public Universities*

Public University	Mean	N	df	t-calculated	p-value
Federal University	2.822	246	326	5.629	0.000*
State University	3.025	82			
Total		328			

\*significant at  $\alpha = 0.05$

Table 6  
*t-test Analysis of Mean Attitude Scores of Male and Female Mathematics Education Students*

Gender	Mean	N	DF	t-calculated	p-value
Male	2.782	202	326	2.893	0.004*
Female	2.956	126			
Total		328			

\*significant at  $\alpha = 0.05$

public universities in Benue State, hence the null hypothesis is rejected at 0.05 level of significance. Eyeballing the cluster mean attitude scores of both educational institutions indicates that mathematics education students from the State University are more impacted by cloud services than their counterparts from the Federal University.

### Research Hypothesis Two

There is no significant difference in the mean response of mathematics education students on how cloud services affected male and female students' attitudes towards mathematics education.

From the results in Table 6, the p-value of 0.004, which is less than 0.05, indicates that there is a significant difference in the mean response of respondents on how cloud services affected male and female students' attitudes towards mathematics education. The null hypothesis was therefore rejected at 0.05 level of significance.

### Discussion

The results displayed in Table 1 suggest that cloud service utilization among mathematics education students exerts a high level of impact on the mathematics confidence of the students. This finding implies cloud service adoption is helping mathematics education students overcome their psychological barriers in doing well in mathematics. Cloud services thus enhance the students' natural aptitude in mathematics and raise their belief in their capability to achieve a successful outcome. The high extent of impact of cloud services on the students' mathematics confidence observed in this study is in agreement with the research findings of Abd-Wahid and Shahrill (2014) and the assertion by Rusinov (2012) that review of good class notes using cloud-sourced contents boosts self-confidence in mathematics. Cloud services provide students the opportunity to utilize free interactive platforms on the Internet, assuring them of their ability to handle difficulties in mathematics. This practice of studying mathematics with online help develops students' mentality towards mathematics education and

improves their self-worth, not only in the discipline, but in life as a whole.

As reported in Table 2, mathematics education students' affective engagement is highly impacted by the adoption of cloud services (cluster mean = 2.87). This is an indication that the students react well to cloud services utilization as an external incentive to develop personal interest in, and enjoyment of, mathematics. This outcome is in line with the results presented by Barkatsas, Kasimatis, and Gialamas (2009), who affirmed that specific technology use in mathematics education is associated with strongly positive levels of affective engagement. Augmentation of mathematics education with cloud services, therefore, leads to a relatively stable orientation that affects the intensity and continuity of engagement in learning situations, the selection of strategies and the depth of understanding. The observations of this present study have illuminated the fact echoed by Attard and Curry (2012) that cloud services in particular, and technology integration in general, affect how students react to schooling, teachers, and peers, influencing their willingness to become involved in school work. This also agrees with Dix (1999), who upheld that the use of computer-based technology in mathematics does appear to positively influence student motivation.

This study has revealed that cloud services positively affect mathematics education students' disposition to manage their own learning by choosing appropriate learning goals and selecting learning strategies appropriate for mathematical tasks. The results displayed in Table 3 indicate that cloud services utilization engenders a high level (cluster mean = 2.92) of behavioral engagement among mathematics education students in public universities in Benue State. This is in agreement with Fredricks and McColsky (2012), who observed that behavioral engagement draws on the idea of participation and involvement in learning processes and is considered crucial for achieving positive academic outcomes. The finding of this study reveals that adoption of educational cloud services by mathematics education students yields high impact on the students' behavioral engagement as expressed in dimensions outlined in Abd-Wahid and Shahrill (2014): attentiveness, diligence, time spent on

task, and non-assigned time spent on task. Cloud services enable mathematics education students to put in a great deal of practice to perfect their mathematical skills, which in turn translates to a positive attitude towards their field of study. This outcome from this study also agrees with the work of Shechtman, Cheng, Lundh, and Trinidad (2012) who emphasized that a fine blend of technology in mathematics instruction delivery raises the level of commitment of learners. Cloud services, as observed in this present study, encourage mathematics education students to develop sound study strategies and try various approaches and methods of solving mathematical problems.

The analysis of results presented in Table 4 adds commensurately to the debate on repeated priming of mathematics as negatively stereotyped for a certain gender of students. The Mean Attitude Score for female mathematics education students is higher than that of their male counterpart, though both genders display strong positive attitudes towards mathematics education. The weight of this difference in attitude towards mathematics education was further subjected to rigorous hypothesis testing, as shown in Table 6. The t-test analysis established a statistically significant difference in the impact of cloud services on students' attitude towards mathematics education between male and female mathematics education students in public universities in Benue State. The implication of these results is that female students tend to better perceive their ability to study mathematics education than male students, particularly with cloud services as a means of instructional augmentation. This study, which agrees with the works of Wong and Hanafi (2007) and Sanders (2006), reveals that female students are more responsive to technological innovation in mathematics education than their male counterparts.

This outcome is obviously in conflict with several traditional studies which upheld mathematics as a male-dominated field of study. In this vein, this finding is in sharp contrast to Fatade et al. (2012), who maintain that males tend to show a natural positive attitude to school mathematics while females display a negative attitude. Ursini and Sanchez (2008), in a longitudinal comparative study, also found significant gender difference in attitudinal change favoring boys when students are subjected to technology augmented mathematics education. Similarly, Pierce et al. (2007) reveal that boys have higher scores than girls for each sub-scale of their newly developed MTAS. Keen observation and scrutiny of the body of evidence in favor of the male gender reveals that, unlike the present study, most of these studies are based on subjects at the early childhood and lower levels of education where gender disparities are predominant.

However, on the other side of the gender debate, to which the findings of this study have lent weight, are a

series of deeper psychological enquiries such as the one by Spelke (2005), who concluded that highly talented male and female students show equal abilities to learn mathematics. This finding also supports the results of Olibe, Ezoem, and Ekene (2014) who reported that female students have more knowledge of virtual learning than male students. Lindberg et al. (2010) relatedly held that due to cultural shifts initiated by increasing levels of technology penetration in recent years, the gender gap is closing. In a similar vein, Adebule and Aborisade (2014) recommended that sex should not be considered as a factor influencing attitudes of students towards mathematics and that teachers should teach mathematics freely among all categories of learners.

The higher rate of impact of cloud services among female mathematics education students observed in this study could be a pointer to a new demographical structure of technology adoption. Female students who are at the receiving end of the gender complex are now gradually looking to available means of supporting their mathematics learning. With time, the need to look out for gender disparity in mathematics education may disappear altogether. This line of reasoning has also been suggested by Bergeron (2011), who observed that women are most likely to adopt new technology when it is social, is relevant, and seamlessly improves their day-to-day efforts as obtained in mathematics education.

A comparison of the extent of impact of cloud services on students' attitudes towards mathematics education between public universities in Benue State turned out in favor of the State University. The results presented in Table 5 indicate the Mean Attitude Score of mathematics education students in the State University as 3.025, as opposed to that of Federal University, which is 2.822. The implication of this outcome is that mathematics education students from the State University, a state-government-owned university, are more impacted by the utilization of cloud services than their counterparts from the federal-government-owned Federal University. This difference unveils several complex underlying issues bordering on service delivery by the ICT directorates of the educational institutions. This finding agrees with the work of Oyeleye, Fagbola, and Daramola (2014), who found only 10% efficiency in adoption of cloud computing by public universities in Nigeria. Most of the efficient cloud services delivery systems reported in available literature such as that by Adeyeye et al. (2014) are predominantly hosted by private universities.

This finding has suggested that the State University offers better cloud-based services, particularly in terms of infrastructure as a service (IaaS) available unto students, as evidenced in the level of impact on mathematics education students' attitudes. Technical factors such as distribution of wireless access points

within a campus, power supply to access points, bandwidth and strength of broadband, and maintenance of service equipment by staff of the ICT directorate determine the quality of service students get.

### Conclusion

Insights into students' attitudes and beliefs are the most important and crucial steps in understanding how the learning environment for mathematics education is affected by the introduction of digital technology. The private cloud services delivered by public universities in Benue State have been increasingly influencing the way mathematics education students study and do research, thereby altering their views, perspectives, and disposition towards their discipline.

This study has specifically established a substantial impact of the utilization of cloud services on students' attitudes toward mathematics education in the attitudinal component areas of mathematics confidence, affective engagement, and behavioral engagement. Cloud services adoption results in strong positive mentality and self-worth among mathematics education students. It also leads to students feeling good, thinking hard, and actively participating in their own mathematics learning.

Obviously, allowing students' choice in the mathematics education process is an important element of engagement and sends important messages relating to power and control. The choice of cloud services by mathematics education students as a sort of technological augmentation has opened up rich avenues to develop highly engaging, student-centered mathematical activities and tasks. Engagement in mathematics occurs when students are procedurally engaged during the course of learning and beyond, as they enjoy learning and doing mathematics, and they view beyond the classroom. These outcomes have been revealed to be positively impacted by the utilization of cloud services by mathematics education students in public universities in Benue State, Nigeria.

### Recommendations

The following recommendations are made based on the findings of this study:

- i. Students of mathematics education should seek deeper and more enriched learning experiences by continuously leveraging on available cloud services, benefitting from several online mathematical communities, and developing themselves in life-sustaining skills.
- ii. Mathematics educators should incorporate emergent technologies like the educational cloud in their instructional design to flexibly

support the teaching and learning process and improve students. More instructional aids can be cued from the World Wide Web (WWW) via educational institution-hosted cloud services for all-around pedagogical development.

- iii. The ICT directorates of public universities should wake up to the challenge of epileptic service delivery by building a consistent maintenance culture to sustain efficient cloud service delivery systems. More access points should be made available everywhere on campus, even around students' hostels, to support efficient mobile learning.
- iv. The management of public universities in Benue State in particular, and Nigeria in general, should make a concerted effort targeted at improving the establishment of technological infrastructure in their institutions. The commitment on the part of schools' management can only translate to flexible ways of doing things and effective approaches to teaching and learning by faculties and students.
- v. The federal and state governments must make more funds available to public universities for technological development and state-of-the-art service delivery. Only a sustained sponsorship from the government can improve the status of Nigerian universities in global ranking.

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## Transformational Teaching: Pakistani Students' Perspectives in the English Classroom

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The purpose of this study was to investigate the potential of transformational teaching practices in learning and teaching of English as a second language in Pakistan. The study examined student descriptions about professorial charisma, intellectual stimulation, and individualized consideration in bachelor English programs, as well as how these variables predicted effective teaching in the English language classes. A sample of 490 undergraduate students responded to a survey in seven public and private universities in Pakistan. The findings indicated that the transformational teaching behaviors were associated with the effective teaching. Regression analysis indicated that professorial charisma, intellectual stimulation, and individualized consideration were significant predictors of effective teaching in the English language classes. The implications for the improvement of English education are considered.

Several studies (Graddol, 1997; Lauder, 2008; McKay, 2002) document the wide use of English as an official language in many countries of the world. In Pakistan, English is used in different fields such as civil administration, bureaucracy, the legal system, and education (Abbas, 1993; Khaliq, 2006; Mansoor, 2004). Research studies indicate that Pakistani students at secondary and tertiary levels are motivated to learn this global language (Mansoor, 2005; Rahman, 1999). Similarly, Khaliq (2006) pointed out the need to promote English as a tool to gain new knowledge and skills for a decent living and equal opportunities in all fields. In Pakistan, many projects are in progress to improve English education across the country. However, there are calls for changes in English language teaching for better learning outcomes. Researchers concluded that poor learning outcomes resulted because of ineffective teaching (Mansoor, 2004; Rahman, 2005; Siddique, 2007).

Generally, in Pakistan the higher education environment reflects the need to revamp and rebuild the whole system. Educationists and researchers indicate the need to restructure the system in such a way that creativity and independent thinking are not penalized but encouraged (Mansoor, 2003). In the context of English language teaching, Malik (1996) stated that English teachers failed to provide this encouragement and depended on the lecture method that just promoted lack of student engagement and temporary learning outcomes. Thus, the aim behind the teaching and learning is just getting the degree without the realization whether the degree imparted the learning associated with it (Hoodboy, 1998). In the context of the higher education environment in general and English teaching in particular, a transformational approach towards teaching and learning looked promising. To tap student learning talents, Phillips and Graeff (2014) suggested:

Students need a classroom learning experience that is different from the traditional lecture format in order to think critically and solve problems. If students are forced to think critically, construct their own knowledge, and arrive at a solution to a problem, they will have a deeper understanding than if they memorize the solution to a similar problem (p. 241).

Previous research (Bolkan & Goodboy, 2011; Economos, 2013) reported that transformational teaching resulted in teaching effectiveness as it led to student motivation, satisfaction, and improvement in academic performance (Bolkan & Goodboy, 2009, 2011; Boyd, 2009; Pounder, 2004). Researchers suggested that further research on teachers as leaders would advance knowledge to increase teaching effectiveness (Harrison, 2011; Pounder, 2004). Some research studies reported how teaching effectiveness was increased as teachers used the components of transformational teaching with a view that the classroom was as an organization and that teachers should act as leaders and students as followers. However, it is important to note that most of the research studies on transformational teaching were conducted in the United States and that there was a lack of serious research on the association of transformational teaching and second or foreign language learning in other cultural settings. Researchers suggested that transformational teaching could improve English education in Pakistan, though Pounder (2008) indicated that there was insufficient work to investigate how transformational leadership could be replicated across cultural settings. Also, Bolkan and Goodboy (2011) noted that research studies could be conducted to examine transformational leadership in the classroom across cultures.

The present study tried to fill the gap by examining the potential of transformational teaching for students learning English as a second language in Pakistan. This study examined professor behaviors for transformational teaching related to professorial charisma, intellectual

stimulation, and individualized consideration, and how these behaviors predicted effective teaching in second language classrooms.

### Transformational Leadership

Burns (1978) introduced the term “transformational leadership” to describe leaders’ and followers’ engagement and relationships to higher levels of morality and motivation. Bass (1985) explained the conceptualization of transformational leadership and included following components.

- (a) Idealized Influence or Charisma: The leader displays certain characteristics that indicate his vision and his ability to gain trust, earn respect, and create optimism. His charisma inspires and excites his followers.
- (b) Inspirational Motivation: As a role model for his followers, a leader clearly communicates a vision to develop the confidence of his followers to share leaders’ vision and the organization’s goals.
- (c) Individualized Consideration: As a coach and a mentor, a transformational leader considers the individual needs of his followers and gives feedback for their personal growth.
- (d) Intellectual Stimulation: Transformational leaders stimulate followers to rethink their existing values and beliefs by providing their followers with interesting and challenging tasks and thus motivating them to solve problems (Bass, 1985).

### Transformational Teaching Practices

Transformational teaching practices have been derived from the transformational leadership theory of Bass (1985). The use of transformational leadership in a classroom context is based on the assumption that the classroom can be viewed as a small social organization with the teacher as a leader and students as followers (Cheng 1994; Pounder, 2004). Transformational teaching practices include charisma, individualized consideration, and intellectual stimulation. Charismatic professors create enthusiasm among students about tasks. They win respect and possess a sense of mission that they convey to students (Banjeri & Krishnan, 2000). Harrison (2011) found that professors indicated individualized consideration by dealing with each student as an individual and facilitating them in their personal growth and development so that they were able to reach their full potential. According to Boyd (2009), educators demonstrated intellectual stimulation in the classroom when they helped students evaluate the assumptions that limited their thinking.

As transformational leaders stimulate their followers to experience high levels of motivation and performance, transformational teachers encourage their students in personal growth for a high level of academic achievement (Slavich & Zimbardo, 2012). In keeping with the view of teachers as transformational leaders, research studies report the positive relationships between teachers’ transformational behaviors and students’ overall satisfaction and performance in the classroom (Harvey, Royal, & Stout, 2003; Kinicki & Schriesheim, 1978; Pounder, 2008).

Marcus (2004) investigated the role of transformational leadership in distance education and concluded that through transformational teaching practices instructors increased student creativity and helped them to contribute to the creation of new ideas. Slavich and Zimbardo (2012) suggested that transformational teaching could increase students’ potential for academic success and positively impacted students’ attitudes, values, beliefs, and skills.

A transformational classroom climate indicates improved communication and deep understanding of concepts (Ahmed & Qazi, 2011). Harvey et al. (2003) posited that enhanced participation and increased professor credibility were correlated with transformational leadership skills in the classroom. Likewise, Mulford and Silins (2003) found that transformational professors prioritized student needs, encouraged and appreciated their student opinions, and demonstrated moral support. Researchers elaborated on how a transformational professor created a respectful learning climate and established rapport with students.

Research studies support the association of transformational teaching and student learning outcomes at all levels of educations. Transformational teaching positively influences student learning outcomes in the schools, colleges, and university settings (Boyd, 2009; Cheng, 1994; Harvey et al., 2003; Pounder, 2008). Cheng (1994) found that transformational leadership positively impacted classroom environments and increased student academic performances.

Boyd (2009) stated that transformational teaching in a school could transform the lives of students who were members of gangs. The researcher illustrated how a teacher used individualized consideration and intellectual stimulation to transform a classroom of gang members into a group of scholars and teachers. Boyd found that transformational teachers display certain behaviors such as being sensitive to students’ needs, establishing rapport with students, and helping them to become self-actualized. Boyd suggested that by knowing students more on a personal level, professors could direct students to needed services or lead them to resources or mentors that could help them achieve their personal goals.

The benefits of transformational teaching are not confined to student outcomes. Transformational teaching is positively linked with decreased faculty turnover rates, increased levels of faculty job satisfaction, and greater levels of faculty commitment to reform universities and implement change (Griffith, 2004; Harrison, 2011).

### Effective Teaching

Effective teaching is a multidimensional construct which covers many aspects in the context of second language learning. It includes English teachers' knowledge of content and methodology to teach that content (Gatbonton, 1999). For teaching effectiveness, teachers need to prepare, transform, and adapt the content, as well as to adopt effective methods to convey this content to English language learners (Gudmundsdottir, 1991).

Research on effective teaching of a second or foreign language indicated the importance of cultivating positive learning environments in the classroom (Falout & Falout, 2004). Haggan (1999) suggested that teachers should help students develop an aptitude and passion for learning. Bista (2011) reported how teachers encouraged an active learning culture by engaging and motivating their students in stress free classrooms. Bista contended that English instructors created effective learning environments for better learning outcomes. Likewise, Gatbonton (1999) found that for learning outcomes in second language classrooms, teachers needed to make contact with, and have good rapport with, students. Transformational teaching resulted in creating positive learning environments in the classrooms. Transformational teachers influenced student learning at all levels, including cognition, affection, satisfaction, and motivation. It also increased teacher credibility and led to greater levels of student engagement and deep learning experiences in the classroom (Bolkan & Goodboy, 2009, 2011; Economos, 2013).

Liando (2010) concluded that for teaching effectiveness in second language classrooms, the students preferred their teachers to have personal attributes such as being caring, friendly, patient, and fair. Students stated that professors who made the course more interesting and challenged students academically were considered as effective teachers. Liando's vision of effective teaching is indicative of transformational leadership in the classroom. Bolkan and Goodboy (2011) reported that professors' transformational leadership traits such as charisma, as well as behaviors such as individualized consideration and intellectual stimulation, promoted effective teaching in college classrooms.

Professors encouraging students to learn led to effective teaching (Khandelwal, 2009; Patrick, Hisley, & Kempler, 2000). Khandelwal defined encouragement as

professor behaviors of showing hope, support, and confidence in learners. He suggested that encouraging professors did not make judgments regarding students' learning struggles. Likewise, transformational professors set a respectful tone for communication with learners, and conveyed school mission and goals to encourage students. In this way, a transformational instructor helped students achieve their academic targets (Mulford & Silins, 2003).

Research studies (Bolkan & Goodboy, 2011; Harrison, 2011; Pounder, 2008) report that for quality learning and teaching outcomes, instructors should use all components of transformational teaching in their classrooms. Harrison suggested that transformational teaching could be used in syllabi, assignment feedback, and other forms of communication. Noland and Richards (2014) indicated a positive association between professors' transformational teaching and students' learning and motivation. Researchers concluded that transformational teaching had the potential to provide a model for effective teaching in higher education. The current study seeks to explore the association of professor transformational teaching behaviors and teaching effectiveness.

### Method

This section will explain procedures used to answer the following research question: how do undergraduate students describe professors' use of individualized consideration, intellectual stimulation, and professorial charisma, and how these variables predict effective teaching in bachelor English programs in Pakistani universities?

### Data Sources and Research Methodology

The data for this research study originated from a dissertation study conducted by Khazima Tahir in partial fulfillment of the requirements for the degree of Doctor of Education at Dowling College, School of Education, Department of Administration, Leadership, and Technology (2015). Permission to complete this research was sought through the Internal Review Board for the Protection of Human Subjects in Research (IRB) at Dowling College, New York, USA and department chairs of the universities in the Punjab, Pakistan.

### Participants

Data came from 490 students enrolled in seven public and private universities in the Punjab province of Pakistan. Participants were 134 men and 356 women whose ages ranged from 17 to 25 years of age. All students were enrolled in bachelor English programs. Focusing the study on one type of particular course

Table 1  
*Factor Loadings for Considerate Intellectual Stimulation*

Factor Loading	Item	Item number	$h^2$
.642	Display compassion towards students who need additional help.	40	.490
.642	Treat students as individuals with different strengths and weaknesses.	41	.501
.535	Support diverse thinking from students in the class.	47	.413
.526	Are available beyond office hours.	39	.304
.497	Engage students in critical thinking in the class	43	.492
.492	Engage students in discussion from various sources regarding assignment.	44	.494
.484	Discuss course topics, ideas, or concepts with students outside the class.	38	.385
.462	Welcome questions in the class.	42	.445
.460	Provide assessments that encourage independent thinking	45	.447
Eigenvalue = 1.67			
Percent of Variance = 3.48			

Table 2  
*Scale Reliability of the Items*

Dimensions	Numbers of Items	Alpha Coefficient $\alpha$
Effective teaching	9	.869
Charisma	8	.789
Considerate Intellectual Stimulation	9	.830

ensured that findings were not affected due to differences in course content since research in education pointed out that course content could influence student perceptions of instructors (Koh & Tan 1997; Pounder, 2008). Responses of 490 students were completed, yielding a response rate of 97 percent. Seventy-nine participants were enrolled for less than one year, 106 participants were enrolled for one year, 101 participants were enrolled for two years, 57 participants were enrolled for three years, and 57 participants were enrolled in the program for more than three years. The data was collected from students enrolled in different academic years also. Participation in this research study was voluntary. The students of the universities were surveyed during the lectures. The data was gathered from seven universities in the Punjab province of Pakistan. Population wise, Punjab is the largest province of Pakistan, and it has 56 percent of the country's total population (Livingston & O'Hanlon, 2011).

### Survey Instrument

The original survey instrument was developed and adapted from the research literature. Survey items

examined undergraduate student descriptions of effective teaching according to Shepherd (2009), Fenner and Khulman (2012), Economos (2013), and NSSE (2001-2014). Statements from the research literature had been adapted and converted into instrument items to measure effective teaching. Items that measured undergraduate student descriptions of actual professor behaviors associated with charisma, intellectual stimulation, and individualized consideration were developed and adapted from the qualitative findings of Bolkan and Goodboy (2011) and a research study of Economos (2013). Undergraduate students responded to a survey that included demographics questions and had items on a Likert scale (1 = strongly disagree, 5 = strongly agree) for individualized consideration, intellectual simulation, professorial charisma, and effective teaching. A jury of five undergraduate students enrolled in a BS English program reviewed the content of each item in the survey instrument and determined if an item measured the construct that it was assigned to measure. A factor analysis was conducted with 490 student responses obtained through the survey instrument to reduce the data and to establish unique variance among items that comprised the sub-scales

within the survey instrument. Considerate intellectual stimulation was identified as a new variable as a result of factor analysis using principal component analysis and a rotational method of varimax with Kaiser Nominalization. It merged together two variables of individualized consideration and intellectual stimulation for transformational teaching. Table 1 reports The Cronbach's Alpha reliabilities for considerate intellectual stimulation, professorial charisma and effective teaching, and number of items per variable used in this study.

### Data Analysis

The responses received from the students were coded and entered into the Statistical Package for the Social Sciences (SPSS). All respondent identities remained confidential. Inferential statistics, specifically multiple linear regression analyses, were used to determine the level of support of the variables of Considerate Intellectual Stimulation and professorial charisma to predict teaching effectiveness in the English language classrooms.

### Results

Research Question: How do undergraduate students describe professor use of individualized consideration,

intellectual stimulation, professorial charisma, and how these variables predict effective teaching in bachelor English programs in Pakistani universities?

Multiple linear regression analysis was conducted to answer this research question.

The model summary in Table 3 showed that Considerate Intellectual Stimulation was the strongest predictor of effective teaching among all undergraduate students in the English language classes. In model one, professor use of Considerate Intellectual Stimulation was the predictor of effective teaching (45 percent). In model two, professors' use of considerate intellectual stimulation and professorial charisma were predictors of effective teaching among all by 13 percent when both were present (62 percent).

The strongest predictor of effective teaching in the English language class was considerate intellectual stimulation based on its standardized beta weight of .467 and professorial charisma (beta weight of .464). The result of this regression analysis indicated that transformational teaching significantly predicted effective teaching in the English language classes.

### Discussion and Conclusions

Overall, the results from this study indicated that transformational teaching was positively associated

Table 3  
*Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.675 <sup>a</sup>	.456	.455	4.50517
2	.792 <sup>b</sup>	.628	.626	3.73031

a. Predictors: (Constant), Considerate\_Intellectual\_Stimulation\_Lit

b. Predictors: (Constant), Considerate\_Intellectual\_Stimulation\_Lit, Charisma\_Lit

Table 4  
*Coefficients<sup>a</sup>*

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
1 (Constant)	8.274	1.235		6.701	.000
Considerate_Intellectual_Stimulation_Lit	.743	.037	.675	20.195	.000
2 (Constant)	-.619	1.182		-.523	.601
Considerate_Intellectual_Stimulation_Lit	.514	.034	.467	15.072	.000
Charisma_Lit	.558	.037	.464	14.978	.000

a. Dependent Variable: Considerate\_Intellectual\_Stimulation\_Lit

with effective teaching in second language classrooms. These findings align with past research. The research on transformational teaching (Bolkan & Goodboy, 2009, 2011; Boyd, 2009; Economos, 2013) revealed that transformational teaching resulted in teaching effectiveness as it shared a positive relationship with student learning. In this study, the three components of individualized consideration, intellectual stimulation, and professorial charisma were related to transformational teaching that predicted teaching effectiveness.

The results of this research may be explained in light of past research. Harvey et al. (2003) reported the positive influence of professors' transformational leadership on student learning. They discovered that intellectual stimulation was related to professors' teaching practices and university students' satisfaction. They also found that at the university level, teaching effectiveness for university teachers was related to stimulating students intellectually. They labelled this as "enriched learning environment wherein the instructors challenge them intellectually" (p. 400). Similarly, Bolkan and Goodboy (2011) reported that a professor's use of intellectual stimulation predicted students' intrinsic motivation. Bolkan and Goodboy concluded that intellectual stimulation improved classroom learning environments as professors promoted student critical thinking and thoughtful study habits.

Further, the results of this study indicated that the use of intellectual stimulation alone in second or foreign language classroom may not create greater teaching effectiveness. This study reports that in second or foreign language teaching, student responses in factor analysis merged the two variables of individualized consideration and intellectual stimulation, which was then named Considerate Intellectual Stimulation. Undergraduate student perceptions of this new variable indicated that intellectual stimulation and individualized consideration should be inseparable from each other in second or foreign language classrooms. The results of this study suggested that in second language classroom professors need to combine the components of individualized consideration and intellectual stimulation for quality learning and teaching results.

Intellectual stimulation leads to thoughtful problem solving by careful contemplation (Bass, 1985) and challenging of students (Bolkan and Goodboy, 2011). By the use of intellectual stimulation, educators challenge the students' existing beliefs and assumptions (Boyd, 2009). The findings of the current study indicate undergraduate students' reservations when professors involve them in discussions, debates, and critical thinking in a foreign language.

The research on second and foreign language also supports this contention. Al-Khairy (2013) examined factors that influenced student enrolled in English

programs in Saudi Arabia. He reported complex classroom environments in foreign language classes resulted in some students who experienced stress to perform well. Similarly, Alrabai (2014) reported that communication anxiety negatively impacted students' learning in foreign language classrooms.

Students who already face the challenge of learning a second or foreign language feel uncomfortable in the class where professors challenge them to think about their existing beliefs. The value of intellectual stimulation is increased when professors use individualized consideration along the way in second or foreign language classrooms. To create less threatening environment and reduce student threat and anxiety, professors' use of individualized consideration provide students with personalized experiences of education which increase student participation and teaching effectiveness in the classrooms (Bolkan & Goodboy, 2011; Waldeck, 2007).

The results of this study support the idea that for teaching effectiveness, professors should use individualized consideration and intellectual stimulation together by creating supportive learning environments in the class. The results of this study also invite researchers to conduct specific research on how to use considerate intellectual stimulation in second or foreign language classrooms.

Professorial charisma predicts teaching effectiveness along with considerate intellectual stimulation in the English language classes. In the current study, professors display charismatic behaviors by being dynamic, humorous, inspiring, honest, and reliable. Charismatic professors are able to show empathy, trust, a caring attitude, and flexibility in their personalities while they teach. They trigger student excitement during learning and teaching process. The results of this study are aligned with the previous research studies (Bolkan & Goodboy, 2011; Economos, 2013) in predicting the charismatic behaviors of professors, resulting in teaching effectiveness.

Overall, the results of this study support the use of transformational leadership behaviors in promoting teaching effectiveness in second language classrooms. It is important to note that professorial charisma and use of considerate intellectual stimulation in second language classrooms provide students with necessary emotional support that students need to overcome their learning struggles. This can lead to effective teaching with a quality learning outcome.

A limitation of this study is that it did not gather data from students enrolled in other academic disciplines in Pakistan. The study focused on students who were enrolled in bachelor English programs. It is possible that students from different academic disciplines may respond to transformational teaching practices in different ways. For instance, professorial charisma may be a strong predictor in social sciences,



and intellectual stimulation may be considered more valuable in natural sciences. Therefore, subsequent research should examine other academic disciplines to see the relationship of transformational teaching practices and teaching effectiveness. In addition, this research study reported the dispositions of students who had English as their major subject in bachelor English programs. As English is a compulsory subject for all Pakistani students up to bachelor level, students not majoring in English may have different perceptions regarding transformational teaching practices and teaching effectiveness. Conducting research in this context may prove worthwhile. Research studies should also be conducted to discover effective teaching behaviors in second language classrooms associated with transformational teaching practices as perceived by professors.

This research has implications for English education in Pakistan: many projects seek to improve skills of English professors, and the potential of transformational teaching to improve English education looks promising. The results of this study are useful for students, professors, and policy makers in that it offers insights into effective teaching behaviors in English courses as related to transformational teaching. This research indicates how transformational teaching exhibits certain instructional behaviors and faculty interactions that have implications for student learning. Research studies (Bolkan & Goodboy, 2011; Pounder, 2008) have indicated a need to investigate the potential of transformational teaching across cultural settings, and this study reported descriptions of Pakistani undergraduate students on transformational teaching practices in second language classrooms. It is interesting to note that Pakistani students also reported that transformational teaching practices are associated with teaching effectiveness.

Findings of this study are transferrable to teaching in general. Transformational teaching behaviors create improved environments for teaching and learning. Findings and results that emerge from the current research on transformational teaching provide a good description of how transformational teaching results in effective teaching. The results of this study will help teachers to teach more effectively so that students will be more engaged in their learning.

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## Gaming the System: Helping Students Level Up Their Learning

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The use of gamified learning has increased within the educational community over the last decade in an attempt to enhance student learning in multiple ways. In particular, researchers have started to examine gamified learning and its impact on student motivation and engagement within educational settings. However, few have examined the relationship between specific tools embedded within a learning management system (LMS) and student outcomes at the postsecondary level. The purpose of this study was to examine the impact of a grade predictor tool embedded within a gaming inspired learning management system on 75 college students' ability to accurately predict their final grades. Results indicated that all students reported using the tool on at least a monthly basis and that the majority of students were able to correctly predict their final grades.

Gamified learning, or the gamification of learning, has been defined as the use of game design elements in non-game settings in order to increase motivation and attention on a task (Deterding, Dixon, Khaled, & Nacke, 2011; Simões, Redondo, & Vilas, 2013). It is important to note the distinction between teaching through a gamified pedagogical approach and teaching through the use of actual games, which has been found to be an effective way to teach things such as grammar (Tuan & Doan, 2010; Yolageldili & Arikan, 2011), computer programming (Doherty & Kumar, 2009), digital citizenship, and problem solving (Gros, 2007). Unlike teaching with games, gamified instruction is the integration of gaming principles, and this approach to teaching and training is gaining popularity in the field of education (Caponeto, Earp & Ott, 2014; Domíngues, et al., 2013) as well as private and public corporations (Dale, 2014). Evidence suggests that gamified learning, or the creation of gameful experiences, can impact engagement, motivate target behaviors, and drive innovation (Kapp, 2012).

This research draws on social constructivism and self-determinism as a theoretical framework. The social constructivist theory of learning states that learners construct new knowledge based upon prior knowledge and experiences (Vygotsky, 1978). According to this theory, teachers and students both generate knowledge as they reflect and work together towards conceptual understanding of the content (Vygotsky, 1978). Constructivist theory contends that knowledge is created through this collaborative work between teachers, content experts, and students (Brown et al., 1993; Lave, 1988). The notion that knowledge is constructed indicates that students must take an active role in their learning as opposed to being passive vessels into which teachers pour information (Au, 1998). This also implies that knowledge is not a static entity but instead an evolving process that differs from learner to learner (Gredler, 1997). Additionally, meaningful learning occurs when learners have the opportunity to construct meaning from multiple

representations of the same material (Mayer, Moreno, Boire, & Vagge, 1999) rather than relying on a single viewpoint or perspective. This theory of learning aligns closely with a gamified approach to teaching where students are provided multiple opportunities to interact with their teachers, the content, and their classmates in an attempt to construct new meaning.

In addition to social constructivism, the theoretical framework of this research draws on self-determination theory. A primary tenet of self-determination theory is that when individuals are given the autonomy to make their own decisions about the tasks they complete, they are more likely to be engaged in their work (Gagne & Deci, 2005). Choice is an integral component in self-determination theory, which posits that having the autonomy to make decisions can also lead to greater motivation in task completion (Ryan & Deci, 2000).

When students are allowed to choose which learning activities they engage with, they are more likely to make selections that align with their own learning style, which can make the learning more relevant and meaningful to them (Biggs, 1999). In addition, when students are provided with a learning environment where they are encouraged to take risks and delve into challenging problem solving, they are more likely to develop effective learning dispositions (Claxton, 2007).

The challenge comes in aligning course goals and assignments with the interests of individual students so that as students choose to complete various assignments, they are also meeting the objectives of the course (Barata, Gama, Jorge, & Goncalves, 2013).

Providing students with choice in assignment selection is at the foundation of the gamified instructional approach (Dickey, 2005), which is why self-determination theory, combined with social constructivism, provides a logical framework for research in this area.

In his book, *What Video Games Have to Teach Us About Learning and Literacy* (2014), James Gee describes thirty-six learning principles that are present in good games. These learning principles provide the

catalyst for good game design and, in turn, can be used as guiding principles when designing a gamified learning environment. For instance, good games provide players with information when they need it and within the context in which the information will be used (Gee, 2003). This allows players to put that information to use immediately in order to complete a task, solve a problem, or otherwise progress through the game. Quality games also challenge players so that they are routinely working at the peak of their abilities and knowledge (Gee, 2003). Vygotsky (1978) referred to this as the zone of proximal development, which is the area where a learner is constantly being tested and challenged. Having students, or players, operate within this optimal learning zone helps keep them engaged and encourages them to learn more in order to meet the demands of the next challenge.

Games, particularly multi-player games, require players to collaborate and work in teams where they have to share knowledge and skills (Gee, 2003). Being engaged in a community of practice (Lave & Wenger, 1991) focused on solving a common problem or completing a joint task can promote social learning opportunities. Games that specifically promote and reward cooperation and teamwork have a positive impact on the development of prosocial skills (Granic, Lobel & Engels, 2014). Creating gamified learning environments that likewise promote cooperative learning could have a similar impact on social skills.

Gee (2003) also contends that well designed games are motivational, primarily because of the different learning principles outlined previously. Working at the limits of their abilities keeps players engaged as they continue to take on new challenges (Ott & Tavella, 2009). Gee (2003) refers to this process as a cycle of expertise, which requires players to constantly learn, act, revise, and learn again in order to demonstrate mastery and be successful in a game. Allowing students to engage in this iterative process of learning, testing, and revising can be an effective way to keep them engaged in authentic tasks (Barata et al., 2013). In addition to the motivational aspect of the cognitive element of games, Lee and Hammer (2011) suggest that the social and emotional aspects of gaming environments can contribute to student engagement as well.

Most games have reward systems that allow students to earn things such as points, badges, and trophies, which unlock new features or levels based on the completion of various tasks. Conversely, there are usually consequences when tasks aren't completed correctly. The key is finding a balance between rewards and consequences such that players remain motivated to proceed but do not become overwhelmed or discouraged by the complexity of the task (Domínguez et al., 2013). A well-designed game can also motivate players to stay engaged by enhancing the

value of the task or tasks being completed (Yang, 2012). This is particularly beneficial with educational games focused on academic content like civics, geometry, or science. In most traditional classrooms, the primary way students are rewarded is through grades, which are given *after* the completion of an assignment, paper, quiz, or test. In a gamified classroom, students are rewarded *throughout* the learning process as a way to encourage their active engagement in problem solving and critical thinking.

Another key component inherent in most gaming environments is the element of choice, which allows players to decide where to go within the gaming environment and what decisions to make based on the tasks and situations with which they are confronted. Providing authentic opportunities for choice can lead to more engaged learning as players feel they have control over the outcome of the game and the ability to customize their experience (Dickey, 2005). However, providing students with too much choice can result in negative consequences. This has been referred to as the "paradox of choice" (Schwartz, 2005) and suggests that having too many choices can be overwhelming and actually detrimental to the decision-making process. Finding the balance between enough choice and too many options is one of the many challenges game designers face. Incorporating an element of choice is yet another design element to consider when creating a gamified learning environment.

Over the last decade, a variety of gameful learning environments such as ClassCraft (<http://www.classcraft.com/>), Playlyfe (<https://playlyfe.com/>), and TalentLMS (<http://www.talentlms.com/>) have been developed to promote and facilitate gamified learning. Some are better suited for K-12 education, and some are designed for post-secondary environments. That said, research on how these learning environments affect specific student outcomes is limited. The authors of this study chose to use the learning management system (LMS) called GradeCraft (<https://www.gradecraft.com/>), which was developed at a prominent midwest university. GradeCraft incorporates a variety of elements of gamified learning including additive grading, where students start at zero and advance through levels by earning points via the completion of assignments and other graded tasks. Courses can also be structured such that the successful completion of one assignment will unlock, or make available, subsequent assignments. Other gamified elements present in GradeCraft include a leaderboard, badges that can be awarded for exceptional work, focus on mastery learning, the creation of avatars to represent students in the LMS environment, and student choice in assignment selection.

One way to provide students with choice in an educational setting is by allowing them to pick from a range of assignments and assessments to complete rather than telling them specifically what they need to do and when it needs to be completed. In addition to assignment choice, providing students with a tool that helps them predict final grades may bolster learner autonomy within the course. One such tool is the Grade Predictor feature embedded in GradeCraft, which allows students to track their progress and anticipate a final grade in ways that would otherwise not be possible in the absence of this tool.

The Grade Predictor tool is designed to let students explore different pathways through the course assignments in order to see what choices will help them achieve the grade they hope to earn in the class. This research focuses specifically on student use, and perceptions of, the Grade Predictor tool in order to learn how students might make use of this predictive capability. There are several unique features within GradeCraft that make it different from other learning management systems. Likewise, there are many differences in the pedagogical approach between a gamified course and a more traditional course. Investigating all of the different features and making comparisons between the multitude of differences in instructional approaches would be beyond the scope of a single manuscript. Therefore, a deliberate decision was made to focus on the Grade Predictor because of the novelty of this tool and the potential it provided for students to take greater control of their studies.

### Grade Predictor

The Grade Predictor tool, as the name implies, makes it possible for students to predict their final grade while selecting the assignments they want to complete. The ability to accurately predict a final grade can help students make determinations about what material they need to master and how they should prepare for upcoming tests and examinations (Burns, 2007; Hacker, Bol, Horgan, & Rakow, 2000). Moreover, when students are accurately able to predict their grade in a course they can make better informed decisions about how to distribute the time and effort they devote to studying (Grimes, 2002).

The Grade Predictor tool allows students to pick all the assignments they intend to complete and see how many points they would earn, as well as the overall grade they would receive, based on the completion of those assignments. They can even select an individual score for each assignment to determine exactly what they would need to earn in each case in order to reach their target grade for the course. This is similar to a progress bar or status indicator in a gaming environment that shows the players where they are in a level and what they

have left to complete in order to advance in the game. However, picking a score for an assignment doesn't mean students automatically receive that score. It just allows them to see how many total points they would earn in the course based on the assignments they select and the scores they anticipate receiving.

The Grade Predictor automatically gives students credit for assignments completed so that those points get factored into their final predicted grade. Students can use the Grade Predictor as frequently as they like, making revisions to the assignments they plan to complete based on whatever criteria they choose. This aligns closely with the tenet of choice that is a central part of gameful learning. The Grade Predictor tool is designed to help students make informed decisions about the assignments they choose to complete so that they can plot a productive and efficient pathway through the course. That said, questions remain about the frequency and usefulness of the Grade Predictor tool.

Prior to the start of the winter 2015 semester, Institutional Review Board approval was sought and granted to implement GradeCraft in a series of cross listed (undergraduate/graduate) courses to examine the impact a gaming inspired LMS has on students' ability to accurately predict their final grades. More specifically, to answer the following research question: Does using a Grade Predictor tool embedded within a gaming inspired learning management system enhance students' ability to accurately predict their final grade at the college level?

### Method

During the fall of 2014, the authors chose to adopt GradeCraft as the primary LMS for two classes they taught in the fall semester of 2015 and winter semester of 2016. The classes selected for implementation were both education classes serving undergraduate and graduate students, many of whom were pursuing a teaching certification or an additional teaching endorsement. More specifically, one class had a focus on transition services for individuals with disabilities, and the other class on the integration of educational technologies within the K-12 environment.

### Participants

All students ( $n = 76$ ) who were enrolled in the courses during the two semesters listed previously were eligible to participate in the study. The sample for this study included undergraduate ( $n = 73$ ) and graduate ( $n = 2$ ) level students who received all instruction on campus within a face-to-face classroom framework. Of the 75 students, 11 were male, and 64 were female. No age or ethnicity information were collected. Participation in the research was completely voluntary,

Table 1  
*Survey Participation*

Participants	Pre-Survey	Midterm Survey	Response Rate
Total	75	68	91%
Undergraduate	73	66	90%
Graduate	2	2	100%

and no incentive was given for participation. Additionally, no penalty was administered for nonparticipation if students opted out.

### Measure

Data were collected through surveys distributed electronically to all participating students at the start, middle point, and end of each semester. The three surveys were created collaboratively by both authors and consisted of open ended and multiple-choice questions. Students were asked about their grade status including both current and anticipated grades, use of LMS features such as the Grade Predictor, and assignment preferences. As stated earlier, the Grade Predictor tool is embedded in GradeCraft and assists students in determining which assignments are needed to obtain a specific grade for the course. Students can generate hypothetical “final” grade scenarios based on the selection of assignments they intend to complete. For example, students may use the Grade Predictor to select the minimum number of assignments to complete in order to achieve their desired final grade.

### Procedures

Student participation in data collection was limited to answering three online surveys during the course of the semester. Links to the pre-survey, mid-survey, and post-survey were distributed each term to correspond with the first week of class, midway point of the term, and last week of class respectively. Prior to any survey dissemination, a consent form was distributed to all potential participants that included, but was not limited to, the following: the purpose of the study, research procedures, possible risks, and contact information for the university’s office of research. Students did not have a choice on whether or not they used GradeCraft, but they did have the option to not participate in the study. On the first day of each semester, students were informed that GradeCraft would be the LMS for the course and were shown a brief video providing an overview of GradeCraft. Next, an orientation exercise

was assigned to familiarize the students with the GradeCraft features and help them learn how to navigate the site successfully. More specifically, the Grade Predictor was introduced, and students were shown how to use it. Lastly, the collected data was analyzed at the conclusion of the winter 2016 semester.

### Results

The purpose of this study was to explore whether using a Grade Predictor tool embedded within a gaming inspired LMS (i.e. GradeCraft) allowed students to accurately predict their final grade. Three separate surveys were distributed during each semester to 75 students over the span of two academic semesters. Due to a low response rate on the post-survey ( $n = 42$ ), data reported in tables 1 - 3 are exclusive to the Pre and Mid surveys. That said, a fourth table has been included and contains Grade Predictor user opinion data collected from the post survey since the authors believe these data add value to the manuscript. Lastly, data were analyzed to see whether students were able to accurately predict their final grade based on two variables (a) student use of Grade Predictor and (b) final grade.

### Participation

Total enrollment for all classes was 76 students. Out of the 76 students, 75 consented to participate in this study, and 100% of those participating completed the pre-survey (see Table 1). Seven of the initial 75 participants failed to complete the midterm survey, resulting in a 91% response rate for students completing both surveys. A possible explanation for why seven students did not complete the midterm survey is that all seven had acquired enough points to offset attendance/participation points awarded for each class session and, therefore, were not in class the day the midterm survey was administered. The sample consisted of 64 females and 11 males.

### Grade Predictor

Students were asked on the pre-survey to predict their use of the Grade Predictor tool prior to any

Table 2  
*Pre-Survey for Grade Predictor (n=75)*

Participants	Daily	Once a Week	Every Other Week	Monthly	Did Not Use
Accurately Predicted (n=33)	6	15	8	4	0
Within 1 Grade Value (n=10)	2	5	3	0	0
≤ 2 Grade Values (n=10)	3	5	0	2	0
≥ 3 Grade Values (n=22)	3	7	7	5	0

Table 3  
*Midterm Survey for Grade Predictor (n=68)*

Participants	Daily	Once a Week	Every Other Week	Monthly	Did Not Use
Accurately Predicted (n=29)	1	3	18	7	0
Within 1 Grade Value (n=9)	1	2	4	2	0
≤ 2 Grade Values (n=9)	0	1	6	2	0
≥ 3 Grade Values (n=21)	0	4	9	8	0

assignments being completed. They were presented with five answer choices ranging from daily use of the Grade Predictor to no use of the Grade Predictor. Students were also asked to predict their final grade. Table 2 compares students *anticipated* use (pre-survey) of the Grade Predictor in determining their final grade against their *actual* final grade in the course to represent how accurately each student was able to predict their grade. It should be noted that a student who predicted an A but earned an A- was considered to be within 1 grade value. Likewise, if a student predicted a B but earned a B+, he/she was also considered to be within 1 grade value.

**Pre-survey.** Of the 75 students, all responded they intended to use the Grade Predictor tool during the semester. Frequency of intended use varied across participants with 61.3% of students anticipating using the Grade Predictor either daily or at least once a week compared to 39% of students intending to use it at least once a month. The most commonly selected option was once a week (43%) while monthly usage was the least selected answer (15%), indicating a possible initial reliance on the tool to predict final grades. There were 33 students (44%) who accurately predicted their final grade on the pre-survey. An additional 10 students were accurate within one grade value.

**Midterm survey.** After a six-week exposure to course content and assignments, students were prompted to complete the midterm survey. Instead of asking students how they *anticipated* using the Grade Predictor, this survey asked how frequently they had *actually* been using the tool over the first half of the semester. Similar to the pre-survey, students were asked again to predict their final grade in the course. Student self-reported frequency of use was noticeably different compared to the pre-survey results. Table 3 displays the results of the use of the Grade Predictor by students at the midway point of the semester compared with the accuracy with which students predicted their final grade.

Only 18% of the students reported using the tool on at least a weekly basis even though 61% anticipated using it that frequently on the pre-survey. All of the participants indicated using the Grade Predictor at least monthly if not more frequently. Additionally, over half (54.4%) of the students reported using the Grade Predictor every other week and only two students used the tool daily. As shown in the table, 29 (43%) of the students accurately predicted their final grade at the midway point of the semester. This was nearly unchanged, on a percentage basis, from the pre-survey where 44% accurately predicted their final grade.



The majority (57%) of students accurately predicted their final grades within one grade value. However, 29% incorrectly estimated their final grade by 3 or more grade values. A closer analysis of that 29% revealed four students underestimated their final grades (i.e., earned a higher grade than predicted) and the other 24% overestimated. Since all students used the Grade Predictor tool at least monthly, it was difficult to correlate frequency of usage with ability to accurately predict a final grade. For example, of the 43 students who accurately predicted their final grade, 51% of them used the Grade Predictor tool every other week, and only two students used the tool on a daily basis. Additionally, weekly use was also low among the respondents with just five students from each group using the tool on a weekly basis. However, the most commonly reported usage of the tool on a frequency basis was every other week. In addition, of the 29 students who accurately predicted their grade, 18 (62%) reported using the Grade Predictor at least every other week. Conversely, of the 19 students who only used the Grade Predictor on a monthly basis, only 7 (37%) accurately predicted their final grade.

**Post Survey.** During the final week of the semester, students were instructed to complete a post survey. Similar to the pre- and midterm surveys, questions focused on the frequency of Grade Predictor use and final grade outcomes. Additional queries on the post survey went beyond what was previously asked on the pre and midterm surveys, to include questions focused on users' opinions of the Grade Predictor tool, more specifically, how beneficial the tool was in planning work for the semester, reducing workload anxiety, and instilling confidence in the student's ability to earn his/her desired grade for the course. As stated previously, response to the post survey was 56%, so a decision was made to exclude the data from the reporting of student use of Grade Predictor and final grades alongside the pre and midterm surveys in Tables 1-3.

After an analysis of the other post survey data, the authors agreed that the data focusing on user opinions for the Grade Predictor tool added value to the overall manuscript (see Table 4).

Users' opinions regarding the Grade Predictor tool revealed an overall positive view. The majority of respondents (62%) reported using the Grade Predictor tool to plan a course of study throughout the semester. Additionally, more than half (53%) believed the Grade Predictor tool instilled an additional level of confidence when working towards a predicted final grade, and half reported that the tool reduced grade anxiety. It should be noted that a percent of respondents were compelled to select a neutral answer to the three questions. That said, the number of neutral answers did not surpass the positive responses for each question.

### Discussion

An increasing number of researchers have conducted studies with a focus on gamified learning and its impact on motivation and engagement within education (Gee, 2003; Yang, 2012). However, few have examined the relationship between specific tools embedded within the LMS and student outcomes at the postsecondary level. The purpose of this study was to examine the impact of using a Grade Predictor tool embedded within a gaming inspired learning management system on 75 college-level students' ability to accurately predict their final grades. Based on the results, the majority of students were able to accurately predict their final grade by using the Grade Predictor tool at least once every two weeks, thus increasing autonomy in the learning process by providing students the ability to design their own learning path and predict their learning outcomes (i.e., grades). Furthermore, the intrinsic results from the post survey, coupled with data representing actual use of Grade Predictor, provide further evidence that the tool was helpful to the majority of students.

Table 4  
*Grade Predictor Opinions (n 42)*

	Very True	Neither True or Untrue	Not True At All
I used the grade predictor tool to plan my work for the semester.	26	10	6
I used the grade predictor to reduce my anxiety over my workload.	21	16	5
The grade predictor tool helped me to be confident of achieving the grade I wanted.	22	12	8

The Grade Predictor tool is designed to provide students with a way to accurately predict their final grades by seeing, not only what assignments they need to complete, but also the specific scores they would need to earn on those assignments. Tools such as the Grade Predictor are only effective if they are used on a consistent basis and are readily available. Equally important is that within a gamified environment, rules are established and remain in effect throughout the duration of the course. This is particularly important when using an additive method of point accumulation within a gamified environment so that students have an advantage in determining which assignments will result in favorable points through the consistent use of the Grade Predictor tool.

Results of this study indicated that students who used the tool every other week had the highest success rate of accurately predicting their final grade. This, in part, could be due to the fact that students who used the Grade Predictor every other week were more aware of their ongoing progress in the course compared with their classmates who were only using the tool on a monthly basis. Using the Grade Predictor every other week likely allowed students to make more timely decisions about what assignments they still needed to complete based on scores they were receiving on submitted work. Students could also recover more easily from a low score on an individual assignment if they were regularly checking the Grade Predictor.

In addition, students who utilized the Grade Predictor every other week would be better able to stay abreast of the staggered deadlines inherent within a gamified course where there are many different assignment options to choose from. An additional benefit of using the tool weekly was a reduction in anxiety, as reported in the post survey results. Those students who were only using the Grade Predictor on a monthly basis would have been at a disadvantage as they would have likely missed several deadlines from month to month and thereby lost the opportunity to earn points for several assignments.

There was a discrepancy between *intended* use (pre-survey) and *actual* use (midterm survey) of the Grade Predictor tool. Students predicted a higher rate of Grade Predictor use on the pre-survey compared to their actual reported use on the midterm survey. This may be due to the fact that students gained a better understanding of the demands of the targeted courses, and associated assignments, and their corresponding ability to meet those intellectual demands as the term progressed, thus reducing the need for the tool. This makes sense because initial predictions about grades are influenced by past performance in similar courses (Burns, 2007) and, not surprisingly, grade predictions made later in a course tend to be more accurate than those made early in the

term (Koriat, 1997). This is largely because once students become more familiar with the expectations and rigor of a course, they are better able to predict how well they will perform in the class.

Another explanation is that assignments across courses were designed so that due dates extended over the duration of the semester versus having weekly deadlines, so students might not have felt inclined to use the Grade Predictor every week since they were not receiving graded work that frequently. A final explanation is that some classes only met once a week, whereas others met twice a week. Students in classes that met more frequently may have had regular reminders, and opportunities, to use the Grade Predictor when they logged into the LMS during class. Regardless of the frequency of use, every student reported using the Grade Predictor during the course of the semester. This is encouraging because it's one indication that students perceive this tool as having some measure of value when it comes to self-guided learning.

### Limitations

A couple of limitations of the study are worth noting. First, only data from the pre and midterm surveys were used in tables 1-3 because of a low response rate for the post survey. One explanation for the low response rate is that the post survey was administered either during the final week of class or at the final exam class period. Several students who had already earned enough points to get an A in the course did not bother to attend the final class sessions and were not required to complete the final exam. This meant they were not present to receive verbal prompts to complete the post survey nor did they feel obligated to respond to e-mail reminders requesting the completion of the survey. Exploring ways to insure a higher completion rate will be important for future research. The second limitation of note was the focus on data collection from student self-reporting on surveys at different checkpoints each semester. While this approach generated useful information, it will be important to expand data collection efforts to include other methods such as course evaluations, interviews, and observations where appropriate.

### Future Research

One suggestion for future research is to examine how students are choosing assignments and what criteria they use when given the opportunity to choose which assignments they will complete. This might include looking at patterns across classes to see whether or not certain assignment types (e.g., quizzes or written papers) are selected more often than other types of assignments.

This line of research would provide practitioners with valuable insight that could improve future course offerings by increasing student engagement and motivation through the creation of assignment types that more closely align with student interests. To conduct this research, it is imperative that more faculty start implementing GradeCraft so data collection can expand across a greater range of courses and disciplines. This would hopefully alleviate smaller sample sizes of participants in future studies and promote the collection of data across a broader array of courses. As the number of courses using GradeCraft increases, naturally future data collection efforts will grow. This will present opportunities to explore the impact of gamified learning in a variety of content areas.

A second suggestion for future research is to reexamine existing survey questions to ensure that future iterations of this line of study will continue to yield worthwhile insights. In addition, a more comprehensive approach to administering the post survey for future courses is necessary to insure responses from students who do not attend class at the end of the term. One solution would be to administer the survey within the last two weeks of the course when more students will likely be in attendance rather than waiting until the final exam period.

### Implications for Practice

Based on data collected in this study, all students made use of the Grade Predictor tool available to them in order to stay abreast of their progress within their courses. As reported earlier, 100% of the participants in this research across multiple semesters and classes indicated that they made use of the Grade Predictor tool on at least a monthly basis. A tool such as this seems particularly critical in gamified courses where students are given the autonomy to pick and choose which assignments they will complete. Students took advantage of the opportunity to test out different pathways to get to the course grade they hoped to achieve and the ability to revise those pathways as the semester progressed. Therefore, instructors planning to use gamified pedagogies in their courses should provide students with access to a tool such as the Grade Predictor so they can easily track their progress and predict their grade.

While virtual tools such as Grade Predictor have the potential to be powerful learning mechanisms within a gamified learning environment, simply providing these tools to students without the necessary guidance and instruction on how to effectively use them is counter-intuitive. A comprehensive training for students on how to use these types of tools prior to implementation, and continuous fidelity checks throughout the semester, can help to maximize their

use. In turn, this could increase the chances of students reaching their academic goals (i.e., desired final grade) and help them better manage their coursework in a gamified learning environment.

One notable issue encountered during this study was the assumption by several students that full points would be automatically awarded for any assignment that was submitted. This false assumption may have been a result of a miscommunication between students and the instructor on the capabilities of the Grade Predictor or simply a misconception of how the tool worked. More specifically, students equated hypothetical assignment submissions represented in the Grade Predictor with automatic full credit instead of compensating for points not awarded due to mistakes and assignments that did not demonstrate mastery of targeted concepts. This provides further justification for explicit, and ongoing, training throughout the semester. Lastly, it should be noted that the authors of this study have only been using GradeCraft for a year and acknowledge that they are still learning the best ways to effectively implement gamified learning in their respective courses. Having said that, the authors see the potential benefits of using gamified learning at the university level and intend to continue using GradeCraft for future classes as they work collaboratively to refine their competency with the tool.

### Conclusions

From a very early age, games are used to teach and enhance human development (Yang, 2012). Incorporating and increasing gamified elements within an academic curriculum seems to be a natural progression as educators continue to compete with personal technology for their students' attention. The extant literature supports the notion that a gamified approach can increase student motivation and engagement, but more work is needed to know how much and in which contexts gamified elements should be used. Additionally, there is still much to learn about the best way to implement principles of gamified learning into a formal class setting and effective ways to prepare students to be successful learners in courses where these pedagogical strategies are used. Universities are in a unique position to help further this exploration through empirical research by expanding the use of gamified learning across disciplines.

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## Reliability and Validity of the Research Methods Skills Assessment

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The Research Methods Skills Assessment (RMSA) was created to measure psychology majors' statistics knowledge and skills. The American Psychological Association's Guidelines for the Undergraduate Major in Psychology (APA, 2007, 2013) served as a framework for development. Results from a Rasch analysis with data from  $n=330$  undergraduates showed good fit for 16 of the 21 items created. Validity analysis showed that using the RMSA to measure students' statistics knowledge was an improvement over the assessment recommended by the APA Guidelines and was less time consuming. Together the findings provide a preliminary test that can be further developed to provide a tool for instructors and departments to use when assessing psychology students' statistics knowledge and skills. Future research should expand the RMSA to include items that measure knowledge with confidence intervals as the proposed items were removed due to poor fit. Future studies should also aim to replicate the current findings with additional samples of psychology students.

Statistics is an integral part of the curriculum in psychology departments with an estimated 86% of undergraduate psychology programs requiring statistics and related methods courses (Friedrich, Buday, & Kerr, 2000; McKelvie, 2000). In psychology, students often study statistics within the department, as opposed to the mathematics department, and the course(s) can be part of a sequence that integrates research methods (Friedrich et al., 2000). The inclusion of statistics in the psychology curriculum allows for the students to build knowledge and skills consistent with the way in which statistics are applied in psychology. As such, statistics courses taught in psychology may differ from the statistics courses taught outside of a psychology department. For example, probability is a foundational topic in statistics courses. However, the application of probability, such as using the  $p$ -value to interpret a statistical test, is an applied skill needed among psychology majors, but could be omitted from a statistics courses not taught within psychology. Other skills, such as distinguishing and applying different specific statistical tests (e.g.,  $t$ -tests and ANOVAs) or using effect size, are also examples of important applied skills that need to be covered in the psychology statistics course. These skills are outlined in the American Psychological Association's *Guidelines for the Undergraduate Major in Psychology* (APA, 2007, 2013; hereafter *Guidelines*) along with other statistics objectives for psychology majors.

The *Guidelines* also emphasize the importance of assessing students' levels of mastery of these skills and provides suggested methods for such assessment. For the statistics related skills the recommendation is to review a research project using a rubric for scoring. Such projects, while containing a wealth of information regarding students' knowledge and skills, may be problematic in the assessment setting given the length of time needed to review a research project, the variability between raters, and the challenge that not all

students will have the opportunity to complete such a project during their undergraduate career. Also, research projects, although using statistics, cover a broader range of skills such that using them to assess statistics skills would require teasing out items that are specifically related to statistics.

Other methods exist for measuring statistical knowledge and skills. Three commonly used tests are the Statistical Reasoning Assessment (SRA; Garfield, 2003), the Comprehensive Assessment of Outcomes for a first Statistics Course, the CAOS, (delMas, Garfield, Ooms, & Chance, 2007), and the Statistics Concept Inventory (SCI; Allen, 2006). In general, these tests assess knowledge expected of students after completing an introductory statistics course. The tests are consistent with the standards outlined in the *Guidelines for Assessment and Instruction in Statistics Education* (GAISE) endorsed by the American Statistical Association (Everson, Zieffler, & Garfield, 2008). They measure statistical reasoning and common misperceptions (i.e., SRA and CAOS) as well as items designed to measure general student knowledge (i.e., CAOS and SCI). There is ample support for these instruments (Allen, 2006; Garfield, 2003; delMas et al. 2007; Zieffler, Garfield, Alt, Dupuis, Holleque, & Chang, 2008). They were developed by experts in the statistics education field and were subjected to pilot testing, and the final instruments have yielded high reliability estimates and correlated with course outcomes. As such, they are recommended for measuring statistical reasoning and knowledge after completing an introductory statistics course.

The SRA, CAOS and SCI are targeted specifically at the experiences students will have in an introductory statistics course, but their questions are limited in their coverage of content that is emphasized in psychology statistics courses (Friedrich et al., 2000) and outlined in the APA *Guidelines*. Among these limitations are the skills outlined above: applying probability by using a  $p$ -

value, choosing appropriate statistics tests for different scenarios, and using effect sizes. We aimed to develop a test that would be more inclusive of knowledge and skills taught in the psychology statistics course, but less time consuming than reviewing a research project. We used the *Guidelines* to provide a framework from which to begin to develop this test.

### Measuring Statistical Skills Amongst Psychology Students

In 2007 the APA established the first version of the *Guidelines*, which includes goals, curriculum and assessment planning aimed at helping the construction of undergraduate programs (APA, 2007). In 2013, the second version of the *Guidelines* was published in which the number of goals was reduced from ten to five and detailed indicators were specified within each goal for both the two- and four-year levels. The goals include a range of topics such as general knowledge in psychology, communication and professional skills, and critical and scientific thinking. Goal 2.0, entitled “Scientific Inquiry and Critical Thinking,” includes 24 indicators in which research skills are listed. Among these are specific statistics skill indicators, including the ability to interpret basic descriptive statistics, to identify statistical and meaningful significance (i.e.,  $p$ -value vs. effect size estimates) and to choose appropriate statistical tests. It is these specific statistics indicators that we aimed to measure with the RMSA. Although this first version of the test measured only content related to statistics, the instrument was titled the Research Methods Skills Assessment (RMSA) to be consistent with the broader skills identified in Goal 2.0 and allow for future versions of the test to include methods questions as well as statistics questions.

### Goals of the Current Project

Recognizing the need for an efficient way to assess students’ skills in statistics, we created a 21-items test with the goal of assessing the research skill indicators focused specifically on statistics in Goal 2.0 of the *Guidelines*. As such, the focus of the questions on the RMSA surrounded knowledge and skills in interpreting descriptives, significance, effect size, and confidence intervals, as well as choosing appropriate tests for various scenarios common in psychological research.

The purpose of this phase of our project was to preliminarily examine the quality of the RMSA items for measuring performance with the indicators related specifically to statistical practices outlined in the *Guidelines*. We examined this by first conducting a Rasch analysis to determine well-fitting items. Our intention was to establish reliable and valid questions for each of the indicators in the *Guidelines* pertaining to

statistics content. Following this, we tested incremental validity to determine the ability of the RMSA to measure statistics content knowledge and skills above and beyond the use of a scored research project, the suggested method in the *Guidelines*. We expected that the RMSA, given its more direct measure of statistical skills, would provide a better measure than the rubric score for this specific content. Although other tests exist to measure statistical skills, their lack of content specifically related to the APA Guidelines makes them fundamentally different from the RMSA items. As such, we chose not to compare the RMSA to other statistics assessments.

## Method

### Participants

The participants in this study were recruited from four different Northeast institutions ( $n=330$ ; 73.9% female; mean age=22.63(6.09); 71.4% Caucasian, 12.4% Black/African American, 14.3% Hispanic/Latino, 1.9% Asian). The institutions ranged in size but were primarily private with the exception of one large public institution. The primary focus was to examine performance when administering the RMSA utilizing a paper-pencil “closed-book” classroom setting; however, two instructors requested an online version of the assessment for their students to complete in class.

Inclusion criteria for participating in the study dictated that students had to be enrolled in, or have already completed, a course taught within the psychology department that had the specific purpose of instructing them on statistics. The inclusion criteria was set this way given that psychology departments vary in the courses they provide to meet the need of statistics instruction (Friedrich et al., 2000). For example, some programs provide a stand-alone statistics course and others provide a course that integrates statistics and methods. The subject pool for this study included those completing stand-alone statistics courses ( $n=155$ ) and those completing courses that integrated statistics and methods ( $n=175$ ). This resulted in a sample ( $n=330$ ) for the Rasch analysis that exceeded the general sample size guidelines of 200 participants (Thorpe & Favia, 2012).

Data from the stand-alone statistics course and integrated statistics and research methods courses were analyzed together. The groups were similar in terms of their college GPA,  $M=3.21(.47)$  vs.  $M=3.14(.42)$ ,  $t(90)=-.75$ ,  $p=.45$ , overall RMSA score  $M=.61(.15)$  vs.  $M=.58(.21)$ ,  $t(95)=.82$ ,  $p=.412$ , and each subsection score of the RMSA (Section 1,  $M=.74(.22)$  vs.  $M=.76(.22)$ ; Section 2,  $M=.45(.33)$  vs.  $M=.43(.33)$ ; Section 3,  $M=.36(.40)$  vs.  $M=.34(.38)$ ; Section 4,  $M=.36(.30)$  vs.  $M=.32(.28)$ ; all  $ps>.05$ ). The course grade between these

Table 1  
*Content, Taxonomy and Related APA Objectives for each RMSA Item*

Content Area (Question #)	Objectives Measured (Taxonomies Used)	Objective (APA V2)	Total Items
Descriptives	Interpret basic statistical results (knowledge, application, analysis)	2.2e,E	9
Q1	Sample Size		1
Q2	Mean		1
Q3 & Q4	Standard Deviation		2
Q5 – Q9	z scores		5
Significance	Appropriate use of statistical vs. practical significance (knowledge, comprehension, application, evaluation)	2.2e,E	4
Q10 & Q11	p-values		2
Q12 & Q13	Cohen's d		2
Confidence Intervals	Identifying confidence intervals appropriate for sample means as opposed to individual scores; assumes knowledge of Central Limit Theorem (knowledge, application)	2.2e,E	2
Q14	Confidence for individual scores		1
Q15	Confidence intervals for sample means		1
Choosing Tests	Ability to choose an appropriate test for a given research hypothesis (knowledge, comprehension, application)	2.3B; 2.4d, D	6
Q16	One-sample t-test		1
Q17 & Q18	One-way and repeated measures ANOVA		2
Q19 & Q20	Pearson and Spearman correlations		2
Q21	Chi-square		1

*Note:* APA-V2 objectives reflect foundational level with lowercase letters and baccalaureate level with uppercase letters.

two groups showed a significant difference with the students in the stand-alone statistics course having a final grade that was higher than those in the integrated statistics and research methods course,  $M=.87(.07)$  vs.  $M=.84(.08)$ ,  $t(102)=2.03$ ,  $p=.045$ . Given that these scores differed only by 3% and that all other measures of ability (i.e., GPA and RMSA scores) did not differ, we combined the data for the groups for all analyses.

A subsample provided course performance data (described below) to aid in the investigation of incremental validity. Access to course performance data was dependent on the instructor having assigned the specific coursework and their willingness to participate, resulting in a convenience sampling. Final statistics course grades were provided for  $n=116$  students, and rubric scores for a final research projects were provided for  $n=28$ .

## Measures

**Research methods skill assessment.** A full copy of the RMSA is provided in the Appendix. The RMSA

included 21 questions to measure key statistical knowledge and application skills reflected in the objectives in the *Guidelines*. Table 1 provides the objective each item targets, as well as the foundational/2-year and baccalaureate/4-year level. The items were created to span four of the taxonomies proposed by Bloom (Aiken & Groth-Marnat, 2006; Bloom, 1956): general knowledge, comprehension, application, analysis, and evaluation (see Table 1). This resulted in items that go beyond the measurement of rote memory and measure more in-depth comprehension of concepts.

In the first section of the RMSA, a table of descriptive statistics was displayed, and a series of four questions was given to assess students' ability to "interpret basic statistical results" (objective 2.3a, APA, 2007, p. 13). Following this, four z-scores were provided, and students were to identify which of these were statistically significant at the given alpha level. To assess students' skills with objective 2.3b, to "distinguish between statistical significance and



practical significance” (APA, 2007, p. 13), the results of an independent samples *t*-test were provided, and four questions were asked to identify the students’ knowledge of whether the results were statistically significant and/or meaningful and which values in the results (i.e., *p* or *d*) revealed this information. Other questions assessed the students’ ability to choose an appropriate test for a given research hypothesis (objective 2.4e). True/false questions pertaining to confidence intervals (objective 2.3c) and derived from Garfield, delMas, and Chance (n.d.) were also included.

Completion time was typically 15 minutes with some students finishing more quickly and few taking up to 20 minutes. Directions for completion encouraged this quick pace by specifying, “If you know the answer to a question, please write it down. If you do not know an answer, that is okay, simply move on to the next question.” Each question on the RMSA is recorded as correct (1) or incorrect/not answered (0), and the points are summed and averaged across the number of items. This provides a final score indicating the percentage of items correct.

**Course Performance Measures.** Course grades and rubric scores for a research project, based on a grading scale of 0-100%, were provided by faculty for a subset of students. Reviewing research projects using a rubric is the recommended form of assessment listed in the *Guidelines*, and as such we compared them to RMSA scores. The rubric scores differed from course grades in important ways. For example, the rubric scores are generated using items that intend to assess learning outcomes for a research project assigned to students. Course grades demonstrate the extent to which a student meets, not only the learning outcomes of one assignment, but many, and they can also include credit for course attendance, participation, and goals of assignments beyond that of the APA *Guidelines*’ objectives. For example, assignment goals can include criteria such as properly using APA format or sentence structure.

The rubric scores provide an assessment of students’ final research project paper. The paper included a literature review, hypothesis, methods development, data collection, analysis, and conclusion. The faculty who provided the rubric scores developed and used the rubric for departmental assessment to rate each pertinent step of the research process listed above. The rubric utilized a four-point scale that included “does not meet expectation,” “partially meets expectation,” “meets expectation,” and “beyond expectation.”

## Procedure

All research was approved by the Institutional Review Boards at all schools from which students were sampled. The RMSA was distributed in students’ classrooms. Students completed the RMSA in a paper-

pencil format or online using a computer in the classroom. The faculty member or researchers monitored the completion of the RMSA.

## Results

### Rasch Analysis

To assess the appropriateness of the items on the RMSA to measure knowledge and skills with statistics, a Rasch analysis was used. Rasch analysis was developed to examine the individual items on a test that are scored dichotomously, such as the items on the RMSA (0=incorrect, 1=correct; see Thorpe & Favia, 2012). Rasch analysis is a latent variable model that assumes that an underlying latent trait (in this case statistics knowledge and skills) can be explained by responses on a series of measurable items (RMSA items). This approach allows researchers to develop tests that can measure intangible constructs and, as such, is commonly used in educational test construction. The results of a Rasch analysis provide information on the fit of items, that is, their ability to explain the underlying latent trait, as well as the difficulty and discrimination of an item. Difficulty refers to the ability index, or point at which a respondent has a 50% probability of answering an item correctly. Discrimination refers to the ability of an item to separate respondents between those scoring above and below that item’s ability index. In our analysis, difficulty and discrimination items are reported as *z*-scores with negative values indicating easier/less discriminate items and positive values indicating more difficult/discriminate items.

We proceeded with the Rasch analysis by first assessing item fit using three criteria (Thorpe & Favia, 2012). After final items were determined, the Rasch model, excluding the removed items, was assessed for fit. Following this, the final model was used to generate difficulty and discrimination estimates for each item.

### Item Analysis

Three criteria were used to examine items. Items with less than a moderate ( $r < 0.30$ ) point-biserial correlation (Nandakumar & Ackerman, 2004) were flagged; items that could not, at minimum, moderately discriminate ability ( $> 0.65$ ; Baker, 2001) were flagged; and, items that had a negative effect on the overall Cronbach alpha such that their removal increased the alpha value were also flagged.

Using these criteria, seven items were identified as potentially problematic: I1, I3, I4, I10, I14, I15, and I20 (see Table 2). All seven items made small, if any, negative impact on Cronbach alpha values. The largest increase in the alpha value possible, given removal of a

Table 2  
*Statistics for Removed and Final Items*

Item	Point-Biserial	$\alpha$ if removed	% correct	Difficulty (z)	Discrimination (z)
I1	0.2921	0.7838	0.9534	-5.5023	3.8251
I2	0.3908	0.7794	0.9009	-6.394	4.7073
I3	0.1202	0.766	0.621	0.5137	-0.5164
I4	0.2928	0.75	0.7784	-3.5214	3.3623
I5	0.57	0.7671	0.7872	-9.1354	5.7155
I6	0.6106	0.7634	0.7522	-8.5864	4.7077
I7	0.5428	0.7693	0.7697	-8.665	5.2601
I8	0.5279	0.7706	0.7668	-8.392	6.0223
I9	0.4986	0.7748	0.5219	-0.9675	6.202
I10	0.3764	0.7459	0.6152	-2.9646	3.6427
I11	0.4783	0.7765	0.4082	2.9057	5.0695
I12	0.4159	0.7827	0.4665	1.1487	4.3565
I13	0.5066	0.7729	0.2915	5.2679	5.4785
I14	0.161	0.7606	0.2741	0.2127	0.2128
I15	0.272	0.755	0.449	1.3378	1.8781
I16	0.5054	0.7741	0.4606	1.314	5.5894
I17	0.4885	0.7743	0.2741	5.3062	5.2556
I18	0.5356	0.7711	0.4548	1.515	5.5417
I19	0.5101	0.773	0.3499	4.2676	5.3035
I20	0.425	0.7788	0.2216	5.5805	5.0846
I21	0.4741	0.7764	0.3528	3.9846	4.9344
All**	--	0.78	--	--	--

\*Item removed

\*\*Based on final items only

*Note:* Statistics for final items are derived from the model after removing poor performing items

Table 3  
*Model Fit Statistics*

	Model 1 Rasch Model	Model 2 Unconstrained Discrimination	Model 3 Discrimination Varies Across Item
<i>N</i>			
Log Likelihood	-2825	-2819.39	-2782.32
AIC	5682.93	5672.78	5628.64
BIC	5744.34	5738.03	5751.48
$\chi^2$ (df)	--	6.08(1)*	37.07(15)

\* $p < .05$

single item (I3), was 0.01. As such, the point-biserial and discrimination values were used to evaluate item removal. Flagged items were sorted by their correlation values first and then discrimination scores. Point-biserial correlations provide a measurement of monotonicity, an underlying assumption of the Rasch model that correct responses increase with ability (Thorpe & Favia, 2012). Discrimination is an important output of the Rasch model that allows researchers to identify items that separate respondents based on ability; however, it is not an underlying assumption of

the model. As such, discrimination was considered the secondary priority when determining removal of items.

Five items had point-biserial correlations that were below the cutoff (.30) ranging from 0.12 - 0.29 (I3, I14, I15, I1, I4). Four of these items (I3, I14, I15, I4) also had low discrimination values (<.65) ranging from -0.06 to 0.53. Item one (I1) had a low correlation but high discrimination. The low correlation was likely due to small variability in response where 94% of respondents correctly answered the item. The high rate of correct responses is not surprising given the easy

nature of the question (“how many people were in this study?”). Given this, I1 was not pursued for removal.

One item (I10) was flagged based on a low discrimination value but had a moderate correlation (0.37), and one item (I20) was flagged due to a slight decrease in Cronbach alpha (-0.007) but had a moderate correlation (0.37) and discrimination value (0.94). The removal of I20 was not pursued given that it met the criteria for both the correlation and discrimination and would have a minimal change on the overall Chronbach alpha if removed.

The four items with both low correlations and low discrimination values were removed one at a time based on lowest to highest correlation values. Following this, I10, which had low discrimination but a moderate correlation, was removed. The model was recalibrated after each removal to ensure that additional items flagged for removal continued to meet the point-biserial criteria cutoff. The point-biserial correlation is dependent on the overall test score and as such can change after removal of an item.

After removing five items (I3, I14, I15, I4, I10) sequentially, the overall Cronbach alpha was improved from 0.75 to 0.78. All remaining 16 items had moderate or strong point-biserial correlations and moderate to high discrimination scores.

### Model Fit

The fit of the model to the data was first tested for adherence to the assumption that there is a known discrimination parameter fixed at one (Thorpe & Favia, 2012). To check for the fit of the model under this assumption, 200 iterations of a Bootstrap goodness-of-fit test was performed using Pearson’s chi-square in the ltm package of R (Rizopoulos, 2006). A non-significant goodness-of-fit test supports the assumption that the model fits the data with a parameter fixed at one; however, the result of the test based on the data was significant ( $p=.01$ ), suggesting that the discrimination parameter was different from one. As such, a second unconstrained model, allowing a single discrimination parameter to vary, was tested for fit to the data. Models one and two were compared using -2LL with a chi-square test. A significant reduction in the -2LL indicates improvement in model fit. The -2LL for model two decreased (see Table 3) and this change was significant,  $\chi^2=6.08(1)$ ,  $p<.001$ , indicating Model 2 was an improvement over Model 1.

We examined the two-parameter extension of the Rasch model that allows the discrimination parameter to vary for each item. We used -2LL to test if this third model provided better fit than model two. When allowing the discrimination parameter to vary across items, the fit was improved above using the single parameter,  $\chi^2=37.07(15)$ ,  $p<.001$ .

### Item Difficulty and Discrimination

Item difficulty and discrimination was examined using the final third model that utilized 16 items and a two-parameter extension of the Rasch model. Item difficulty  $z$  scores are presented in Table 2. Items earlier on the test were easier for students (I1-I8) with  $z$ -scores ranging from -9.1 to -5.5. The negative  $z$ -scores indicate that the ability index, or point at which a respondent has a 50% probability of answering correct, is skewed left for each of these items, indicating that they are easier items. The majority of students answered these items correctly (75% to 95% correct). The items were designed to measure knowledge and skills with interpreting descriptive statistics and  $z$ -scores.

More difficult items were present in the second half of the test (I9-I20). The  $z$ -scores for these items ranged with -.96 to 5.58 from 22% correct to 52% correct. This indicates that the ability index is skewed right for each item, illustrating that they are more difficult items. These items covered topics of statistical significance, effect size, and choice of the best test statistical test for a given scenario.

All items had very high discrimination, ranging from 3.82 to 6.20. This indicates that the items were able to separate respondents between those scoring above and below the ability index of a given item.

### Validity

To establish content validity, two instructors with experience teaching statistics for psychology majors at both the undergraduate and graduate level for more than 30 years each reviewed and provided feedback on the items’ coverage of the *Guidelines’* indicators. Final adjustments to wording and format were made given that feedback prior to distributing the RMSA to students.

To examine incremental validity, we utilized the technique of Schmidt and Hunter (1998) that compares the overall correlation generated when regressing scores from a current standard for measuring skills alone on course grade compared to the overall correlation when regression the current standard for measuring skills in combination with the RMSA. We used the *Guideline’s* suggestion of a rubric score from the evaluation of a research project as the standard existing assessment from which to assess incremental validity. As such, we compared the overall  $R$  values obtained when regressing the rubric scores alone on course grade compared to the rubric scores and RMSA regressed on the course grade. When predicting course grade using the rubric scores alone,  $R^2=.11$ ; when adding the RMSA to the model, the  $R^2$  improved to .18. This indicates a 63% increase in validity and utility of using the RMSA over using the rubric score alone.

### Discussion

The purpose of this study was to provide preliminary data for the development of the RMSA. We implemented the RMSA with a large sample of students majoring in psychology across different institutions. Our goal was two-fold: establish questions that pertain to each indicator related to statistics content in the *Guidelines* and determine if the RMSA increased validity when measuring statistical skills compared to using a rubric score alone.

The Rasch analysis provided good fit for a 16-item test. The items cover interpreting descriptive statistics, statistical significance, and effect size, as well as choosing tests appropriate for different scenarios. The items related to confidence intervals were problematic and removed from the test. Future studies should aim to create better fitting items that measure both knowledge and application of confidence intervals. One of the items removed (I3) asked students to assess the normality of data based on descriptive statistics provided in a table. We see this as a critical skill for students in psychology. As such, we would recommend further development of the RMSA to include this question with additional items to help decipher exactly how students are thinking the answer to this question through and better assess their level of skills. For example, do students answer this question incorrectly because they fail to recognize that they can compare the mean, median, and mode to determine skew? Or, are they unaware that the incongruity in these three values suggests skew in the data? Also, there is a need for items that assess students' abilities to interpret graphically displayed descriptives. In this study, descriptives were displayed only in table format.

Despite the need for growth with respect to items that measure confidence intervals and knowledge of descriptive statistics, the incremental validity analysis suggested that the RMSA provides a better indicator of students' statistics skills than rubric scores of a research project. These findings are consistent with our hypothesis. We anticipated that, given the direct emphasis of statistical skills by the current items on the RMSA, the test would provide a better measure of statistics skills than the research project. The research project did include statistical analysis; however, it also included other research knowledge of various designs (quasi, experimental, correlational), independent and dependent variables, and reliability and validity. It will be important, if additional items are created on the RMSA to assess such research skills, to analyze the incremental validity of methods related items on the RMSA compared to using the research project rubric scores.

The data in this study supports the RMSA as a good measure of statistical skills; however, research

projects remain a more holistic approach that can allow instructors a context to open dialog with students regarding concepts that they may be struggling to master. If instructors use the RMSA in place of a more holistic project, we would encourage instructors to carefully review the results of the RMSA with students to allow for dialog and further exploration in areas where they may struggle.

Demographic comparisons of student's responses to the RMSA are needed. Upon determining a more comprehensive test that addresses the need for the items listed above, comparisons should be examined for potential gender, racial, and ethnic differences. Also important is the consideration of appropriate overall RMSA scores. Given that students may study statistics throughout a sequence of courses (e.g., Statistics I & II or Statistics followed by Research Methods/Capstone), comparison of item fit and discrimination should be conducted for these varying levels of completion with the course sequence.

The findings in this study, and especially those related to incremental validity, need to be replicated in a large diverse sample. Only one institution participating in this study assessed student research projects with a rubric, which limited the available data. The data collected in this study provided a foundation from which a relatively brief test can be developed for use in assessing psychology major's statistical knowledge and skills. The implication of such a test is vast, as it would allow for faculty to quickly assess their curriculum's effectiveness in meeting *Guidelines* indicators in this area. Unlike other goals and indicators in the *Guidelines*, Goal 2.0 has few standard tests listed for assessing the indicators in that goal. The RMSA could fill this gap by providing a quick and easily administered test to provide an indicator of students' statistical skills and knowledge.

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## Appendix

## Research Methods Skills Assessment

DIRECTIONS: The following questions ask varying questions pertaining to statistical concepts. Please read each question carefully and provide your best answer.

Questions 1 – 9 are based on the data in Table 1 which represents the results of a hypothetical administration of the SAT Quantitative Test.

**Table 1: Results for SAT Quantitative Test**

Statistic	Value
n	100
Mean	700
Median	500
Mode	500
Standard Deviation	300

Q1: How many people were sampled?

Q2: What was the mathematical average for the SAT score?

Q3\*: Does it appear that the data are normally distributed? (*this item removed*)

Q4\*: What measure listed in the table provides information about the spread of the data? (*this item removed*)

A series of tests were run on the SAT data presented in Table 1. First, z-scores were calculated for each student to determine any outliers. An outlier was defined as having a score more than two standard deviations from the mean.

Use the following information to determine which students are outliers. Circle the correct response on the right.

Q5: Student # 1 has a z-score of 1.64    Outlier   Not an outlier

Q6: Student # 2 has a z-score of 2.35    Outlier   Not an outlier

Q7: Student # 3 has a z-score of 0                      Outlier   Not an outlier

Q8: Student # 4 has a z-score of -2.21    Outlier   Not an outlier

Q9: What score on the SAT Quantitative test did Student # 3 obtain?

The next four questions are based on the following hypothetical example: A clinical psychologist was interested in testing the effects of a new treatment for anxiety. He randomly assigned 30 subjects to two groups: Group A received the treatment, which lasted four weeks; Group B was assigned to a waiting list control. A standardized test of anxiety was given to all subjects at the end of the four weeks. This test has a maximum score of 30 where a higher score indicates a greater amount of anxiety. The psychologist obtained the following data:

**Table 2: Results of the Experiment on Anxiety**

	Mean	Standard Deviation	Value of t-test	Value of p	Value of d
GROUP A	17.80	4.23	2.24	.033	.85
GROUP B	20.93	3.39			

Q10\*: Did the treatment significantly affect anxiety? *(this item removed)*

Q11: What statistic did you use to determine if the treatment affected anxiety?

Q12: Is this a meaningful difference?

Q13: What statistic did you use to determine if this is a meaningful difference?

Questions 14 and 15 are based on the following:

A 95% confidence interval is calculated for a set of weights and the resulting confidence interval is 42 to 48 pounds. Indicate whether the following two statements are true or false.

Q14\*: A total of 95% of the individual weights are between 42 and 48 pounds. *(this item removed)* True False

Q15\*: If 200 confidence intervals were generated using the same process, about 10 of the confidence intervals would not include the population mean ( $\mu$ ). *(this item removed)* True False

Questions 16 through 21 are based on the following:

Researchers at the National Institute of Health have developed a new depression scale. The test is scored on a scale of 0-50 with higher scores indicating higher levels of depression. The scale was given to a large national sample and it was determined that the mean of the test is 25 with a standard deviation of 5 (these values, therefore, are considered to be the population mean and standard deviation).

Please match the appropriate statistical test from the list below that would be used to answer each research question related to the scenario above.

- One-way between subjects ANOVA
- One-sample t-test
- Spearman correlation *(this item removed)*
- Repeated measures ANOVA
- Pearson correlation
- Chi-square test

Q16: A professor gives the test to his class of students and finds that the mean for this group of students is 35. Which test would he use to determine if his students are significantly more depressed than the population on which the test was normed? \_\_\_\_\_

Q17: The test was given to a sample of 15 women and 10 men. The mean for women was 24 and the mean for men was 21. Which test would he use to determine if the two means were significantly different from each other?

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Q18: A teacher of statistics gives the test before and after the midterm exam in her class. Which statistical test would be used to decide if there is a significant difference between these two means?

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Q19: Which test can be used to determine if there is a relationship between income (in dollars) and scores on the depression test? \_\_\_\_\_

Q20: What test can be used to determine if there is a relationship between ethnicity (African American, Caucasian, Hispanic) and scores on the depression test? \_\_\_\_\_

Q21: In reviewing the scoring protocols for the test, it was discovered that some of the test takers did not complete all of the items. To analyze this, the tests were coded as “completed” or “not completed”. Which test would be used to determine if a higher percentage of males completed the test as compared to females?



## Students' Perceptions Towards Teachers' and Students' Academic Impoliteness

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There seems to be a diversity of opinions regarding the construct-relevant definition of impoliteness. Currently, it has been defined with reference to its occurrence in specific contexts. Universities are among those places where incivility is growing rapidly. Both students' and instructors' impolite behavior have been seen as a serious problem that highly interferes with the goals of education. Hence, the current study attempts to examine Iranian university students' perception of instructors' and students' uncivil behavior. The results indicated that academic incivility can be recognized as a verbal, non-verbal, and/or as a combination of both. This study creates awareness about academic impoliteness especially in Iranian contexts and it might be a step towards tackling it.

In the field of linguistics, the word “impoliteness” is a fairly new research topic which has not yet gained as much attention as politeness. However, currently the study of impoliteness has attracted considerable recent attention among scholars (Bousfield, 2008; Culpeper, 2005, 2010; Limberg, 2009) who now endeavor to study the notion of impoliteness more thoroughly than before. Given the limited literature, the first challenge is how to define impoliteness. According to Jamet and Jobert (2013), the term impoliteness causes confusion as it is not easy to distinguish between social impoliteness and linguistic impoliteness. Consequently, there have been numerous attempts to define impoliteness. As Tannen (1990) maintains, crucial to proposing a definition is the understanding that people have diverse conceptualizations regarding impolite behavior. Given scholars' categorization of impoliteness as a culturally specific notion (Strecker, 1993), various definitions emerged. Culpeper (1996), for instance, believes that impoliteness is the opposite of politeness, thus being consistent with what Eelen (2001) declared: that politeness and impoliteness are two sides of a coin.

Although various attempts have been made to theorize politeness, there is a lack of attention towards impoliteness in literature. Many scholars have used the notion of impoliteness to theorize politeness. For instance, Watts (2003) argues that impolite behavior is a distinguishable form of social behavior since it is opposite to appropriate social behavior. The notion of impoliteness has been traditionally examined by focusing on single politeness or impoliteness strategies (see, for example, Brown & Levinson 1987; Lachenicht, 1980; Turner, 1996). In the traditional approach, impoliteness is defined as “strategic” (Lakoff, 1989) or “instrumental” (Beebe, 1995), denoting “a function that the speaker intended, and was not failed politeness” (Beebe, 1995, p.166). Accordingly, impoliteness has been defined by referring to those actions that might damage the image of the speaker. For instance, according to Goffman (1967, p. 14), three types of action can constitute a threat to image are:

- a) the offending person may appear to have acted maliciously and spitefully, with the intention of causing open insult;
- b) there are incidental offences; these arise as an unplanned but sometimes anticipated by-product of action—action the offender performs in spite of its offensive consequences, though not out of spite; and
- c) the offending person may appear to have acted innocently, and his offence seems to be unintended and unwitting.

Many scholars (Austin, 1990; Bousfield, 2008; Brown & Levinson, 1987; Culpeper, 1996, 2005 & 2010; Lachenicht, 1980; Leech, 1983; Turner, 1996) have postulated, criticized, revised, proposed, and maintained a traditional impoliteness framework based on the initial theme proposed by Brown and Levinson (1987). As Watts (2003) argues, there has been a lack of consensus regarding the notion of politeness and impoliteness and it is highly expected that there won't be an agreed upon conceptualization of the two terms in the future either. Accordingly, scholars have examined impoliteness from various standpoints which result in incompatible interpretations. Accordingly, some contexts have been proved to be more likely to host the impolite behaviors, for instance, everyday conversation (Beebe, 1995), workplace discourse (Andersson & Pearson, 1999), and courtroom discourse (Penman, 1990). As a result, more attention has been devoted to the realization of impoliteness in extended discourse. For instance, army training discourse (Culpeper, 1996), family discourse (Vuchinich, 1990), doctor-patient discourse (Aronson & Rundstrom, 1989), parliamentary discourse (Harris, 2001), radio talk shows (Hutchby, 1996), adolescent discourse (Goodwin & Goodwin, 1990), legal discourse (Archer, 2011), impoliteness in literary works (Brown & Gilman, 1989; Ermida, 2006; Metthias, 2011), impoliteness in email communication and commerce (Cehjnová, 2014; Wolf, 2011), and finally in informal settings and ordinary conversations

(Ermida, 2006; Harris, 2001; Myers, 1989). One of the areas that impoliteness is highly increasing is higher educational contexts (Boice, 1996; Hernandez & Fister, 2001; Seidman, 2005; Twale & DeLuca, 2008). Academic contexts are among those where disruptive behavior is beginning to grow quickly. Incivility can be defined as any destructive behavior causing distress in others. Over the past few decades, incivility has been observed as a problem at the primary, secondary, and high school levels; however, recently it has been also observed at the higher education level (Ausbrooks, Jones & Tijeriana, 2011; Clark, 2008; Clark et al., 2012; Knepp, 2012; Wei, 2010). Both students, to a large extent, and instructors, to some extent, are getting accustomed to improper behavior in a way that is becoming a serious problem at universities and consequently will interfere with the goals of education. Since the immediate objective of education is to increase civility and respect in society (Mirhaghi & Shomoossi, 2015), disrespectful behavior should not be encouraged. In fact, according to Clark and Carnosso (2008) ignoring such actions will lead to the emergence of a threatening situation. A further definition of incivility has been proposed by Clark and Kenaley (2011) in which impoliteness is assumed to be any speech or behavior that threaten *any member* of the educational contexts. By italicizing *any member* in this definition, it can be inferred that incivility can take multiple dimensions: students to students, students to instructors, students to personnel, instructors to instructors, instructors to students, instructors to personnel, personnel to personnel, personnel to students, and personnel to instructors. Hence, a serious concern is felt with the growing number of disrespectful behaviors being observed by either students or instructors in an academic contexts where the ultimate goal is to expand knowledge for the benefit of mankind. As a result, it seems most essential to identify and define disrespectful behavior in such contexts and then endeavor to eliminate even the slightest signs of such manner at universities.

### Literature Review

Incivility, in a general term, refers to any "speech or action that is disrespectful or rude" (Berger, 2000, p. 446). These behaviors are more vividly observed after the mid-1980s and are widespread among students. A lack of courteous types of behavior begins at the high school levels and continues and intensifies at the university level. According to Leatherman (1996) and Baldwin (1997), universities also widely blamed for causing the latest incivility due to inappropriate response to such behaviors. In fact, the only response produces by universities to students' improper behavior is the sanction of some of the offensive behaviors.

Furthermore, as universities grow in size and number of students, they have adopted a rather impersonal and indifferent social setting (Baldwin, 1997; Leatherman, 1996). An account of disrespectful behavior in academic contexts can be any rude and disrespectful speech or behavior that causes problems in the academic environment (Feldmann, 2001). More recently, Robertson (2012) defines it as intentional behavior aiming at disrupting the teaching and learning processes. The Center for Survey Research at Indiana University (2000) provides a more specific description of incivility related to the academic contexts by defining it as "... behaviors that distract the instructor or other students, disrupt classroom learning, discourage the instructor from teaching, [and] discourage other students from participating..." (in Bjorklund & Rehling, 2010). Recently, attempts have been made to categorize academic incivility. For example, Feldman (2001) put the concept into four categories: classroom terrorism, simple annoyances, threat of violence, and intimidation. By "classroom terrorism," Feldman (2001, p. 137) means that any behavior which can affect teaching and learning processes is an example of academic incivility. The second one is called simple annoyances, which refers to concepts such as clothing and class performance. The third type refers to any act of violence against a faculty member or other students. Finally, Feldman's last category of impropet academic behavior is known as intimidation that "manifested itself when students threatened to go to the dean or department head about the instructor's teaching or grading practices" (McKinne, 2008, p.27). Furthermore, covert behavior, such as sleeping, and overt behavior, such as arguing with instructors (Meyers, 2003; Seidman, 2005), as well as serious or non-serious incivility (Connelly, 2009), are other types of disrespectful behavior. There is much discussion in the literature pertaining to the emergence of uncivil behavior among students at higher educational level (Boice, 1996; Braxton & Bayer, 1999; Clark & Springer, 2007; Gonzales & Lopez, 2001; Luparell, 2003; Schneider, 1998; Thomas, 2003). For example, Royce's (2000) Survey on academic incivility shows that instructors identified the following behaviors as "incivilities": 1) arriving late to class; 2) noisily packing up early; 3) leaving early; 4) talking in class; 5) coming to class unprepared; 6) repeating questions; 7) eating in class; 8) acting bored or apathetic; 9) groaning disapprovingly; 10) making sarcastic remarks or gestures; 11) sleeping in class; 12) inattention; 13) not answering a direct question; 14) using a computer in class for non-class purposes; 15) letting cell phones and pagers go off; 16) cutting class habitually; 17) dominating discussion; 18) demanding make-up exams, extensions, grade changes, or other special favors; 19) taunting or belittling other students;

20) challenging the instructor's knowledge or credibility; 21) making harassing, hostile, or vulgar comments to the instructor in or out of class; 22) sending the instructor inappropriate emails; and 23) making threats of physical harm to the instructor. Similarly, Bjorklund and Rehling (2010) portrayed uncivil student behavior as ranging from using alcohol or any other drugs to coming late to the class.

Other groups of studies attempted to examine unintended impolite behaviors (see for example Kasper 1990; Scollon & Scollon, 1995). They studied impoliteness based on the analyses of communication across cultures. Accordingly, it was shown that uncivil behaviors are likely to occur more frequently in multi-cultural contexts and among various language groups (Cheng 2003; Harris, 2001). On the whole, as one reviews the literature on instances of incivility in higher education, similar cases emerge in explaining such behavior from various standpoints. For instance, using cell phone in class (Boice, 1996; Feldman, 2001; Hernandez & Fister, 2001; Jere, 2015; McKinne, 2008; Meyers, 2003; Royce, 2000; Seidman, 2005), using technological devices for any purposes other than education (Alberts, Hazen, & Theobald, 2010; Clark, 2008; Jere, 2015; McKinne, 2008; Nordstrom, Bartels & Bucy, 2009; Peck, 2002), holding a disruptive dialog (Alberts et al., 2010; Boice, 1996; Clark, 2008; Feldman, 2001; Hernandez & Fister, 2001; Meyers, 2003; Nordstrom et al., 2009; Royce, 2000; Seidman, 2005), leaving class early (Alberts et al., 2010; Boice, 1996; Clark, 2008; Feldman, 2001; Hernandez & Fister, 2001; Meyers, 2003; Nordstrom et al., 2009; Peck, 2002; Royce, 2000; Seidman, 2005), being unprepared for class (Royce, 2000), and making sarcastic comments (Alberts et al., 2010; Clark, 2008; Nordstrom et al., 2009; Peck, 2002) are frequently reported as improper behavior in educational contexts.

Although scholars have constantly listed a huge list of impolite behavior, some claim it is not easy to define (Gilroy, 2008). Hence, bearing in mind the diversity involved regarding the conceptualization of impolite behaviors, it can thus be inferred that some completely polite behaviors in one context can be assumed as impolite in another context. For example, Jamet and Jobert (2013) argue that in a German context, directness is politeness. Similarly, avoiding eye contact in Zulu context is a sign of politeness (Chick, 1996, Gough, 1995), whereas the same is assumed to be an impolite behavior in British-South African Culture (Ige, 2001). This subjectivity (Alberts et al., 2010) also pertains to labeling impoliteness as severe or non-severe in a way that there is a high possibility that one instructor could consider a specific behavior as rude while the other may not feel any harm (Connelly, 2009).

Scholars have reached a consensus regarding the rise of incivility in academic contexts (Alberts et al., 2010;

Bjorklund & Rehling; 2010; Boice, 1996; Feldman, 2001; Gilroy, 2008; McKinne, 2008; Meyers, 2003; Seidman, 2005; Twale & DeLuca, 2008). Accordingly, the majority of studies have focused on students' perceptions towards disrespectful behavior at universities. Given the lack of studies on classroom incivility (Boice 1996; Braxton, Bayer & Noseworthy, 2004) and lack of objectivity in the available works (Alberts et al., 2010; Boice, 1996; Clark, 2008), it seems inadequate to limit this study only to students' incivility as there is little, if any, study that examines instructors' impoliteness in the Iranian context. Furthermore, bearing in mind that classroom incivility includes any unprofessional behaviors that may occur by both teachers and students, the current study aims to examine students' perception towards instructors' and students' improper behavior. Taking into account the cultural differences, the present study examines the conceptualization of incivility among Iranian university students. Hence, the following research questions are posed:

What is the Iranian university students' perception towards students' academic incivility?

How do the Iranian university students define instructors' impolite behaviors?

## Method

### Participants and Procedure

A total number of 114 university students (59 females and 55 males) participated in the study. They were studying in different departments from eight different provinces of Iran (Tehran, Alborz, Ilam, Esfahan, Shiraz, Bandar Abbas, Kermanshah, and Gilan). Participants were asked to write 10 cases and examples of impolite behavior from students towards teachers or other students and 10 cases from teachers to students or other teachers at universities. Attempts were made to be completely unbiased towards the instances of impolite behavior. Hence, there was no prior suggested category nor any example. The rationale for not giving any example or category was for students to come up with instances of impoliteness free from any biases. They were informed that they could even write their personal experiences or their personal observation of uncivil behavior in academic contexts. The data collection procedures lasted around a whole semester as participants ranged from different provinces of Iran.

### Analysis

According to the qualitative nature of the study, content analysis was applied to analyze participants' comments regarding impoliteness. As Fraenkel and

Table 1  
*Distribution of Students' Non-Verbal Academic Impolite Behavior among Both Genders*

Non-verbal		Female		Male		Total	
1		F	%	F	%	F	%
	Lack of attention to teacher, lesson, class and assignment	35	57.37	26	42.62	61	100
	Lack of attention						
	Coming to class late or after the teacher	27	62.79	16	37.20	43	100
	Not listening to the teacher while teaching	19	63.33	11	36.66	30	100
	leaving the class without teachers' permission	19	63.33	11	36.66	30	100
	Total	100	60.97	64	39.02	164	100
2	Cell phone	22	48.88	23	51.11	45	100
3	Inappropriate dress	9	40.90	13	59.09	22	100
4	Not to stand up to a teacher	8	44.44	10	55.55	18	100
5	Yawning and sleeping in class	6	35.29	11	64.70	17	100
6	Ignoring ethical and moral values	5	33.33	10	66.66	15	100
7	Inappropriate sitting or perching in the class	8	80	2	20	10	100
	Total	158	54.29	133	45.70	291	100

Wallen (2006) maintain, content analysis is a reliable approach to examine those objects of research which are not directly observable. Although there is consensus among scholars regarding the application of content analysis (Fraenkel & Wallen, 2006), yet what lies ahead as a concern is the usage of an appropriate method in converting raw data into relevant themes. According to Strauss (1987), grounded theory analysis (GTA) is an approach in exploring the content when the researcher does not have any prior assumptions regarding the research topic as data are not collected prior to any former conclusion. As a result, there is a possibility of theory formation (Strauss & Corbin, 1998) out of the gathered data. Hence, the procedures of GTA, including three stages, were followed. The initial stage is called open coding and basically includes the delineation of basic ideas and then placement of them in categories (Given, 2008). After breaking down the data, this stage is followed by the axial coding where the researcher re-reads the data (Strauss, 1987) to situate interrelated themes under the same subcategories (Given, 2008). And finally, in the third phase, known as selective coding, a central theme is chosen by the researchers to help them to incorporate the main categories and develop empirically grounded theory (Given, 2008).

### Results

The analysis of the data provided a total number of 1294 cases of impoliteness with the distribution of 556 cases related to student to teacher and other students and 738 cases related to teacher to students and other teachers. Each is discussed in detail below.

### Students' Perception of Students' Academic Impoliteness

A total number of 556 excerpts emerged and were put into three groups: non-verbal (291 cases), verbal (192 cases), and verbal and non-verbal (73 cases).

**Students' non-verbal academic impoliteness.** Non-verbal impolite cases include those behaviors that are performed by gesture, eye contact, violates the class norms, etc. Seven subcategories emerged out of 291 cases.

**Category one: Lack of attention.** *Lack of attention* ranks as the first category (164 cases) of non-verbal students' impolite behavior with a rather different distribution among females (100 cases) and males (64 cases). A careful examination of this category shows that four subcategories can emerge. They include "lack of attention to teacher, lesson, class and assignment" (61 cases), "coming to class late or after the teacher" (43 cases), "not listening to the teacher while teaching" (30 cases), and finally "leaving the class without teachers' permission" (30 cases). Of interest is that in all subcategories, the number of the cases observed by females was more than those observed by males.

**Category two: Cell phone use.** Cell phone use is the second category of students' academic impolite behavior. It refers to the situations when students use their cell phones in the class, the times they play with their cell phones, and even times when their cell phones ring in the middle of the class. According to the Table 1, out of 291 cases related to non-verbal academic impoliteness, 45 cases refer to the use of a cell phone in the class. A gender-wise comparison demonstrates that both equally (22 females and 23 males) assumed cell

Table 2  
*Distribution of Students' Verbal Academic Impolite Behavior among Both Genders*

Verbal		Female		Male		Total	
		F	%	F	%	F	%
1	Not being quiet in class	36	59.01	25	40.98	61	100
2	Joking with the professors and giving nicknames to them	13	40.62	19	59.37	32	100
3	Lack of modesty in speech and using impolite words	15	48.38	16	51.61	31	100
4	Interrupting professor's speech	12	57.14	9	42.85	21	100
5	Talking loud with the professor	17	85	3	15	20	100
6	Talking behind the professor's back	8	44.44	10	55.55	18	100
7	Asking inappropriate personal and irrelevant questions	3	33.33	6	66.66	9	100
		104	54.16	88	45.83	192	

phone use as a non-verbal impolite behavior in academic contexts.

**Category three: Inappropriate dress.** Inappropriate dress is the third category of non-verbal impolite behavior. Participants' comments show that the category of inappropriate dress is basically related to those situations when university candidates wear clothes that violate the social norms of academic contexts. Twenty-two out of 291 non-verbal cases were related to academically unsuitable dressing. Interestingly, more males (13 cases) tended to choose this category as impolite behavior than females (9 cases) did. Subjects noted that university students have to respect the academic dignity of the university by wearing clothes appropriate for the educational contexts.

**Category four: Not standing up for a teacher.** Not standing up for a teacher is another theme related to academic incivility. In Iranian academic contexts, students stand up when a teacher enters to the class. This action has been taught to students from the early days in primary school to the higher university levels. For that reason, Iranian students believe it is a sign of impolite behavior if a teacher enters the class while students remain seated. As shown in Table 1, 18 cases (8 females and 10 males) were compelled to express such thoughts.

**Category five: Yawning and sleeping in the class.** Yawning and sleeping in the class, although not very central, refers to a non-verbal uncivil behavior. It refers to those situations when students are not fresh in the class: they yawn or sleep as the teacher begins to teach the new lessons. According to Table 1, this category encompasses 17 cases where males (11 cases) have chosen this category two times more than females (6 cases).

**Category six: Ignoring ethical and moral values.** Ignoring ethical and moral values is among the least non-verbal impolite actions. This theme is basically related to those instances when students try to make any relationship with their teachers beyond the student-teacher relationship. Candidates claim that any attempts to establish romantic relationships with teachers are seen as signs of non-verbal academic impolite behavior.

As can be seen from Table 1, 15 cases refer to this type of incivility. Similar to the previous category, males (10 cases) tend to choose ignoring ethical and moral values two times more than females (5 cases).

**Category seven: Inappropriate sitting or perching in the class.** Inappropriate sitting or perching in the class is the least uttered case for impolite behavior. The study shows that any sitting in the class such as back sitting, down sitting, or any perching except the conventional way is considered as a sign of disrespectful behavior. According to Table 1, although a limited number of cases (10 cases) refer to inappropriate perching on the university chairs, it is interesting to note in that in contrast to the previous cases, more females (8 cases) tend to be more concerned with this category than males (2 cases).

**Students' verbal academic impoliteness.** The second group of students' improper academic behaviors refers to only verbal or spoken instances. This category analyzes the impoliteness from linguistic points of view and encompasses seven subcategories driven from 192 codes.

**Category one: Not being quiet in class.** Not being quiet in class ranks as the highest verbal uncivil behavior. This is associated with those situations when students talk in the middle of class and do not keep silent. According to Table 2, 61 out of 192 cases are related to students' noisiness in the class. Additionally, it can be seen that females (36 cases) are more concerned with this category than males (25 cases).

**Category two: Joking with the professors and giving nicknames to them.** Joking with the professors and giving nicknames to them is the second improper verbal behavior. Students believe that they are not allowed to joke with instructors and make fun of them. In fact, it was declared that any spoken word beyond the respectful lines of behavior—such as giving nicknames to teachers, mispronouncing their names intentionally, imitating their voices, etc.—are strongly viewed as serious acts of impoliteness. As shown in Table 2, a total number of 32 codes refer to this type of disrespectful

Table 3

*Distribution of Students' Verbal and Non-Verbal Academic Impolite Behaviors among Both Genders*

Verbal and Behavioral		Female		Male		Total	
		F	%	F	%	F	%
1	Joking with the students and professor in the class	34	46.57	39	53.42	73	100

Table 4

*Distribution of Teachers' Non-Verbal Academic Impolite Behavior among Both Genders*

Non-verbal		Female		Male		Total	
		F	%	F	%	F	%
1							
	Ignoring student's opinion	19	41.30	27	59.69	46	100
	Absence without prior notice	5	20	20	80	25	100
	The mismatch between teaching and testing	8	50	8	50	16	100
	rejecting criticism	3	21.42	11	78.57	14	100
	Coming late to the class	8	61.53	5	38.46	13	100
	Too many absences	8	66.66	4	33.33	12	100
	Leaving the classroom early	2	33.33	4	66.66	6	100
	Inattention to students' activities in classroom	1	16.66	5	83.33	6	100
	not recording student class attendance	0	0	3	100	3	100
	Total	54	38.29	87	61.70	141	100
2	Discrimination among students	13	35.13	24	64.86	37	100
3	Using cellphone in the classroom	12	36.36	21	63.63	33	100
4	Eating and drinking in the classroom	9	37.5	15	62.5	24	100
5	Ignoring ethical and moral values	6	40	9	60	15	100
	Total	94	37.60	156	62.40	250	100

behavior. In drawing a comparison among genders, the study indicates that compared to females (13 cases), more male participants (19 cases) believe that making fun of the professors is a major sign of impoliteness.

**Category three: Lack of modesty in speech and using impolite words.** Lack of modesty in speech and using impolite words ranks as the third category. This refers to the conventional norms of educational and social contexts where students are expected to remain within bounds of modesty in their speech. Bad language, harsh words, cursing, and offensive language are some of the instances of this category. From Table 2, it can be seen that out of 192 codes, 31 refer to the use of appropriate language in the class, with an equal distribution among both males and females.

**Category four: Interrupting professors' speech.** Interrupting professors' speech is the fourth theme of verbal academic offensive behavior. This refers to times when instructors are interrupted by students while teaching or even speaking in the class. Out of 192 cases, 21 cases refer to speaking in the middle of

instructors' speech. According to Table 2, there is a little difference among males (9 cases) and females (12 cases) in their choice of this category.

**Category five: Talking loud with the professors.** Talking loud with the professors is another theme of incivility in educational context. Participants posited that speaking with a high and loud voice with instructors is a sign of impoliteness. According to Table 2, 20 codes are expressed under this category. In contrast to the previous category attracting an equal number of males and females, speaking with a loud voice was mainly expressed by a great number of females (17 cases) than males (3 cases).

**Category six: Talking behind professors' backs.** Talking behind professors' back is another sign of incivility. It is defined as defaming teachers, spreading rumors and gossiping about teachers, judging teachers based on hearsay evidence, or any further act similar to spreading slander about university instructors. According to Table 3, males (10 cases) expressed more concerns regarding this behavior than females (8 cases).

**Category seven: Asking inappropriate personal and irrelevant questions.** Asking inappropriate personal and irrelevant questions stands as the last impolite behavior among university students towards teachers. It refers to those instances when students try to evade lessons by asking teachers personal questions. Those questions can include a wide range of inappropriate queries about a teacher's life, likes and dislikes, marital status, income, etc., making the teacher and some of the students uncomfortable during the class. From Table 2, it can be seen that asking awkward questions of teachers is expressed as an unjustified behavior more by males (6 cases) than females (3 cases).

**Students' verbal and non-verbal academic impoliteness.** The last category of students' academic disrespectful behavior includes a combination of both verbal and non-verbal behaviors. In fact, it refers to any inappropriate behavior that is expressed through the application of linguistic and non-linguistic signs and includes only one category.

**Joking with the students and instructors in the class.** Joking with the students and instructors in the class is the only collective impolite behavior that can be expressed both verbally and non-verbally or even the combination of the two (73 cases). It can cover a wide range of actions, such as imitating and mocking teachers' and other students' voices, speech, styles, gestures, faces, clothes, names, etc. Furthermore, students use conversation as a way of distracting attention from lessons, and any signs of jocularly in their tone are also believed to be a sign of incivility. According to Table 3, this behavior was expressed more by males (53.42%) than females (46.57%).

### Students' Perception towards Teachers' Academic Impoliteness

A total number of 738 codes were emerged expressing university instructors' impolite behavior and are accordingly grouped into three categories: non-verbal (250 cases), verbal (126 cases), and verbal and non-verbal (362 cases).

**Teachers' Non-verbal Academic Impoliteness.** Non-verbal cases refer to those teachers' behaviors that are seen as disrespectful by students. Seven subcategories emerged from 250 cases.

**Category one: Lack of attention.** Lack of attention is one of the first and most immediate signs of teachers' academic uncivil behavior. According to Table 4, 141 cases include a number of factors ranging from "ignoring students' opinions" (46 cases), "absence without prior notice" (25 cases), followed by "the mismatch between teaching and testing" (16 cases), and "rejecting criticisms" (14 cases). Also, there are other sources of teachers' ignorance such as "coming late to

the class" (13 cases), "too many absences" (12 cases), "leaving the class early," "inattention to students' class activities" (6 cases), and finally "not recording students' attendance in the classroom" (3 cases).

**Category two: Discrimination among students.** Discrimination among students ranks as the second immediate source of non-verbal impolite behaviors. It refers to teachers' unfair treatment between male and female students. In addition, it also refers to discrimination among students of the same gender. This category covers a vast number of items such as inequitable distribution of grade among students, giving unequal power to students, devoting inadequate attention to some of students' opinions, etc. As it can be seen from Table 4, 37 out of 250 codes are expressed in relation to teachers' unjust actions in the class. What is interesting is that males (24 codes) are more concerned than females (13 codes) about discrimination.

**Category three: Using a cellphone in the classroom.** Using a cellphone in the classroom is the third category of teachers' improper behavior. As the name suggests, it refers to teachers' use of cellphones to call, text, play, or do any other activities beyond the educational realm. According to Table 4, 33 out of 250 cases argue that the use of a cell phone is not appropriate in the classroom. Similar to the previous category, males (21 codes) expressed more concerns regarding this behavior than females (12 codes).

**Category four: Eating and drinking in the classroom.** Eating and drinking in the classroom is the next category and refers to instances when teachers eat, drink, or chew gum in the class while teaching. From Table 4, it can be observed that 15 cases are related to this theme, with a slightly higher males' choice (15 cases) than females (9 cases).

**Category five: Ignoring ethical and moral values.** Ignoring ethical and moral values is the least important theme of teachers' impoliteness. Students maintain that teachers' attempts to establish any relationship with students beyond the teacher-student relationship is highly inappropriate and is not acceptable among students. Although only 15 codes were mentioned under this category, a rather similar distribution between females (6 codes) and males (9 codes) was found.

**Teachers' verbal academic impoliteness.** Verbal impoliteness includes inappropriate spoken language conveying offense in academic contexts. A total number of 126 cases emerged and were accordingly put into four subcategories.

**Category one: Lack of modesty in speech and using impolite words.** Lack of modesty in speech and using impolite words is the most central verbal impolite behavior. It claims that teachers are expected to use polite language, courteous expressions, deferential speech, etc. Teachers' use of bad language is highly criticized and should be avoided as it is one of the serious

Table 5  
*Distribution of Teachers' Verbal Academic Impolite Behavior among Both Genders*

Spoken or Verbal		Female		Male		Total	
		F	%	F	%	F	%
1	Lack of modesty in speech and using impolite words	14	21.21	52	78.78	66	100
2	Teachers' self-infatuation and self-praise	11	37.93	18	62.06	29	100
3	Breached confidentiality	5	26.31	14	73.68	19	100
4	Joking with the students	6	50	6	50	12	100
Total		36	28.57	90	71.42	126	100

Table 6  
*Distribution of Teachers' Verbal and Non-Verbal Academic Impolite Behavior among Both Genders*

Verbal and Behavioral		Female		Male		Total	
		F	%	F	%	F	%
1	Insulting and Mocking						
	Insulting students' race, ethnicity, language, culture, city, name, etc.	16	33.33	32	66.66	48	100
	Mocking students' because of not learning the lesson	10	25	30	75	40	100
	Forcing the students to leave the classroom	9	50	9	50	18	100
	Make fun of students' academic field	0	0	8	100	8	100
	Laugh at students' questions in class and mock them	2	28.57	5	71.42	7	100
	Total	37	30.57	84	69.42	121	100
2	Teacher to Teacher						
	Questioning other teachers' method of teaching	25	35.71	45	64.28	70	100
	Feeling superior to other teachers	6	50	6	50	12	100
	Lack of friendly behavior with other teachers	1	14.28	6	85.71	7	100
	Mocking other professors' beliefs and viewpoints	1	16.66	5	83.33	6	100
3	Negligence						
	Ignoring students questions in class	10	25.64	29	74.35	39	100
	Professor's negligence and avoidance teaching	17	62.96	10	37.03	27	100
	Wasting the time of the class	6	37.5	10	62.5	16	100
	Total	33	40.24	49	59.75	82	100
4	Professor's loss of temper	9	29.03	22	70.96	31	100
5	Lack of friendly manner and extreme strictness	6	35.29	11	64.70	17	100
6	Clinging to non-academic distracters	11	68.75	5	31.25	16	100
Total		129	35.63	233	64.36	362	

sources of verbal impoliteness in academic contexts. Table 4 presents an overview of the distribution of this category. As it can be seen from the table, 66 codes out of 126 cases refer to speech modesty. A highly noticeable difference among gender is the high number of cases of speech modesty expressed by males (52 codes) compared to females (14 codes).

**Category two: Teachers' self-infatuation and self-praise.** Teachers' self-infatuation and self-praise ranks as the second verbal rude behavior from the teachers' side. These are generally those university instructors who consistently praise themselves, admire their skills, and are proud of themselves. It is apparent from this table that few (29 codes), with a rather different



distribution among females (11 codes) and males (18 codes), refer to this type of academic impolite behavior.

**Category three: Breaching confidentiality.** Breaching confidentiality is the third component of teachers' verbal impoliteness. This means that teachers are expected to ensure that strict confidentiality regarding students' personal lives is maintained in all respects. In fact, students posited that teachers are assumed to be very good at keeping secrets. Table 4 shows that 19 cases refer to such a claim. The most striking result to emerge from the data is that males (14 codes) are more concerned about the issue of confidentiality than females are (5 codes).

**Category four: Joking with students.** Joking with students is the last expressed component of teachers' verbal academic impoliteness. This is the situation when teachers make fun of students, mock their names, laugh at their lifestyles or their ethnicity, etc. From Table 4, we can see that 12 codes with similar distributions between females and males are reported as this type of incivility.

**Teachers' verbal and non-verbal academic impoliteness.** Seven categories of teachers' verbal and non-verbal academic impoliteness emerged from 362 codes. Each is discussed below.

**Category one: Insulting and mocking.** Insulting and mocking is the first identified impolite behavior which can be exhibited both verbally and non-verbally. A general examination of this category from Table 5 shows that 121 out of 362 codes of verbal and non-verbal impoliteness are expressed in relation to teachers' offensive and disrespectful behavior and speech with students at universities. The results obtained from the preliminary analysis of the data indicated that this category was mainly dominated by male participants (84 codes) as opposed to females (37 codes). According to Table 6, five subcategories emerged from the analysis of this category, demonstrating that it is associated with "insulting others' culture, city, race, name, etc. (48 cases); "humiliating students because of not learning the lesson" (40 cases), "forcing students to leave the classroom" (18 cases), "making use [sic] of students' academic field" (8 cases), and finally, "laughing at students' question in class" (7 cases).

**Category two: Teacher to teacher impoliteness.** Teacher to teacher impoliteness is the next important theme of disrespectful behavior. It is any insolent behavior that might be performed by teachers in relation to other teachers. Ninety-five codes were gathered with a noticeably different distribution among females (33 codes) and males (62 codes). From Table 6, we can see that four subcategories emerged from the data: "questioning other teachers' method of teaching" (70 codes), "feeling superior to other teachers" (12 codes), "lack of friendly behavior with other teachers"

(7 codes), and finally, "mocking other teachers' belief and viewpoints" (6 codes).

**Category three: Negligence.** Negligence is the third category of impolite actions. A total number of 82 codes emerged and were similar to the two previous categories: males (49 codes) tend to choose this theme more than females (33 codes). The gathered codes were put into four subgroups to cover a wide range of issues: "ignoring students' questions in class" (39 codes), "teachers' avoidance of teaching" (27 codes), and finally, "wasting the time of the class" (16 codes).

**Category four: Teachers' loss of temper.** Teachers' loss of temper ranks as the fourth category of ill-formed manners. Students mentioned that university instructors are highly expected to control their anger and remain calm in any challenging situations. According to Table 6, from 31 comments addressed under this category, 22 were by males; whereas, only 9 were by females.

**Category five: Lack of friendly manner and extreme strictness.** Lack of friendly manner and extreme strictness is the fifth category and mainly refers to teachers' excessive seriousness in class, making teaching and learning insufferable. Table 6 represents that the lack of a good and amiable behavior with students is expressed with 17 codes in which 6 females and 11 males commented about this classification.

**Category six: Clinging to non-academic distractors.** Clinging to non-academic distractors stands as the last category of rudeness, which is basically the notion of discussing marginal and peripheral topics in the class. In fact, devoting class time to any issue except the lesson is seen as a case of academic impoliteness. A very noticeable result from Table 6 is that, in contrast to many cases, those 16 collected codes are unequally chosen by more females (11 codes) than males (5 codes).

## Discussion

The primary aim of this work was to examine Iranian university students' perception towards university students' and instructors' academic impoliteness. According to the study, disrespectful behavior in academic contexts is divided into three categories, namely verbal, non-verbal, and a combination of the two. Confusion existed in the literature as to what exactly constitutes classroom incivility, as well as the rate of incidence of such acts (Boice, 1996; Caboni, Hirschy, & Best, 2004; Twale & Deluca, 2008). Therefore, the findings of this study support the literature. Each is discussed below regarding its consistency, if any, with previous studies.

### Students' Academic Impoliteness

Regarding students' perception towards university students' incivility, the study demonstrates that verbal

or non-verbal impoliteness, or the combination of the two, can cause discourtesies in academic contexts. The emergent cases of academic impoliteness in the current study are compatible with the literature.

In line with the literature, the first uncivil non-spoken behavior was found to be lack of attention to teacher, lesson, class, and assignment; lack of prior preparation (Appleby, 1990; Kearney & Plax, 1992; Royce, 2000); lack of punctuality in coming to class late or after the teacher (Appleby, 1990; Bjorklund & Rehling, 2010; Boice, 1996, 2000; Feldman, 2001; Hernandez & Fister, 2001; Meyers, 2003; Kearney & Plax, 1992; Royce, 2000; Seidman, 2005); lack of attention to the teacher while teaching (Boice, 1996; Feldman, 2001; Hernandez & Fister, 2001; Meyers, 2003; Royce, 2000; Seidman, 2005); loud conversations during class (Boice, 1996, 2000; Fernandez-Balboa, 1991), and early departure from the class without teachers' permission (Bjorklund & Rehling, 2010; Boice, 1996; Clark & Springer, 2007a; Feldman, 2001; Hernandez & Fister, 2001; Meyers, 2003; Seidman, 2005; Royce, 2000).

Other mentioned cases of behavioral academic impoliteness were using a cell phone (Boice, 1996; Bjorklund & Rehling, 2010; Feldman, 2001; Hernandez & Fister, 2001; Jere, 2015; McKinne, 2008; Meyers, 2003; Seidman, 2005; Royce, 2000); wearing inappropriate dress, which has been previously referred to as an annoyance by Feldman (2001); yawning and sleeping in class (Boice, 1996; Clark, Otterness, Alerton, & Black, 2010; Feldman, 2001; Hernandez & Fister, 2001; Meyers, 2003; Seidman, 2005; Royce, 2000); and ignoring ethical and moral values by such actions as sending inappropriate emails to teachers (Royce, 2000), and displaying disrespectful nonverbal behaviors (Clark & Springer, 2007).

Consistent with the previous data, the second group of incivilities are those that are verbally committed: for example, talking in the class (Feldman 2001; Jere, 2015; McKinne, 2008; Royce, 2000) and joking with the professors and other students (Alberts et al., 2010; Boice, 1996, 2000; Feldman, 2001; Hernandez & Fister, 2001; Jere, 2015; McKinne, 2008; Meyers, 2003; Seidman, 2005). In addition, lack of modesty in speech and using impolite words have also been identified as academic incivility among Iranian university students. Many scholars found similar conclusions with their research: that making vulgar comments to the teachers (Royce, 2000) and insulting and stalking instructors (Boice, 1996; Feldman, 2001; Hernandez & Fister, 2001; Meyers, 2003; Seidman, 2005) are assumed to be signs of disrespectful behavior. Moreover, talking loudly with the professor was constantly expressed as insufferable rudeness by the participants of the current study and was comparable to what has been claimed in the literature. For instance, violence in speech (Boice, 1996; Feldman,

2000; Feldman; Hernandez & Fister 2001), threats of violence, as well as attacking instructors verbally (Bjorklund & Rehling, 2010; Boice, 1996; Feldman, 2001; Hernandez & Fister, 2001; Meyers, 2003; Seidman, 2005), have been identified earlier.

Most importantly, the findings of this study support Royce's (2000) results by documenting that any verbal or non-verbal sarcastic speech, gestures, or remarks are highly perceived as improper behavior at universities.

### Teachers' Academic Impoliteness

Although some research has been done on the students' ill-mannered behavior in the higher educational environment (Boice, 1996; McKinne, 2008), there is no reported research about teachers' incivility, especially in Iranian contexts. Only a very limited number of studies (Boice, 1996; Tantleff-Dunn, Dunn, & Gokee, 2002) have been conducted regarding this construct. The present study showed that, similar to students' incivility, teachers' improper actions in educational contexts are also divided into three categories: verbal, non-verbal, and a combination of the two. A thorough exploration of the literature indicates that some of the discovered instances of teachers' impoliteness have been previously proposed, while some were not. For example, and compatible with the literature, the first category of behavioral incivility includes ignoring students' opinions, being absent without prior notice, mismatching between teaching and testing, and arriving late to class (Boice, 1996, 2000; Tantleff-Dunn et al., 2002).

However, regarding teachers' incivility, the present study also declared that Iranian university students believed that rejecting criticism, too many absences, leaving the classroom early, inattention to students' activities in classroom, and lack of recording student class attendance are among teachers' behavioral academic impolitenesses which were not previously declared in literature.

The study also illustrates some teachers' verbal incivilities, such as professor's low academic knowledge (Boice, 1996; Hannah, 2006; Oblinger, 2003) and inability to control a class (McKinne 2008), which is compatible with the previous studies. However, the participants of the current study reported some teachers' verbal academic impoliteness, which were not noticeably stated in literature, e.g., discrimination among students, using cellphone in the classroom, eating and drinking in the classroom, and ignoring ethical and moral values.

Finally, the third group of teachers' uncivil actions are those that can be both verbal and no-verbal. Among the four cases, only joking with the students has been formerly declared by Boice (1996, 2000), and the other three—namely, lack of modesty in speech and use of

impolite words, teachers' self-infatuation and self-praise, and teacher-breached confidentiality—were just mentioned by Iranian university students.

### Conclusion

Academic impoliteness, undoubtedly, takes many forms and can be committed by both teachers and students. Providing a rigid description for incivility depends highly on the extent to which the behavior is disruptive in educational contexts. As result, some behaviors, such as talking on the phone and sleeping in class, were perceived as less serious or mild incivility (Connelly, 2009); whereas, some actions, including threatening teachers or other students (Clark, 2008; Royce, 2000), were reported as serious instances of incivility.

The current study aimed at proving an awareness regarding the existence of academic impoliteness in educational contexts which is committed, not only by the students, but also the teachers. In addition, this work introduced a group of frequent and common instances of improper behavior to students and instructors which might help them resist committing them. Furthermore, taking into account the strong debate regarding identification of incivility (Hernandez & Fister, 2001; Seidman, 2005), the study pointed toward the requirement of collaboration (Bruffee, 1999) between instructors and students to address academic impoliteness. This study can also contribute to an effective teaching environment as teachers might think more about their performance (Hannah, 1996; Twale & Deluca, 2008) and adopt more creative teaching strategies to be effective for a wide range of learners (Hannah, 2006).

A final word is that similar studies can be conducted to investigate how both teachers and students perceive university instructors' and students' academic incivility, not only in one nation, but in multiple nations, and they can provide cultural comparisons. This might eventually help researchers to come up with at least a series of agreed upon cases of academic impoliteness at the higher educational level which can be introduced to teachers and students. This awareness might help them decrease the chances of committing such behaviors by being more cautious.

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## A Preliminary Evaluation of Efforts to Diversify Psychology

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Underrepresentation of individuals from diverse backgrounds in the field of psychology is a well-documented concern, as identified gaps directly impact individuals served (Rogers & Molina, 2006; Zhang & Katsiyannis, 2002). This pilot examination evaluated a task force that sought to address this deficit through targeting the recruitment and retention of undergraduate students into graduate programs in psychology. Participants were 127 undergraduate students at a Midwestern university. Participants completed online surveys that assessed their knowledge of the organization's existence and taskforce events (e.g., open houses). Results indicate that the taskforce reached the appropriate undergraduate population, as participants of junior and senior status were more aware of organization resources. Future research should look to examine if the taskforce's efforts have impacted recruitment and retention outcomes.

In psychology, there has been a longstanding concern regarding the underrepresentation of practitioners from diverse backgrounds (Curtis, Grier, & Hunley, 2004; Rogers & Molina, 2006). Maton, Kohout, Wicherski, Leary, and Vinokurov (2006) found that there were no significant increases to the number of African-American and Latino students achieving the Ph.D. from 1989 through 2003. The American Psychological Association (APA, 2008) reported that only 20.1% of Ed.D. and Ph.D. degrees in psychology were received by ethnic minorities, whereas 28% of the general population in 2010 reported racial/ethnic minority status (U.S. Census Bureau, 2010).

Concerns surrounding underrepresentation are specifically relevant for professional fields of psychology, such as school psychology. Data from the National Association of School Psychologists (NASP; Curtis, Castillo, & Gelley, 2010) membership survey for the years 2009 through 2010 revealed school-based professionals in the U.S. are disproportionately White. Specifically, 90.7% of NASP members identified as White/Caucasian. Only 3.4% of members reported identification as Hispanic/Latino, and 3% reported being Black/African-American. These data are alarming, given that recent U.S. Census data (2012) has indicated that 49.7% of those under five years of age are minority children.

These data are important because research has demonstrated that the gap between the diversity of school psychologists and the students they serve has implications that are not simply theoretical. Specifically, research has revealed that students from racially/ethnically diverse backgrounds are overrepresented in special education (Zhang & Katsiyannis, 2002). For example, African-American children are 2.86 times more likely to receive special education services for intellectual disability and 2.28 times more likely to receive services for Emotional Disturbance (ED) when compared to same-age students of all other racial/ethnic groups combined (Losen &

Gillespie, 2012; U.S. Commission on Civil Rights, 2009). The demographic mismatch between service-delivery personnel and the populations they serve clearly affects client outcomes. Because school psychologists are integral members of multidisciplinary teams involved in the assessment and determination of eligibility and service provisions for these students, knowledge and exposure to multicultural issues is crucial. Proctor (2009) asserts that school psychologists from racially/ethnically diverse backgrounds should be well-represented in the field, as students of diverse backgrounds are significantly influenced by school psychology.

The APA has also taken a strong stance regarding the need to recruit and retain students from diverse backgrounds. Specifically, the organization's accreditation standards state that approved graduate programs must "[make] systematic, coherent, and long-term efforts to attract and retain students and faculty from differing ethnic, racial, and personal backgrounds into the program" while simultaneously "[ensuring] a supportive and encouraging learning environment appropriate for the training of diverse individuals" (APA, 2013, p. 10).

Although recruitment at the national level may prove challenging for universities, there are organizations that strive to provide opportunities for individuals from diverse backgrounds. One such program has a long history of success. Specifically, the McNair Scholars Program (<http://mcnairscholars.com/>) hosts conferences and organizes opportunities for its members to interact with individuals from colleges and universities. This program is federally funded at more than 200 institutions across the nation and strives to prepare undergraduate students for doctoral-level education by mentorship, research training, and career development. Accepted McNair Scholars are first-generation students or from a group that is traditionally underrepresented in higher education. The research literature demonstrates that positive outcomes (e.g., perceived helpfulness with academic attainment, positive impact on doctoral training experience, increased

perceived competence and confidence, and academic connectedness and identity) have been associated with participation in the McNair Scholars Program (Gittens, 2014; McCoy, Wilkinson, Jackson, 2008).

Also, there are universities across the nation that have sought to address these disparities through their own recruitment efforts. Specifically, Hammond and Yung (1993) reported that the following recruitment approaches were used at a high rate by the sampled 35 professional psychology institutions: use of personal contacts, visibility of minority faculty and staff in recruitment activities, preadmission workshops and open houses, recruitment materials developed for minority students, and media presentations in undergraduate or high school classes. In a more recent review, Rogers and Molina (2006) listed the following as exemplary recruitment techniques used to attract students of color: financial aid, engagement of current minority faculty and students, faculty members making personal contacts, creating links with historical institutions of color, targeting undergraduates at their home institution, offering a visitation program, developing recruitment materials geared for students of color, and contacting other professionals in the field.

Recognizing the problems associated with racial/ethnic underrepresentation, students enrolled within a school psychology program at a Midwestern university took action. Specifically, students were initially recruited to conduct a needs assessment for their doctoral program as part APA reaccreditation. The initial goal of the student committee was to serve as a taskforce to generate ideas for the recruitment and retention of students from diverse backgrounds within the school psychology program at their institution. However, they realized they were more interested in developing a self-sustaining student body that would actively pursue initiatives in the recruitment and retention of students from diverse backgrounds into psychology graduate programs.

The taskforce took on several efforts to achieve the goals of recruitment and retention. Students directed recruitment efforts to pursue individuals locally and nationally. Local efforts involved recruitment at their home university. Specifically, members actively reached out to psychology majors and minors who were involved in registered student organizations with an emphasis on diversity. Taskforce members also initiated statewide efforts by contacting the psychology departments of all major public universities in their state. With the studies conducted by Hammond and Yung (1993) and Rogers and Molina (2006) in mind, members of the taskforce utilized their personal contacts to initiate conversations with psychology faculty off campus and out of state. To engage in national efforts, taskforce members contacted three university-based McNair programs, as members of the

taskforce were previously McNair scholars at their respective undergraduate institutions.

These local, state, and national recruitment efforts consisted of several strategies that were similar to those previously mentioned (Hammond & Yung, 1993; Rogers & Molina, 2006). For example, open houses were hosted that offered information regarding suggested undergraduate courses, the graduate school admissions process, the taking of the Graduate Record Exam (GRE), and other relevant topics. To address financial need, assistance was offered to those students from out-of-town universities attending the open house, and all students received a complimentary lunch. Further, task force organizers intentionally invited faculty members of color to present at the open houses.

Apart from the open houses, members traveled to several in-state institutions to provide brief presentations concerning graduate school and the admissions process. Members also hosted Skype presentations with undergraduate students who were interested in graduate school but attended out-of-state universities. Finally, members of the organization participated in a regional psychology conference typically attended by many undergraduate psychology students. During this conference and the mentioned presentations, materials were disseminated that included helpful information for undergraduate students, with a specific focus on attracting students from diverse backgrounds.

The purpose of this pilot examination was to gather information from undergraduate students regarding their perceptions of the described organization, such that changes could be implemented to improve the taskforce's efforts. Specifically, researchers were interested in obtaining information surrounding undergraduate students' awareness of the taskforce and resources made available by the organization. The organization had only been in existence for less than two years at the time of data collection, so the current study served as a means to gather information to improve the efforts of the organization. As such, no hypotheses were posed, as this was an exploratory study to assess the visibility of the organization. Further, outcome data surrounding the success of the organization's recruitment (i.e., change in percentage of enrolled students from racially/ethnically diverse backgrounds) were not gathered.

## Method

### Participants and Procedure

Researchers recruited undergraduate students ( $N = 127$ ) who were enrolled at a Midwestern university through the psychology department's research subject pool. Specifically, these students were enrolled in a



Table 1  
*Descriptive Statistics for Participant Year in School (N = 127)*

	<i>N</i>	Percentage of Participants
Freshman	24	18.90
Sophomore	30	23.60
Junior	44	34.60
Senior	29	22.80

Table 2  
*Descriptive Statistics for Race Students (N = 121)*

	<i>N</i>	Percentage of Participants
White	89	70.10
Black	19	15.00
Hispanic	6	4.70
Middle Eastern	7	5.50
Bi-racial	0	0.00

*Note.* 6 undergraduate student participants did not report their race.

psychology course at the time of data collection, for which they would earn extra credit. Researchers obtained approval from their university's Institutional Review Board (IRB) prior to data collection. All participants completed online surveys via the online database, Select Survey, which ensures the use of the most advanced technology to secure confidentiality of data. Participants provided informed consent by selecting an option on the survey before completing any items.

Most of the students who participated were of sophomore or junior status and self-identified as White. Six of the undergraduate participants elected not to report their race. Data were not collected regarding participant age, gender, or major. Refer to Tables 1 and 2 for descriptions of the sample.

### Measures

Researchers developed a survey that employed a "yes/no" multiple-choice response format, with "yes" coded as 1 and "no" coded as 0. Participants completed items concerning their knowledge of the organization's existence, awareness of sponsored events, and regarding their perception of the availability of resources for undergraduate students. Investigators also included items to assess demographics in the survey. Participants were able to indicate their race or ethnicity in open-ended response option and their year in school using multiple choice format. See Table 3 for all included survey items.

Before analyses were conducted, data collected from participants of freshmen and sophomore status were combined, whereas data collected from advanced undergraduate students (i.e., juniors and seniors) were combined. Researchers also developed a variable to assess minority status, as investigators coded those who identified themselves as White or Caucasian as "non-minority," and those who indicated a race or ethnicity other than White or Caucasian, including those of bi-racial status, as "minority."

### Results

Investigators conducted correlational analyses to examine the relations between predictor and outcome variables, with year in school and racial minority status examined as predictor variables. Significance was only identified as part of the correlational analyses on the outcome variables (see Table 4). Specifically, variables that assessed student awareness of organization resources were all significantly correlated. Researchers therefore created a composite variable (i.e., "Awareness of Resources") to facilitate interpretation. This assessed participants' overall awareness surrounding the availability of resources offered by the organization. It consisted of the addition of 4 items that assessed if participants had previously heard of the organization and if they were aware of the sponsored open house, the availability of graduate student mentors and the organization's website. Given the "yes/no" response format, scores on the "Awareness of Resources" composite ranged from 0 to 4.

Table 3  
*Student Survey Items and Response Format*

• I am currently a: (freshman, sophomore, junior, senior).
• Please identify your race and/or ethnicity.
• Before today, had you heard of the organization?
• Were you aware of the open house that was sponsored by the organization?
• Were you aware that members of the organization are available to provide information and suggestions concerning applying to graduate school?
• Were you aware of the organization's webpage located on the Psychology Department's website?

Table 4  
*Bivariate Correlations between Outcome Variables*

	1	2	3	4
(1) Heard of the organization? ( <i>N</i> = 127)	--			
(2) Aware of the Open House? ( <i>N</i> = 127)	.27**			
(3) Aware of available mentorship? ( <i>N</i> = 126)	.39**	.53**		
(4) Aware of the organization's webpage? ( <i>N</i> = 126)	.39**	.33**	.30**	--

\*\*  $p < .01$

Table 5  
*Factor Loadings and Communalities based on a Principle Components Analysis*

	Component 1	Communality
Heard of the organization?	.69	.48
Aware of the Open House?	.75	.56
Aware of available mentorship?	.79	.62
Aware of the organization's webpage?	.68	.46

Researchers conducted a principal components analysis to determine the composition of the component variables. At .68, the reported Kaiser-Meyer Olkin measure of sampling adequacy was slightly above the accepted value of .60 (Beavers et al., 2013). Further, Bartlett's test of sphericity was significant,  $\chi^2(6) = 90.22$ ,  $p < .01$ . A one component solution was obtained by examining Eigen values, loadings, and scree plot. Reported Eigen values indicated that the only extracted component explained 52.75% of the variance. All items had primary loadings at or above .60. The component loading matrix for this solution is presented in Table 5.

Missing data were present for dependent and independent variables. Data were missing completely at random, and relevant variables had no more than 1 participant missing. As such, researchers did not employ any techniques to address missing data and did not exclude any data from the analyses.

As part of this pilot examination, researchers sought to examine if students were aware of the task

force and the resources made available by the organization. Researchers addressed this question by gathering undergraduate students' knowledge surrounding the existence of the organization. Of the 127 undergraduate students surveyed, 21% indicated that they had previously heard of the organization. Regarding the sponsored open house for undergraduate students interested in graduate school, 7.9% responded that they were aware. Finally, 8.7% of respondents indicated that they were aware that graduate student members of the organization were available to serve as mentors and were aware of the organization's website.

Investigators conducted Analyses of Variances (ANOVAs) to determine if there existed variables that accounted for undergraduate participants' awareness of resources. When examining the developed "Awareness of Resources" composite (i.e., heard of the organization, aware of the open house, awareness surrounding the availability of graduate mentors, awareness website), a significant main effect for year in

school was identified. Specifically, those participants of junior or senior status ( $M = .67$ ,  $SD = 1.06$ ) provided ratings indicating that they were significantly more aware of the available resources when compared to those of freshman or sophomore status ( $M = .20$ ,  $SD = .56$ ),  $F(1, 124) = 8.48$ ,  $p < .01$ ,  $\eta_p^2 = .06$ . Minority status was also examined as a predictor variable for awareness. A significant main effect was not identified for the Awareness of Resources composite,  $F(1, 118) = 2.01$ ,  $p = .16$ ,  $\eta_p^2 = .02$ .

### Discussion

The underrepresentation of practitioners from diverse backgrounds in the field of psychology has been identified as a major concern in the research literature (Curtis et al., 2004; Rogers & Molina, 2006). Closing the gap in racial/ethnic disparities among practitioners and the individuals they serve is of great importance. Graduate students at a Midwestern university sought to address the lack of diversity in their school psychology program by developing a taskforce dedicated to the recruitment of undergraduate students. The current study sought to evaluate this taskforce by gathering data from undergraduate students surrounding their experiences with the taskforce.

Results indicated that awareness varied among participants. Although 21% of participants indicated that they had heard of the organization, those of junior and senior status reported being significantly more aware of the available resources when compared to those of freshman and sophomore status. This finding was particularly promising, given the organization's goals to recruit students into graduate programs in psychology. Many of the sponsored activities (e.g., open house) were more relevant for students of junior and senior status, and these students were therefore directly targeted during recruitment phases. Although the taskforce sought to specifically recruit students of minority status, data indicate that minority status was not a predictor of undergraduate student awareness of resources. As such, these results can be directly used to inform future efforts to recruit those of minority status.

### Limitations

Several limitations to the current study exist and should be addressed as part of future research. As mentioned previously, the current study did not include any outcome data relevant to changes in the number of graduate students from diverse backgrounds who were effectively recruited. Given the organization had only been in existence two years at the time of data collection, this information was not yet available. Although participant survey data were helpful in determining the visibility of the organization and

satisfaction with organization efforts, these data do not directly provide information regarding whether or not the organization met its primary goal (i.e., increases in minority enrollment).

It should also be noted that minority status was defined as those who self-reported a race or ethnicity other than White or Caucasian, including those of bi-racial status. However, minority status encompasses all those who belong to groups that are underrepresented (e.g., race, ethnicity, language, gender, sexual orientation, etc.). Data were not collected on these other demographic variables. As such, the current study failed to evaluate how these other factors may have played a role in participants' views of the organization. Also, there exist other variables that may have contributed to participants' ratings of the organization. For example, participants who are more likely to be involved in Registered Student Organizations, and general university sponsored, activities may have been more aware of this organization's efforts because they were looking for them.

Lastly, generalizability to other universities presents another problem. Data from the current study were only gathered from undergraduate student participants at one sampled university. The sampled students elected to participate to receive extra credit in a psychology course, and therefore they may have been different from those undergraduate students who elected not to participate or from those who were not directly recruited (e.g., undergraduate students in psychology courses not offering extra credit).

### Implications for Practice

Studies similar to those conducted by Hammond and Yung (1993) and Rogers and Molina (2006) are necessary, as research is needed to inform graduate programs of the strategies that work to recruit and retain students of diverse backgrounds. However, the literature is lacking in terms of studies and program evaluations that examine the direct outcomes associated with the recruitment and retention efforts of psychology graduate programs. As a pilot, the current study was conducted to add to the research literature, but more importantly to ensure that the targeted students were aware of the resources available at their university.

Given that the research literature is lacking in this area, the current study may be used to guide future research, in that the efforts described in the current study will encourage faculty and students within psychology graduate programs to reconsider the efforts that they currently have in place to recruit and retain students from diverse backgrounds. The commitment to these efforts cannot be prominent at a select number of programs across the nation. Given standards set forth by APA and NASP, all psychology graduate programs are encouraged to make such efforts an integral part of their

training programs. Further, when efforts are undertaken, graduate programs should not only aim to evaluate the programs that are being implemented, but should also consider what their efforts can add to the research literature.

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## Successful Teacher Teams in Change: The Role of Collective Efficacy and Resilience

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Teachers' competence in launching and managing pedagogical change collaboratively is crucial for the continuous development of their work as well as for meaningful student learning. However, research on how teachers can thrive in their profession in the changing higher education environment is limited. This study investigated the experiences of teachers in managing pedagogical innovation when working as a team and implementing integrated competence-based learning modules. Strength-focused concepts like collective efficacy and resilience were used to extend the understanding of the phenomenon. Five teacher teams were analyzed in relation to the change itself, as well as to protective and risk factors that had an impact on teachers' collective efficacy and resilience to the change. The data consisted of group interviews and individual questionnaires collected during the process. The findings indicate that stronger collaboration creates significant changes in teachers' work and students' learning, and success is based on teacher teams' capacity to craft their common work practices.

The need for pedagogical change and teacher learning to provide essential competence for the continuously evolving world of work has been widely recognized in higher education (e.g., Aggarwal, 2011; European Union, 2010; Goodyear & Zenios, 2007; Toom, 2012). The change from traditional subject-based teaching to a learning-focused approach in teaching and competence-based learning entails creating innovative pedagogical practices based on team teaching, collegial collaboration, and networking with the world of work (Barnett & Coate, 2005; Benjamin, 2010; Biggs & Tang, 2007; Lakkala, Toom, Ilomäki, & Muukkonen, 2015). In this change, higher education teachers play an important role as creators of new collaborative practices with their colleagues, students, and professional networks beyond the school. However, the focus of teacher collaboration can be diverse and can range from a superficial level to intensive collaboration. Vangrieken, Dochy, Raes, and Kyndt (2015) call a continuum ranging from teams as mere aggregates of individuals to strong levels of team collaboration as the degree of team entitativity. They also discovered a lack of clear and empirical insights into the phenomenon of teacher collaboration itself, especially in higher education (Vangrieken et al., 2015). Besides this, the need to make extensive changes in the way teachers initiate more intensive levels of collaboration has raised the question of how teachers' efficacy and resilience can be developed successfully. Collective efficacy (Bandura, 1997, 7) refers to a teacher team's beliefs concerning managing with the change, while resilience means a capacity to recover when changes occur (Luthans, 2002). In the change process, teachers face several challenges when trying to learn new ways of working and sustaining their motivation (Keesing-Styles, Nash, & Ayres, 2014). Investigating their experiences regarding the capacity of

their teams will help us to understand the phenomenon of teacher collaboration and the kinds of support that teacher teams require to enable them to transform their practices in a successful way.

The aim of this study is to investigate the experiences of higher education teachers in changing their collaborative practices. The focus of the pedagogical change was to improve competence-based education by reconstructing curricula into broader competence modules in which the previous subjects were integrated, and teachers were organized to work as teams responsible for planning and implementing the module together. The development goal was also to create flexibility and innovativeness for student-centered tailoring of the learning process by changing the individual and fragmented nature of teachers' work to be more collaborative. Also, with students, collaborative learning and authentic real-life projects were emphasized in order to create the alignment between work-related competence and pedagogical practices. In this study, the focus was especially on investigating the teachers' experiences about their teams' efficacy and resilience in managing this change successfully.

### Theoretical Framework

Making the transformation from a traditional individualized working culture towards more collaborative work entails several changes which can also be experienced from the teachers' perspective as both challenges and adversities. However, emerging positive approaches to development (see, e.g. Luthans, 2002; Mills, Fleck, & Kozikowski, 2013; Oades, Robinson, Green & Spence, 2011) highlight concentrating on how these challenges and adversities can be improved and turned into new capabilities. Interrelated concepts *collective efficacy* and *resilience*

focus on optimal functioning, so that is why they can lead us to a deeper understanding of teachers' successful collaborative processes during the pedagogical innovation phase.

**Collective Efficacy and Resilience in a Changing Educational Context.** Collective self-efficacy "represents a group's shared belief in its joint capabilities to organize and execute courses of action required to provide given levels of attainment" (Bandura, 1997, p. 477). Regarding teacher teams, collective efficacy perceptions are future-oriented beliefs about how teachers can succeed as a team in their joint efforts to plan and implement the new collaborative working model. As Bandura puts it (1997, p. 7), "Collective efficacy is not simply the sum of the efficacy beliefs of individuals. Rather, it is an emergent group-level attribute that is the product of coordinative and interactive dynamics." The success of teacher teams lies in teachers' sense of collective efficacy, the belief that they can solve the problems they face and improve their work through unified efforts.

Goddard (2001) states that collective efficacy has been a neglected construct in research on school development, but recent studies endorse its importance. Teachers' beliefs about their collective efficacy have been positively and significantly related to advancements in student achievement (Goddard, Hoy, & Hoy, 2000; Moolenaar, Sleegers, & Daly, 2012), teachers' commitment to their students (Lee, Zhang, & Yin, 2011), and trust among colleagues (Goddard et al., 2000), and they have served as indicators of teachers' professional commitment (Ware & Kitsantas, 2007). Lim and Eo (2014) suggest that collective efficacy plays a mediating role between the organizational climate and teacher burnout. A socially supportive teaching environment increases collective efficacy, and it has a positive impact on teachers' job satisfaction. Additionally, the findings of Salanova, Rodriguez-Sanchez, Schaufeli & Cifre (2014) suggest a reciprocal relationship between collective efficacy and collective flow over time. Efficacy beliefs have an influence on feelings in the group and their perceptions of their own capabilities to cope with challenges.

For complex changes and challenging environments, the importance of resilience as a strength-focused concept has been recognized (Luthans, 2002; Caza & Milton, 2012). It is not just a personal capacity, but also a characteristic of successful organizations and teams. The concept of resilience has been utilized in many professional fields, and it refers to the positive psychological capacity to rebound: to "bounce back" from adversity, uncertainty, conflict, failure, or even positive change, progress, and increased responsibility (Luthans, 2002). In the educational context, resilience is conceptualized as "the ability of an individual, team, or school to adapt to changing

demands, to recover, and to remain vigorous after the changes have occurred" (Schelvis, Zwetsloot, Bos, & Wiezer, 2014, p. 631). Regarding teacher team, collective efficacy and resilience are intertwined in teachers' own perceptions about the success of the team's joint effort, leading to greater persistence and resilience. Based on their review of teacher resilience, Beltman, Mansfield and Price (2011) present resilience as a complex, idiosyncratic and cyclical construct involving dynamic processes of interaction over time between a person and an environment. They also indicate a relationship between motivation and self-efficacy, "as teachers experience success in their work, this builds their self-efficacy, which then leads to greater persistence." Therefore, the question regarding teacher resilience is not just how to survive, but how to thrive in the profession (Beltman et al., 2011). According to Gu and Day (2007), resilience is a multidimensional, socially constructed concept that is relative, dynamic, and developmental in nature, and it provides a promising perspective for understanding the ways in which teachers manage and sustain their motivation and commitment in times of change. Beltman et al. (2011) have highlighted the need for more empirical studies in different contexts, and also the role of teachers themselves in developing resilience.

**Sources of Collective Efficacy and Resilience.** According to Bandura (1997), successful teams have a strong sense of efficacy and resilience. The growth of self-efficacy and resilience has been noted as interacting at the individual level. A high level of self-efficacy is important for teacher resilience, and self-efficacy can be enhanced as teachers encounter and overcome challenges. At the group level, there is a need to deepen our understanding of how these two concepts interact at the collective level and how they affect the way teacher teams construct their collaboration.

Even though teachers' collective efficacy is more than the sum of individual efficacy and is a qualitatively different construct, the four sources of individual efficacy (mastery experience, vicarious experience, social persuasion and affective state) are also fundamental to the development of collective teacher efficacy (Bandura, 1997; Goddard et al., 2000; Lim & Eo, 2014). Hence, collective and individual efficacy are intertwined. According to Goddard, Hoy and Hoy (2004), a mastery experience is the most powerful source of efficacy information. The perception that a performance has been successful tends to raise efficacy beliefs and contribute to the expectation that the performance will be proficient in the future. In contrast, the perception that one's performance has been a failure tends to lower efficacy beliefs and contribute to the expectation that future performances will also be inept. Attributions also play a role (see, e.g. Bandura, 1997; Pintrich & Schunk,

2002). If success is attributed to internal or controllable causes, such as ability or effort, efficacy beliefs are enhanced. But if success is attributed to luck or the intervention of others, efficacy beliefs may not be strengthened. Observing others creates a vicarious experience for reflecting on collective efficacy. Social persuasion, such as verbal communication, coupled with models of success and positive direct experience can encourage teachers to give the extra effort that leads to success; thus, persuasion can support persistence and persistence can lead to solutions to problems (Goddard et al., 2000). The affective state of a group affects how it interprets and reacts to challenges.

Meister and Ahrens (2011) discovered three main factors that improve teacher resilience: leaders providing autonomy and support for teachers' enthusiasm and growth, the affirmation of having a positive effect on students' lives, and collegial interactions. In their review, Beltman et al. (2011) investigated the individual and contextual protective and the risk factors for teacher resilience, focusing on factors that sustain teachers in the profession. The key individual protective factors are related to self-efficacy and intrinsic motivation, while at the contextual level support from colleagues and working with the students are the main protective factors. The most frequent challenge related to the school or classroom has to do with behavior management and a lack of time due to having a heavy workload at a more general professional level. In a school-level study, Ebersöhn (2012) focused on resilience via the mobilization of resources through relationships: school communities construct networks around relationships to buffer adversity and promote resilience. Additionally, Moolenaar et al. (2012) found that dense networks, both personal and work-related advice relationships support and nurture teachers' collective efficacy beliefs. Schelvis et al. (2014) propose four perspectives on resilience for the educational sector that can be used as reflective and proactive tools in development: 1) the focus should be on the ability of an individual, team, or school to *function* (or behave) effectively and safely; 2) variability should be promoted, such as the individual differences between teachers in maintaining a manageable workload; 3) the focus should be on using available resources proactively in turbulent times; and 4) failures or unwanted outcomes are not breakdowns of normal system functioning, but represent the lack of timely adaptations to changing circumstances. They conclude that resilience theories provide several ways for teachers to increase their resilience by developing their abilities to anticipate, monitor, respond, and learn at school, at both the team and individual levels, by attending to demands and resources.

Collective efficacy and resilience are socially constructed in a specific context. They can both be

analyzed via factors identified as successful and protective or, on the other hand, as risks and challenges. In the specific context of this study, we want to explore the factors affecting the perceptions of teacher teams regarding their collective efficacy and resilience in managing the new collaborative working model. The focus is on "we" instead of "I" (see Goddard et al., 2004) in order to answer the question of how the teacher teams managed to change their ways of working. Even though collective efficacy is a group-level property, the "minds of the individual members who make up the group are the locus of collective efficacy assessment" (Stajkovic, Lee, & Nyberg, 2009, p. 815). Increasing teacher collaboration has positive outcomes for teachers' efficacy and resilience (e.g. Bandura, 1997; Gu & Day, 2007; Lim & Eo, 2014). Investigating teacher teams' own experiences with the factors affecting their collaborative work can help us understand more deeply the new nature of teachers' work.

### The Aim and Research Questions

The aim of this study is to examine the collective efficacy and resilience of teacher teams by investigating what makes the teacher teams and their collaboration successful when implementing new pedagogical practices and managing the resulting change. This study explores teacher teams' experiences during the change, as well as the factors affecting their capacity to adopt the new collaborative working model successfully.

The research questions are as follows:

- (1) What changes did teachers experience as team members during the pedagogical innovation process?
- (2) Which factors did teachers as team members experience as both protective and risk factors for their collective efficacy and resilience?
- (3) How did the teams differ in their process of adopting the new collaborative working model?

### Method

#### Context of the Study

The study was conducted in the context of a pedagogical innovation process at a university of applied sciences (UAS) in Finland. At the organizational level, it was decided that all the bachelor programs starting in September 2014 would be implemented in a new way. Curricula were reconstructed into broader and integrated competence-based modules, and teachers were organized to work as teams. This context offered unique circumstances for exploring teacher collaboration in a process of change at the deeper level, concentrating on the experiences of

the teacher teams about their capacity to manage the change successfully.

The change process began in autumn 2013, when teacher teams started to design the new implementation process. The modules were planned during 2013–2014, and the first new modules were implemented in September 2014. The learning process and environment were organized according to the principle of constructive alignment (Biggs & Tang, 2007), in which the intended learning outcomes direct the design of pedagogical practices, as well as more integrated and authentic learning environments. Teacher teams were collectively responsible for designing and implementing the modules. Teams could decide themselves how to organize their work (e.g., whether to use co-teaching or only one teacher at a time). The goal was to inspire students to take more responsibility for their learning and to study more collaboratively by giving them authentic real-life learning assignments and by offering continuous guidance and feedback. However, teams were flexible and also worked with other teachers, utilizing their expertise when needed.

### A Multiple Explorative Case Study

The study was an explanatory multiple case study consisting of five cases (Yin, 2009). The aim is to increase understanding about the phenomenon investigated through cases (Merriam, 1998) and to create analytic generalizations that can be applied to other concrete cases and situations (Yin, 2014). The processes of each team composed a separate case, and the data were collected from everyone involved in one of the cases (Yin, 2014). As a result, the method involved aggregating individual assessments to evaluate collective efficacy and resilience at the group level (see Bandura, 1997).

### Participants

The criteria for selecting the teacher teams for this study were as follows: the teams worked in the same unit; the modules were equally long, eight weeks; and they started in August or September 2014, which made the teacher processes comparable. The five cases selected had a more intensive time frame for the implementation process than the other cases, and the teams already had some experience in working collaboratively. The teams represented the following fields in bachelor-level education: agricultural industries, biotechnology and food engineering, sustainable development, landscape design, and plant production (both within the domain of horticulture). Each of the five teams consisted of three persons, so 15 persons (11 females, four males) participated in the study. Teachers participated in the study voluntarily.

### Data Collection

The data were collected both through team interviews and individual follow-up questions in four phases from May 2014 to December 2014. First, the data collection began with a team interview during the planning stage in May 2014. Next, the first follow-up questions were sent by e-mail to each team member in October 2014, when the implementation process of reforming pedagogical practices towards competence-based learning was going on. After that, the second follow-up questions were sent in November 2014 when the implementation had ended. The data collection ended with a second set of team interviews in December 2014.

The team interviews consisted of the following themes: the changes teachers experienced, what they found inspiring and challenging, the reasons for success and failure, and what the new competences needed by a teacher were. The questions of the semi-structured interviews were created to be very open, to capture the experiences as comprehensively as possible. The time taken for each interview was approximately 60 minutes. The interviews were recorded and transcribed. The interviews were used to answer all the research questions. The open e-mail follow-up questions were used because in the individual follow-ups it was possible to find out about experiences that had not been mentioned in team interviews. With the individual questions, teachers were asked to describe their team's successes and failures, and the reasons for them. The responses to these follow-up questions were used to answer the second research question.

### Analysis

The data were analyzed using abductive strategy, which utilizes both deductive and inductive approaches (Atkinson & Delamont, 2005; Creswell & Plano Clark, 2007). The unit of the analysis was an expression focusing on one idea, which sometimes consisted of couple of words (e.g., Inspiration of students) and sometimes of several sentences (e.g., "It is about the openness. I think we said the bad things as well, and if something went wrong with your own doings, we communicated in an honest way, didn't try to feign/fake.") First, using deductive strategy, the interview data were coded into the main categories: changes, protective factors and risk factors. Because the interviews were semi-structured in nature, the same themes came up during the various phases of the interviews, but the categories were exclusive, and each unit was assigned only to a single category. The data from the follow-up questionnaires were also coded into the main categories of protective factors and risk factors. The detailed analysis framework is



Table 1  
*The Main Categories Answering the Research Questions*

Research questions	Main categories
Research question 1.	Changes related to students' learning Changes related to teachers' teamwork Changes related to teachers' competencies
Research question 2.	Protective factors related to students' learning Protective factors related to teachers' teamwork Risk factors related to students' learning Risk factors related to teachers' teamwork

presented in Findings when describing the results (i.e., the number of units).

personal permissions for the data to be used for research purposes.

### Reliability and Validity of the Study

The first author did the first coding, and the coding was discussed over and over with the second author. As a result, some changes in coding were made, and exclusive categories were created for the research questions (Table 1). After this, using an inductive strategy, the first and the second author developed the final subcategories over several iterations. The units of analysis were also compared with each other. To support coding reliability, intercoder reliability (Whitley & Kite, 2013) was used. A colleague with the same type of work background as the first author used the classification schema to analyze 10% of the randomly selected units from the categories (1,180 units all together, approx. 100 used for testing reliability from interviews and questionnaires). The coding differed in only 15 of the units. Thus, five of the codes were renamed to describe the content of the code better, six units were divided into two categories, and four codes remained the same after discussion. To ensure validity, various pieces of qualitative data were collected during the four phases and by several means (individual e-mails, team interviews). This triangulation supported the legitimacy of the conclusions (Hamilton & Corbett-Whittier, 2013). Because the data collection varied and teachers used time differently in answering the questions, the numbers of units were not directly comparable; the different content of the units was important.

We followed the research ethics guidelines approved in the context of the study. Further, the director of the institution had given his permission to conduct the study as a part of the change process, and the voluntarily participating teachers gave their

### Results

#### Teachers' Experienced Changes during the Pedagogical Innovation Process

The changes experienced by teachers (Table 2) were related to pedagogical practices with students (45%), to collaborative work among teachers (23%), and to more general teacher competencies needed for the changed working model (32%). At the time of the first interview, teachers had already planned the forthcoming module, but they had not yet implemented it. However, they already had some previous experience with teamwork and organizing project-based collaborative learning among students, so they were able to evaluate the forthcoming practices. By the time of the second interview, after the implementation, the teachers were more focused on the protective and risk factors, and for this reason, the number and the variations in the answers ( $f$  = frequency of analysis units) related to changes were richer in the first interview ( $f$  = 184) than in the second one ( $f$  = 85).

The changes experienced in students' learning were the intended outcomes of the new model, such as integrated learning entities and authentic learning, or direct consequences of the outcomes, such as increased student-centeredness and notable changes in the roles of students and teachers. Some of the changes experienced were less expected, such as sense of a supportive atmosphere. In the new model, the teachers felt that students learned to work more collaboratively and to take more initiative and responsibility while teachers acted more like facilitators of learning. The changed role of a teacher was clearly the main change experienced after the implementation. Particularly during the planning phase, all teachers emphasized integrated learning entities and authentic learning,

Table 2  
*The Number of Units Related to the Changes Teachers Experienced* (f= frequency of analysis units)

Main categories	Sub categories	Example	First team Interview % (f)	Second team Interview % (f)	Total % (f)
Changes related to students' learning	Teachers' coaching role	"It is like a step down from the traditional role of a teacher"	5.4 (10)	15.3 (13)	8.5 (23)
	Students' more responsible and collaborative role	"Responsibility for studying and learning is shifted to the students themselves"	8.7 (16)	7.1 (6)	8.2 (22)
	Increased student-centeredness and supportive atmosphere	"Interaction and succeeding in it are emphasized, compared to traditional lecturing. We are much closer to the students."	6.5 (12)	10.6 (9)	7.8 (21)
	Diversification of pedagogical practices	"... All kinds of methods and tools, it has been diversified a lot."	6.0 (11)	9.4 (8)	7.1 (19)
	Integrated learning entities	"Currently, we are striving to address bigger themes, which will cover the previous subjects."	8.7 (16)	2.4 (2)	6.7 (18)
	Authentic learning	"We have real-life projects in the background, to inspire the students."	6.0 (11)	3.5 (3)	5.2 (14)
	Holistic and integrated guidance and assessment	"On a weekly basis, we are following the development of students; then assessment is always related to guidance of learning."	2.7 (5)	-	1.9 (5)
Changes related to teachers' teamwork	Increased collaboration	"Collaboration with teachers has increased greatly. Previously, we did discuss things, but everybody did their own thing. It is different now."	9.8 (18)	9.4 (8)	9.7 (26)
	Shared responsibility and common aim	"We have a common thread here."	5.4 (10)	7.1 (6)	5.9 (16)
	Increased planning and preparation work	"We started the planning work earlier and the amount of it has increased a lot"	6.0 (11)	-	4.1 (11)
	Organization of teachers' work	"Teacher's job description and planning of working hours is quite different. It is more like an empty canvas, try to do this and that. It is not so precisely counted how the hours are spent."	4.3 (8)	-	3.0 (8)

Changes related to teachers' competence	Self-regulation: adaptation and practical management	"You need to start from the beginning, to think about how you will act."	13.6 (25)	11.8 (10)	13.0 (35)
	Collaborative competence	"Team working skills..."	8.2 (15)	12.9 (11)	9.7 (26)
	Open-mindedness and flexibility	"You need to step out of your comfort zone."	7.6 (14)	10.6 (9)	8.5 (23)
	Broader consciousness about the world of work	"You need to know the world of work, and understand what kind of skills students will need."	1.1 (2)	-	0.7 (2)
Total			100 (184)	100 (85)	100 (269)

Table 3  
*Number of Analysis Units Related to Protective Factors at the Level of Students' Learning* (f= frequency of units)

Protective factors related to students' learning	First team interview % (f)	First E-mail questions % (f)	Second E-mail questions % (f)	Second team interview % (f)	All units % (f)
Students' motivation, inspiration and engagement	22(10)	23(6)	15(8)	24(24)	21(48)
Peer learning and students' collaboration	15(7)	15(4)	27(15)	18(18)	19(44)
Succeeding in organization of student-centered learning and assessment practices	0(-)	31(8)	18(10)	18(18)	16(36)
Authentic learning environment	30(14)	12(3)	11(6)	12(12)	15(35)
Building trust and positive atmosphere for learning	7(3)	8(2)	20(11)	17(17)	15(33)
Holistic and flexible framework for teaching and learning	26(12)	12(3)	9(5)	11(11)	14(31)
Total	100(46)	100(26)	100(55)	100(100)	100(227)

together with holistic guidance and assessment, as important changes, which illustrates the tangible transformation from individual teacher planning to a more collaborative and integrated approach. Furthermore, according to the teachers, the new model increased the variation in pedagogical practices, like the use of digital tools and variety of learning methods, and this diversification was mentioned in both interviews.

Related to teachers' teamwork, the main change in both phases was increased collaboration. Also, shared responsibility and a common aim were mentioned in both interviews. The changes, such as increased planning and preparation work, and new ways of organizing teachers' working hours were

only mentioned in the planning phase. Furthermore, teachers recognized new competence demands, which illustrated teachers' resilience during the phase of adopting the new collaborative model and managing the changes. The most affected competencies had to do with teacher self-regulation, especially adaptation and practical management. Participants highlighted the ability to learn, revitalize, and regulate their actions continuously while working, as well as having more accountability while co-creating new practices. Further, collaborative competence, flexibility, and open-mindedness were experienced as being important in both phases.

### Experience of Protective and Risk Factors for Teams' Collective Efficacy and Resilience

The teacher teams' descriptions of the protective and risk factors for the success of the change illustrate how they socially constructed their collective efficacy and resilience (see Beltman et al., 2011; Goddard et al., 2004). The factors were analyzed at the level of students' learning and also at the level of teachers' work. The number of units related to protective factors was larger (551 units altogether, combining the total numbers in Tables 2 and 3) than the number of risk factors (362 units combining the total numbers in Tables 4 and 5).

#### Protective Factors Related to Students' Learning.

At the level of students' learning (Table 3), teachers reported, "Students' motivation, inspiration, and engagement" had a strong impact on teachers' feelings of success with the new model. "This is inspiring and gripping from the students' perspective," was one of the comments made by teachers. This factor was emphasized during all phases. Therefore, students' motivation had a significant impact on the teacher teams' experience of their collective efficacy. Also, successfully organizing "peer learning and student collaboration" in learning created a good foundation for resilience in the new model. According to one participant, "The grouping of students went well, and it created good team spirit for working." Even during the first interview, teachers reported that they expected this to improve practices. During and after the implementation phase, it became clearer that teachers felt that the new kind of situation, in which peer learning plays a larger role, creates success. Furthermore, "[s]uccessfully organizing student-centered learning and assessment practices" was a meaningful factor for the teacher teams. Instead of lecturing, they created learning activities during which students took more responsibility and were more active. They also reported these kinds of activities to be meaningful from the students' point of view. These factors illustrate teachers' feelings of success when creating new motivating practices for students as a team, and this had an impact on the collective efficacy they experienced.

In the planning phase, two factors especially increased the teachers' feeling of success: firstly, an "authentic learning environment," including increased opportunities for practice-based learning and collaboration with the world of work and secondly, a "holistic and flexible framework for teaching and learning." Participants reported that the newly integrated competence-based modules were meaningful, and the fragmentation of learning had been successfully overcome. Further, they felt they could work in a more flexible manner by organizing their collective actions according to the needs of students, as well as be more open to the affordances of companies to create practice-based learning. Because teachers

were able to regulate and control their practices in this new framework, this also increased their collective efficacy and resilience. Further, especially after the implementation, teachers recognized that "building trust and a positive atmosphere for learning" was a meaningful factor. More intensive interaction with the students helped to "create the right attitude" and a sense of "achieving trust." The new model brought students and teachers closer to each other, and this relatedness affected the feeling of success.

**Protective Factors Related to Teachers' Teamwork.** Regarding teachers' teamwork, participants identified eight protective factors for collective efficacy and resilience (Table 4). Important in the planning phase especially, each teacher's "own development and broader consciousness" as a result of team collaboration was a supportive factor. "I have found entirely new aspects of myself," said one teacher. Teachers noticed that they could learn much from each other while working as a team and utilizing mutual feedback. They also recognized that they had become more aware of their colleagues' competencies and work practices. In the final interview, the main protective factor was "trust in succeeding and overcoming challenges." The teams emphasized that they had not been afraid of failure, but had been persistent in finding solutions to challenges.

Further, teachers experienced "collective agility and flexibility" to influence their success in the new model. They expressed the view that they continuously evaluated their work as a team, and when recognizing the need to make improvements, they reorganized their common work practices immediately. They learned that as a team, they could solve the problems they encountered in a more flexible manner by utilizing the different strengths of individuals and by "feeding each other's thinking." "Collaboration itself" was deemed "rewarding" in all phases of the study. Increased collaboration created good team spirit and resulted in more team support and fruitful interaction with colleagues. Teachers reported that the positive affective state of working together supported collective efficacy, even though in the final interview it was not mentioned so often. Also, the teacher teams' "engagement and inspiration for change" were recognized as being essential factors for feelings of success. The change itself was experienced "as a great opportunity," coupled with the sentiment that "nobody would like to change back to the old way, even though it has been hard." The willingness of the teacher teams to embrace the changes created the foundation for collective efficacy and a resilient way to handle adversity.

Many teachers reported "increased effectiveness" to be one protective factor for teams' resilience. Besides this, "shared responsibility and trust" in a team helped relieve and lighten the workload, as the team

Table 4  
*Number of Units Related to Protective Factors at the Level of Teachers' Teamwork* (f=frequency of units)

Protective factors related to teachers' teamwork	First team interview % (f)	First E-mail questions % (f)	Second E-mail questions % (f)	Second team interview % (f)	All units % (f)
Trust in succeeding and overcoming challenges	12(14)	12(6)	16(7)	27(30)	18(57)
Collective agility and flexibility	14(16)	21(11)	16(7)	14(16)	15(50)
Collaboration itself rewarding	16(18)	21(11)	25(11)	9(10)	15(50)
Engagement and inspiration for change	16(18)	15(8)	11(5)	10(11)	13(42)
Increased effectiveness	11(13)	6(3)	18(8)	14(16)	12(40)
Shared responsibility and trust	11(13)	15(8)	7(3)	12(13)	11(37)
Own development and broader consciousness	18(21)	0(-)	0(-)	6(7)	9(28)
Allocating and investing time for collaboration	2(2)	10(5)	7(3)	9(10)	6(20)
Total	100(115)	100(52)	100(44)	100(113)	100(324)

Table 5  
*Number of Units Related to Risk Factors at the Level of Students' Learning* (f= frequency of units)

Risks related to students' learning	First team interview % (f)	First E-mail Questions % (f)	Second E-mail Questions % (f)	Second team interview % (f)	All units % (f)
Obscurity of new practices and unfit administrative tools	16(9)	29(5)	55(12)	27(20)	27(46)
Risk in not succeeding in assessment	15(8)	18(3)	14(3)	13(10)	14(24)
Risk of failing to create student motivation, responsibility and self-directedness	22(12)	0(-)	5(1)	12(9)	13(22)
Improvements in practices needed	0(-)	29(5)	27(6)	12(9)	12(20)
Recognizing and responding to students' needs	7(4)	6(1)	0(-)	19(14)	11(19)
Risk in failing to guide peer learning	16(9)	18(3)	0(-)	8(6)	11(18)
Challenge of integrating different themes	16(9)	0(-)	0(-)	3(2)	7(11)
Uncertainty about the new model	7(4)	0(-)	0(-)	7(5)	5(9)
Total	100(55)	100(17)	100(22)	100(75)	100(169)

supported its members: “The nicest thing is that you are not solely responsible for everything. You can share things. It is really great; if problems arise, there are two colleagues with whom we try to figure out how to proceed. This is the greatest thing for a teacher.” Furthermore, “investing and allocating time for collaboration” helped to create a foundation for collective efficacy, and this was somewhat more evident during and after the implementation process.

**Risk Factors Related to Students’ Learning.** In the new model, participants identified several risk factors related to students and their learning (Table 5). The main issue diminishing experiences of collective efficacy was the “obscurity of the new practices and unfit administrative tools.” Teachers felt that the administrative digital tools were not designed to fit the new practices. They also reported that there were confusing guidelines, which they could not influence, and this diminished their sense of team efficacy. This factor was especially highlighted during and after the implementation process.

The sense of “risk in not succeeding in the assessment” was evident during all phases of the study. In the integrated model, in which learning was strongly based on student teamwork, the competence-based assessment and feedback given to students raised several questions, and the new solutions were not easy to find. This illustrates the fact that creating new assessment practices requires more support and persistence so that the teacher team will feel confident. Teachers also recognized the “risks of failing to create student motivation, responsibility and self-directedness” in the first interview, when they had not yet started working with the students. Their experiences were based on previous comparable praxis: “This is a big change for students compared to traditional schooling, so big that you can easily fall by the wayside.” In the first interview, teachers highlighted the motivational aspects, but after the implementation phase, they emphasized more the challenge in creating a sense of student responsibility and self-directedness.

The factor “improvements in practices needed” illustrates the challenges teachers recognize that need to be solved during the next implementation process. Thus, they are not necessarily diminishing the sense of collective efficacy, but there can also be motivational challenges that teacher teams can overcome together and, in that way, build their resilience.

In the new model, teachers felt that “recognizing and responding to the various needs of students” and the “risk in failing to guide peer learning” diminished their sense of collective efficacy. Teachers wanted to strengthen their competence in coaching and guiding students, especially in how to get students to work successfully in groups. Furthermore, many teachers

emphasized the “challenge of integrating different themes” in the first interview, but not later during the implementation phase. So, the challenge in giving up traditional courses can be overcome via planning. There was also general “uncertainty about the new model,” which diminished the sense of team efficacy.

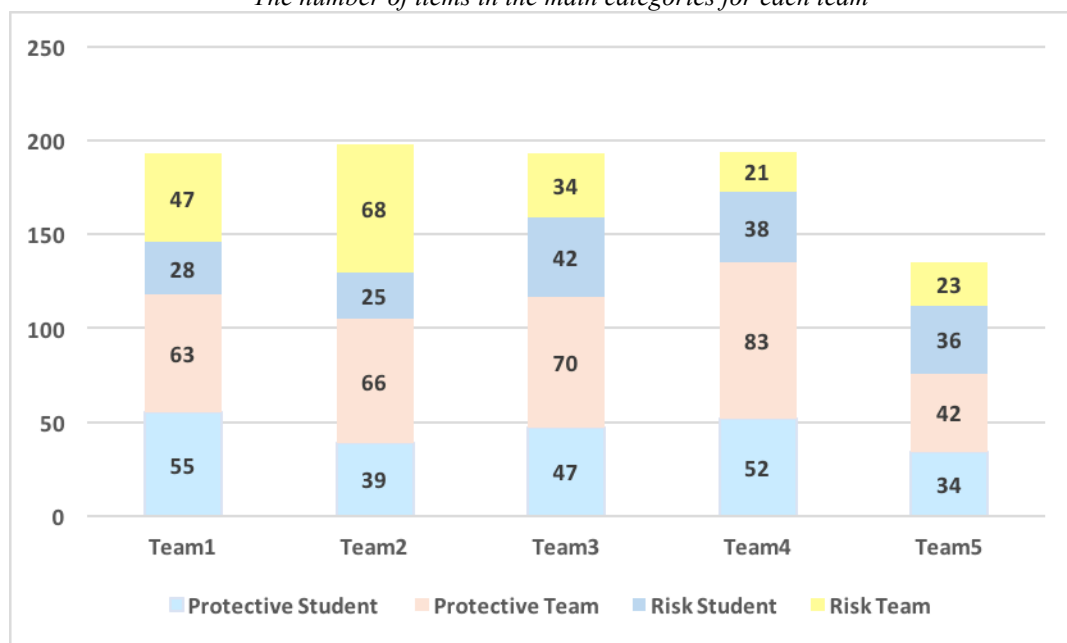
**Risk Factors Related to Teachers’ Teamwork.** The main risk for a team’s collective capacity to work effectively (Table 6) was “time management and excessive workload,” which was experienced in all the phases. Teachers had many other responsibilities besides working with a team. They were also teaching older classes, which operated in a traditional manner and generated problems with respect to the time scale. Teachers complained about the lack of resources, being overly busy and a lack of time, all of which diminished the capacity of the teams to succeed in their work, and this problem was experienced during all the phases of the study. In the planning phase, there were two risks, which were mentioned less often in latter phases. First, teachers experienced the “difficulty in adapting to the new model” as challenging. As an example, one of the teachers said: “One problem is that you cannot decide everything by yourself and you need to give up something.” They recognized that diversity among teachers demanded that they learn to adapt to working as members of a team. Second, “insufficient engagement with collective work” diminished the teams’ sense of efficacy, while some of the other co-operating teachers did not abide by the common agreements, but instead continued working in their own way.

Especially during and after the implementation phase, teachers reported that “insufficient interaction and communication” within their teams presented challenges and diminished their sense of collective efficacy. The teams felt that they did not have enough time to evaluate and create common guidelines for effective joint practices. They also recognized the need for systematic knowledge sharing during the implementation process so that they could better succeed in their work and be more creative as a team. Further, teachers felt that “vague roles and guidelines” decreased their efficacy, and this feeling of confusion was even stronger in the final phase. They felt that the autonomy of a team was not clear, and that more specific guidelines would have helped. Also, in some cases the roles within a team were ambiguous, and there was some confusion about the roles and relations with the other teachers. This factor resulted in contradictory situations in which the teams found it difficult to find solutions by themselves. The teams also felt that the “heaviness and vulnerability of teamwork” prevented them from succeeding in their collective work. They reported that it was difficult to learn to work as a team. Some team members reported feeling a sense of vulnerability when they were not able to participate in teamwork activities,

Table 6  
*Number of Units Related to Risk Factors at the Level of Teachers' Teamwork* (f= frequency of units)

Risks related to teachers' teamwork	First team interview % (f)	First E-mail questions % (f)	Second E-mail questions % (f)	Second team interview % (f)	All units % (f)
Time management and workload	34(25)	31(8)	44(12)	24(16)	32(61)
Insufficient interaction and communication	8(6)	54(14)	22(6)	18(12)	20(38)
Vague roles and guidelines	12(9)	12(3)	15(4)	27(18)	18(34)
Difficulty in adapting to new working model	29(21)	0(-)	0(-)	9(6)	14(27)
Insufficient engagement with collective work	14(10)	0(-)	7(2)	6(4)	8(16)
Heaviness and vulnerability of teamwork	0(-)	4(1)	11(3)	13(9)	7(13)
Lack of supervisor's support and involvement	3(2)	0(-)	0(-)	3(2)	2(4)
Total	100(73)	100(26)	100(27)	100(67)	100(193)

Figure 1  
*The number of items in the main categories for each team*



and that increased the workload for the others. Besides these factors, some participants mentioned that the “lack of

supervisor’s support and involvement” posed a risk to the collective efficacy of the teams.

**Results of the Differences between Teams While Implementing the New Model.** In general, with four of the teams, the total number of items concerning the protective and risk factors related to students and to teachers' teamwork was almost the same, but the number of items in categories was different for each team, as shown in Figure 1. Team 5 was the only exception. All the teams experienced more protective factors than risks, which illustrates the team members' general feelings of success about the new model.

The number of items for each team was analyzed using the chi-square test, and the analysis showed the following statistically significant differences between the teams:

- Team 1 differed from Team 4 ( $X^2=14.278$ ;  $df=3$ ;  $p<0.005$ ) and from Team 5 ( $X^2=8.399$ ;  $df=3$ ;  $p<0.05$ );
- Team 2 differed from Team 3 ( $X^2=16.447$ ;  $df=3$ ;  $p<0.001$ ), from Team 4 ( $X^2=31.262$ ;  $df=3$ ;  $p>0.000$ ) and from Team 5 ( $X^2=18.661$ ;  $df=3$ ;  $p<0.000$ ).

The division of items in the sub-categories was also considered, and there were interesting differences between the teams.

Each team had to build its resilience and efficacy collaboratively in its own way. During the planning phase, each team considered the protective factor concerning its "own development and broader consciousness." To a certain extent, it was replaced by items falling under the category "improvements for practices needed," which emerged during the process as the work was being conducted in a new way. Some of the sub-categories emerged during the implementation process, such as "students' motivation, inspiration, and engagement," as well as "peer learning and student collaboration," which helped strengthen the resilience and efficacy of every team, but especially Team 1. Also, in all the teams, trust in succeeding and overcoming challenges increased.

In this study, teachers in Teams 1 and 2 experienced a sense of "external disruption," which they could not themselves effect, and this had a strong influence on the teams' work. Participants in these two teams provided more comments about team-related risks than did the other teams, and the teams resembled each other more than the other teams did. The external disruption experienced by Teams 1 and 2 was due to the fact that team members had other responsibilities and other work to do, which diminished the amount of time for developing team work and presented challenges with respect to "time management and work load." Team 1 had more supportive items regarding student work, and this was probably the major motivation for the team to overcome the challenges in working collectively as a team. Further, Team 2 experienced an

"external disruption" caused by another teacher, who interfered with students' work without negotiating and sharing enough information with the rest of the team. This diminished the team's entitativity because members could not control their work as a team. Team 2 had more items in the following sub-categories than did the other teams: "insufficient communication," "difficulty adapting to new model," and "insufficient engagement, heaviness, and vulnerability." In this study, Team 2 was a problematic team that did not succeed in building up its resilience to solving the problems during the process.

Team 3 was an average team. Trust in the team's capacity for team development increased during the process. Especially during the planning process, the team members showed a capacity for engagement and were inspired to make changes. Teams 1, 2, and 3 had more items in the sub-category "vague roles and guidelines" than did Teams 4 and 5.

With Team 4, similarly as with Team 3, trust in the team's capacity to develop increased during the process. This team most likely experienced a sense of flow while overcoming the challenges, and the members identified more supportive items than did the members of other teams. In general, this team was successful and could use the team itself as a factor for creating resilience and entitativity, not only student-related factors.

Team 5 in general discussed and reflected on the issues less than the other teams. It did not analyze the process or its progress as extensively as the other teams. During the planning phase, the members were worried about how to succeed in organizing students' learning, especially in motivating them. With Team 5, the sub-categories regarding student-related protective factors, as well as risks, were somewhat different than in the other groups: they had fewer supportive factors and more risks during the process. However, in the final analysis, they had a profile similar to the other teams.

## Conclusions and Discussion

In this study, the changes teachers experienced in their work practices during the pedagogical innovation process were significant. The transformation from working individually to engaging in teamwork changed the way teachers interacted with students, how they collaborated with their colleagues, and how they regulated themselves and their work. The main change the teachers recognized at the student level highlighted changes in the collaborative learning environment, such as teachers acting more like facilitators of learning and students more like collaborators. We think that the experience of a supportive atmosphere and strengthened teacher team entitativity also created space for diversification in pedagogical practices. The main



change experienced relating to teacher competence was self-regulation, which highlights the need for continuous adaptation and the significance of teacher resilience. All these changes created a novel picture regarding the phenomenon of teacher collaboration in higher education and emphasizes its importance as a way to create a successful environment for promoting students' learning.

The transformation in teaching practices can serve as an effective learning process for teachers, during which teachers as a team can feel that they successfully build new student-centered practices and strengthen their collaboration. The findings related to team members' beliefs about collective efficacy and resilience at the student level indicate that students' motivation and engagement is the main protective factor. Observing students' inspiration created a vicarious experience (see Goddard et al., 2000) for teachers to reflect on their collective efficacy. The successful change was created with the students, not just for them. Teachers also succeeded in overcoming the challenges when creating new practices, which enhanced their collective efficacy and persistence, as in the study undertaken by Beltman et al. (2011). The reasons for success were related to issues they themselves had created and resolved, which corresponds with the findings by Goddard et al. (2000): when success is attributed to internal and controllable causes, efficacy beliefs are enhanced. Similar phenomena were also found at the team level, as the main protective factors were trust in overcoming challenges and collective agility and flexibility, which indicates each team's own capacity to craft its collective work according to the emerging needs. This trust even increased during the process. As demonstrated in the following words of one teacher, we can recognize a reciprocal relationship of collective efficacy and social flow (Salanova et al. 2014): "It was our inspiration. We were so motivated about our new operations, we just wanted to progress, go forward, and that's why we succeeded so well."

The risks for each team's collective efficacy and resilience with students' learning were mainly related to the challenges in creating new practices. Many of these challenges not only diminished resilience, but also created new challenges for the teams to overcome together. When teams successfully meet such challenges, they can increase their resilience and sense of collective efficacy. This kind of mastery experience (see Goddard et al., 2004) can be a powerful source of efficacy information, and through that, build the team's resilience. The main risk, obscurity of new practices and unfit administrative tools, was an external factor which the teachers felt they could not have an impact on themselves, and this feeling even increased during the process. At the first implementation of the new model, it

is understandable that organizational structures had not been comprehensively developed, and traditional ways of working still live on in people's minds, thereby making the new practices seem even more obscure in their nature. Nevertheless, when moving towards a collaborative working model and student-centered organization of learning, it is essential to build administrative and organizational guidelines that enable and support the innovation process (see also Smith, 2012; Kunnari & Ilomäki, 2016). The best solution for increasing collective efficacy and a sense of ownership would be to allow the teams themselves to create the guidelines for their work. In this way, by taking the responsibility upon themselves for finding solutions in how to succeed, they can learn to be more resilient.

The main risk factor found in teachers' work, "time management and workload," is supported by the findings presented in previous studies (e.g., Beltman et al., 2011; Kunnari & Ilomäki, 2016). Teachers need to be allotted enough collective time to be able to clarify obscure practices. At the team level, the risks "insufficient interaction and communication" and "vague roles and guidelines" can also be connected to a lack of shared time to solve the problems. If there is insufficient time for social engagement within a team, such as communication and the sharing of positive experiences to support persistence and problem solving, then the efficacy beliefs of a team can be diminished (see Goddard et al., 2000). These findings highlight the demand for sufficient team entitativity and deep-level collaboration when working with students (see Vangrieken et al., 2015). Likewise, if collaboration itself strengthens resilience, then time management issues need to be taken seriously.

This study draws a picture of successful teams dealing with change and socially constructing their collective efficacy and resilience. In this case study, the teams can be described as successful because they all found more protective factors than risk factors for their collective efficacy and resilience. However, even though these teams represent a special group, the findings can be used to facilitate teacher development in many contexts. Referring to suggestions by Schelvis et al. (2014) about how to increase resilience, the main point is that teachers need to find a new mindset for how to create new work practices collaboratively. This means adopting a positive and open-minded approach, like focusing on the resources available through collaborative work with the whole community, with students and with teacher teams. Teamwork can create a space for increasing the awareness of common resources. In addition, increased teamwork is a good example of teachers' workplace learning, social learning in small groups or teams of teachers (Imants & van Veen, 2010) as an essential source of individuals' as well as teams' professional development.

From the organizational standpoint, based on this study, the new kind of collaborative culture in teachers' work can be achieved through raising 'organizational mindfulness' (Weick & Sutcliffe, 2006) as a shared awareness of personal and organizational goals and as an ability to recognize and interpret different signals together in a time of change. Further, providing teachers with personal as well as external resources with which to be flexible and adaptable, and therefore the competence to improvise successfully in the face of uncertainty, may serve to foster teacher teams' resilience in higher education (Mills et al., 2013; Sutcliffe & Vogus, 2003). Collaborative working culture demands a different kind of focus at the organizational level, and the message needs to be clear: the new autonomy of a teacher is socially constructed in collaboration with other teachers. The teacher is the main actor participating in building new practices, not as an individual, but as part of a community, taking students' needs and colleagues' needs into account. Current research related to wellbeing at work (e.g., Tims, Bakker, & Derks, 2013) has also revealed the direct effects of crafting work to meet challenging demands in terms of increased well-being. Therefore, teachers should be encouraged to craft their own jobs in innovative ways and build their collective efficacy and resilience in the change.

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## Inquiry Into (In)ability to Navigate Dissidence in Teacher Education: What it Tells Us About Internalized Racism

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In this study, the author, a teacher educator of color, explores her inability to successfully navigate a tension-filled moment in a teacher education diversity course while discussing ethnic and racial stereotypes. More specifically, using “inquiry as stance” and relocating personal pedagogical practice to social and critical practices through the conceptual lenses of “white racial supremacy” and “double consciousness”, she investigates her dilemma that she uncomfortably confronts when a student of color speaks up against the majority of students in class who are white. In working through and theorizing the author’s inner conflict, as she feels the commitment to support the student of color while also seeking validation by the majority students, she concludes that teacher educators of color committed to social justice work can unwittingly alienate the very students of color they are committed to inspire as an effect of internalized white supremacy. In the final section, the author argues that internalized white racial supremacy is an inevitable condition of structures of racial oppression, and a failure to recognize and study internalized white racial supremacy can hamper diversity and multicultural education that are meant to combat racism and further perpetuate existing racial hierarchies.

In the present time in which schools and societies are increasingly becoming diverse in many places in the world, and yet the gap between the demographics of teacher population and student population is rapidly widening (e.g., Dingus, 2008; Philip, 2011), educators of color bring unique educational perspectives to teaching and learning. In this regard, Foley, Levinson, and Hurtig (2000-2001) identified four major contributions made by scholars of color as follows: (1) scholars of color have disrupted “deficit explanation of the lower achievement rates of students, teachers, and parents of color . . .” (p. 80); (2) scholars of color have assumed and shown the success and capacity of students, teachers, and parents of color; (3) scholars of color have documented which “pedagogical and curricular practices help marginalized students, teachers, and parents produce success” (p. 80); and (4) scholars of color have advocated for multiple decolonizing and collaborative research approaches, which contributed to research methodology. Hence, the influence of the counter-hegemonic voices of academics of color in transforming white-dominated field of education is undeniable. In pedagogical settings, racial minority teachers are shown to have a positive impact on the social-emotional development of American minority children, and teachers of color can serve as role models for students of color (Wright, Gottfried, & Le, 2016).

However, automatically assuming that educators of color and their thinking and action can transcend the system of domination is also problematic. Spivak (2003) noted the need to deconstruct one’s implicatedness in dominant systems of knowledge and representations. In representing herself as a scholar of color who is in a privileged position as an academic in the West, Spivak (2003) contended that there is a need

to be hyper-self-reflexive and to acknowledge her own complicity in perpetuating the system of domination. According to Spivak, the internalization of domination and oppression is a phenomenon that affects all people. Following this line of thinking, educators of color must be self-reflexive about their own internalized system of domination in order to fully pedagogically benefit their students, including students of color.

As a teacher educator of color working with predominantly white pre-service teachers in a rural Midwestern state in the US, one of my major pedagogical commitments is to support pre-service teachers in understanding the practical consequences of social, racial, economic and cultural hierarchies; concentrations of power and control; and oppression. Relatedly, my commitment also extends to improving the educational opportunities of students of color at all levels. I seldom work with pre-service teachers of color, and when I do have the opportunity to work with them in my class, I am very excited. However, I have noticed that there are times when I unwittingly alienate the very student I am committed to inspire in my class. There are times when my commitment, as well as personal and professional knowledge, misalign with my pedagogical practices in working against racial hierarchies and supporting students of color. To this end, this paper is an inquiry into my inability, as a teacher educator of color committed to social justice work, to respond to a tension-filled moment involving a pre-service teacher of color in an undergraduate diversity class. This study’s major contribution is thus exploration of how unexamined internalized white racial supremacy operating in a teacher educator of color can become an impediment in facilitating the “difficult dialogue” (hooks, 1994), the transformative potential of diversity, and multicultural teacher education courses.

Authors of numerous existing studies documented the racially marginalized experiences of teachers and teacher educators of color (e.g., Diggs, Garrison-Wade, Estrada, & Galindo, 2009; Kelly & McCann, 2014; Tuitt, Hanna, Martinez, Salazar, & Griffin, 2009). An ample body of research also examines the taken-for-granted whiteness of teaching, whereby the authors explore how white educators perpetuate and support racial ideologies in their teaching (e.g., Galman, Pica-Smith, & Rosenberger, 2010; McIntyre, 2002; Picower, 2009). However, research on how the forces of whiteness may manifest in the work of educators of color is scarce. According to Pyke (2010), internalized racism remains understudied, as the topic seems to be a taboo largely because of “a concern that the racially subordinated will be held responsible for re-inscribing White supremacist thinking, casting it as their shortcoming rather than a problem of White racism” (p. 559). In this regard, Padilla (2001) noted that internalized racism is *not* the consequence of any weakness, ignorance, or other shortcoming of the oppressed. In fact, human actions and thinking are impacted by the structure of the relations of domination and institutions (Dubois, 1903/1994; Fanon, 1967). More specifically, hooks (2013) argued that white supremacist thinking informs the consciousness of everyone regardless of skin color. Concurring with such school of thought about the inevitable internalization of the structure of domination, I argue that further inquiry into how educators of color can unintentionally and unconsciously reinforce the system of racial hierarchy in pedagogical setting is clearly needed. In particular, the unique experiences and invaluable perspectives contributed by educators of color demand more attention.

In the following section, I discuss the methods and modes of inquiry that inspired this study paper, before exploring the notion of “white racial supremacy” and “double consciousness” as the theoretical frameworks that guided the study. “Double consciousness” is adopted in conjunction with “white racial supremacy” to show the psychological conflict of two-ness that I as a teacher educator of color experience. Next, I describe the context of this inquiry with the detailed notes on what I mean by a tension-filled moment in which I was unable to respond to dissidence in my pedagogical practice. In the final discussion, I conclude that the internalization of white racial supremacy is the inevitable consequence of the system of racial domination. I thus argue that studying internalized racial oppression can advance the diversity and multicultural pedagogy committed to work against racial inequality because not attending to inevitably internalized racism can unwittingly reinforce the forces of domination even by teachers of color. I also offer a few implications and suggestions for the field of teacher

education and teacher educators of color engaging in “inquiry as stance” and moving from “personal to critical” self-reflection.

### Methods and Modes of Inquiry

In this work, I adopted a qualitative method of autoethnography (Chang, 2008). Chang, Ngunjiri, and Herenandez (2013) defined autoethnography as “a research method that enables researchers to use data from their own life stories as situated in sociocultural contexts in order to gain an understanding of society through the unique lens of self” (p. 18). As will be discussed more fully in the following section, the pedagogical experience discussed in this study provides rich and powerful data that calls for detailed analysis even though it occurred within a single class period. Another study written by the author on the topic of the internalization of racism with a wider set of data can be found elsewhere (Author, 2014). Informed by the social and critical understanding of internalization of racism discussed in the previous section, autoethnography as a method is useful for this study, as I am interested in investigating internalized racial oppression within myself as a teacher educator of color who is committed to social justice work. My aim is reveling white domination and white privilege through my own pedagogical practices by situating the vignette in a broader sociocultural context. In particular, I place value on being able to analyze my innermost thoughts pertaining to the incident that will be discussed below in relation to my personal background, as this is something I may not be comfortable sharing with other researchers. In adopting the method of autoethnography, the data analysis of my own reflection started with memory work, where I recalled and told stories to myself in terms of how I responded to a particular student within the classroom environment discussed below.

The undercurrents of an inquiry into my inability to withstand a tension-filled moment and support the pre-service teacher of color in my class are “inquiry as stance” in practitioner inquiry (Cochran-Smith, 2003) and “relocating the personal to critical” in autoethnography. This approach allowed me to explore how my sociopolitical contexts have shaped my perspectives, behaviors, and decisions (Chang, 2008; Kamler, 2001). In her discussion on educating teacher educators by adopting “inquiry as stance,” Cochran-Smith (2003) contended that this approach offers “an intellectual as well as practical perspective on the education of teacher educators- a way of learning from and about the practice of teacher education by engaging in systematic inquiry on that practice” (p. 8). Similarly, Cochran-Smith and Lytle (1999) described inquiry as stance as “both social and political- that is, it involves

making problematic the current arrangements of schooling; the ways knowledge is constructed, evaluated, and used; and teachers' individual and collective roles in bringing about change" (p. 289). In my own inquiry, I draw on the "inquiry as stance" within autoethnography to learn about and learn from my own teaching practice. I am particularly concerned with my unanticipated inability to support the student of color in an actual pedagogical setting, even though, as a teacher educator of color, I am fully committed to educational equity for all students. In so doing, I hope to deconstruct my own unconscious and taken-for-granted ways of thinking and acting that are embedded in social and political contexts, which reinforces what I am committed to work against in the cost of comforting and being validated by my predominantly white students. I also draw on Kamler's (2001) notion of relocating the "personal to critical" and putting the social and critical back into my personal practices of failure forces in pedagogy which share the similar commitment in attending to social and political in the notion of "inquiry as stance" (Cochran-Smith, 2003; Cochran-Smith & Lytle, 1999). Along with the understanding of the internalization of racial domination as social process, autoethnography and "inquiry as stance"—in which I move from personal to critical—provide a set of lenses through which to examine how white supremacist thinking seeps into the pedagogical practices that are meant to combat it.

### **Theoretical Framework: White Racial Supremacy**

bell hooks (2013) argued that the US is founded on white supremacist thought and action, and "the bottom line of race and racism is white supremacy" (p. 153). According to hooks (2013), white supremacist thinking informs the consciousness of everyone regardless of skin color. In the author's view, this phenomenon is so difficult to recognize and challenge because white supremacist thinking functions unconsciously. hooks' contention aligns well with Spivak's (2003) aforementioned argument on the necessity of being hyper-reflexive about one's own complicity to the system of white domination even as a scholar of color. Additionally, Leonardo (2004, 2009) contended that racial domination that is historical and institutional is recreated at the individual level through white racial supremacy without one necessarily being aware of the manifestation of white racial supremacy forces. Similarly, Delgado and Stefancic (1997) described white supremacy as the operation of the forces that currently occupy the everyday mundane actions that shape the world in the interests of white people. In this regard, hooks (2013) noted that "thinking about white supremacy as the foundation of race and racism is crucial" (p. 6) because it explores how white

supremacist thinking in everyday life upholds and maintains a culture of domination.

I draw upon the notion of white racial supremacy to examine how I unintentionally support the system of white domination, as I am unable to successfully support a pre-service teacher of color in a tension-filled moment. This stance is useful, as it exposes the social fact that I, too, as a teacher educator of color, am inevitably shaped by the system of domination and have internalized the white supremacist thinking and acting. In his discussion about what comfort tells us about racism, Shi (2015) referred to his discomfort with his parents speaking Cantonese in public, which he ascribed to his preoccupation with the white people around them feeling uncomfortable. Shi went on to hypothesize what such (dis)comfort says about the state of internalized white supremacy in ourselves and others. In this work, through an inquiry into my personal pedagogical practice, I theorize about my inability to respond to a tension-filled moment in an undergraduate teacher education class, which occurred during a discussion on ethnic and racial stereotypes. Given that I unconsciously sought validation from my white students, in the sections that follow, I examine the social and racial limitations imposed on me as a teacher educator of color by recognizing the important social and psychological manifestations of white racial supremacy in my own classrooms. I also discuss the potentials of adopting "inquiry as stance" and going from "personal to critical" work that can ultimately impact the "pedagogical practice" and expose the privileged positions of whites.

### **Double Consciousness: W.E. B. Dubois**

As mentioned above, the experiences of people of color are definitely not the same as those of whites. Inquiring into my pedagogical practice through the theoretical lens of "double consciousness" (Dubois, 1903/1994) helps to explain the psychological tension and conflicts within myself as an educator of color, as I am faced with a dilemma of deciding to support or silence a student of color in a class filled with white students. In this context, the notion of white racial supremacy, along with "double consciousness," allows me to acknowledge that I too am inevitably implicated in the system of domination. Dubois (1903/1994) described the Black experience of double consciousness as follows:

It is a peculiar sensation, this double consciousness, this sense of always looking at one's self through the eyes of others. . . . One ever feels his twoness, -an American, a Negro; two souls, two thoughts, two unreconciled strings; two warring ideals on one dark body. . . . The history of the American Negro is the history of this strife, -this longing . . . to merge his

double self into a better and truer self. In this merging he wishes neither of the older selves to be lost. He would not Africanize America, for American has too much to teach the world and Africa. He would not bleach his Negro souls in a flood of white Americanism, for he knows that Negro blood has a message for the world. (p. 3)

Dubois (1903/1994) introduced the notion of multiple, complex, and conflicting identities of the blacks who measure themselves and their capacity by the perceptions that white people have of them. The author also discussed the core beliefs that blacks hold about themselves in relation to white people. In other words, despite the desire to sustain their identities as Africans, according to Dubois, the blacks tend to have low self-esteem and feel inadequate because of how whites view them. Several scholars have noted that “double consciousness” continues to be a prevalent factor in the lives of African Americans and people from historically marginalized racial groups in general (e.g., Kumasi, 2012; Lyubansky & Eidelson, 2005).

Dubois’s (1903/1994) concept of “double consciousness” and the concept of white racial supremacy (hooks, 2013; Leonardo (2004, 2009) allow exposing educators from historically marginalized racial groups, not only educators from dominant group, as being implicated in reproducing dominant ways of knowing. However, Dubois’s (1903/1994) concept of two-ness, which he used to describe the experiences of African Diaspora in the history of slavery, provides an insight into doubly divided psychological effects of racism and domination. While the members of oppressed racial groups have unique perspectives about the system of domination not visible to the members of the dominant group, they also examine themselves through the gaze of the dominant other. Using *double consciousness* as a theoretical lens for the self-inquiry in this study shows that the actions and thinking of educators of color to those of white educators are not conflated in this paper, while demonstrating the powerful endurance of the dominant forces.

In her study, Willis (1995) examined the literacy experiences of a young African male third-grade student. In this work, employing Dubois’s (1903/1994) concept of “double consciousness” allowed Willis to illuminate the social and psychological effects of the system of domination on the way this student maneuvered the world of literacy through the dominant ways of knowing, which rendered his own cultural practices illegitimate. Willis (1995) suggested that literacy educators must attend to double personhood of students from historically marginalized group as a resource in school literacy practice to broaden the scope of literacy practice beyond “a Eurocentric literacy canyon” (p. 37). Carter and Kumasi (2011) also used

Dubois’s (1903/1994) concept of “double consciousness” to examine how some black youth interact and negotiate their identities during the book club activities and discussions. They concluded that using Dubois’s (1903/1994) notion of “double consciousness” as a lens helped them to “re-search” and “re-see” (Cartner & Kumasi, 2011, p. 88) the black youth’s sense making of the book discussed and their identities as they navigate dominant white and Afro-cultural ways of knowing. In this study, by using Dubois’s (1903/1994) notion of “double consciousness,” I hope to explore the impacting psychological manifestation of “double consciousness” in my own classroom as a teacher educator working mostly with white pre-service teachers. My goal is also to understand how my experience as a minority teacher educator is mediated by how I am perceived by my white students.

### Context

The context of this inquiry is a small university town located in a Midwestern rural state in the US. The university in which this inquiry is situated is the only four-year university in the state. The state and university are both predominantly populated by whites. However, due to employment opportunities, the state has gradually become more diverse, especially in its public school student population.

The teacher educator in this inquiry is a female Asian American whose parents immigrated to the US forty years ago. I have been teaching at the university for six years now. As a minority woman teacher educator who is committed to working with pre-service teachers in better preparing them to support all their future students in becoming successful, I teach multicultural/diversity teacher education courses in which one of the main goal is to work against racism, especially racialized thinking and teaching. The course in focus of this inquiry is the undergraduate course titled Diversity and the Politics of Schooling, which is a required course for all students in the teacher education program at the university. The course content covers a wide range of pertinent topics such as race, racism, white privilege, white supremacy, marginalization, and structural inequality.

### Discussion about Ethnic and Racial Stereotypes

One major pedagogical approach I adopt in the course is the notion of “difficult dialogue” (hooks, 1994), referring to a dialogue used to “disrupt the seemingly fixed (yet often unstated) assumptions” (p. 130). I employ this practice when exploring the invisibility of whiteness and deconstructing whiteness in order to begin the work of engaging students’ own relationship to race



and racism. Given that majority of students who are enrolled in the Diversity and the Politics of Schooling course are sophomores who have had very little experience and direct contact with ethnic and racial diversity, discussing and recognizing ethnic and racial stereotypes becomes the starting point for initiating “difficult dialogue.” According to Peng (2010), stereotypes are “the tendency to categorize individuals or groups according to an oversimplified standardized image and attribute certain characteristics to all members of the group” (p. 255), and they do not accurately portray individuals and their history. Thus, as Peng argued, stereotypes can impede the effectiveness of intercultural communication. Hughes and Baldwin (2002) posited that being aware of racial stereotypes is the first necessary step in working against them. The authors further observed that stereotypes are one of the major “stumbling blocks in effective communication” (p. 125) among people from different cultures and race.

As I am aware of the importance of recognizing different ethnic and racial stereotypes and bringing them to students’ awareness in order to work against them (Hughes & Baldwin, 2002), in the diversity class mentioned above, we discuss different ethnic and racial stereotypes. During this exercise, students are divided into groups of four or five to talk about different racial stereotypes. As we begin the activity, I call out different ethnic/racial groups and ask the students to write down whatever stereotypes associated with each group come immediately to their minds. I emphasize that suggesting these stereotypes does not necessarily imply that they personally perceive each ethnic/racial group in the same way, but simply reflects the general societal perceptions of each group.

When prompted to list the prevalent stereotypes associated with Latinos/Latinas, African Americans, Asians, and people from the Middle Eastern countries, students start giggling as they write their responses. When I ask them what they are giggling about, they say that they giggle because these stereotypes, while sounding terrible, are not very difficult to identify. For me as an educator, these

confessions indicate that this activity is an effective entry point to “difficult dialogue.” I try to convey that stereotypes that are not personal are easy to identity because they are a part of culture and circulate within the system of racial domination. Once the small group activity is completed, I initiate a whole class discussion, as a part of which we generate the same list of prevalent stereotypes. Below is an example of a partial list the class generates before discussing the circulation of stereotypes in media, society, and minds of individuals, along with their impacts on the members of the targeted groups.

### The Swirl of Tension

One semester a year ago, as the class was finishing the aforementioned stereotypes list and I was about to move onto the discussion and start deconstructing the activity, a student from a Middle Eastern country raised her hand. She expressed that, while she recognizes the importance of the activity, partaking in it is extremely painful for her. As soon as the student expressed her feelings, I could feel the tension in the room, as the class became completely silent. I noticed that some students rolled their eyes, and I felt a huge knot in my stomach. After a few seconds that felt like an hour, I tried to explain that these stereotypes are not directed at her, but are rather the false perceptions of different ethnic/racial groups members of our society have. Thus, we need to recognize them as stereotypes rather than facts. The student courageously continued, stating that, given that she experiences the effects of these stereotypes every day, hearing them reinforced in the class is painful. In another silent moment that followed the student’s comment, I found myself uncomfortably confronting my own inability to support this brave pre-service teacher of color. Finally, another female student spoke up, saying that she experienced racism toward her as a white woman when she travelled to Mexico the previous year, but she did not let it bother her. A few seconds later, which we spent in total silence, this courageous Middle Eastern student bravely

Table 1  
*Stereotypes Described by Students*

Latinos/Latinas	Africans Americans	Asians	Middle Easterners
Undocumented	Athletes	Math Geniuses	Terrorists
Low Riders	Loud	Bad Drivers	Womanizers
Dirty	Love Fried Chicken and Watermelon	Bad English	Belly Dancers
Gangs	Gangs	Bad Athletes	Violent

responded that experiencing Mexican person's racism while on holiday cannot be equated to the life of racial minorities in the US, for whom such issues are part of everyday experiences. This time, as she was sharing her thoughts and feelings, the student started crying. As I was standing in front of the class, facing my students, all of whom were white with the exception of the brave Middle Eastern young lady, I did not know how to respond to her. My heart went out to her, and I felt the need to support her. At the same time, I was deeply torn and conflicted. Saying anything against racial stereotypes felt risky and even dangerous. Yet, I sensed that some of the class members wanted me to support the white student who shared her experience of racism in Mexico. I was glad when the class time came to an end. Before she left, I asked the Middle Eastern student to come and see me the next day during my office hours. As the students were leaving the classroom, I heard one whispering to her friend< "Isn't someone being sensitive or what! Maybe it's that time of the month for her." The stereotypes activity that was meant to facilitate "difficult dialogue" for my students thus became extremely "difficult dialogue" for me as a teacher educator of color.

### **Inquiry as Stance and Moving from Personal to Critical**

Inquiring about the reasons behind my inability to support the student of color who courageously shared her felt pain during the activity, as a part of which the class was instructed to create a list of ethnic and racial stereotypes, was more difficult to confront than supporting others in confronting their own racism. Perhaps I found this challenging because, as a teacher educator of color, I had assumed that I had what it takes to help students to work against their prejudiced thoughts. Perhaps I thought that I had enough personal experiences and academic knowledge to know better and teach better. As I inquire into what I see as failed pedagogical practices through the notion of white racial supremacy, I remember looking at the faces of twenty-four white students and not wanting to be ostracized from the group. While I felt the obligation and commitment toward the only non-white student—the student from a Middle Eastern country who was willing to speak up for her own rights and express her feelings—I was unwittingly compromising my integrity of being a teacher educator committed to social justice in order to be perceived favorably by the majority students. In this uncomfortable moment, my experience was mediated by my concern about how I would be perceived by my white students. The workings of the internalized forces of white racial supremacy within me in the given moment prompted

me to privilege saving the relationships with my white students in the classroom over supporting one student of color. In transitioning from the personal to the social and critical, white racial supremacy and "double consciousness" helped expose the fact that I too am a part of system of domination. Hence, I must inquire about my own pedagogical practices from within (as opposed from outside) the larger structure that is already predefined by racial hierarchies. I felt the "two-ness" within myself, as I was empathizing with the student from a Middle Eastern country while at the same time wanting to be a part of the majority and be favorably perceived by my white students. As this student shared her thoughts, I was so deeply torn, as I felt a strange desire to be validated by my white students. The notion of "double consciousness" allows me to examine how the forces of racial domination are deeply and durably ingrained in people, as even a teacher educator of color committed to support all students can unwittingly alienate the students of color, as I have done in my own teacher education classroom. Hence, the mechanism of internalized racial oppression contributes to the system of white supremacy.

### **During My Office Hours and After**

When the Middle Eastern student came to visit me the next day, I was nervous and embarrassed. When I asked her what hurt her most and what made her cry during our previous class, she said, "It was not so much what they said, but how they said it, and how easy it was for them to just say them so lightly." After a long pause, I thanked her for her courage to speak up in the class. She responded, "Sometimes you just have say it, you know, whether or not others want to hear what you have to say." I felt very small in front of her as she made her case with grace and power, without a hint of anger in her voice.

In the following class, I began the lecture by opening up what had happened during our previous session. I asked the students to think about the labels that they live with in their daily lives and how those labels affect them. I also prompted them to consider how hearing others talk about those labels as if it were no big deal would make them feel. The class was silent again, and I did not insist on discussing this issue further. However, at the end of the semester, at least half dozen students stated that they were glad that we had a further discussion on the stereotypes activity and that they would not forget that day. It has been over a year since the incident, but I have frequently thought about what the student from a Middle Eastern country said to me when she visited me during my office hours. At the time, even though I felt very small in this student's presence, I was grateful to her, for her actions prompted me to dwell on

my limitations as a teacher educator of color that are largely imposed on me socially and politically. This student made me realize that recognizing such limitations is important pedagogically.

### Discussion and Implications

Discussions on the internalization of white supremacy and racism are often regarded as a taboo, because such research runs the risk of being misinterpreted as reflecting weakness of the oppressed (Pyke, 2010). In this study, I have adopted practitioner inquiry and autoethnography, whereby I aimed to move from “personal” to “social and critical” through the conceptual lenses of “white racial supremacy” and “double consciousness.” In so doing, my goal was to explore my inability to successfully navigate the dilemma between serving my own internalized desire and tendency and supporting the only student of color in my class. I recognize that this inquiry is unique to my own personal experiences and it focuses on a single event that took place in one class; thus, the experience itself cannot be generalized. However, the dynamics of such inability and dilemma during “difficult dialogue” do suggest a few important implications for the field of teacher education and beyond as it highlights the dilemma that non-European educators inevitably faces with systematic and entrenched marginalization in one’s own classrooms.

First, as teacher educators of color, we should not shy away from implicating ourselves in the critiques and investigations of how the system of racial dominations is secured in our pedagogical practices by situating our individual practices socially and critically. Therefore, as shown in my own personal pedagogical example discussed in this inquiry, assuming that teacher educators of color committed to social justice education and racial equality stand outside of the system of domination and are immune to white racial supremacist thinking/acting is problematic because doing so conceals the circulation of white racial supremacy and derails the potentials of “difficult dialogue” where taken-for-granted views can be disrupted. The fact that I was unable to respond to one student of color in adequate ways suggests that the pedagogical practices of teacher educators of color are inevitably racially and politically loaded (Spivak, 2003). The issue is that educators of color can marginalize those students of color we are committed to support and inspire; therefore, teacher educators of color can contribute to lack of institutional support that is already problematic for students of color. My own failure in the pedagogical example used in this study exemplifies the internalized consequence of oppression and racism that, if gone unnoticed, can only perpetuate existing white racial supremacy. Sharp (2003) stated that engaging in

self-reflection and thinking deeply about her cultural and racial identity has allowed her to become more cognizant of her own thoughts and has enabled her to assist her students’ (of color) learning. I believe that self-reflection on cultural and racial identity of teacher educators of color is equally necessary.

Another significant contribution this inquiry offers stems from the revelation that students of color do have very different perspectives and insights from white students. Thus, they can offer important lessons not only to their peers, but also to all teacher educators (Johnston-Parson, Lee, & Thomas, 2007; Rankin & Reason, 2005). Moving one’s pedagogical practices that may on the surface seem personal to social and critical and listening to all students’ voices may result in positive changes in teacher educators’ pedagogical practices. In my case, one student of color and her courageous assertion in the class as well as during my meeting with her, served as a significant impetus for me to look more deeply into how internalized white racial supremacy manifests in my everyday pedagogical practices.

Moreover, although whether or not racial minority teacher educators can ever entirely overcome internalized white racial supremacy is debatable, concerted efforts and sustained steps must be taken to critically examine the actions and thoughts resulting from internalized racism. These issues must also be more systemically addressed in teacher education. Naming discriminatory pedagogical practices and actions within oneself for what they are requires internal conscious effort because the internalized racism cannot be overcome if one fails to recognize it. Overcoming internalized racism then also means that educators of color must not be seduced by what is comfortable, but rather pay close attention to the dilemmas and conflicted-ness akin to those I have experienced in the class I have discussed in this study.

At a broader level, internalized racism is emblematic of pervasiveness of racism in society, and it is essential for all races and individuals in various disciplines to fully understand how racial, political, and historical contexts in which we exist touch, influence and shape our values, beliefs, and actions. In my case, the internalized racism played out in my own classroom undermining a minority student’s position while simultaneously valuing the dominant culture. Without understanding and reflecting the effects of internalized racism, not only can individuals not strive to fight against oppression, but we cannot have positive impacts on social change.

With that in mind, I conclude this essay by invoking Said’s (1994) distinction between “maintainers” and “public intellectuals.” According to Said (1994), “maintainers” collude with the system of domination and uphold the status quo. They work hard to protect their own social and economic capital while

shying away from conflict and risk. In contrast, “public intellectuals” are scholar dissidents who know that power and knowledge are closely linked. They are willing to raise embarrassing questions in order to expose hidden truths and the contingency of received ideas. As Said (1994) so aptly put it, “They are not easily co-opted by institutions. They oppose the ruling class and the intractability of its power” (p. 11). In other words, “public intellectuals” are constantly engaged in creating disruption—within themselves, in society, and in the world. When teacher educators of color recognize the social and political limitations imposed on us as described above, this will allow us to assume the position of “public intellectuals,” which will better prepare us to facilitate “difficult dialogue” and navigate dissidences in diversity education classroom settings. In the diverse, globalized, fast, capitalist but still neocolonial world of the early 21st century, the need for “public intellectuals,” especially in pedagogical settings, seems more desperate than ever. To do so, all educators at all levels must more systematically engage in self-reflection around race because, through the process of critical self-reflection around race, individuals come to realize how they are situated in society, recognize the dynamics of oppression, and question the consequences of their beliefs and behaviors in classrooms (Milner, 2005, 2010). Without such an effort in questioning and interrupting educators’ own marginalization, a system of schooling becomes a site where racial domination is perpetuated (Dei, 1996).

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## Using Simulation to Develop Entrepreneurial Skills and Mind-Set: An Exploratory Case Study

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Entrepreneurs need to develop a range of skills to be successful, including skills in decision making, risk management, problem solving, communication, and teamwork. Games and simulations are increasingly being used in both academia and business to encourage such skills development. This paper describes a business simulation module whereby postgraduate students use a game to simulate managing and operating a business. The game replicates real-world scenarios, thereby providing an innovative and contextualized learning environment. This paper presents extracts from students' reflective essays, which describe various learning outcomes. The paper concludes with some guidelines for teachers considering integrating game-based learning into their curricula to facilitate skills development, as well as recommendations for future research.

### Introduction

Entrepreneurship “refers to an individual’s ability to turn ideas into action and is therefore a key competence for all, helping people to be more creative and self-confident in whatever they undertake” (Barzdins, 2012, p. 129). The concept of entrepreneurship has been around for a long time, yet, entrepreneurship education is a relatively recent addition to university curricula (Robinson & Josien, 2014). Although a recent addition, the significant role of education in promoting entrepreneurial mind-sets and skills is now widely recognized (European Commission, 2008). Furthermore, entrepreneurship education is acknowledged as one of the key drivers for future growth and thus is becoming more accepted and applied (Militaru, Pollifrono & Niculescu, 2015).

Hynes, Costin, and Birdthistle (2011) emphasize the need for universities to stimulate entrepreneurial mindsets in students and to encourage innovation around business start-ups. The role of universities in society is changing quickly (Militaru et al., 2015), and so they need to provide a collaborative and incentive atmosphere for business creation, the formation of human capital, and the development of entrepreneurial mind-sets and skills within their students.

The remainder of this paper is organized as follows: The next section, Section 2, outlines the key literature relating to entrepreneurial skills development and best practices for designing constructivist and contextualized learning environments, with a particular focus on the use of gaming pedagogy for entrepreneurship students. Section 3 describes a case study whereby we integrated a simulation game into the curriculum for a postgraduate business simulation module to enhance entrepreneurial skills development. Section 4 presents and discusses the results, and section 5 outlines the conclusions and limitations of our study, as well as the implications of the study for other teachers and recommendations for future work.

### Developing Entrepreneurial Skills and Mind-sets

This section discusses key literature relating to developing entrepreneurial skills and mind-sets, as well as how teaching design approaches might be applied in the development of entrepreneurial skills. This section also discusses literature relating to the use of games in entrepreneurship education.

### Entrepreneurial Skills and Mind-Sets

The need for entrepreneurs to obtain or acquire certain skills for them to be successful cannot be over emphasized (Ibrahim & Lucky, 2014). Entrepreneurial skill is the skill in developing or creating a new product/service that will add value to society and generate monetary benefits for the entrepreneur. Olagunju (2004) posits that entrepreneurial skill is the individual ability to create a new business through the exploitation of an idea in order to benefit both the individual and the society. In a similar definition, Salgado-Banda (2007, p. 229) identified key factors or characteristics that defined entrepreneurial skill, which include “self-belief, boldness, tenacity, passionate, empathy, and readiness” that will motivate and encourage an individual to achieve certain objectives as a result of opportunity and risk taking.

Research highlights the importance of the entrepreneurial attributes (risk and innovation aptitude, rapid decision-making, long sight, ability to understand others, ability to read reality factors, ability to deal with complexity, ability to compete) that cannot be generated from scratch but can be developed and should be known by students (Bellotti et al., 2014; Munir, Idrus, Shukar, Ithnin, & Mohamad, 2015). Consequently, students need to deepen their understanding of company management competencies in an entrepreneurial perspective, understand important social realities that may help them enter the world of work in a more aware way, and better

understand their potential to become entrepreneurs (Minniti, Bygrave, & Autio, 2006).

### **Teaching Approaches and Entrepreneurial Pedagogy**

As entrepreneurship has been progressively introduced to higher education programs (Rae, Martin, Antcliff, & Hannon, 2012; Duval-Covetil, 2013), there has been growing interest in effective teaching approaches and entrepreneurial pedagogy (Albornoz, 2009; Edelman, Manolova, & Brush, 2008; Gibb, 1987; Gibb, 2002; Kuratko, 2005; Neck & Greene, 2011) to develop enterprise and entrepreneurial mind-sets and skills in students.

In terms of teaching approaches, there are generally considered to be three main approaches: behaviorism, cognitivism, and constructivism (Ertmer & Newby, 1993). In a behaviorist environment, learners are seen as reactive because they are first presented with a stimulus (e.g., the lesson content), and they then respond (or behave) a certain way, depending on the reinforcers that are presented to them. Over time, these learners learn to associate certain responses with certain stimuli, which is why behaviorist approaches and methodologies are often referred to as stimulus-response psychology (Barnes & Holmes, 1991). Behaviorist teachers are only interested in overt behaviours and, as such, they do not consider memory or the internal processing of the mind (Ertmer & Newby, 1993).

Cognitivist teachers, on the other hand, *are* interested in internal events of learning, as well as the external events undertaken by an instructor (or game), and they see learners as active learners. Cognitivists place significant importance on the proper structuring, sequencing, and outlining of information to ensure their learners can properly digest, store, and retrieve the information when they need to do so (Ertmer & Newby, 1993).

Constructivism, a branch of cognitivism which is sometimes referred to as contextualized learning, sees learners as constantly constructing understanding and representations, so it is not simply a case of receiving information and retrieving it at an opportune time; these kinds of learners must be very active in the learning process, and they must help shape their own understandings. Jonassen, a key theorist in the field of constructivism, discusses the characteristics of constructivist learning environments (CLEs) (Jonassen, 1999). In a CLE, learners are afforded tools that enable them to engage in discussion, collaboration, and reflection; such tools are often available in virtual learning environments such as Moodle, Blackboard, and Sakai. To succeed in a CLE, learners need to work as individuals but also collaborate and learn from peers because “knowledge is individually constructed and

socially co-constructed by learners” (Jonassen, 1999, p. 217). The key component of a CLE is the problem that learners are asked to solve (Jonassen, 1999). Unlike traditional behaviorist environments, the CLE environment focuses on engaging the learner in solving authentic, contextualized problems that resemble problems typically found in the “real world” (Brookes, Moseley, & Underwood, 2012; Jonassen, 1999) and so are most appropriate for the delivery of effective entrepreneurial education.

Evidence from the literature suggests that traditional teaching methods to deliver entrepreneurship education are inappropriate and outdated (European Commission, 2008; Gibb, 2002; Higgins, 2008; Hytti & O’Gorman, 2004). Indeed, as entrepreneurship scholars have developed understanding of the way entrepreneurs learn through practice and reflection, educators have concluded that enterprise pedagogy requires experiential elements that encourage students to mimic entrepreneurial behavior (Gibb, 2002; Pittaway & Cope, 2007). Furthermore, the teacher needs to become a facilitator rather than a lecturer or disseminator (Garrison & Anderson, 2003). One way educators can shift the active instructor/passive student relationship to a more dynamic student-led/tutors-as-facilitators relationship is through the provision of contextualised learning and experiential education, such as that afforded in a constructivist learning environment (Costin, Drakopoulou Dodd, Hynes, & Lichrou, 2013; Jonassen, 1999).

As a strategy, contextualized learning provides educators with a way to remove the abstraction from traditional academic content and allows students to experiment with the application of their knowledge to a given problem. Students become the drivers of their own learning process, and evidence suggests this approach results in increased engagement and motivation (Sviniki, 2004; Titzer, Swenty, & Hoehn, 2012). Contextual learning requires students to engage with “real world” scenarios that provide authentic experiences (Jonassen, 1999; Leger, 2006).

### **The Use of Business Simulation and Games**

The pinnacle of contextual learning in enterprise occurs when students launch new ventures or dabble with a real small or medium-sized enterprise (SME), observe the consequences of their actions, and learn from their mistakes. Common experiential pedagogical methods include business plans (Hills, 1988), business simulations (Wolfe and Bruton, 1994), and “serious games” (Bellotti et al., 2014; Low, Venkataraman, & Zrivatsan, 1994). Shaffer (2005, p.1) describes “epistemic games” as the following:

Activities are simultaneously aligned with the interests of the learners, the structure of a domain of knowledge, valued practices in the world, and the modes of assessment used. By using elements from the real context, and embedding them in the game design and gameplay, the context can be recreated with a high degree of authenticity (Brookes et al., 2012, p. 3).

A number of authors (Faria, Hutchinson, & Wellington, 2009; Washbush & Gosen, 2001; Williams, 2011; Wood, Beckmann, & Birney, 2009) have suggested the use of simulation games as an innovative pedagogical approach to teaching entrepreneurship (Souitaris, Zerbinati, & Al-Laham, 2007; Prensky, 2001) as they enable students to practice the concepts of entrepreneurship and business management (Bellotti et al., 2014).

There seems to be some ambiguity in the literature in defining what is a simulation and what is a game. This ambiguity arises partly from the fact that the term simulation can be applied to both a genre of computer game and a digital training tool. Gaming simulations include sporting, racing, train, and flight varieties, to name but a few. While many games require suspension of disbelief on the part of the user, training simulations, on the other hand, model the real world accurately:

Key features of simulations are that they represent real-world systems; they contain rules and strategies that allow flexible and variable simulation activity to evolve; and the cost of error for participants is low, protecting them from the more severe consequences of mistakes (Garris, Ahlers, & Driskell, 2002, p. 443).

A simulation is a replica of reality: of actual events, decisions, and resultant performance and the consequences of decisions made within a given context, in this instance a small firm. It enables students to learn through interactive and experiential learning that mirrors the real world of starting and growing a new business. Simulations are therefore useful to learn about the complexities of running a small firm where the application, not the definitions, of business concepts, functions, and operations are most important. Decisions do not occur sequentially, but simultaneously and interactively, just as they do in the business world. Decisions are made with incomplete, unreliable, or unavailable information, where the problems are unfamiliar, within restricted timeframes, under competitive conditions, and are impactful on the future financial strength of the business. Participation in the game promotes creativity amongst the participants, who develop a shared view of their learning, and further, it has a personal learning aspect in terms of independence of decision making,

attitude toward risk, and adaptability and flexibility of participants in thought and action.

### Method

This section of the paper describes the background context of the case study, the simulation game used, the characteristics of the participants, and the how the data were collected.

### Context of the Case Study

This paper describes a case study of a "Business Simulation" capstone module designed for students in a Master's programme in International Entrepreneurship Management at the University of Limerick. The primary objective of the module is to provide students with the opportunity to integrate knowledge and skills acquired over the previous two semesters in a managerial setting through the completion of an online business simulation or game. The module is designed to reflect the reality of all the issues linked to business start-up and growth. Learners are challenged to think and navigate their way through all the problems and challenges that are presented within the game to integrate concepts successfully, cross-functionally, and from financial and non-financial perspectives.

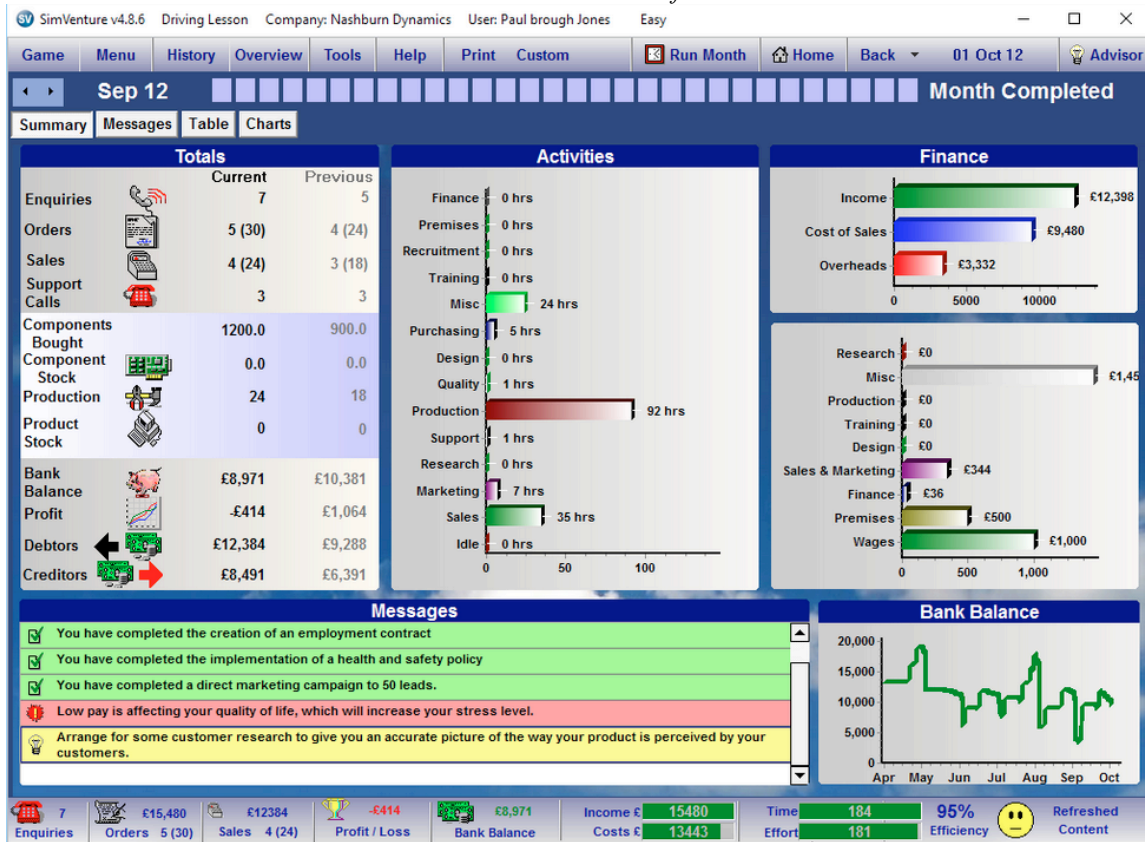
The Business Simulation module is delivered through a series of lectures, seminars, and lab sessions. By the end of the module, students should be able to demonstrate the ability to select and apply appropriate analytical decision-making techniques in an integrative manner. More importantly, during the game, they should be able to analyze the simulation company, its strategy, the product portfolio, markets, and competitors on an ongoing basis. It is imperative that students critically assess and defend the group decision-making process and reflect on current firm performance and outputs as a basis of refining future decision-making. Long-term skills acquired include being able to categorize and interpret other groups' strategies and likely future actions in devising and modifying a company's strategy and also being able to communicate effectively a firm's performance and management skills to shareholders.

### The Simulation Game

The simulation game used for this module is SimVenture. SimVenture requires logical reasoning to unravel many complex scenarios, while at the same time enabling students to identify how much progress they have been making, print out appraisals of their progress, and save and load simulations. SimVenture facilitates the development of analytical thinking skills by making demands on students in a captivating and real-world manner. Instructors should facilitate rather than teach to foster an inquisitive, creative, and



Figure 1  
*The SimVenture Interface*



analytical mind-set, build self-confidence, and promote teamwork. The instructors on this programme use SimVenture because it can facilitate the development of decision making, risk management, communication and teamwork, and problem-solving skills.

The game enables users to set up and run their own virtual company and test their knowledge about all aspects of a business. At the heart of the game are the decisions made on the part of the user/team. The reality of the simulation combined with the on-screen information makes it a rich learning resource (see Figure 1). In SimVenture, the user is essentially an entrepreneur assembling and selling computers. The game commences at a pre-determined month, when the business is already several months in operation. It is the job of the user/team to generate a profit and a sustainable strategy for the company going forward. The core areas of the business are Sales and Marketing, Operations, Organization, and Finance. When a team plays the game, it is ultimately the team's responsibility to identify individual strengths and weaknesses and allocate roles accordingly. One team member should ideally assume the role of CEO, although the role can also be rotated.

## Participants

Table 1 outlines the profile of the students taking the Business Simulation module. In 2015, 23 students took the module, with a fairly even distribution of male and female students. The majority of students (43.5%) were in the 18-34 age bracket, and more than two-thirds (69.5%) of them were under the age of 45. While a significant number of students had previously graduated from a business-related discipline (43.5%), just over one quarter of the students (26.1%) came from science or engineering and just over one fifth (21.7%) came from an arts-related discipline. The remaining students came from an education background (8.7%). It is interesting to note that 26% of the students had experience in a business start-up prior to commencing the program.

## How the Data Were Collected

The module comprises two formative assessments, which contain a number of elements:

Table 1  
*Profile of Students Completing the Business Simulation (n=23)*

		Percentage
Gender	Male	52.2
	Female	47.8
Age	18-34	43.5
	35-44	26.0
	45-54	21.8
	55+	8.7
Educational Background	Business	43.5
	Science or Engineering	26.1
	Education	8.7
	Arts, Humanities and Social Science	21.7

- Strategic Review Plan (worth 70% of the final grade)
- Behavioral Diagnosis and Reflective Essay (worth 30% of the final grade)

This paper focuses on data collected from the behavioral diagnosis and reflective essay only. In this assessment, students were required to diagnose and then reflect on their decision making styles and skills, their problem-solving capabilities, their communication and teamwork skills, their attitude toward risk, and ability to deal with uncertainty. To help students diagnose their skills, students were prompted with a number of thematic questions; these questions are outlined in the remainder of this section.

In terms of decision making capabilities, students were asked to consider the following questions:

- What style of decision making did they prefer to use?
- What processes did they go through to make decisions and if the processes differed by task?

The following questions asked students to consider how their problem-solving abilities developed:

- What was their way of responding to problems or unforeseen bottlenecks and if this the best response?
- How did they react to the negative consequences of the decisions made?

We also wanted to determine if and how students developed their communication and teamwork skills and asked the following questions:

- How would they describe their communication style?
- Did they practice the skills of listening?

In addition, we questioned students about their risk management strategies by asking them: What was their attitude to risk and did they consider themselves a “risk-taker”?

Once students had diagnosed their skill levels, students were then asked to reflect on what that meant for them in the role of entrepreneur and owner/manager. They were asked to consider their strengths, the skills that required development, how their strengths could be leveraged in the firm, and how their strengths complement areas of weakness. The next section presents qualitative evidence from students’ reflective essays for each of the themes discussed in the essay.

## Results and Discussion

The European Commission’s report on entrepreneurship in higher education (2008) highlighted the important role that education can play in developing students’ “entrepreneurial capacities and mindsets” (p. 7). The report also highlighted the need for “more interactive learning approaches” (p. 8) and cited simulation games as one possible solution.

In the students’ reflective essays, we identified a number of qualitative comments that demonstrate evidence of learning outcomes resulting from engagement with the simulation game. To that end, the following quotes provide some evidence of the value of the game and students’ perceptions of skills development.

Some students commented that the game helped them improve their skills in general, as evidenced in the quotes in Table 2.

It is vital that entrepreneurship courses help students become better decision-makers (Bellotti et al., 2014; European Commission Report, 2008). In this case study students were asked to reflect on their own decision-making abilities and identify which type of decision-makers they were, e.g., were they rational or

Table 2  
*Qualitative Evidence of General Skills Development*

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<p>"This week gave me an opportunity to think about how I work within a group, and how this affects my decision-making, risk taking, and general approach to management in the business environment."</p> <p>"The game is very true to the real-world and as the week went on, I began to see it as MY real company."</p> <p>"Successfully managing a small business has much to do with being open to continually learning from new situations and all those around us. In developing a management style I have found that prevention is better than cure and that keeping composure, good communication and gathering information are vital to decision making."</p> <p>"For me this was a wonderful experience of the daily life as an entrepreneur/owner manager. My strengths in sales, marketing, and financial management came (sic) were enhanced as well as my communication skills."</p> <p>"As an entrepreneur, I need to consciously take the time to get to know people that I am working with to learn what is of interest to them, so that their contribution is optimized. By ensuring that strengths are recognized and optimized, the business will benefit, and conflict will lessen as a result."</p>
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Table 3  
*Qualitative Evidence of Decision-Making Skills Development*

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<p>"Every business decision that resulted in a poor outcome was a success because it helped us learn how that variable worked and what it impacted."</p> <p>"The ability to make decisions in the midst of this uncertainty and limited resources is core to the change management small businesses require."</p> <p>"I realised that as my decisions usually tend to be very well informed, they can come at a cost of time and efficiency."</p>
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intuitive decision-makers, dependent or led by others, or spontaneous decision-makers. We also wanted students to bear in mind that some decisions will be so routine that they can be made without much consideration. However, other more complex decisions may involve some uncertainty, greater risk, and/or more serious consequences. A number of students commented on how the game facilitated the development of decision-making skills (see Table 3). Students also developed problem-solving capabilities, which were also identified as crucial skills for entrepreneurs (Bellotti et al., 2014; European Commission, 2008). In our case study, the simulation game has been designed to replicate some of the problems and challenges that entrepreneurs might encounter when setting up a new business. Table 4 provides some evidence of problem-solving approaches and skills development.

Communication and teamwork have also been identified as critical skills for entrepreneurs (Bellotti et al., 2014; European Commission, 2008). In our case study, students were encouraged to reflect on how their individual communication style ensured their ideas were listened to

and acted upon. If they encountered conflict, they were asked to comment on how they managed the conflict and if their approach achieved the desired result. Some students' quotes provided evidence that they recognized the importance of communication and teamwork (see Table 5).

A key skill for entrepreneurship is the ability to be more risk tolerant and able to live with uncertainty (Bellotti et al., 2014; European Commission Report, 2008; Hisrich & Peters, 2002; Segal, Borgia, & Schoenfield, 2005). The simulation game provided students with opportunities to experiment with various risky strategies and evaluate the outcomes. Some students provided evidence on their approaches to risk management (see Table 6).

The next section presents the conclusions and limitations of our case study.

### Conclusions and Recommendations

This paper described a business simulation module whereby postgraduate students used a game to simulate managing and running a business. Simulations are

Table 4

*Qualitative Evidence of Problem-Solving Approaches and Skills Development*


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"For me the best is to learn from the experience of others, apply this knowledge and mixed (sic) it with my own knowledge."

"If the best possible outcome from the problem did not outweigh the difficulty needed to achieve that outcome, then the problem was not tackling. This I feel is not to be confused with a tendency to concede on difficult issues but should be viewed as a logical decision, made for the advantages of the overall group."

"A method of problem solving I used was assigning weightings to criteria that affect a problem. In doing this, a clear understanding of how important the variables effecting the business decision were [sic]. Therefore, I could try to maximize or minimize the effect of this criteria, depending on the desired outcome."

"Instead of panicking, blaming myself are unproductive ways of responding to problems, I am in the process of discipline (sic) myself by taking a problem-solving approach. More important, I need to work on my weakness and learn to ignore things that upset me."

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Table 5

*Qualitative Evidence of Communication and Teamwork*


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"The first major step we took as a group was to ensure that we understood each other."

"I have learned to surround myself with positive competent people who have similar interests and passions, and who can help me stick to my commitments."

"Hiring the right people is paramount. I know that now."

"Communication is so important within a team. Misunderstandings can very easily get out of hand if conflict is not resolved early."

"I learned so much from the others in my team – we all had different but complementary skills."

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Table 6

*Qualitative Evidence of Risk-Taking Approaches*


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"This project has taught me to be more calculated and prudent in relation to risk."

"This... taught me so much about running my own business. I underestimated the whole concept of risk."

"I am a natural risk taker – this taught me to slow down and think about my potential losses before rushing into a decision that may be to my detriment."

"From experience in life, I have taken that risks needed to be taken as the (sic) will bring you to stages you never imagine before. They do create a little bit of fear though. In this exercise the risk taken gave good results and sales were generated from them."

"I believe in taking calculated risks... I will weigh up the pros and cons and find out all the information before taking the leap into what may seem a risky (sic) situation to others."

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increasingly being used in both academia and business to encourage the development of entrepreneurial skills. Such skills include decision-making, risk management, problem-solving, communication, and teamwork. Extracts from students' reflective essays demonstrate some evidence of learning outcomes resulting from engagement with the game. A similar study by Garalis and Strazdiene (2007) revealed that the majority of students they surveyed considered entrepreneurial skills to be very important for starting one's own business. Interestingly, of those students intending on setting up their own business, the students in

the Garalis and Strazdiene study significantly rated the impact of simulation in developing the essential entrepreneurial skills.

While this case study describes qualitative data from a full student population, the small class size (n=23) impacts the generalizability of the findings. This study does not compare the impact of the game on the skills development of students who already had prior entrepreneurship experience with those who had no prior experience.

Furthermore, as we provided students with guidance for their essays in the form of themed questions that they

should address, this guidance probably influenced their reflection activities and the content of their essays. While there are clear advantages to providing such guidance, in terms of focusing students on specific themes, it may also have hindered students' efforts to comment on *other* aspects of skills development.

While the use of business simulations has been found to be effective (European Commission Report, 2008), we have yet to evaluate other business simulation software packages. In their review of two business software applications, King and Newman (2009) reported that Marketplace was more suitable than SimVenture as regards pedagogical and technical requirements.

We have some recommendations for other teachers who are thinking of integrating simulations and collaborative project work into their modules, regardless of discipline. From a teaching perspective, we agree with Bellotti et al. (2014) who argue that teachers need to have experience using the simulation tools in order to ensure they can maximize their use in the classroom.

Furthermore, we recommend that teachers give students some guidance on what constitutes a reflective and deep response, to ensure students properly address and reflect on the questions in the assessment brief. In the case study described here, despite our efforts to provide reflection questions, many students tended to answer each of the questions on a consecutive basis, and did not attempt to reflect on or present the "bigger picture."

Also, it can be helpful to give students some guidance on how to work effectively in teams. Tuckman (1965) describes a number of phases that learners go through when forming and working in teams. For students to work effectively, they need to set clear guidelines and goals, they ideally need to appoint a team leader, and they need to trust one another. Flammia, Cleary, and Slattery (2010) recommend encouraging students to engage in some non-task communication also, to facilitate team cohesion. It can also be helpful to give students guidelines on how to communicate online (netiquette), seeing as much of their collaborative work will take place through the medium of technology. It would be interesting to evaluate how students work in teams to solve problems using games such as the one outlined in this paper.

Moving forward, we would like to measure the impact of the simulations on students' entrepreneurial skills development. To do so, we would need to evaluate skills levels before students undertake the simulation module and again afterwards, to identify if skills have been developed as a result of the engagement with the game, the collaborative strategic planning, and/or the private reflection. Ideally, we would measure, both quantitatively and qualitatively, when, how, and where students developed the necessary skills. Various evaluation frameworks are currently being investigated, including Bellotti et al.'s

(2014) skills and competencies strategic axes and the Brookes et al. (2012) model for designing a pervasive learning activity.

It would also be interesting to evaluate motivational factors, i.e., do the students feel sufficiently invested in the game? Brookes et al. (2012) talk about the importance of "willing suspension of disbelief" (p. 3) and the impact this has on student learning.

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## Raising the Quality of Discussion by Scaffolding Students' Reading

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Many college students fall into the habit of coming to class unprepared, without having read assigned texts, or having read partially and superficially. As a consequence, they may take a passive stance, discussion can fall flat, and learning can be diminished. This article describes an instructional strategy for engaging students as active learners in preparing for class discussion and in the discussion itself. Using a modification of the literature circle model originated by Daniels (2002) and adapted for college learners by Larson, Young, & Leiphram (2011a), the author describes a procedure in which students read, use organizing templates to write about their reading, and then draw on that writing for small-group and finally whole-class discussion. Grounded in research on active learning, reading compliance, and reading and writing to learn, the strategy presented here is a way to achieve higher quality discussion, and therefore deeper learning.

Several years ago at a teaching conference, I attended a presentation entitled "Reading to Learn: If Students Won't Read, How Can They Learn?" (Larson, Young, & Leiphram, 2011b). It was the second part of that title that caught my attention. Like many of my colleagues, I continually found myself in a quandary over students' coming to class without having completed their reading assignments. Believing that students learn best when lecture is combined with other instructional methods, including discussion (Brookfield, 2015; Fink, 2013; Weimer, 2013), I have always planned for discussion to be a significant component of each class meeting. Whole-class discussions often fell flat, so I shifted to heavier reliance on small-group discussion as a warm-up for talk in the larger group. This change got students talking, but not necessarily reading, and the talk frequently seemed to sit on the surface of the issues, or even to skirt them altogether in favor of personal storytelling that might be tangentially related to the central course concepts. Seeking solutions, I flocked to the conference session along with a roomful of faculty members from other colleges.

We professors cajole, incentivize, prod, and even punish to get students to read, in hopes that if they read, they will be prepared for class, discussions will be more meaningful, and learning will increase. Sometimes, when my students insist they have read the material, I wonder what that reading looks like. Do they breeze through the pages in order to finish and move on to the next assignment? Do they read with marker in hand, highlighting whole paragraphs so that the text ends up drenched in yellow? Or do they read laboriously, sentence by sentence from beginning to end, with little idea of why they are reading or how to make useful sense of it? I wanted my students not only to read, but to read thoughtfully and purposefully so that when they came to class, the work we did together would also be more meaningful.

The conference presenters gave me a strategy: *reading communities*, to use their term (Larson, Young,

& Leiphram, 2011a; 2011b), more commonly known as book clubs or literature circles (Daniels, 2002). In fact, as a literacy educator, I knew the strategy very well; I had even used the strategy when the preservice teachers in my literature courses gathered to discuss children's novels. It had never occurred to me to adapt the strategy in other courses for discussion of college-level texts. I returned from the conference in the fall of 2011 and revised my approach to a literacy education course the very next semester. In this article, I will provide a foundation for using the literature circle approach in college classrooms and then describe in detail how I have shaped the approach, initially inspired by Larson et al. (2011b), over nine semesters in order to achieve higher quality discussion—and therefore deeper learning.

### Review of Literature

#### Discussion as Active Learning

Notable voices on teaching and learning in higher education, such as Brookfield (2015), Fink (2013), and Weimer (2013), have argued effectively for approaches that engage students as active learners and critical thinkers. In his review of research on active learning, Prince (2004) defined *active learning* as "any instructional method that engages students in the learning process. In short, active learning requires students to do meaningful learning activities and think about what they are doing" (p. 223). Active learning, then, refers primarily to mental activity that is meaning-seeking and reflective in nature. Reading and listening, acts that are often viewed as passive, can be quite active, especially when readers have developed skills for critical reading and thinking. Teaching to support active learning requires instructors to do less telling so that students do more of the work of learning (Weimer, 2013). When professors encourage students to engage in tasks like asking questions, making connections, and summarizing discussion, students necessarily take a



more active role in their learning, and delivering information need not be the instructor's central instructional approach.

Faculty often come to active learning strategies as "an antidote to passive learners" (Weimer, 2013, p. 124), wanting to reduce boredom and engage students; additionally, faculty often discover the power of active learning for achieving a variety of educational outcomes (Fink, 2013). Benefits of approaches associated with active learning in a variety of disciplines are well documented; a review of that research is beyond the scope of this article. Some of the most commonly identified benefits, however, include improved concept learning (Akinoglu & Tandogan, 2007), improved exam performance (Freeman et al., 2014; Lento, 2016; Pierce & Fox, 2012), persistence in the course (Ueckert, Adams, & Lock, 2011) and course pass rates (Freeman et al., 2014; Lento, 2016), as well as more positive reactions from students (Armbruster, Patel, Johnson, & Weiss, 2009; Cavanagh, 2011) and greater motivation for learning (Miller & Metz, 2014).

Students often express a preference for discussion-oriented classes over those that are heavily lecture based, and many faculty members agree (AlKandari, 2012; Jensen & Owen, 2010; Nunn, 1996). Among the potential benefits of discussion as a mode of learning are stronger communication skills (AlKandari, 2012; Dallimore, Hertenstein, & Platt, 2008), increased achievement in courses (Dudley-Marling, 2013), the development of critical thinking skills (Hamann, Pollock, & Wilson, 2012; Jones, 2008), and exposure to a greater variety of ideas (Parker & Hess, 2001). When students discuss texts they have read, "discussion widens the scope of any individual's understanding of a text by building into that understanding the interpretations and life experiences of others" (Parker & Hess, 2001, p. 275). Small-group discussion can be especially appealing to students because they find that it supports their learning more than whole-class or online discussion (Hamann et al., 2012).

These benefits, however, are not always present with discussion (Dudley-Marling, 2013). Factors such as the instructor's skill at facilitating discussion (Dudley-Marling, 2013) and students' level of comfort in the classroom setting (Dallimore et al., 2008) influence the quality of discussion. Any professor who has incorporated discussion into a course knows well the tendency for a small percentage of students to do most of the talking (Nunn, 1996; Weaver & Qi, 2005) and for discussion groups to get off task occasionally. Additionally, the quality of discussion suffers when students have not adequately prepared by reading or doing other foundational assignments (Foster et al., 2009).

Faculty members have proposed a variety of remedies for these challenges. For example, providing incentives through grading (Foster et al., 2009; Quinn & You, 2010) and providing instruction in the purposes of discussion and discussion skills (Brank & Wylie, 2013; Bruss, 2009; Parker & Hess, 2001) can increase students' preparedness and raise the quality of discussion. Simply incorporating small-group discussion rather than relying solely on whole-class discussion can be helpful in engaging more students (AlKandari, 2012). Many strategies have been offered (e.g., Brookfield & Preskill, 2016) including ensuring that each student has a specific role within the group (AlKandari, 2012; Daniels, 1994, 2002).

### Reading Compliance

Regardless of the format employed for discussion, when students read, discussion is likely to be more engaging and fruitful (Carkenord, 1994). Studies confirm, however, what many faculty members experience: most students spend very little time reading in preparation for class, or they do not read at all (Baier, Hendricks, Gorden, Hendricks, & Cochran, 2011; Clump, Bauer, & Bradley, 2004). When asked what would motivate their reading, students say they want incentives, including quizzes and supplementary assignments that help them understand the readings (Hoeft, 2012). Students also want more guidance from their professors on how to read effectively and how to focus their reading on the important ideas (Berry, Cook, Hill, & Stevens, 2011).

Faculty members have employed quite a wide variety of approaches to motivating reading (Lewis & Hanc, 2012), many with good effect. Reading compliance increases, for example, when instructors teach in ways that value students' reading by asking questions about the reading in class, engaging students in using the information they read, and ensuring that texts are discussed (Brost & Bradley, 2006). Instructors should also monitor reading compliance as a way of signaling that they value the reading (Burchfield & Sappington, 2000).

Attaching a grade to the reading and its associated assignments has also been found to increase compliance (McMullen, 2013). Quizzes, for instance, can serve as an effective incentive for reading which, in turn, can have a positive impact on class participation and learning. Students have reported that they read more carefully when they know they will be quizzed (Marchant, 2002). Ruscio (2001) reported the anecdotal observation that with randomly administered reading quizzes, students asked better questions, and the quality of discussion increased as reading compliance increased.

Quizzes may not always be the most effective instructional strategy, however. Various forms of writing about reading in advance of class discussion can be more effective than quizzes in motivating students to complete their assigned reading (Hoeft, 2012), preparing students for class discussion (Weinstein & Wu, 2009), and encouraging deeper, more thoughtful reading (Roberts & Roberts, 2008). Instructor feedback to students' writing about text provides additional benefit. Ryan (2006) found that worksheets designed to support comprehension of course texts, coupled with feedback from the professor, were more successful than quizzes or the worksheets without feedback in engaging students' interests in the material and yielding better performance on exams.

### **Critical Reading as It Relates to Discussion**

Instructors want students to engage in deeper, more meaningful reading—reading to transform (Roberts & Roberts, 2008). We want our students to read not only for minutiae, but for the big ideas authors are trying to communicate in disciplinary writing (Roberts & Roberts, 2008; Tomasek, 2009). The term “critical reading” is often used to describe this kind of deep reading in which readers question, interpret, connect new information to previous knowledge, examine their own perspectives and assumptions, and propose solutions (Tomasek, 2009). This is the kind of reading that multiple choice quizzes may undercut (Roberts & Roberts, 2008).

Assignments that provide incentive to read and also support critical reading are generally open-ended, requiring students to express their understanding in original ways. In the Larson et al. (2011a) study, for example, students reported that completing worksheets designed to elicit different ways of thinking about text increased both reading compliance and content learning in small discussion groups. The worksheets, like those originally suggested by Daniels (1994) to support younger readers' comprehension of texts appear to provide a similar scaffold for adults. In another study, instructors offered students choice from an array of open-ended response options designed to help develop strategies for comprehending complex texts. These open-ended, student-designed responses to assigned readings increased reading compliance, enhanced students' comprehension, and improved the quality of class discussion (Roberts & Roberts, 2008). Writing prompts designed to elicit specific kinds of critical thinking, when answered prior to discussion, led to a “more active and dynamic learning experience” (p. 128) and richer, more engaged discussion (Tomasek, 2009). In another study, a structured written weekly assignment

targeted reading skills such as identifying an author's thesis and supporting evidence. Students' writing on this assignment reflected improved reading skills over the course of the semester, with the most notable improvement occurring for students who scored lowest on a reading pretest (Van Camp & Van Camp, 2013).

This kind of focused writing about reading can accomplish more than simply preparing students for subsequent discussion, however. Writing itself is “a powerful means of learning” (Gere, 1985, p. 2) that promotes higher levels of thought. Focused writing scaffolds reading which, in turn, improves participation and the quality of discussion and ultimately student learning. The remainder of this article describes a procedure my students and I refer to as “reading groups,” in which students read, use organizing templates to write about their reading, and then draw on that writing for small-group and finally whole-class discussion.

### **Reading Groups as an Instructional Strategy for Improving Discussion**

The concept of literature circles has been around since at least 1994 when Daniels first published his model for use with K-12 learners. Similar to the book clubs with which many adults are familiar, literature circles are small groups of students who read and then gather to discuss their reading. The literature circle model was first described and later refined by Daniels (1994; 2002; Harvey & Daniels, 2015) to scaffold students' critical reading and promote more meaningful, engaged discussion. One of Daniels's unique contributions was identifying a variety of roles discussants might play for the purposes of helping students understand the range of ways readers think about texts - thereby improving reading comprehension—and enriching the resulting discussion. Those roles included a question generator, a summarizer, an investigator who contributes supplementary background information, and so forth. For each role, Daniels offered a template for making notes and preparing talking points. This is the model that Larson et al. (2011b) adapted for use in college classrooms and that I have further shaped for use in a course I teach two or three times a year in a teacher preparation program.

Larson et al. (2011a; 2011b) adapted the literature circle model for use with college students, and I have found that it serves effectively for my students. Over the nine or so semesters since I began using this approach, I have adapted it further so that it works well for my students and me. My purpose here is to provide a detailed view of my implementation of reading groups so that others might also adapt it for their own use. The basic process is nearly identical to the one Larson and her colleagues shared at that

conference in 2011. In my master's level teacher preparation course in language arts, we employ the following process for the assignment I simply call "reading groups": For most of our weekly class meetings, students read assigned texts and make notes using their choice from among several templates I provide. They submit their reading notes electronically at least 24 hours in advance of class; I read them, often responding with brief comments, and use a very simple rubric to evaluate the quality of students' thinking. For discussion in class, students gather in randomly assigned reading groups, using the notes to guide their discussion. Additionally, I pose problems or questions derived from students' notes. Following small-group talk about the readings, I pull the whole class together for debriefing and summarizing. This process occupies about an hour of a three-hour class meeting; the remainder of our time is occupied with writing workshops, peer modeling of literacy strategy lessons, and other shared literacy experiences.

Students' reading notes are the centerpiece of our literature circle process, allowing for choice of format (Roberts & Roberts, 2008), offering incentive to prepare (Hoeft, 2012), and providing structure and direction to scaffold students' thinking (Berry et al., 2011). The description below includes logistical details of how I employ literature circles, with emphasis on the writing that students do before they come to class discussions. I will also describe some adjustments I have made over time and some practical suggestions for other instructors.

### The Reading Notes Assignment

The assignment is simple. Students read, make notes on their reading, and submit their notes electronically at least 24 hours in advance of class. They choose from among eight templates for the notes; four are derived from Daniels's (2002) work on literature circles, initially adapted by Larson et al. (2011b) (available at [http://www.uwec.edu/CETL/fellows/Reading\\_to\\_Learn.htm](http://www.uwec.edu/CETL/fellows/Reading_to_Learn.htm)) and then adapted further to suit my purposes. Since his original conception of the various roles readers might take, Daniels has shifted emphasis away from adherence to specific roles because the worksheets that accompany the roles can become an end in themselves and result in flat, mechanistic discussions (Daniels, 2002; Harvey & Daniels, 2015). In order to avoid this phenomenon, I have adapted his model in several ways. I do provide templates for students' reading notes. However, to ensure that the templates best suit the needs of my students and my course, I have selected four of Daniels's eight roles that are most appropriate for the context, I have further adapted templates shared by Larson et al. (2011b), and I have created additional templates not based on Daniels's (1994; 2002) roles. Rather than have students rotate through the various roles in order to gain understanding of all of them as Daniels

originally suggested, I allow students to choose any template they prefer. Although I do encourage them to try a variety of templates for their reading notes, students have the freedom to stick with a single format all semester if they wish. Additionally, students know that I read and make use of their notes, referring to specific ideas from the notes in class. I believe that my publicly and explicitly employing what they have written in their notes leads students to view the notes as purposeful (Brost & Bradley, 2006). In an online or hybrid course, this same process could be used. If the course were asynchronous, students could actually comment on each other's notes or make specific reference to peers' notes in written discussions.

The four roles we borrow from Daniels (2002) include a Discussion Director, whose job is to generate questions for the group to tackle; a Content Connector, whose job is to integrate concepts from the reading with information from previous courses, life experiences, and other knowledge sources; a Literary Luminary, whose job is to identify passages of significance (defined by the student in that role); and a Word Wizard, whose job is to identify words or phrases that are essential for understanding the texts. Additional templates I developed include the following: Quote-Question-Talking Point (QQT) (adapted from Connor-Greene, 2005), in which students identify an important quotation from the text, a question about the text, and a talking point derived from the text; Four Squares, consisting of four boxes, each with a prompt (e.g., "One thing I didn't really understand. . .," "An essential principle in this reading was . . .") (adapted from Strickland, Ganske, & Monroe, 2002); Magnet Words (adapted from Buehl, 2014), in which students identify at least two "magnet words" that serve to organize the essential content of the texts, along with conceptually related words and rationales for their choices; and Big Three, an original format in which students identify three central concepts from the reading and provide a list of supporting text passages for each (see Appendices A, B, C, and D). Whichever format students select, they are encouraged to think about central concepts, to synthesize those concepts with previous learning and experience, and to integrate their thinking with the literacy theory I use as a framework for organizing course content.

To keep this assignment from overwhelming the students or me, I provide time guidelines of thirty minutes to an hour, both for students to make their notes (in addition to what would be the usual reading time) and for me to read the submitted assignments. My purpose is not to respond to every idea a student puts forth, but instead to let students know whether the quality of their thinking is on the right track and what might be most useful to bring up for group discussion. The content of their thinking as reflected in the notes is less important than their attempt to

make sense of the texts. We will address the content in class, together. I set a timer as a reminder not to get caught up in giving lengthy feedback. The rubric is quite simple. The notes get one or two points depending on the quality of thinking they demonstrate, and no points if the notes are incomplete or if they reflect only superficial thinking (see Appendix E).

### Using the Notes in Reading Group Discussions

Students check the feedback before coming to class and bring printed copies of their notes. (Relying on electronic copies in class tended to interfere with group engagement due to the scrolling and searching and dealing with devices, resulting in less eye contact among group members and less attentive listening to each other.) When it is time for the discussion, students move to their reading groups. In the early part of the semester, cards with their names are displayed on the table in front of them so that they can easily speak to each other by name. In Daniels's (2002) model, the life of a literature circle lasts as long as the discussion of a particular novel or set of texts, and then new circles form as the students move on to new texts. My students tend to pick a table on the first night of class and sit in the same place all semester. In order to ensure that they hear a variety of voices for these discussions, therefore, I do assign the reading groups even though, in general, I place a high value on student choice. I use the university's learning management system (Blackboard Learn) to form random groups and to reassign group membership about every four weeks. Most students report that they like this method and that the regrouping every few weeks is beneficial.

The members of each reading group determine how they want to proceed. In some cases, each member takes a turn to speak briefly before the discussion opens. In others, a student who is particularly eager to raise a point will start right in, and discussion flows freely from there. Although I require that they have their notes printed and their texts in front of them, students make use of these resources in different ways. Some begin by referring to their notes, while others seldom refer to them; the writing and thinking have done their work, and most students approach the discussion well prepared. If discussion flags, students consult their notes and shift to a new topic. After 10 or 15 minutes of small-group talk, I often interject a provocative question or passage from a student's reading notes, the groups talk further, and then we have a summative whole-class discussion, during which groups share their insights or puzzlements and the class engages in further talk about the texts.

### Scaffolding Students' Reading, Writing, and Talking

Since many students have participated in book clubs with friends, or are at least aware of the concept, the basic idea of reading groups is familiar. To introduce the assignment, I provide a one-page overview listing its purposes and procedures, as well as evaluation criteria. I try to make my expectations for students' thinking and participation very clear. The students in our program are generally very familiar with reflective writing and summarizing, which is different from the qualities I value in the notes and the discussion: a focus on big ideas and guiding principles, a willingness to consider multiple points of view, and an attempt to synthesize ideas across texts and experiences. These qualities are embedded in the rubric and in other information I provide in Blackboard, and I make them explicit in class.

I introduce the templates that are available for students' notes and provide completed examples from previous semesters, as well as some I have created, to help students envision what good reading notes look like. We examine these models together and talk about the kinds of thinking they reveal. Additionally, I scaffold their reading by providing guiding questions to help students focus their thinking on the big ideas, rather than the small, interesting details, in a set of texts. Students are not required to answer the guiding questions; the questions are designed simply to point their attention to the most essential concepts and issues of the course. Throughout the semester I display compelling, insightful excerpts from students' reading notes, and we use these both as discussion fodder and as additional explicit examples of the kind of thinking I want students to engage in.

Also, a couple of times early in the semester we take a few minutes prior to small-group discussion to talk about what a good discussion looks like; based on that conversation, I generate a handout with a list of good discussion practices, and for several weeks, I remind students to look over that handout as they get into their groups. This combination of scaffolds for students' reading, writing, and talking helps them build an understanding of how to prepare and participate effectively, as well as why the reading group process is valuable. Although my work occurs in a teacher education context, everything about this approach is easily adaptable to courses in any discipline in which discussion of readings occurs.

### Student Response

At the end of each semester, I administer my own anonymous electronic questionnaire with questions about each of the major components of the course.

Table 1  
*Preferred Means of Assessing Understanding of Readings*

Number of responses ( $n = 30$ )	Preferred Means of Assessment
16	Reading notes (as described in this article)
8	No preference expressed
5	In-class quizzes
2	Oral class participation only
1	Mid-term and final exams only

*Note.* Two students' comments stated more than one preference.

Each prompt reminds students of the purposes of the assignment or activity and asks about their experience and suggestions. Although I modify the wording slightly from one semester to another, this version of the reading notes prompt from the most recent semester's questionnaire is representative:

The purposes of the reading notes were to help you prepare for discussion, to encourage you to do the reading, to allow me to gauge your initial understanding, and to guide how I approached instruction. Did we achieve these purposes? How did the reading notes assignment work for you? What did you think of the balance between reading notes and the quizzes on the weeks when you had major assignments due? Did you find that the templates made any difference in the way you prepared for class? In the quality of group discussions? What modifications would you suggest?

In two recent semesters, 30 of 36 students (83.3%) responded to the questionnaire. Their responses about assessment preferences are represented in Table 1.

As the table demonstrates, not everyone loves the reading notes. This kind of preparation takes more time than simply reading and showing up to talk. Most students, however, do prefer the reading notes to the one-question quizzes I give on some weeks. For instance, one student wrote the following:

I am surprised I am saying to have a quiz instead, because I am one who has bad test anxiety. It was just TOO overwhelming, and I felt I was scrounging to make sure I said the right thing to get 2 points each week, and each week spent less on the actual good information in the reading.

These kinds of comments remind me that learners have different needs and preferences (Weinstein & Wu, 2009). They do have choice in the format for their reading notes, and they have many other opportunities to make choices about their own learning in the course. The course *can* be overwhelming due to the volume of content addressed to meet teacher certification

requirements. This kind of feedback is what prompted me to drop the reading notes requirement on the weeks when students have other assignments due in the course. Instead, I substitute a one-question in-class quiz designed to encourage reading and roughly assess their initial understanding of the texts. On those evenings, with other work to do and the absence of reading notes, the level of preparedness—and quality of discussion—always seem to drop. For everyone's sanity, though, I have settled on this compromise.

Much more commonly, students respond positively, as in these examples:

- I definitely think that the reading notes were effective tools for learning and comprehending the texts. In many classes, there is not enough incentive or structure and it is too easy to skip a week of reading. In this class, the routine of reading notes was helpful. I liked choosing from the role sheets and having the freedom to decide what role sheet to use each week. I also liked being allowed to stick to the same role sheet if we wanted. They served as excellent guides to support my reading and understanding of the text. They also helped a lot during reading group discussions.
- I felt like I was reading for a purpose, and some points I was looking forward to talking with my classmates the next week. . . . As a result, the role sheets helped me to prepare for class by having them printed out, and helped us to focus on the key details in our group discussions, rather than ideas we liked. . . . I like that it was only worth two points. It was enough to help me to want to do it, but I wasn't too overwhelmed each week. I more read for enjoyment and because I wanted to learn.
- My suggestion for this is, I would keep using the reading roles sheets and other scaffolding that you use, because it means more than just taking a test. Also, using strategies like these stay with me much longer than taking a test. I liked doing the reading notes; it was more like we were

able to do some constructed thinking to developed a deeper meaning of the information.

The students in the sample found a range of benefits for reading notes. The most frequent comments (17 students) connected the reading notes assignment to enhanced thinking about the texts, as seen in the students' comments above: Students said that using the templates and making structured notes caused them to think more about the reading, facilitated their construction of meaning and helped them remember more about what they read. Students reported that making their notes and knowing they would be discussing with peers gave them a purpose for reading that is lacking in some courses. They felt that work they put into the reading notes prepared them for and supported the discussion.

From a pragmatic standpoint, students appreciated the variety provided by the templates and the freedom to choose which format they used for their notes. Several found value in the structure provided by the templates and the submission in advance of class. Comments about the amount of time required were mixed; two said that the notes took too much time, and three said the load was reasonable, especially after they got the hang of it. Several preferred the notes to quizzes because of test anxiety.

In a separate question, I ask students' opinions about the course texts: whether they provide a variety of perspectives and sufficient content to help students' feel confident about their preparation for teaching literacy. Students overwhelmingly like the course texts, but what I have been most struck by is that they often provide very specific, content-based reasons for their responses. The students who have written these structured reading notes and participated in the reading group discussions can, at the close of the semester, write about their reading with obvious familiarity and confidence. For example, one student wrote the following:

I enjoyed the textbooks. I found [Book A] to be a much easier read than [Book B] because of the way it was laid out. I will definitely use both of those as resources in future teaching. . . . [Book C], I felt, could have had chapters or excerpts of chapters pulled and featured as handouts. I didn't feel we covered that book in depth the way we covered the others. For the most part, I enjoyed the [supplementary] articles. I found that there was not an overwhelming amount, and it was a nice accompaniment to the other reading assignments.

Although I do not have this same information from students prior to implementing this approach, I would be greatly surprised if their responses about course texts

would have been as specific as the ones students provide now.

Anecdotally, students sometimes report that part of their motivation for taking their work seriously is the desire *not* to be the group member who does not carry his or her weight; they become annoyed—sometimes visibly—when a classmate is repeatedly unprepared. They come to expect a higher level of discussion.

## Conclusion

Whereas in past semesters whole class or small-group discussion often began with an awkward silence, that opening silence is now rare. I often hear students discussing the readings as they enter the classroom. The big majority of students come to class having read and, more than that, having taken at least a few minutes to *think* about the reading, give it context and substance, and prepare to discuss it meaningfully.

Since I began using the reading group procedure, the benefits documented by Larson and her colleagues (2011a) have been evident for my students. I am learning to support my students' active meaning making through reading and discussion, and student reports and my own observations confirm that students understand texts better, feel accountable for reading and participating, believe the reading notes have a positive impact on their learning, experience more meaningful discussion, and are more likely to complete assigned reading (Larson et al., 2011a).

The quality of thinking as evidenced in students' notes strengthens over time as they develop and hone their skills of identifying the most important ideas and synthesizing ideas across sources. My informal observations suggest that this growth in students' thinking and level of preparation spills over into both the small-group and whole class discussions. In both contexts, students refer to their texts more often than I have seen in semesters past, flipping through pages in search of some passage to support an argument and explicitly referring to specific passages as they talk. I have observed that my students are able to sustain focused discussion for longer periods of time, and shifts to off-topic talk are fewer. Although it is still possible for a student to fake her way through the notes and discussion, faking is more difficult and less likely.

Each semester, the assignment evolves a little more, another kink gets worked out, and I learn how to articulate purposes and expectations more effectively. The reading notes process takes time, both in and out of class, and there are moments when I say to myself, "Why are you doing this? Does it make that much difference?" My answer is always yes. I do it because of the difference it has made in our engagement with each other, with ideas and, more importantly, in my students' learning.

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## Appendix A

## QQT Response Guide

Identify the quote, question, and talking point and—for each—explore it a bit to show your thinking. Remember to work toward synthesis in your learning. Each item should address a different text/chapter or a significantly different topic from the other two.

Quote: One really thought-provoking passage to quote. Not just any passage will do! When you find yourself thinking, “Wow, I never thought about it that way,” or “Really? I’m not sure I agree with that,” or “I’m not understanding what the author means here,” then you’ve found your quote.

Your quote and response:

Question: One really thought-provoking question for your group to consider together. Use what you know about open-ended questions that encourage divergent responses and about authentic questions (questions to which you really want an answer) as opposed to “test questions” (questions to which you know the answer).

Your question and response:

Talking Point: One additional talking point—something that you’re dying to talk about with your group, whether it would fit in one of the previous two categories or not. What’s the juiciest part of the readings, the issue or big idea that really gets you excited, confused, or frustrated?

Your talking point and response:

[Note that the response spaces in each of the templates expand as students type.]

(Adapted from Connor-Greene, 2005)

## Appendix B

## Four Squares

<p>[Some theoretical framework] helped me think about this reading by . . . .</p>	<p>One thing I didn't really understand as I read was . . . . (or, I understood it but am not sure how it would really work)</p>
<p>I think one of the essential principles underlying these texts is . . . .</p>	<p>When I read about _____, it really struck a chord with me because . . . .</p>

(Adapted from Strickland, Ganske, & Monroe, 2002)

## Appendix C

## Big Three

Big ideas cut across one or more books, chapters, or articles. They express principles that guide literacy teaching and learning and curriculum. They focus on fundamental ideas that direct our decision-making processes as teachers.

Identify three big ideas from this week's reading, and make a case to support them, as follows:

- Main Ideas: State each as a sentence.
  - Supporting Details: Show your thinking that led to the main idea. *Pull specific evidence from across texts*, and explain how they support the main idea you've identified.
- 

Main Idea #1:

Supporting Details:

Main Idea #2:

Supporting Details:

Main Idea #3:

Supporting Details:

## Appendix D

## Magnet Words

Text/p.#: Support:	Text/p.#: Support:
Magnet Word 1:	
Text/p.#: Support:	Text/p.#: Support:

Considering all the texts in this set, identify *two* magnet words—words around which many essential ideas cluster. Do *not* choose a word that is the main topic. E.g., If the texts are all about comprehension, do not choose “comprehension” as a magnet word. Too easy!

For each magnet word, provide at least four specific instances of support from the texts.

You may add more boxes if needed.

## Appendix E

## Rubric for Reading Notes

0 Points	1 Point	2 Points
Incomplete or late, or doesn't appear that you have read all the texts; notes are very cursory.	Dig a little deeper: Complete but may focus on minor details, makes some connections among ideas but may not develop a line of thinking, may focus primarily on insignificant details, or may not prove useful for the group. Your notes seem to be written in a vacuum, independent of other readings.	You've got it! Complete, focuses on central concepts, develops a line of thinking about each idea and makes connections among ideas, will be useful for group. You're clearly building a cohesive set of ideas from week to week.

## “Just Imagine That...”: A Solution Focused Approach to Doctoral Research Supervision in Health and Social Care

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Effective supervision in doctoral research is critical to successful and timely completion. However, supervision is a complex undertaking with structural as well as relational challenges for both students and supervisors. This instructional paper describes an internationally applicable approach to supervision that we have developed in the health and social care disciplines that offers structure, but is also dynamic and responsive to the needs of students and supervisors and aims to develop the research competency of students. Our approach called Solution Focused Research Supervision (SFRS) is based on solution focused approaches, adapted from Solution Focused Brief Therapy and questioning techniques derived from coaching. This approach has enabled our supervision teams to effectively develop focused research questions and decide on appropriate research methodologies and methods. We offer the SFRS approach as a way of working that seeks to recognize and build upon strengths, foster engagement and openness to learning as well as build trust between students and supervisors. The authors, from (countries deleted for peer review), are supervisors and students who have developed the approach and provide practical examples of its application.

“Doing a doctorate” is not something to be entered into lightly, and the undertaking constitutes both an emotional and intellectual journey (Baptista, 2014, Cotterall, 2013). The emotional dimensions of the doctoral experience are poorly articulated but play a key role in both student learning and in supervision. The interplay between positive and negative emotions can variously inspire, guide and enhance the research or delay and even derail it (Cotterall, 2013). In addition, the supervisor/research student relationship in the higher degree research (HDR) process is fundamental to successful completion, yet the relationship is a complex and dynamic one (Emilsson & Johnsson, 2007; Gurr, 2001).

Given the central importance of the quality of supervision in the HDR candidature (Heath, 2002), preparation for supervision would seem essential. Supervisors require different support systems as compared to academics delivering structured course work programs (de Kleijn, Meijer, Brekelmans & Pilot, 2015). While some universities offer preparation and support for supervisors, many supervisors learn the skills of assisting students to design and undertake research, and eventually craft a thesis, by trial and error. Supervisors have varying degrees of experience and confidence in their ability to adequately supervise the student or the research. In addition to this are the organizational expectations and quality metrics about completion times, publications, and supervisory loads (Owler, 2010).

We do not propose a solution to all of the issues and challenges associated with HDR supervision. However, we offer an approach that we have developed

and found to contribute positively to some of the structural challenges doctoral supervision poses for both supervisors and students.

### Background

The opportunities and challenges associated with offering quality supervision to both PhD and professional doctorate candidates is well detailed (Carr, Lhussier, & Chandler, 2010; McSherry & Bettany-Saltikov, 2014). Supervision of higher research degree students has traditionally been seen in terms of an expert-disciple or a master-apprentice model (Hemer, 2012; Wolff, 2010) and evaluation of success often limited to discrete, measurable outputs such as timely completion, publication quanta, external funding success and numbers of students supervised. However, such measures do not account for the “messiness,” fluidity, and complexity of the supervision process (Spiller, Byrnes & Ferguson, 2013). Vilkinas (2008) notes that the majority of supervision is task focused with limited evidence of innovation and reflection. This problem may be exacerbated by the current climate of metric focused performance for both students and supervisors. Numerous authors have attempted to delineate the components of quality supervision (Carr et al., 2010; Heath, 2002; Lee, 2008; Savage, 2013; Wolff, 2010) and how these may be used to construct sound models or frameworks to facilitate quality supervision systems and processes (Carr et al., 2010; Gatfield, 2006; Lee, 2008; Maxwell & Smyth, 2010).

Different styles of supervision identified in the literature include problem-oriented and process-

oriented styles (Emilsson & Johnsson, 2007; Hemer, 2012). A problem-oriented style focuses on tasks to be undertaken and problems to be solved. In contrast, a process-oriented style focuses on the interpersonal processes and the relationship between student and supervisor/s and the process is seen as both educational and supportive. Person-centered approaches such as the process-oriented style perceive supervision as a collaborative partnership (Hemer, 2012). The supervision model presented by Gurr (2001) is based on student-centered learning rather than a teacher-centered stance and also stresses the collaborative nature of the undertaking. The model of Supervisor/Student Alignment stresses the need for the dynamic alignment of supervisory style with the student's level of development as they move to achieve "competent autonomy" (Gurr, 2001, p. 85). Gurr suggests that the development of "competent autonomy" is a goal of excellent supervision. He proposes that indirect/active supervision is desirable and is characterized by eliciting the student response through seeking their opinions, elaborating on their ideas, and building on their suggestions. In his 'Three-S' framework Wolff (2010) prioritizes the place of writing as an activity throughout the doctoral journey rather than an end process of "writing-up." Another model, proposed by Lee (2008), consists of a framework of five supervisory approaches: functionality, enculturation, critical thinking, emancipation, and relationship development. Each of these person-centered models conclude that supervisory styles are not fixed, but are dynamic and responsive to changing events and phases of candidature. The models identify critical thinking and independence as indicators of success in the supervisory relationship.

This paper describes a person-centered, solution-focused approach to supervision that offers structure; that is also dynamic and responsive, as recommended by Lee (2008); and that aims to develop "competent autonomy, as described by Gurr (2001). The aims of this paper are the following:

- To outline a research supervisory approach for doctoral students in health and social care based on an adaptation of Solution Focused Brief Therapy (de Shazer, 1985),
- To highlight how a Solution Focused approach can support both the supervisor and student to resolve challenges associated with articulating the research question and deciding on appropriate methodologies and methods, and
- To outline techniques we have found useful and give examples from our supervision practice, based on the experiences of supervisors and students in using these techniques.

## The Solution Focus

The approach we call Solution Focused Research Supervision (SFRS) has its roots in Solution Focused Brief Therapy pioneered by de Shazer and colleagues in the 1980s (de Shazer, 1985; de Shazer, 1988; Lethem, 2002). Adaptations of Solution Focused Brief Therapy (SFBT) have since been used in various settings, including education (Woods, Bond, Humphrey, & Symes, 2011), occupational therapy (Duncan, Guhl, & Mousley, 2007), nursing (McAllister, 2003; McAllister, 2010; Walsh, Moss, & FitzGerald, 2006), organizational redesign (Bloor & Pearson, 2004), and coaching (Grant, 2013).

## Principles of Solution-Focused Research Supervision

The heart of SFRS is the same as the solution focused approach to coaching or counselling: a strengths focus to help people identify specific goals and preferred outcomes and find ways to achieve them (Grant, 2013). The difference is that SFRS is not counselling as the focus is the completion of a significant body of complex work culminating in a thesis rather than the resolution of personal issues. However, like solution focused counselling or coaching, SFRS is predicated on the assumption that many of the skills and strengths necessary to bring about a preferred future already rest within the individual. These skills and strengths can be mobilized for solution generation through a process which keeps the student (and indeed the supervisors) engaged and open to learning while maintaining trust in the supervisor/student relationship. Trust in this relationship is distinguished by positive, openhearted communication (Emilsson & Johnsson, 2007). Some strategies for this include:

- Look for what works and do more of it;
- Highlight and build on strengths;
- Cease doing what doesn't work; and
- Use creativity and imagination to imagine a better future and work towards it. (Grant, 2013)

The solution focus approach has many similarities to Appreciative Inquiry (Cooperrider & Srivastva, 1987) which seeks to generate positive images of the future. These "anticipatory realities" have the effect of orientating human effort towards an ideal future state (Yballe & O'Connor, 2000).

However, our experience in supervision is that, far from being positively future focused, there is a tendency to focus on deficits and what is not right or not going well – reflective of the problem-oriented approach for supervision (Hemer, 2012). Such deficit thinking can psychologically disengage students by



mobilizing anxiety and putting them into a psychological “away state” (Rock, 2006), which can rob them of the cognitive resources required to solve the problem or improve the situation (Walsh, Crisp, & Moss, 2011). Deficit thinking can trigger stress, and reasoning can be clouded as a result. This can have a detrimental effect on the student’s ability to develop their research and their competent autonomy.

In contrast, the SFRS approach seeks to keep the student in a psychological “towards” state (Rock, 2006). While not ignoring problems, it looks for what works and what is going well. It builds on the strengths of individuals and uses creativity and imagination to focus on a positive possible future—a quality thesis—and how to get there (Walsh, et al., 2006). The approach seeks to build critical thinking capacity and direct the student towards independence. We have found that the action focus of the approach helps the student move forward and progress in their research.

### **A Solution-Focused Research Supervision Approach to Questioning**

SFRS uses solution-focused questioning techniques such as scaling questions and the miracle question (discussed below) (Walsh et al., 2006). Solution focused questions are questions that help the student to clearly articulate purpose and goals, as well as discover and articulate their specific strengths and abilities in constructing and enacting solutions. The questioning process also aims to support and empower the student to discover their own solutions and focus on those issues over which they have control (Grant, 2013). However, of equal importance, the SFRS approach requires the supervisor to adopt an attitude toward the student and the supervision that focuses on assisting the student to acquire the attributes of critical thinking: become questioning, reflective, resourceful, resilient, and independent. From our experiences, many of our students already come with some or all of these attributes but don’t recognize this. They are however, often acutely aware of their deficits. The role of the supervisor is, in part, about identifying and maximizing potential by building on the student’s strengths. This goal can be realized through making the student, not the thesis, the center of inquiry and using opportunities to build self-esteem and self-efficacy throughout their doctoral journey (McAllister, 2010; Walsh et al., 2006).

To work well, we have found SFRS needs to be based on a shared understanding of the approach, and an explicit agreement to use it. In this way, the student is coached in the SFRS approach and learns to use the principles between, as well as during, supervision sessions. Supervisors should also be open and transparent about the expected outcomes of the questioning and visioning techniques and coach

students in their use. It is important that students and supervisors form a trusting alliance in the supervisory relationship so that students do not feel themselves to be mere objects in a technical approach, but rather active partners in the application of the approach (Lipchik, 2002). In addition, the steps outlined below should be used in flexible, pragmatic, and person-centered ways so that both supervisor and student are able to participate in collaborative solution generation that is exploratory, experiential, and constructive.

As mentioned above, a key technique of the approach is asking good questions of the student and of the proposed research. Therefore, before discussing the steps in the SFRS process it is worth outlining the SFRS approach to questioning. Similar to Brain Based Coaching (Caine & Caine, 1990; Rock, 2006), we use three elements: Questioning, Clarifying and Placement.

**Element One: Questions.** According to the German philosopher Martin Heidegger, every question is guided beforehand by what is sought (Heidegger, 1962). That is, one has to know something of what constitutes an answer before one can ask the question. We would add that good questions beget good answers because the quality of the answer is directly proportional to the quality of the question being asked.

The questions in SFRS aim to make clear what is already known, not known, assumed, or taken for granted by the student and by the supervisor. They also aim to clarify purpose, identify strengths, seek possibilities, and generate actions. Some examples of SFRS questions that might be directed towards ensuring the student and supervisor(s) are all satisfied with the research question, as well as progress of the research and written thesis at different points in the journey, might include the following:

- If we were in the future and your thesis on [research topic] was finished what would you now know that you didn’t know when you started?
- What is the purpose this chapter serves in your thesis?
- On a scale of one to 10, how well does this literature review or methodology chapter(s) serve this purpose?

As can be seen in these examples, SFRS questions tend to be open ended and curious. Specific examples of SFRS questions will be given later in the paper.

**Element Two: Clarifying.** Clarifying in SFRS is the process of asking questions to clarify the student’s response to problems, situations, and events associated with the research and exploring their thinking. This allows the supervisor and student to be clear about answers, to explore topics further, and to clarify thinking. The assumptions, rationales, prejudgements and biases we have often go unexplored. Clarifying is

Table 1  
*Stages to Ensuring the Development of a Research Question*

Stage	Title
1	Listening to the narrative
2	Posing the ‘miracle’ question
3	Tapping the Passion
4	Developing the Research Question(s)
5	Exploring Methodology and Methods
6	Exploring Feasibility

the process by which students can become more aware of their thinking and more self-reliant.

Examples of clarifying questions are:

- “What you appear to be saying is .....is that right?”
- “It seems that you are assuming these two issues are linked...is that right? Can you tell me more about that?”
- “That’s interesting .... Tell me how you reached that conclusion?”

**Element Three: Placement.** Placement is the process whereby the supervisor marks points in the journey of the supervision session and of the thesis. This placement allows the supervisor to be explicit as to where the student and supervisor are in the process and where it is heading. It also helps the student contextualize the questions. Examples of placement statements include:

- If these are the research questions, we can now explore who or what has the answers.
- We are at the stage of exploring methodological issues, so let’s discuss what the questions you have identified seek to do: explain, test, describe, etc.
- I think the next step might be to identify what is already known about this topic. What do you think?

This process of questioning, clarifying, and placement is cyclical as further questions and points of clarification are generated.

Having identified what SFRS is and the three core elements associated with questioning, the next section focuses on the processes aligned to devising robust research questions and aims.

### **Solution-Focused Research Supervision: Six Stages to Developing Quality Research Questions and Research Approaches**

For the purposes of this section we assume that the supervisor has had the “Why do you want to do a PhD/Prof Doc?” conversation. Unless the student is to be part of an already identified study, the next conversation usually revolves around the question, “What do you want to do and why?” This question is perhaps the most important in the doctoral journey in that everything else flows from it. It is therefore worth exploring fully. Development of the research question is an activity that should be undertaken collaboratively and consciously with skill and insight.

We have found the following techniques useful in developing the “preliminary” research question. We use the term “preliminary” to reflect the fact that as the student learns more about the subject area and methodologies (discussed below), the research question tends to change and is refined. Within the SFRS approach there are six stages to ensuring that the development of a research question is undertaken effectively. These six steps take time to work through and, depending on whether the student is studying full-time or part-time, may take weeks or months. Our experience has been that spending the time to carefully and fully develop the research questions, aims, methodology and methods is time well spent.

Table 1 lists the six stages required to develop an effective research question within a SFRS context. These are then explored in more detail.

#### **Stage 1: Listening to the Narrative**

Listening carefully to the student’s oral narrative about how they came to this topic area and why it is of interest to them can help the supervisor identify the student’s passion for the topic, the purpose they wish it to serve, and the significance it may have to their

Table 2  
*Example of the Use of the “Miracle Question”*

“I had done a fair bit of reading around my topic prior to the meeting and my head was full of jumbled up thoughts, ideas, and concepts. The thought that I would ever be able to put them on paper in coherent order was difficult to contemplate. I felt overwhelmed by the enormity of the task ahead and firmly believed it would be a miracle if I ever finished my thesis! So when my supervisors introduced the idea of asking the ‘miracle question’ of a thesis that was still only a kernel of an idea, it was a suggestion that resonated.

“The miracle question was, ‘Imagine a miracle has happened and your thesis is finished. What would you know now that you didn’t know before?’ I left the meeting equipped with this single question, this one task to complete before the next meeting in two weeks. In my mind, I was already at the printers collecting the final copy of my thesis to submit for examination. What had I found out?

“When I started to think about all the things I would know, it was quite straightforward to write a list. I would know:

- what shortcuts, workarounds and violations in perioperative practice looked like,
- how often they occurred’
- the context within which they occurred,
- the characteristics of the culture within which such behaviours took place,
- what influenced non-adherence,
- whether perioperative nurses were conscious of breaking the rules, and
- what the implications were for patient safety.

“The miracle question had provided clarity of purpose, a focus on the end point that helped considerably to ‘unjumble’ the myriad of thoughts and ideas and provide some structure and order within which to place them. This process also highlighted the aspects of the topic that were of particular interest for me, the parts that I was passionate about exploring further and finding answers to. These were the concepts of shortcuts, workarounds, violations, rule breaking, and deviance, and this discovery in turn led me to undertake a more focused review of the literature.”

discipline. We say “oral narrative” here because the oral narrative releases the student from the confines of academic writing and allows for freer expression necessary to more fully explore their initial thinking.

Most higher degree research students come with some thoughts about a research question or topic and what may constitute an answer. Indeed, some may believe they know the answer already and merely want to confirm it, or at least know what they want the answer to be. As the oral narrative exposes the student’s thinking, it is important that the supervisor listens not only to the content of the narrative, but also to how this may have emerged from their thought processes; the links, the logic, and their assumptions.

Sometimes the student’s initial idea for a research topic or question is in fact a solution to an issue that they have not fully explored or thought through. For example, a perioperative nurse was interested in the question, “How can we get staff to stop using shortcuts (for standard processes) in operating theatres?” In this case stopping shortcuts is a solution to a problem that has not been fully articulated but is probably about improving patient safety in operating theatres. There may also be some underlying assumptions about

“shortcuts” being bad or unsafe. There may also be some unspoken assumptions about the types of nurses who take “shortcuts.” Exploring how the student came to this topic and the issue of patient safety more broadly may help both the student and the supervisor understand more fully the student’s interest in, or passion for, this topic.

In our experience, passion for a topic is a double-edged sword: it is necessary to sustain the student over the long journey of the PhD but it can also constrain the student’s thinking around the issue. This is especially true if the topic is a preconceived solution to a poorly articulated problem. The SFRS approach to questioning (questioning, clarifying and placement) can act as a mirror to assist the student to become aware of their thinking processes, biases and preconceptions.

## Stage 2: Posing “The Miracle Question”

Once the supervisor and the student have explored the narrative around the topic area, it can then be useful to ask, what is known in solution focused approaches as “the miracle question.” In solution-focused brief therapy the miracle question is a creative way to devise

goals. It helps the client imagine a desired future state. In SFRS it is a creative way to focus, capture, or distill goals, and also to assist in articulating the research aims more clearly as a precursor to scoping the literature and eventually finalizing the research question. Over the course of supervision, variations of the miracle question will be used many times.

The miracle question usually takes the form of: “Imagine a miracle has occurred and your thesis on the topic of ... is now finished. The examiners praised it and praised its findings. Having finished your thesis, what do you now know that you didn’t know when you started?” The student is then encouraged to phrase their answers in the form of, “I now know...”

For example, the student who was interested in short-cuts in the operating theatre describes the use of the miracle question in Table 2.

As mentioned in this example, the miracle question can be used to assist the student to find a focus for a more realistic scoping of the literature. By scoping the literature, we do not at this stage mean a full literature review. This stage of the SFRS process is more aligned to focusing the topic and forming initial research questions. This is an iterative process and involves using the answers to the miracle question as a starting point to interrogate the literature. A useful question at this stage might be: ‘What are the questions I need the literature to help me answer?’ The answers to the questions that this question poses (such as, “What is already known about this topic?”) can then be used to further inform the next iteration of the miracle question (see stage four) and eventually the full literature review.

### Stage 3: Tapping the Passion

In the example in Table 2 above, the student mentions her passion for the topic. Passion for a topic is, in our experience, linked to a wish to make a difference. Another way of putting this is, the student wants the research to be significant or pass the “so what” test. Here the answers to the various iterations of the miracle question can be used to assist the student to explore the significance of their emerging research topic and research questions. A follow-up question to assist in discussing significance might be: “If your thesis was finished, what difference would the knowledge make to patients, staff, the organization or the community (the question can be varied to suit the context)?”

### Stage 4: Developing the Research Question(s)

At this point we would like to stress again that the techniques described above are not necessarily linear; the process is cyclical. After several cycles of steps 1-3 aimed at posing the miracle question to identify aims or goals, interrogating the literature, and discussing its

significance, the student is usually able to move towards devising/developing or “landing” a more definitive version of the research question(s) and then exploring methodology and methods.

Some questions we have found useful in putting together stages 1-4 include:

- Imagine a miracle has happened and your thesis is finished. What would you know now that you didn’t know before? (outcomes of the research) (see example Table 2)
- If these are the answers (to the miracle questions), what are the questions to which they are the answers? (turning the outcomes into research questions)
- If we knew the answers to these questions what difference would it make to the patients, staff, organization, or community? (significance and impact of the research)
- What is already known about this topic? What is unknown about this topic? How well do your research questions relate to these unknowns (e.g., interrogating the literature, contextualizing the research in the wider literature)?

For example, in the study of operating room nurses’ practices and safety shortcuts (described in Table 2), we used several iterations of the SFRS questioning approach in developing the research question. The research question initially had a more “closed” or limited view of practices – indeed it had a “problem focus” with a concentration on blame and negative or deficit practices. Through the SFRS approach, there was a clear shift to the formulation of broader, more inclusive research questions (see below). These questions allowed an inherent openness to possibility, thus de-limiting the research. The student then formulated the following research questions.

The overarching question was, “What are the different ways of working in perioperative nursing, and what are the implications for practice and patient safety?”

Supporting questions included the following:

1. What are the different ways of working in daily perioperative practice?
2. What are the conditions that underlie the different ways of working?
3. What influences the nurse engaging in different ways of working?
4. Are perioperative nurses “mindful” of working in different ways?
5. What are the implications for practice and patient safety?

### Stage 5: Exploring Methodology and Methods

This next step is about exploring how to answer the questions associated with methodology and method(s). It begins with the premise that the best methodology is the one best suited to answering the research question.

We usually begin this discussion by asking the question: “What do these tentative research questions seek to do?” The answers usually include words like “test,” “interpret,” “describe,” “explain,” “understand,” or a combination of these. The follow-on question from this is usually: “What are the methodological options for meeting this intent?” For example, if the answer to the intent question is to “test,” then a methodological option might be an experimental design, possibly a Randomized Controlled Trial (RCT). If the answer to the intent question is to “interpret,” then the methodological options might include, phenomenology, ethnography, discourse analysis etc. In the example above about perioperative nurses, the student stated that the intent of the research question was to explore or describe, “What is going on with the ways perioperative nurses work in regard to patient safety?” The methodological approach she eventually decided was best suited to this intent was Constructivist Grounded Theory (Charmaz, 2014).

How this step in the process is worked through will often depend on individual supervisors and their expertise and experience. In our practice, we commonly spend a good deal of time asking students to read and discuss various methodological approaches. We ask the students to compare the intent of their research questions with the intent of the various methodologies. This often begins with exploring “off the peg” methodologies such as those named above, but it also includes discussion of bespoke or mixed methods approaches which may be better suited to answering the research questions posed. We have noted a tendency in health and nursing research that when a good, well-crafted research question does not fit an “off the peg” methodology, it is usually the research question that is altered, not the methodology or method (Walsh, 2012). The consequence of this is that the research question is no longer that which fired the student’s passion. This in turn has consequences for both the significance of the research and the student’s ability to stay the course and maintain their interest. Of course, not all good questions are researchable, and a pragmatic balance needs to be struck (this will be discussed in the next section). Follow-up questions we have found useful in exploring methodologies and methods include:

- What approach or approaches might be suited to meet the intent of your questions? (methodological fit)

- If these are the questions, who or what has the answers? (sources of data)
- What are the options for getting the answers? (recruitment/methods of data collection)
- How well suited are each of these options for getting these answers? (methodological ‘fit’)
- What other possible options might there be?
- What are the possible strengths and limitations of these options?

In this aspect of SFRS it is also important to encourage the supervisor(s) and student to think through the limitations associated with both the research and the experience/expertise of the supervisory team. We have noted that some supervisors are not well versed in a variety of research approaches or are experienced in only one. They may be reluctant to acknowledge this and find support within the supervisory team to mitigate against the deficit. They may therefore encourage the use of approaches they have used and are comfortable with, rather than the approach which best matches the research question. This is exacerbated by the fact that many doctoral preparation programs do not cover research methodologies and methods, and thus the students have to “pick it up along the way.” If the latter is the case, we would suggest that the supervisor’s role is to work out a way to remedy a major gap in the research student’s knowledge base. We are not suggesting that supervisors have to have an in-depth knowledge of all research approaches, but rather recognize their strengths and deficits in this area and openly discuss ways of managing this.

### Stage 6: Exploring Feasibility

It is our common experience as supervisors that students will often scope a project that is far too large. Indeed, as supervisors we have sometimes used the somewhat hackneyed phrase, “It’s a doctorate, not a Nobel Prize.” We have found the acronym FAME (borrowed from the evidence based practice movement (Pearson, 2010), to be useful in framing a conversation around feasibility. As applied by the Joanna Briggs Institute to their hierarchy of evidence model, FAME stands for Feasible, Appropriate, Meaningful, and Effective. Below are the definitions of each of these elements of FAME, followed by how we have adapted these to SFRS processes:

F: Feasibility – the extent to which an activity is practical:

- What are the characteristics of feasible research, e.g., time, cost, resources, expertise, etc.?

- On a scale of 1-10, how feasible is your research?
- What is it about your research which makes it feasible?
- You have scored the feasibility of your research as 7. What feasibility aspects of this research make it a 7?
- What would you need to do to make it 10?

A: Appropriateness – the extent to which an activity fits with a particular situation or context:

- What are the characteristics of appropriate research, e.g., ethically or culturally acceptable, transferable or generalizable, etc.?
- On a scale of 1-10, how appropriate is your research?
- What is it about your research which makes it appropriate?
- You have scored the appropriateness of your research as 6: what aspects of this research make it a 6?
- What would you need to do to make it 10?

M: Meaningfulness – (the extent to which an activity is positively experienced)

- To what extent will the findings make a difference to staff, patients, healthcare organizations, and your practice area/setting?

E: Effectiveness – (the extent to which an activity achieves the intended effect or outcome)

- To what extent will the research answer the questions you were passionate about?

These questions are examples that we have found useful and there are many other questions that could be used. Whatever questions are posed, the questions should be challenging and encourage student thinking. However, they should not be so challenging that they trigger a threat response in the student. Threat responses inhibit cognitive and psychological engagement and inhibit learning (Rock, 2008).

Having identified the principles and processes of SFRS it is important to discuss the possible implications of this approach for doctoral supervisory practices in the future.

### Discussion

From our shared experiences, the solution focused approach is more than just technique. Both Gatfield (2006) and Lee (2008) report on the importance of

providing pastoral support to students as they navigate the pathway through their doctoral degree. In fact, Lee (2008) places the relationship between the supervisor and student at the center of the framework. The SFRS approach is no different. We acknowledge the importance of recognizing, acknowledging, and empathizing with emotion and the relational elements of the supervisor/supervisee relationship. We know from solution focused brief therapy that when these things are not acknowledged, the solution focused therapy becomes a technical exercise that does not work (Lipchik, 2002). Our experience of adapting the principles of solution focused approaches to supervision and openly using the processes detailed in this paper has been that students seem to be more confident in developing their research questions and approaches.

The solution focused approach to research supervision depicted in Figure 1 offers a new and alternative framework for support and supervision for doctoral students and supervisor(s).

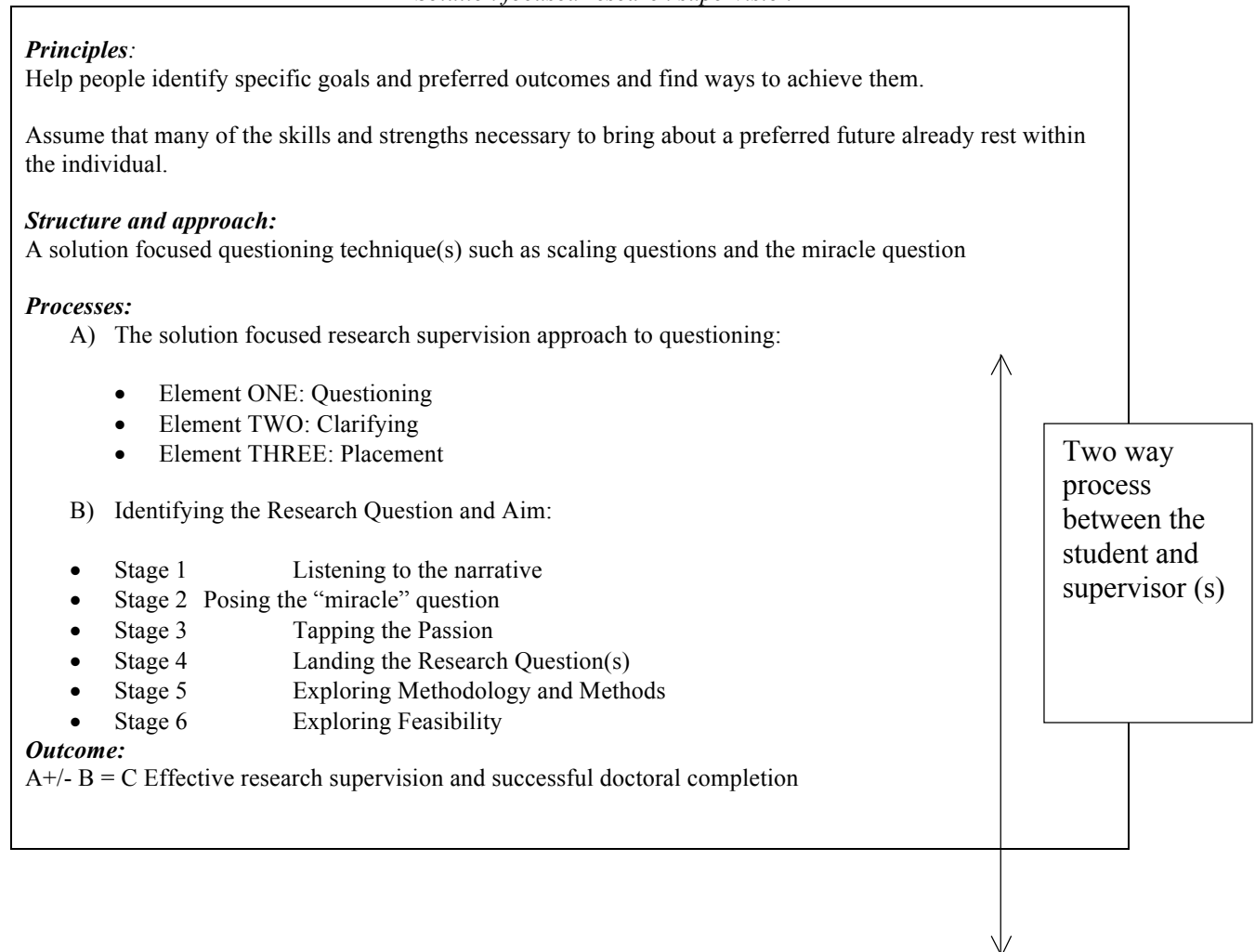
The SFRS approach is predicated on a sound relationship between the supervisory team and the doctoral candidate incorporating effective communication and the opportunity for both challenge and support. From our experience, working with and building on strengths, as well as building competent autonomy through sound questioning which focuses on what works and strengths, are sound ways of developing clear researchable research questions linked with appropriate methodologies and methods. In this way, doctoral students are enabled to undertake a significant and original piece of research resulting in a successful thesis.

### Conclusion

In this paper, we have set out to illustrate how solution-focused principles have enabled us to develop the SFRS approach. As supervisors and doctoral candidates, we have found these techniques to be useful in developing the research questions and deciding on appropriate methodologies and methods to answer them. We have also used the SFRS approach and techniques to assist in crafting chapters, developing the thesis overall, as well as managing “stuckness” and procrastination.

We do not put SFRS techniques forward as a simple recipe-based approach. Asking the right questions and other techniques will not, in and of themselves, lead to good supervision or progress by a student. The supervisor also needs an appreciation of the importance of developing an honest, open, transparent, trusting, and respectful working alliance and the role that emotions and situatedness (or life context) play. In addition, the supervisor and the student need a shared understanding of the ethical and moral boundaries of the professional supervisory relationship.

Figure 1  
*Solution focused research supervision*



We are not advocating SFRS as the only approach to ensuring quality supervision but another possible way of enhancing supervisor(s) and student(s) learning experience. Finally, we would like to close the paper by offering the reflections of one of our co-authors (a PhD candidate) on her experience of SFRS:

As a novice researcher and PhD candidate, facilitation of my research using SFRS has allowed me the space and time to more broadly explore my research topic ...and [the] implications of my research for ongoing clinical practice. SFRS has ensured that I have remained focussed on the issues, questions and solutions that ultimately matter.

I am well aware that ... my initial drafts of written work, could have been better. My SFRS supervisors didn't chastise me but engaged me in solution focused

questioning around what and how I would know what I need to know in order to move forward.

Whilst my ... supervisors provided initial examples of the SFRS approach, it has become an unconscious part of all of our ongoing interactions, and sustains an air of positivity around the supervision sessions. In fact it has been almost impossible to contain the solution focused approach to my research space alone. I now find myself speaking to and providing example of solution focused discourses around change with positive effect in my clinical and managerial workplace.

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# Teaching Introduction to Psychology: Promoting Student Learning Using Digital Storytelling and Community Engagement

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*Clayton State University*

This paper demonstrates how partnering with digital storytelling initiatives, like the StoryCorps project, can yield fruitful service-learning opportunities, while also supporting innovative approaches for teaching students from a range of disciplines who are enrolled in Introduction to Psychology (PSYC 1101). While various pedagogical tools for teaching psychology exist, StoryCorps provides a unique opportunity to expose students to a large range of people and related stories to which they may otherwise not have been exposed. This paper outlines a model for how a partnership with a local digital storytelling initiative (StoryCorps) can be integrated into a community engaged course and facilitate course activities reflecting an applied, multi-faceted learning environment. Preliminary data comparing student outcomes in the service-learning course to those in the traditional PSYC 1101 course are also discussed.

Introduction to Psychology (hereafter referred to as PSYC 1101) is one of the most frequently taught courses on college campuses (Adelman, 2004). Data suggests that approximately 1,300 instructors taught the course in the 2012-2013 academic years (Market Data Research, 2014). It is further approximated that 1.7 million students take this course each year (APA, 2014). This is likely due to the potential relevance of psychology to any discipline wherein it is anticipated that the students will become professionals serving clients or patients in some capacity throughout their careers. Given their reach across diverse disciplines and the breadth of content covered in the course, PSYC 1101 instructors benefit from having a range of instructional tools to support instructional efforts. As a foundational course for psychology majors, as well as a general education requirement for many other majors, there is a need for instructional strategies that address content specific knowledge while also building competencies (e.g., soft skills) relevant across most disciplines. This may be the only psychology course that non-psychology majors take, making their experience with the content and understanding of course material particularly important.

Given the importance of psychology as a baseline course for many college students, it is critical that innovative strategies for this course be developed, implemented, and assessed to address the needs of a wide range of learners and the diversity of their learning styles. The utilization of the public media program, StoryCorps, is an example of how digital storytelling resources can benefit instructional efforts. Listening to digital stories allows students to experience a storyteller's perspective from his/her own voice and perspective (Smeda, Dakich, & Sharda, 2014). This can be of great value to instructional efforts aiming to challenge students to see the relevance of psychology in the "real world." With this in mind, the present article reviews core considerations for teaching PSYC 1101,

addresses the benefits of service learning and related community-focused projects as a tool for instruction, and details an exemplar of how available public media resources can be used to teach psychological concepts in a manner relevant to everyday real-life experiences.

## Introduction to Psychology Course Content

There is ongoing discourse regarding the content of Introduction to Psychology courses. To date there is no explicit model to inform content selection which could further promote uniformity in instructional practices (Gurung, Hackathorn, et al., 2016). Recognizing the importance of this course for undergraduate psychology majors and as a general course requirement for many other majors, the American Psychological Association (APA) appointed a working group to establish a common core of content for the Introduction to Psychology courses. This work builds on previous recommendations and standards (APA, 2013; Wolfe, 1942) proposing a new structure for PSYC 1101. The model emphasizes grounding in research methods and the integration of 5 pillars addressing biological, cognitive, developmental, social/personality, and mental/physical health issues. Cross-cutting themes representing the following values allow for interconnections across these 5 pillars: cultural and social diversity, ethics, variations in human functioning, and applications (Gurung et al., 2016).

Additionally, a 2014 American Psychological Society working group report (Leder-Elder, Good, Afful, Keeley, & Stiegler-Balfour, 2014) emphasized the need for a more integrated, cross-disciplinary approach to introductory psychology instruction, and the introduction of these cross-cutting themes will better serve the efforts to emphasize the interconnectedness of sub-disciplines in psychology, beginning with the introductory course. This requires a substantial amount of deliberate integration throughout the course, which the working

group acknowledges may represent significant effort on the part of the instructor. However, there are multiple pedagogical avenues to this integration. One such avenue is the incorporation of a community-based project focused on addressing a social problem, either at a global or a local level.

### About Service Learning

Service learning can be an essential mechanism for addressing some of the challenges in developing the PSYC 1101 course. Academic service learning is a credit-bearing course-based experience where students engage in an organized community service activity which meets the needs of a community partner. Further, service learning facilitates students' ability to feel connected to their immediate or distal community through student provision of needed services and/or their exposure to a greater understanding of the human experience. Simultaneously, students reflect upon the service experience as a means to enhance their learning of course material or objectives (Felten & Clayton, 2011). Service learning and related community-based learning activities have been linked to higher GPAs, increased critical thinking and problem-solving abilities, increased self-efficacy, tolerance for and appreciation of diversity, and other benefits (Astin, Vogelgesang, Ikeda, & Yee, 2000; Peters, McHugh, & Sendall, 2006; Gallini & Moely, 2003; Vogelgesang & Astin, 2000).

Service learning can take various forms, including direct-service projects and problem-based projects (Heffernan, 2001). In problem-based projects students relate to the community as "consultants," bringing their specific knowledge to bear on a question or problem for which they might make recommendations or derive a solution. Particularly in the case of institutions serving non-traditional students, the students' consultant experience can occur in the context of the full nature of their non-academic lives (e.g., full-time professionals, older returning students, parents) as they still engage in, and benefit from, alternative, applied learning opportunities and assessments. Further, project-based service learning experiences in a course such as PSYC 1101 can engage students from diverse disciplines in what might be a relatively high amount of unfamiliar academic content in a supportive (by peers and instructor), applied learning context. It is important to recognize that there are diverse examples of what service learning can look like and how partnerships can be formed. The experiences and relationships that emerge through service learning will vary significantly depending on the needs of the local community, availability of community partnerships, and the goals of the selected course.

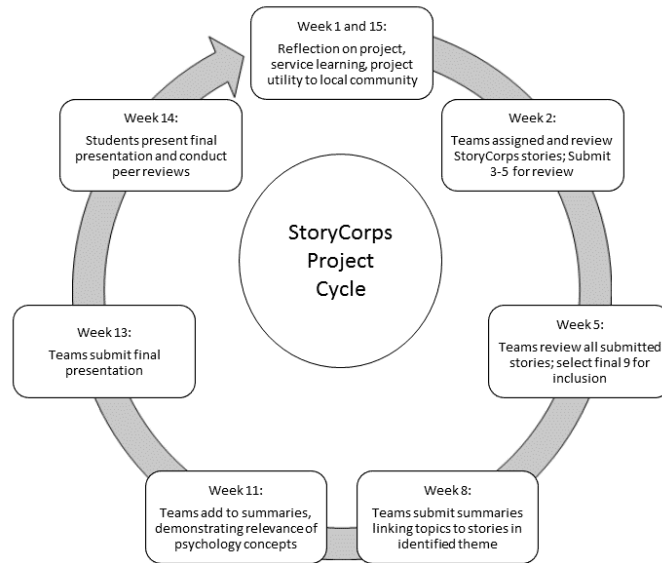
### Digital Storytelling and StoryCorps

This paper presents an exemplar of a consultant-based service-learning project in which Introduction to General Psychology students partnered with a digital story-telling initiative, StoryCorps. In this role students operate as consultants to the local StoryCorps office by providing feedback about how they are using specific stories to understand psychological concepts. At the request of the local StoryCorps office, they also provide feedback about how specific stories they reviewed did or did not resonate with them or better help them understand the human experience.

By facilitating exposure to a range of personal narratives, this partnership provides the opportunity to embed community issues into the course and expose students to case examples. In doing so, they can apply a range of possible psychological concepts and issues (e.g. resilience, brain development, mental health, and identity formation) in the lives of everyday citizens that represent the diverse people and life experiences that are present in U.S. culture. As implemented with the StoryCorps partnership, service learning is also a mechanism that can directly and overtly ensure that Introduction to Psychology courses reflect several of the APA's (2013) learning outcomes for students in psychology programs. This is done by developing a knowledge base for psychology concepts that students explore more in depth through application in course material. Such engagement contributes to critical thinking, communication, and professional development.

The StoryCorps service learning project leverages another powerful pedagogical tool, digital storytelling or narrative (Robin, 2008; Robin 2012; Alismail, 2015; Gazarian, Fernberg, & Sheehan, 2016). Digital storytelling is a modern variation on the ancient practice of storytelling; the addition and integration of available technology such as digital recording allows for the storytellers and the audience to interact and for meaningful stories to be captured and shared by many (Sadik, 2008). In many cases, students plan and create digital stories and narratives (e.g., Borgelt, Brooks, Innes, Seelander, & Paige, 2009; Shelby-Caffey, Úbédá, & Jenkins, 2014; Clarke & Thomas, 2012; Suwady, Pan, & Seow, 2013; Simmons & Tenzek, 2016) while others implement already-produced digital stories as the impetus for student discussion or analysis (e.g., Gazarian, 2010). One readily available repository of thousands of personal digital narratives can be accessed through the StoryCorps initiative. An asset to digital storytelling initiatives is that they can be web or technology-based. Whereas some community partnerships are limited by geography and partnerships may need to occur in the same city, this geographic restriction may be avoided in partnerships that utilize digital story-telling as a learning and service tool.

Figure 1  
*The StoryCorps Project Cycle*



### StoryCorps' Mission

StoryCorps started in 2003 with the mission to “preserve and share humanity’s stories in order to build connections between people and create a more just and compassionate world” (StoryCorps, 2016). StoryCorps involves the recording of interviews that are traditionally presented in small booths with two people who usually know each other well: one as the interviewer and the other as the interviewee. They meet and discuss issues (concerns, subjects) for approximately 30-45 minutes in the presence of a guided facilitator who is monitoring and supporting the process. Resulting interviews are all archived at the Library of Congress. A small subset of these interviews are edited to 3 to 5 minute segments that are then produced for distribution through radio networks affiliated with National Public Radio (NPR). These edited stories can serve as an instructional tool to help students better understand a wide variety of social science concepts which is particularly important given the large range of concepts taught in a survey course like PSYC 1101.

### StoryCorps as an Instructional Resource

As part of the collaboration between the course and the local StoryCorps site, a representative from the StoryCorps site came to the class to explain more about StoryCorps. He discussed the oral history process and purpose and how the students’ work was

of value to the StoryCorps initiative. Through this partnership, students reviewed many of the initiative’s stories and used them as central components of course projects. In doing so, students worked towards two primary goals: (1) analyze how psychological concepts are relevant in society through an assessment of content from selected StoryCorps stories, and (2) demonstrate the utility of StoryCorps as a university-level instructional tool by allowing student “consultants” to present their understanding of how psychological concepts are exemplified in StoryCorps stories. As an additional service to the StoryCorps partner, students provided a summary regarding their thoughts about StoryCorps stories they reviewed during the course. These summaries allowed them to indicate which stories resonated with them and helped them to better understand the human experience, as compared to those that did not.

StoryCorps stories are ideal for keeping students engaged and challenging them to truly understand the relevance and implications of various, sometimes complex, psychological terms. The StoryCorps archives have a substantial quantity and range of content from which students can select. They then use these stories to more thoroughly examine and understand psychological concepts. When students deconstruct the StoryCorps stories, analyze, then reconstruct their understanding of the stories through psychological lenses, they are engaged in the highest levels of learning (CETL, 2016).

## Method

### Project Details

Implemented as part of an institution-wide academic community engagement initiative, the semester-long StoryCorps service learning project used team-based learning and scaffolding as the primary frameworks to structure learning experiences for students. Independent activities, team-based outcomes, and related assessments were integrated. Feedback on each component was used to inform student efforts on the next component while also supporting their competencies for critical thinking and group-based collaboration.

Astin and colleagues (2000) identified several considerations in maximizing the positive effects of service learning on student outcomes. These considerations included (1) the provision of the opportunity for students to process the service learning experience with each other, (2) the instructor's encouragement of class discussion on the service project, (3) the frequency with which the professor connects the service experience to the course subject matter, (4) and the presence of various types of reflection activities. The application of these considerations is represented throughout the course project plan described in detail below. A timeline for the project is detailed in Figure 1.

**Pre-implementation preparation and pre-project reflection essay.** An important aspect of a successful service learning experience is a well-defined community partnership, one which is mutually beneficial to both the students and the community partner. In their overview of the elements of implementing successful service learning initiatives in higher education, Bringle and Hatcher (1996) note that community representatives should be involved in the identification of community project needs both at a macro (e.g., county) and micro (i.e., course) level. For this reason, an agreement between the instructor and a specifically identified community partner representative (in this case, the StoryCorps Regional Coordinator) was contacted prior to implementing the course project. The service learning agreement specified how the students' work would benefit the community partner and highlighted student learning outcomes. To help students better understand StoryCorps' goals and the project, the regional director presented to the course. Once students were briefed on the project and all questions were addressed, they completed reflection essays that challenged them to consider how this project would be of utility to their community partner and themselves.

**Phase 1: Topic and segment selection.** Students were introduced to the service-learning format of the

course during the first week of class with a detailed review of the project guide and sample StoryCorps stories. By week two of the 16-week course students were placed into their teams of 4-6 people according to alphabetical order. The initial assignment involved two parts. First, students engaged in initial discussion regarding potential areas of interest for their overall project. Outcomes of this discussion informed the lenses through which students reviewed the StoryCorps website and selected potential stories for their projects. Students were directed to ask themselves and team members questions such as, "How does this story reflect the potential topic for our team's project?" Students were encouraged to review at least 20 stories from [www.storycorps.org](http://www.storycorps.org) before submitting 3 final selections that included a brief summary of what these stories shared in common that could reflect a potential topic. Students' independent final selections of their stories were submitted for an individual grade. Following the individual submission of stories, groups finalized their decision about the broad topic that would anchor their project (e.g., parenting, discrimination, resilience, health, psychopathology). By week 5, the first team assignment is submitted, which includes the topic and final three story selections (team assignment #1). Directions are outlined in Appendix A.

**Phase 2: Identifying themes within topics.** The next task was for students to identify a theme related to psychology that would consistently link the stories together within their selected topic. This required an in-depth understanding of the story and the ability to recognize common issues presented within the stories. As the students worked to determine an appropriate theme, they received supportive feedback from the instructor to inform their selection process. For example, one team identified LGBTQ issues as a topic and recognized a theme of resilience in the stories that they reviewed as consultants. To support the process of getting to this outcome, students were encouraged to ask themselves questions such as, "What is a theme linking all of these stories together?" "What is a link from one story to another?" and, "What do they have in common?" Once topics, stories, and themes were identified, teams submitted the assignment, including a brief summary of how the theme is reflected in the stories and linked to the topic (team assignment #2). Directions are in Appendix B.

**Phase 3: Integrating psychology concepts.** One of the most challenging aspects of the project for the students was the accurate application of psychological concepts, starting at approximately week 11. This portion of the project required student teams to select at least 3 concepts that would be relevant to each of the featured stories. Selected concepts must be appropriately linked to the project's stories, theme, and topic. Multiple days are dedicated to this process

wherein students' understanding of specific concepts, many of which would have been discussed previously in the course, was challenged. The instructor intentionally allocated class time to support students in understanding how psychological concepts relate to, and can help explain, complex personal, familial, and social experiences. This process revealed the difficulty that is sometimes present when working not only to understand psychological concepts in the context of the text, but also to examine the complex and full lives of StoryCorps participants from a broader biopsychosocial lens whenever possible. For example, when exploring the topic of LGBTQ issues with a thematic focus on resilience, students connected concepts of positive reinforcement, stereotypes, and identity formation to a selected story. Team-based learning (Michaelson & Sweet, 2011) was used to help team members challenge each other and come to consensus about what they would present about the concepts and the stories in a way that was professional and productive. A goal of this process is the promotion of cohesion among team members that could support their later efforts to effectively present information to peers and demonstrate the utility of StoryCorps as a learning tool (Team Assignment 3). Directions are in Appendix C.

#### **Phase 4: Designing a professional presentation.**

By week 12 teams were developing their formal presentation that integrated 3 StoryCorps stories, discussed how at least 3 psychological concepts link to each story (9 concepts in total), and explained the thematic connections among the stories. In their consultant roles teams were challenged to collaboratively deconstruct stories, apply concepts, design a creative method of disseminating their conceptualizations, and disseminate the information via an oral technology-based presentation. The integration of these responsibilities was designed to strengthen their psychology-specific and general professional skills competencies, while also meeting the needs of the community partner.

PowerPoint presentations were the minimum requirement for information delivery, but the use of other creative resources was strongly encouraged. Alternative options included, but were not limited to, a follow-up interview from original StoryCorps participants, integration of mini-movies from student replications of StoryCorps stories, and use of VideoScribe to illustrate selected concepts (Team Assignment #4). Directions are in Appendix D.

**Phase 5: Oral presentation of their formal presentation and post-project essay.** Oral presentations are the culminating activity for the course. Though Phase 4 activities included the development of a group project and yielded a group grade, the Phase 5 oral presentations allowed students to receive an individual grade based on their

demonstrated knowledge and competencies. In the context of their group, student consultants orally presented their collaborative deconstruction of the StoryCorps stories to their peers in a manner that teaches about the 9 selected concepts. The assessment of the oral presentations was based on the following criteria for individual presenters: (1) demonstrated teamwork; (2) high level synthesis of information including concepts, theme, and topic; (3) professional dress and professionalism when interacting with peers and professor during the presentation; (4) the ability to communicate with confidence in an articulate manner; and (5) a well-organized presentation. Students' final task for the semester was to complete an additional reflection essay about their experiences in the course, thoughts about service learning, and perspectives about how this type of learning experience may (or may not) have increased their understanding of psychological concepts.

#### **Participants**

This paper reflects data from two different psychology courses: one is a service-learning course, and the other one is not. Participants in the service learning PSYC 1101 course included 24 students and the non-service learning course included 17 students. These courses were hosted at a small southeastern university that enrolls approximately 7,000 students (Clayton State University, 2016). The institution offers 34 undergraduate and 11 graduate programs to a student population with the median age of 29. Two thirds of the student population are over age 22, thus outside of the traditional college student demographic regarding age. Females comprise 69% of the student body. Race demographics indicate that the 61% of the students identify as Black, 21% White, 6%, Asian, 5% Hispanic, and 3% as multiracial. Introduction to Psychology is a core course for the majority of majors at this institution.

#### **Measures**

Student final grade average data was acquired through instructor records of final grades submitted. Attitudes about service learning were assessed using the Community Service Attitudes Scale (CSAS). Shiarella, McCarthy, & Tucker (2000) developed the CSAS scale to measure multiple aspects of peoples' attitudes toward community service. Subscales include the following: awareness that others are in need, the perception that there are actions that could relieve that need, recognition of the respondent's own ability to provide help, a feeling of connectedness to the community, and a sense of obligation to help based on personal or situational norms and empathy. It also includes an assessment of both the costs and the benefits to the

Table 1  
*CSAS Subscale Comparisons*

	Pre	Post	df****	t
Ability	5.67	6.00	14	1.46
Awareness	6.08	6.28	15	1.15
Actions	5.80	6.08	14	1.72**
Connectedness	5.10	5.58	13	2.38*
Norms	6.18	6.26	15	0.60
Empathy	5.96	6.02	14	0.30
Costs***	3.61	3.93	11	0.77
Benefits	6.36	5.80	13	-1.26
Seriousness	4.94	5.05	12	0.46
Intention	5.63	5.79	15	0.77

\* $p < 0.05$

\*\* $p = 0.1$

\*\*\*reverse coded

\*\*\*\*in some cases students did not complete all items for a subscale and were dropped from analysis of that subscale.

respondent of engaging in the helping behavior as well as the seriousness of the consequences of not acting, and finally the intention to engage (or not) in community service (Shiarella, et al. 2000).

### Procedures

Students enrolled in the service-learning course were asked, but not required, to complete the CSAS. Approximately 75% of the students enrolled in the courses completed the survey. The CSAS survey was administered to students in the service-learning course as part of the on-going data collection associated with the university's service initiative. Students were asked to complete the survey twice: once prior to starting the StoryCorps project (pre-test) and again afterwards (post-test). Use of all data reflected in this manuscript was approved by the university's Institutional Review Board.

### What We Have Learned

While limited empirical data is available, preliminary data about the project suggests that students benefitted from the StoryCorps initiative in multiple ways. In total, 100% of service-learning students received a C+ or better as compared to 89% of the non-service-learning students who received a C+ or better. Regarding student attitudes about civic engagement, available CSAS data supports a trend in increased favorability towards service learning for most of the assessed indicators. Average ratings for the subscales are included in Table 1, as well as results of paired t-tests of the pre- and post-project ratings.

### Discussion: Benefits, Challenges, and Limitations

It is important that innovative and accessible resources that support instructional efforts to make sense of concepts relevant to the range of diversity comprising today's university student population be explored and utilized whenever possible. The goal of this paper is to disseminate such a resource and provide a framework that can be modeled or adapted as necessary. While there are benefits to using non-traditional pedagogical approaches, there are also challenges and limitations. For example, student involvement the StoryCorps service learning project presented benefits, challenges, and considerations for future implementation. As participants in an indirect service-learning project, students initially did not feel that they were "hands on" enough to be making a real difference for the community partner. Thus, there was repeated effort to reinforce the significance of their contribution through the semester. Data suggests that, though there were initial concerns, students reported that their involvement with, and connectedness to, community increased. While there were, for the most part, increases in the CSAS subscales from pre- to post- project (in Ability, Awareness, Actions, Connectedness, Norms, Empathy, Seriousness, and Intention to Engage), changes from pre- to post-project were only statistically significant for Actions and Connectedness. There are a number of possible explanations for this, including small class size and the indirect nature of the community engagement project. Nonetheless, the significant increase in the Connectedness subscale, which may indicate that the completion of the project and exposure to the various StoryCorps stories fostered greater community connection, in combination with a near-

significant increase in Actions (student awareness their actions can help with a perceived need) is encouraging.

When examining the utility of this tool it is advantageous to assess how this approach aligns with emerging ideas about instruction for introduction to psychology. A strength of the structure of this course is not only that it addresses key pillars or domains of psychology (Gurung, et al., 2016), but that it challenges students to engage in an ongoing process of (1) investigation across these pillars and (2) synthesis of information in a manner relevant to their interests, both personally and professionally. In doing so, students are engaged in the highest level of reasoning. Within the scope of this project, the investigation and synthesis activities are analogous to the review and assessment of archival data, giving students some insight to processes involved in that methodology. Students spend significant time reviewing StoryCorps stories, deconstructing these stories from a psychological perspective, and applying relevant concepts. A particular value of this on-going team process is that students cultivate the development of “soft skills” that include personality traits, goals, motivations, and preferences that are valued in the labor market (Heckman & Kautz, 2012). The practices of effectively working as a team, utilizing adaptive communication and interpersonal skills, and taking responsibility have been identified as among the top 10 soft skills desired by workplace executives (Roble, 2012). One of the strengths of this project is that it works to overtly cultivate these skills through team-based learning and oral presentation activities. It is also possible that exposure to a range of stories from people of diverse backgrounds and life experiences prepares students to understand social issues in a more thoughtful and active manner.

A project of this scope also has some clear challenges. First, there is a need to make the value of the project relevant to a range of disciplines in which students are required to take this course. Some students, particularly non-psychology majors, may struggle to see the relevance of the wide variety of topics presented in Introduction to Psychology; therefore, the need to engage in such an involved project may not be obvious to them. For example, when a class activity asked students to provide an example of how or why psychology was relevant to their field, one student replied, “It is not. I work with computers all day.” Other students may feel that they get enough information about how to interact with their clients (e.g., business students) or patients (e.g., nursing students) through other courses. Thus, as the project unfolds through the semester, it is important to repeatedly demonstrate the relevance of the activities and content to students’ lives.

Secondly, the benefits of this course project are limited by challenging group dynamics. One of the most frustrating of these dynamics involves social loafing, wherein a person exerts less effort than their team members on a shared task

but still anticipates benefitting from the group effort. In reality, differing levels of student engagement and contribution to team projects is expected on all projects – be it academic or professional. However, social loafing in group projects can feel unfair to those students putting forth effort, and they may feel unprepared to manage it. Educators of all disciplines must actively work to develop appropriate intervention strategies in the context of team projects or team-based learning practices. Such strategies include, but are not limited to, including a performance measurement for each student (e.g., final team presentations), capping the number of individuals in the team to 5, and incorporating peer evaluations during the semester (Rich, Owens, Johnson, Mines, & Capote, 2014).

Finally, the issue of burden vs. benefit (Peachy & Baller, 2015) is an important consideration when implementing team-based projects, particularly in an entry level course like PSYC 1101. Students and faculty have limited time-based resources to dedicate to any project. While applied learning is valuable, it can be perceived as disproportionately time consuming relative to traditional learning tasks. Group assignments may feel burdensome to students as they may have to communicate with 3 to 4 team members outside of class. Some members may not be as responsive. There may be additional stress associated with having to complete a major course task while not having full control regarding the quality of the final product. This stress can be exacerbated in a semester-long project. To decrease the likelihood of problems further into the course, these challenges and strategies for managing them are introduced in an overview email sent prior to the first day of class. This gives students the opportunity to engage in the course and arms them with knowledge informing their ability to determine if the course is a good fit for them at this point in their college trajectory. The course project is also discussed at length during the first 2-3 class meetings so that students can better understand project details and make decisions about whether or not the course will be a good fit for their needs and available resources.

There are challenges and opportunities for improvement that warrant further discussion when considering how this instructional resource can be integrated into courses. Faculty interested in doing team-based projects always need to be sensitive to course sizes and the types of projects that they, the faculty, can manage. As implemented in a 30-person course, approximately 6 groups can be developed, and this is usually manageable. Increased resources (e.g., a graduate student assistant) may be necessary for class sizes exceeding 60 students. Also, it may be advantageous to utilize a learning management system (LMS) for facilitated discussion groups that can allow professors to provide direct feedback outside of the formal seated course or if this activity is being



completed in a hybrid or full online format. A benefit of using StoryCorps or another open-source digital storytelling resource is that there is evidence to support that it would also benefit other fields in social science, as well as the health sciences (Simons & Tenzek, 2016; Savundranayagam, Dilley, & Basting, 2011). There is also a likely opportunity to adjust the research portion of this initiative to more overtly integrate the research process. For example, story content can be looked at from ethnographic lenses (Whitehead, 2005) to create a holistic experience of the various cultural systems influencing storytellers and resulting stories. Students can also gain exposure to more general qualitative analysis approaches by engaging in activities that involve the coding of story elements according to specific psychological concepts. For example, students can be required to log their strategies for evaluating the relevance of the psychological concerns and building a consensus regarding which terms should be used. The presentation of this data can be formalized and diversified to help students understand that research can be completed and presented in a variety of ways. Doing so may be a healthy complement to the traditional quantitative methods presented in their text. This formalization can allow for the relevance and utility of the research to become more apparent. From an academic community engagement standpoint, while these students did not present to the community partner, it is an advisable component to add to the course. This would more clearly close the loop with the partner while further increasing students' awareness of the effects their actions can directly or indirectly have on community initiatives. Finally, the costs and benefits of engaging students in this type of pedagogy should continue to be assessed. It is important to consider these limitations while pursuing innovative strategies for cultivating future professionals.

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## Appendix A

### Identifying StoryCorps Segments

The task for this part of the project is for each team to make the final selection of the three StoryCorps stories ([www.storycorps.org](http://www.storycorps.org)) that will anchor the course projects. Teams are advised to choose from the stories reviewed by team members, but they are not limited to these options. As this review occurs, teams are encouraged to solidify their topics.

Students may ask themselves the following questions to determine if a segment is suitable for their projects:

- a. "How does this person's story reflect the topic(s) that are of interest to our team?"
- b. [thinking ahead] "What is a theme linking all of these stories together?"

In your teams discuss this question during segment selection. If it makes sense to you and if you can identify several points answering these questions, then that may be an appropriate segment to incorporate into your project. The assignment submission should include the topic, links to the stories, and titles for each story.

## Appendix B

### Determine the Theme

Each presentation should reflect a topic, include three stories related to that topic and integrate 9 psychology concepts. Ultimately the stories are used as mechanisms to illustrate the psychology concepts.

The task for this portion of the assignment is for each team to examine each story and formulate a theme that links the stories together. For example, the overall project topic LGBTQ issues can have theme of family connections or an alternative theme of rejection. Whatever the theme is, it should be linked to the topic and reflected in the actual stories. The assignment submission should include the topic, links and titles to the stories (as previously submitted), the theme, and a summary of how the theme connects the three stories. The titles can be the brief quotes associated with each story (example: "I'm not interested in going home. I just want to drive my truck" from [Idella Hansen and Sandi Talbott's Story](#)).

## Appendix C

### Integrate Psychological Concepts

The task for this portion of the assignment is for each team to demonstrate a connection between your understanding of your topic, the theme, and psychological concepts presented in the text. For each StoryCorps segment, at least three psychological concepts should be reflected. These concepts can be related to any of the text. Concepts should reflect different areas of psychology so do not restrict the selection of concepts to one chapter. Teams are encouraged to select topics that each team member will be able to speak about clearly and accurately during the presentation of the final oral presentation. In doing so, they should demonstrate an understanding of how/why these concepts are relevant to people who may be hearing them and linking them to the StoryCorps segments.

The assignment submission should include the topic, links and titles to the stories (as previously submitted), the theme, and a list of the 9 terms that will be integrated into the presentation.

## Appendix D

### Design a Professional Presentation

The task for this portion of the project is for student to develop a presentation that demonstrates how psychological concepts are very much present in people's lives as evidenced by stories from StoryCorps participants. In this aspect of their consultant roll students will collaboratively design the presentation that demonstrates their deconstruction of the StoryCorps stories, integration of psychological concepts, and demonstrate an understanding of this integration using (at minimum) PowerPoint. PowerPoint presentations are the minimum requirement for information delivery. Students are strongly encouraged to utilize other mechanism for presenting the content.

The final project submission will include the following components: the topic, links to the stories with images of those who participated (available on website), titles of the stories, and a statement of the topic and the theme. Additionally, the 9 concepts should be integrated in a way that allows their connection to the story to be clearly evident. Finally, a concluding slide should reflect the theme of the project. While the final PowerPoint (or alternative presentation platform) presentation is a team project, the actual presentations will be individually graded.

