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Redefining Online Discussions: Using Participant Stances to Promote Collaboration and Cognitive Engagement

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Advances in technology are having a profound impact on distance education as online learning is becoming a preferred educational option. Within these online learning experiences, the asynchronous online discussion has evolved into one of the most commonly used communication tools. However, a lack of cognitive processing and interaction in the discussions appears to limit the potential benefits as suggested within social constructivist theories. This research analyzed participant responses and postings in online discussions and identified seven stances relative to collaboration and cognitive engagement of participants. A taxonomy was created that allows categorization of participant stances with respect to the two constructs. Implications for teaching and research are presented with attention to facilitative prompts, which are used to enhance collaboration and participation within online discussions.

Ubiquitous access to technology and a focus on "anytime, anywhere" computing has had a tremendous impact on the methods and means people use to communicate and learn (Gura & Percy, 2005). Nowhere is this shift more evident than in the realm of higher education as online coursework has become a commonly accepted learning option and online enrollments have shown steady increases. In 2009, nearly 5.6 million university students chose to enroll in an online course, an increase of nearly 21% from just one year before (Allen & Seaman, 2010). As a result, universities and post-secondary institutions are now placing a great deal of emphasis on developing online programs to capitalize on the opportunities presented by these increasing enrollments. The challenges, however, are that online instruction requires a different set of teaching skills and that stakeholders at all levels must direct attention toward the practices and strategies that maximize the potential benefits of online learning and facilitate the achievement of sought after learning outcomes.

The authors' universities have proactively responded to the changing nature of higher education through the implementation of online instruction within various programs across campus. Our departments have been at the forefront of adapting our practices, and the faculty has engaged in examinations of both pedagogy and delivery methods. The goal of these ongoing efforts has been to identify and integrate the "best practices" of online instruction into the design and instruction of courses. One area of focus has been the development of effective and efficient online discussions, which have evolved into one of the more commonly used communication tools in our courses. A consistent concern, however, has been the lack of in-depth or critical thinking and meaningful interaction by students in these online discussions. In an effort to address this concern, this investigation was conducted to explore the nature of online discussions through an analysis of participant responses and postings. The anticipated result was the development of a taxonomy of "stances," defined as characteristic attitudes and behaviors that participants demonstrated through their postings within online discussions. The research questions used to frame this investigation were:

1. What stances do participants adopt as they interact in online discussions?
2. How can these stances be described?
3. How do participants' stances affect online discussions?

Related Literature

Distance education, in its most basic sense, involves the spatial separation of the instructor and learner from the traditional classroom environment. The concept of distance education has a long history, yet recent technological advances have changed its form and function due to the advent of technology that allows anytime access to content and the enhanced ability to communicate (Benigno & Trentin, 2000; Lapadat, 2002). Online learning, defined as a course of study with 80% or more of the content delivered via the Internet (Allen & Seaman, 2010), represents a relatively new form of distance education that is quickly becoming a preferred option in today's educational climate. Its rising status is evident in the growing number of educational institutions that now include online education in their strategic goals as well as the increasing enrollment of students in online courses (Allen & Seaman, 2010).

One explanation for the rapid expansion of online learning is the development of technology that expands the capabilities of computer-mediated communication (CMC), or the ability to send and receive messages through networked computers. Mobile devices, including phones and laptops, can access various

network wirelessly, creating nearly limitless access to materials and other people. Using these various forms of CMC, online learning offers opportunities to "communicate, collaborate, and interact . . . without regard to temporal or physical location" (Hobbs, 2002, p. 2). This inherent flexibility extends the potential for collaboration and, subsequently, for building supportive communities and enhancing cognitive development (Garrison, Anderson, & Archer, 2001; Zhu, 2006).

To fully understand the potential benefits associated with the current methods of online learning, though, it is necessary to examine the related research that has informed the field to date. The original conceptions of distance education utilizing CMC created the necessity for pioneering researchers to study and explain the types of interactions and related processes within discussions that advanced learning objectives. Using content analysis, which involved examinations of the written records produced within CMC (Yukselturk & Top, 2006), a number of models and frameworks explored the benefits associated with our present conceptions of online learning, including critical thinking skills, knowledge construction, and collaboration. It is important to acknowledge these contributions and use them to inform our current practices and research.

Content Analysis Frameworks and Models

In what many consider to be the seminal work exploring the use of CMC, Henri (1992) developed a framework to identify both cognitive and social elements that positively impacted learner interactions and enhanced learning outcomes. It focused on five dimensions of networked discussions: participation rate, social cues, interaction type, cognitive skills, and metacognitive skills and knowledge. The framework proved to have limited effectiveness for the classification of messages, however, as it was constructed within a teacher-centered instructional model and lacked precise criteria for capturing the full discourse within a discussion (Howell-Richardson & Mellar, 1996; Kanuka & Anderson, 1998). As a result, co-construction of knowledge within a group of participants could not be assessed (DeWever, Schellens, Valcke, & Van Keer, 2005). Regardless of these shortcomings, it has served as a foundation for many models that followed, and numerous studies have built upon this framework to accommodate new directions in the analysis of electronic discussions (Marra, Moore, Klimczak, 2004).

Not long after Henri's pioneering work, Gunawardena, Lowe, and Anderson (1997) developed the Interaction Analysis Model for Examining Social Construction of Knowledge in Computer Conferencing (IAM) to explain processes specific to the social construction of knowledge. IAM proposed five phases that reflected movement from lower to higher cognitive levels: (1) sharing and comparing information, (2) discovery and exploration of dissonance, (3) negotiation of meaning and knowledge co-construction, (4) testing and schema modification, and (5) application of new knowledge. Movement within the phases was facilitated by group interaction and negotiation of meaning relative to statements and content. Analyses using the model revealed instructional design was influential in the level of discourse and, subsequently, the achievement of higher levels of thinking (Gunawardena et al., 1997).

Finally, in what is likely the most referenced framework to date, Garrison et al. (2000) developed the Community of Inquiry (CoI) model under the premise that to encourage active participation and to foster cognitive manipulation of content, a sense of community must be developed in an online learning environment. Within the CoI model, there is a focus on "critical thinking within a group dynamic as reflected by the perspective of a community of inquiry" (Garrison et al., 2001, p. 11). The model suggests that as learners engage in online dialog, existing perceptions are examined and new ones are considered within the ongoing information exchange.

Three overlapping elements of presence comprise the CoI framework: cognitive, social, and teaching. Cognitive presence refers to the learner's ability to construct meaning and thoughtfully integrate and reflect on understanding while involved in a community of learners. Within the community, the individual as well as the group explores a common problem, introduced through a triggering event, and critically reflects upon and exchanges information about the issue or problem. Within this exploration, the learner develops social presence as she/he participates in meaningful discourse with others focused on the common objective or purpose. Relationships in which the learner is emotionally and socially invested begin to form. Garrison et al. (2001) describe social presence as including affective communication, open expression, and group cohesion as learners collaborate, exchange information, and accommodate each others' perspectives around focused inquiry. Finally, the notion of teaching presence includes the design of learning opportunities and the methods used by the instructor to support interaction among participants. The goal of teaching presence is to facilitate higher-order thinking and effective social and collaborative processing that leads to higher-order thinking, while maintaining an effective sense of community. Taken together, the three constructs offer a significant framework by which to understand how communities of inquiry in online environments are established and function to foster collaborative processing of course content.

Recent investigations have built upon the foundation established by these frameworks and used various characteristics to examine and classify exemplary practices, including:

- cognitive processes (Khine, Yeap ,& Lok, 2003),
- critical thinking (Dooley & Wickersham, 2007; Garrison et al., 2001),
- interaction types (Bernard et al., 2009; Khine et al., 2003; Liu & Tsai, 2008),
- quality of thinking (Khine et al., 2003), and
- nature of participation (Knowlton, 2005).

Current examinations are likely to access information from computer-mediated discussions that are now often asynchronous as this form of discussion is increasingly identified with critical learning objectives associated with online instruction and learning.

Asynchronous Online Discussions

The asynchronous online discussion (AOD) is a communicative tool that has been observed to promote "a level of reflective interaction often lacking in a face-to-face, teacher-centered classroom" (Rovai & Jordan, 2004, p. 3). Participants within AODs are free from the time constraints inherent in face-to-face interactions or within real-time computer-mediated interactions, such as chats or instant messaging (Cheung & Hew, 2004). This allows them to examine a textual (digital) record of all communication multiple times. As a result, the opportunity to reflect on questions and responses is maximized as content is revisited.

Interaction. AODs are built and accessed within principles associated with social constructivism (Vygotsky, 1978) and the potential for collaboration and communication are often referenced as a primary benefit associated with their use. Interaction comes in the form of writing, reading, and responding to notes or posts as participants exchange information about experiences, discuss course content, or brainstorm solutions to problems. Investigations have revealed that interaction is enhanced when asynchronous discussion boards are used within online courses (see Anderson, 2004; Bliss & Lawrence, 2009), but this appears more likely when specific conditions exist. For example, when effective guidelines were coupled with prompts that allowed discussants to reflect upon, adopt, and share multiple perspectives, response rates and collaboration were highest (Biesenbach-Lucas, 2004; Dennen, 2008).

Schellens and Valcke (2006) noted that group size is also an important factor within the interaction of participants as smaller groups resulted in greater collaboration. These smaller groups may facilitate creation of a sense of community as they maximize opportunities for learners to connect (see Balaji & Chakrabarti, 2010). This would be consistent with tenets from the CoI framework (Garrison, Anderson, & Archer, 2000) that described communities of inquiry as essential to establish conditions necessary for collaboration between learners. Participants need to feel a "sense of connection, belonging and comfort . . . among members of a group who share a common purpose and commitment to a common goal" (Conrad, 2005, p. 1).

Student interaction can also be hindered by a lack of motivation or perceptions that the AOD lacks relevance (Beaudoin, 2002). The resulting discussions are likely to lack the sense of community necessary to promote interaction. In other instances, some students may not be able to effectively process or interpret the text-based information that is the primary method of communication, especially given the necessity of following "conversations" over an extended period of time (Gunawardena et al., 1997). As a result, their participation is limited, thereby diminishing overall collaboration and the related benefits associated with optimal learning of content.

Critical Thinking. Inherent within successful AODs is the use of meaningful discourse to facilitate critical engagement with the content that is the focus of the experience (Gilbert & Dabbagh, 2005). Numerous studies have shown that effective AODS produce an increased level of cognitive thinking and knowledge construction within participants (Kayler & Weller, 2007; Lee-Baldwin, 2005; Schellens & Valcke, 2006). Potential for these outcomes were maximized when learning objectives were linked to real-life experiences within moderately complex tasks. Participants in the AODs were more effectively able to understand the applicability of the content within the greater context of learning (Khine et al., 2003; Schellens, Van Keer, DeWever, & Valcke, 2009). Ajayi (2009) also concluded knowledge development increased as participants shared information regarding their beliefs and experiences. Critically engaging with and reflecting on content prior to sharing was theorized to account for differences.

Research that has focused on cognitive processes within discussions has identified a hierarchy of critical thinking indicators such as: clarification, making inferences, using strategies, and assessing information using evidence as a means to objectively measure thinking levels (Garrison et al., 2001; Henri, 1992; Newman, Webb, & Cochrane, 1997). Progression within the hierarchy was suggested to indicate the development of progressively higher levels of thinking (i.e., Bloom, Englehart, Furst, Hill, & Krathwohl, 1956). The difficulty with the coding schemes to date, however, is that many present a measure of critical thinking for a group and cannot effectively measure

individual critical thinking. In addition, according to Perkins and Murphy (2006), the instruments used are "too cumbersome for use by instructors or students wanting to measure or identify engagement in critical thinking" (p. 298).

The prevalent model that has successfully linked critical thinking to the written communication specific is Garrison et al.'s (2000) CoI model, which has suggested the idea of cognitive presence. Cognitive presence represents the extent to which participants in an online discussion can or are willing to engage in critical thinking and use communication as a means to construct meaning (Garrison, 2003; Kanuka & Garrison, 2004). It has been associated with critical thinking as it "reflects higher-order knowledge acquisition and application" (Garrison et al., 2000, p. 7) within a community of inquiry. Critical thinking can be supported in an online environment due to the continuous access to the discourse occurring within a discussion. Havard, Du, and Olinzock (2005) further contend that this process facilitates "long-term retention of material" (p. 125). This appears contrary to research that has revealed that most participants engaged in online learning do not progress into the advanced levels of critical thinking (Christopher, Thomas, & Tallent-Runnels, 2004; Garrison & Cleveland-Innes, 2005; Kanuka, Rourke, & Laflamme, 2007).

Zhu (2006) introduced the term "cognitive engagement" as she developed the Analytical Framework for Cognitive Engagement in Discussion, which incorporated interaction types from prior frameworks to explore the processing of content within AODs. Zhu (2006) defined cognitive engagement as "attention to related readings and effort in analyzing and synthesizing readings demonstrated in discussion messages" (p. 454). To circumvent the difficulty of directly observing cognitive engagement, she analyzed discussion transcripts. Her rationale was that transcripts provided an effective tool to note specific behaviors that would be indicative of participants who would be categorized as cognitively engaged. The behaviors she cited included: seeking or analyzing information, inquiring or starting a discussion, responding, negotiating, and synthesizing (Zhu, 2006). She also found that the type of interactions that occurred within discussions provided learning benefits. For example, when participants were actively sharing information or negotiating within discussions, they were more likely to achieve learning goals.

Role of the Instructor. One area relative to AODs that is receiving increased attention due to its impact on both participation and critical thinking is the role of instructor in designing and facilitating the learning environment. Labeled teaching presence by Garrison et al. (2000), it has been posited to consist of two dimensions: discourse facilitation and instructional design (see Shea, Li, & Pickett, 2006). With regard to the former, some research has shown that communication between the instructor and student helps increase student participation (Wise, Hamman, & Thorson, 2006) and improve knowledge construction (Zhu, 1996). This is more likely to occur when the instructor adopts the role of facilitator or mediator and ensures that the discussion is content-focused and not purely socially oriented (Garrison & Cleveland-Innes, 2005). On the contrary, when a teacher-centered or directive instructional approach is used, interaction decreases (Hull & Saxon, 2009).

Instructional design elements include providing clear communication protocols and assessment procedures related to course objectives (Dennen, 2008), an effective discussion prompt that creates an issue or dilemma for participants to consider or explore (Garrison et al., 2000), and opportunities to apply course content within the ensuing discussions (Hull & Saxon, 2009). Attention to these increased the likelihood that learners were fully engaged in the critical thinking process and resulted in an increase in participation. Some debate still exists regarding assessment, however. Gilbert and Dabbagh (2005) found that when assessment was meaningfully integrated and had clear criteria with regard to the purpose of the AOD, there was an increase in the number of postings per student as well as evidence of higher levels of thinking. However, other research has found that participation was negatively impacted when discussions were assessed and determined that the absence of assessment resulted in a lack of participation in the discussion (McKenzie & Murphy, 2000; Pena-Shaff, Altman, & Stephenson, 2005). While the research is mixed, it is clear that instructors are focused on the assessment of cognitive outcomes as a recent examination of rubrics found the highest prevalence of assessment criteria was related to cognitive outcomes while those assessing participant interaction were the lowest of the four primary categories identified (Penny & Murphy, 2009). This would appear to indicate the importance instructors place upon content learning relative to participant communication.

In truth, the number of confounding variables associated with the structural elements of discussions has made it challenging to examine outcomes associated with the use of AODs. In addition, according to Perkins and Murphy (2006), many of the frameworks proposed to date are better suited for examinations of collaborative dynamics and critical thinking within the broader group context. They are not conducive for examining critical thinking for an individual member of a learning community. Researchers are still determining the definitive qualities and characteristics associated with the effective use of this form of instruction. Central to maximizing the potential benefits of AODs,

instructors need unified frameworks that enable them to create productive interactions among students and to obtain comparable results across related examinations. With this in mind, the current investigation was conducted to build upon the existing research base by proposing a taxonomy of stances that incorporates elements of interaction and collaboration with the level of cognitive engagement for individual participants.

Methodology

Participants & Context

The study participants were 110 students enrolled in four different Master of Arts in Elementary Education classes in a medium-sized public university in the Midwest. All participants were either employed as teachers or had prior experiences in an education-related field. Eighty-eight of the participants were female, and twenty-two were male. All participants were required to engage in asynchronous online discussions and each was assessed based upon his/her participation and contribution to the discussions.

Asynchronous discussions occurred in self-contained courses administered within a web-based learning management system. Each discussion began with an introductory question posed by the instructor to focus participants on key themes, questions, or issues pertinent to the content of the instructor-developed module. As part of the process, the participants were provided with a rubric that was used to assess them on elements of the discussion, including content of posts, references to course readings and multimedia resources, and overall distribution of posts within the relevant time frame of the module. Scores with feedback relative to the information provided in the rubric were given to each participant for all modules that included a discussion component.

Data Collection and Analysis

The process of data collection and analysis encompassed three phases, with each phase progressively moving the researchers toward the identification of the stances that were included as part of the proposed taxonomy. Phase 1 encompassed the identification of relevant discussions and a broad exploration of the attitudes and behaviors, referred to as stances, reflected in the postings of the AOD participants. The primary goal of phase 1 was to develop a comprehensive list of potential stances adopted by participants and to hypothesize the effects these stances demonstrated on the overall patterns of participation and collaboration within the discussions. Phase 2 involved the revision of characteristics associated with the stances identified in phase 1. Subsequent activities included collapsing and combining relevant categories to reach a parsimonious reduction in the overall number of and description of the stances. Finally, in phase 3, stances were defined and exemplars were determined to facilitate testing of the hypothesized stances amid comparisons and discussions.

Phase 1

To begin phase 1, we compiled a list of the eighteen discussions that had occurred in four classes taught by the authors within one semester. Within the list, each individual discussion was labeled with the course number and a discussion number denoting the lesson/module in which it occurred. From this list, six discussions were randomly selected for analysis by choosing every fourth discussion from the original list of eighteen until a total of six was reached.

Once the relevant discussions were identified, our goal was to independently compile a comprehensive list of descriptions of potential participant stances, which would be combined and refined through negotiations within successive phases of the analysis process. To reach this goal, we followed the recommendations of Garrison, Cleveland-Innes, Koole, & Kappelman, (2006), who noted the importance of selecting an effective theoretical framework and unit of analysis within transcript content analysis. In regard to a theoretical framework, we were informed by Fulford and Sakaguchi's (2001) five methods of analysis of interaction in distance education, which includes participants, form, content, personal reference, and function of communication. As our work was exploratory with specific attention towards attitudes and behaviors within the discussion, we decided to focus on participants, content, and function of communication. We felt these allowed us to understand the patterns and functions of interaction and behaviors that occurred within the context of the communicative network, in this case the AOD, as well as the attention directed towards understanding content through exchanges between participants.

The message was selected for the unit of analysis as this allowed us to look comprehensively at each post on the discussion board and to infer a hypothesized stance demonstrated by the respondent in drafting the message (see Rourke, Anderson, Garrison, & Archer, 1999). Using the message as the unit of analysis also adhered to the recommendation of Garrison et al. (2006), who noted using the message may "reduce decontextualization of the communication" (p. 2) within exploratory examinations. This process resulted in the identification of 1,328 messages for analysis.

In conducting the analyses of the transcripts, each of us separately read all messages in two different

discussions without reference to the discussion topics or author. Primary analysis focused upon patterns of interaction between participants and the underlying function of the communication per message. The result was a number of unique descriptions, often broadly framed, that were developed by each of us and that described the:

- communicative intent (i.e., to demonstrate empathy or express disagreement);
- behavior (i.e., addressed the prompt or stated obvious information); and
- relationship to content (i.e., directly focused on content or lacked depth of explanation related to content).

Specific quotations from the discussions were collected to reinforce particular aspects of the descriptions associated with the aforementioned characteristics.

Phase 2

Phase 2 involved the iterative process associated with revisiting and revising our descriptions through "selective coding with constant comparison" (Garrison et al., 2006, p. 4). Our primary intent was to negotiate a smaller, representative list of stances with preliminary descriptions. The process began with comparisons of our individual lists of potential stances compiled in phase 1 to note similarities and differences among our general descriptions with regard to the primary three characteristics. Within the discussions that epitomized this phase, each of us described multiple instances of very similar or exact manifestations of the proposed stances within our classes. However, it also became apparent that though the proposed stances contained similar qualities, the characteristics chosen were not effective in differentiating them in such a manner that would allow us to generalize and test the stance within and across related discussions. As a result, we felt it necessary to move beyond the characteristics (methods) derived from Fulford and Sakaguchi's (2001) work and to revisit other relevant theories of computer-mediated communication. In this manner we felt that additional insights could be gained and our ability to develop specific constructs to frame our definitions and subsequent analyses would be enhanced.

Two processes were embarked upon concurrently to achieve the aforementioned insights and improvements in our definitions. Literature was revisited with a critical eye towards concepts that would allow us to align the descriptions in a more unified manner. The descriptions of the proposed stances were discussed together and examined independently to note what critical features created the distinctions among them. Our first construct, collaboration, arose from a discussion of Garrison et al.'s (2000) CoI model, Zhu's (2006) social network, and the realization that communicative intent within an AOD did not always demonstrate a level of interaction that was positively oriented. In essence, some participants' behaviors, as demonstrated through their posts, showed an indifference or disdain towards working with other students. The result of such posts was a notable change in the patterns of communication between participants as conditions for interaction were diminished. Each of us agreed that this was an important distinction within the participants' intentions to communicate and that the lack of prior attention to this aspect of communication warranted its inclusion in our framework to provide new insights into examinations of participant interaction.

The concept of cognitive engagement was derived from Zhu's (2006) use of the same term to describe higher order thinking within meaning construction. Acknowledging prior research noting the difficulty of coding with respect to critical thinking (see Perkins & Murphy, 2006), we sought to move beyond focus on the level of thinking to encompass our original characteristics of behavior and relationship to content in an effort to quantify whether a participant's stance demonstrated more generalized behaviors with respect to the content without regard to the level of thinking. For example, in our discussions of our proposed stances, we found participants who we described as cognitively engaged included statements such as, "When I think about what the text said and what I do in my classroom," or, "After viewing the video, my first thought turned to how I could implement the strategy." In essence, reference to resources and evidence of processing were present. On the other hand, limited cognitive engagement or disengagement was demonstrated through comments that appeared primarily focused on simply providing a response, such as agreement or empathy, without actually addressing specific content and, hence, not encompassing a specific level within a hierarchy of critical thinking. The result of discussions on this construct was a decision to quantify the discussion posts as representing differential aspects of cognitive engagement along a continuum.

Having agreed to focus on using collaboration and cognitive engagement as the two primary constructs by which our stances could be differentiated, we independently re-examined and refined the descriptions of our proposed stances. As we resumed our discussions, we were able to dialogue regarding the levels of cognitive engagement and collaboration exhibited by each stance. In turn, we were able to note similarities and differences on the levels of two constructs exhibited as well as specific communicative function of the discussion posts used as examples for

the proposed stances. The original independently proposed stances, which numbered more than thirty, were collapsed into a total of nine stances representing various levels of the two constructs along their respective continuums, and a preliminary name was given to each one. Efforts were made to avoid subjectivity in assigning names to the stances, and 100% agreement was reached for each stance.

Phase 3

Having identified the nine stances, each of us individually examined a new discussion using the proposed descriptions of these stances. Additionally, we developed the axis noted in Figure 1 as a visual reference of the proposed stances in relation to collaboration and cognitive engagement. Within this process, we discovered that in two separate cases, two stances were very similar in their overall orientation on the axes and were difficult to differentiate through analysis of the levels of the two constructs or the related intent of communication. For example, one stance labeled "Aggressor" was very similar to another referred to "Criticizer" in that both demonstrated some engagement with content, but both were deemed non-collaborative as comments within these stances were often negative and stifled conversation. As a result, they were combined into the "Pessimist" stance. In each case, we were able to discuss the related stances and come to agreement that the two stances be combined. This resulted in a final list of seven stances.

Using the general descriptions of stances, formal definitions were established for each stance and exemplars were sought from our discussions. Once again, we revisited the data as definitions were tested and re-examined within discussions and assigned a level of cognitive engagement and collaboration to ensure adherence to what was proposed to be a representative list of stances. Messages were classified into the seven different stances according to their demonstration of the characteristics associated with the definition. Additionally, Figure 1 was modified to reflect the final list of seven stances.

Findings

The findings from data analysis identified a series of distinct participant stances in the asynchronous online discussions. These stances were assigned a descriptive term based upon the particular characteristics that were demonstrated by the participants. A total of seven stances were identified and defined:

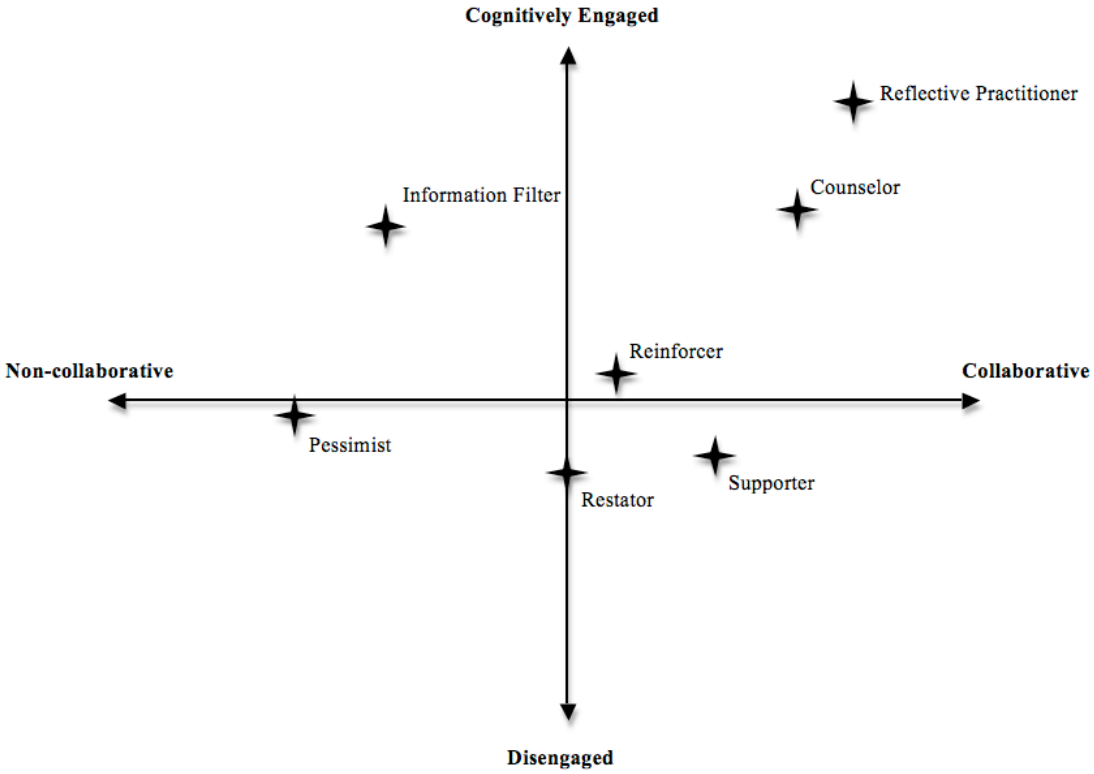
- *Counselor:* an individual who was very task-oriented and focused on addressing the discussion prompts. The counselor was very focused on the struggles of other participants and offered practical advice or suggestions.
- *Information Filter:* an individual who contributed relevant information to the discussion, but the information was strictly factual in nature with limited or no personal application. The focus of posting was to provide and acquire information, thus there was no effort made toward collaboration.
- *Pessimist:* an individual who wrote about how what was being shared would not be effective in his/her classroom or school. The focus was negative and comments sometimes had a skeptical tone. The Pessimist sometimes directly contradicted information presented in the course.
- *Reflective Practitioner:* an individual who looked for similarities to compare practices and then discussed those similarities or offered suggestions for future practice. In this sense the Reflective Practitioner was more self-reflective and made an effort to use this knowledge to help other participants.
- *Reinforcer:* an individual who continually indicated the quality of what was being taught in the course. The Reinforcer wrote about being pleased that s/he was learning the best practices. Postings from the Reinforcer sometimes suggested agreement with others, but seldom extended the academic discussion.
- *Restator:* an individual who was focused on social interaction and seldom contributed new ideas or substantive knowledge. The Restator repeated information from the readings with little effort toward making inferences or interpreting the information.
- *Supporter:* an individual who empathized with difficulties that others were experiencing. The postings were shallow in that they offered positive comments, but did not provide any additional information that would prompt insight or further discussion.

A list of representative characteristics for each stance has been developed to facilitate its identification within a discussion board. In an effort to capture the essence of each stance, these characteristics with an example of each are shown in the Appendix.

Discussion

This research was undertaken to explore the nature of participants' interactions within online discussions through the analysis of their responses and postings.

Figure 1
Graphic Representation of Proposed Stances Relative to Primary Constructs



The goal was to identify and describe stances, or characteristic attitudes and behaviors, that participants adopted within online discussions and to determine how these stances impacted the discussions. The result was a taxonomy that included seven stances identified to represent a combination of the behaviors and attitudes along related continuums of two primary constructs: collaboration and cognitive engagement. The relative location of the various stances within Figure 1 is meant to serve as a visual reference; however, it is important to note that participants could achieve varying levels simultaneously on each of the axes and could potentially move back and forth along the continuum with respect to each construct. We posit the specific location of an individual participant along the axes may vary and that the characteristics included within the definitions and related descriptions of the stances should be the primary factors used in the identification of a particular stance.

Collaboration

Within the study, collaboration was noted as having an important impact on the discussion and ensuing conversations regarding course content. As shown in Figure 1, multiple stances demonstrated behaviors consistent with positive views of collaboration. For example, both the Counselor and Reflective Practitioner regularly asked questions of their peers or offered advice in relation to queries specific to course content. Both of these behaviors were directed towards helping fellow discussants reflect on their own practices. Notably, the difference between the two stances with respect to collaboration was that the Reflective Practitioner was focused upon using the opportunity to engage with and ask questions of others as a potential way to gain information to enrich her own practices. The Counselor, on the other hand, was less introspective in her collaborative relationships. Instead, the Counselor queried others for follow-up information on their circumstances as she sought to provide advice or act as a mentor (Zhu, 1996). Her behaviors and questions indicated that she was not focused on using the relationships to improve her own practices. Examining this in light of Gunawardena et al.'s (1997) framework, the Reflective Practitioner stance exhibits elements related to the co-construction and negotiation

of knowledge, while direct instruction appears to be the underlying principle for the Counselor. In each case, posts of participants exhibiting these stances facilitated continuation of conversations occurring within the discussion board; however, the Reflective Practitioner was able to extend and sustain the conversations for longer periods of time.

While the Reflective Practitioner and Counselor were the most collaborative stances, the Supporter also exhibited attitudes and behaviors consistent with positive views of collaboration. The Supporter was likely to interact with others, showing a willingness to collaborate, but the underlying goal of the interaction was social acceptance within the discussion board. In general, the contributions made by the Supporter were not directed towards helping others improve their practices, nor was there interest in learning from the other participants. Responses were seldom necessary to posts made by the Supporter and the lack of interaction often limited or stopped subsequent discussion. Similar effects were noted with regard to the Reinforcer or Restator, which are shown in Figure 1 as being less collaborative than the Supporter. Participants labeled with these stances responded to others, but not in a true communicative way. The goal behind the communication was not collaboration, but repetition of prior information. The difference between the two stances was that the Reinforcer offered confirmations of practice, while the Restator only repeated information and did not fully engage with other participants or acknowledge practice.

At the other extreme were participants in our discussions that were labeled as non-collaborative and did not exhibit behaviors that promoted interaction. In essence, their behaviors made it apparent that they were not interested in communicating with others. Neither the Pessimist nor the Information Filter initiated conversations through posing questions, nor did they seek to collaborate with others to extend their understanding. In the case of the Information Filter, the primary focus was to post what was necessary to answer the discussion prompt. Seldom did the Information Filter respond to queries, and when he did, it was generally with additional factual information. On the other hand, the goal of the Pessimist appeared to focus on refuting information or experiences contrary to their beliefs or own experiences. These posts appeared primarily directed towards the instructor or facilitator and often had a challenging or aggressive tone. Other participants were unlikely to respond to these posts. The net effect of postings made the Pessimist or Information Filter was a cessation of responses to the thread.

Cognitive Engagement

In developing this taxonomy, three stances were determined to demonstrate the highest levels of cognitive engagement: the Reflective Practitioner, the Information Filter, and the Counselor. Within each of the aforementioned stances, it was evident that discussion participants were examining materials as they were effectively able to cite information from a resource used to present content within the course. The difference between them was in the active processing that occurred as the learner synthesized information from the discussions with course content or personal experiences. The Reflective Practitioner demonstrated his cognitive engagement most effectively as he related content to experiences or changes in personal practice. He synthesized numerous sources of information to support positions taken within the discussion board as he actively reflected upon the beliefs that influenced and directed his actions. Similarly, the Counselor engaged with information as she sought to support her position or the advice she was offering to peers. The primary difference between the two was that the former was focused upon examining his practices in light of content and discussions, while the latter did not address the relationships between the content and personal practices. The Information Filter, on the other hand, appeared to read for information as no evidence of reflection on or synthesis of the content was observed. Discussion posts made by the Information Filter were focused on presenting in-depth factual evidence from sources, which resulted in diminished participation in discussions since no responses were requested or necessary beyond acknowledgment or affirmation.

The remaining four stances that comprised the taxonomy showed limited engagement or a level of disengagement with content. The Reinforcer was likely to acknowledge content related her experiences or those of others. However, similar to Zhu's (1996) wanderer, the participant relayed only general information within posts as opposed to content-specific citations. This limited the potential benefits associated with extending the discussion as the likely responders to these general posts were the Restator and Supporter. The low level of cognitive engagement, or disengagement, for these two stances was very evident in their responses. The Restator did not exhibit any engagement with course content as he simply repeated information that was previously stated. The example listed in the Appendix perfectly portrays the typical response of the Restator. A similar observation could be made for the Supporter, but one could argue the level of disengagement is even greater as responses focused only on support for information made in the previous post to which they are responding. No specific content was actually addressed. For both stances, the lack of engagement did not provide any substantive extension to the discussion and generally halted the responses within a thread.

The last stance addressed within the taxonomy is the Pessimist. The participant who adopted this stance refused to acknowledge applicability of content to his current situation and did not provide substantive information within discussions. Posts were negatively worded with respect to the content, and it was unclear whether a thorough examination of the content actually occurred as responses lacked in-depth rationales for the source of disagreement. Arguably, the act of disagreeing with content may indicate some level of cognitive engagement as the individual must examine the content to express this view. However, in our views, the lack of depth and reflection apparent in posts made by the Pessimist actually demonstrated a level of disengagement due to the refusal to consider or critically examine assertions made within the content. Hence, Figure 1 reflects a relative position below the horizontal line, indicating the stance appeared to be more disengaged than engaged.

Implications for Practice

We believe the strength of the taxonomy we propose lies in the ability to detect participants' stances using the definitions, descriptions, and exemplars. Through the identification of stances, the instructor can maximize collaborative opportunities between and among participants as well as facilitate the processing of and engagement with content. Instructors are then able to effectively apply what we refer to as facilitative prompts to improve discussion-specific outcomes. Facilitative prompts "lead" participants toward stances at the higher end of the taxonomy—those that demonstrate higher levels of collaboration and cognitive engagement both between and within participants.

Each stance, with the exception of the Reflective Practitioner, has specific needs in one or both of these areas, thus the prompts are tailored to address these needs. For example, class participants who adopt stances that would be deemed non-collaborative, such as the Information Filter, need specific forms of questions that direct them toward increased communication with others. The facilitative prompt may ask the individual to specifically examine a classmate's ideas and generate a post regarding his/her response to the classmate's post. On the other hand, the Supporter is focused upon collaboration, thus the instructor should consider a facilitative prompt that engages the individual with the content. This could be accomplished through the use of a direct reference to content, coupled with a follow-up question asking the participant how the content manifests itself in the participant's context of practice.

It is important to point out that the Pessimist represents the extreme case as s/he exhibits both a lack of collaboration and lack of cognitive engagement. While the recommendation for working with others exhibiting these characteristics to a lesser degree would be to engage the individual through a facilitative response aimed at collaboration or cognitive engagement initially and then focus additional prompts toward the other deficiency, this is not the case with the Pessimist. As the Pessimist exhibits the most negative views of the content, it is first necessary for the instructor to restate the Pessimist's position by clarifying the source of the disagreement with specific reference to course content. This information should be followed by reference to the instructor's personal experiences, data, or literature highlighting course content in a positive manner or demonstrating success stories relevant to the content. It is not recommended to focus on other participants' responses initially due to the potential for conflict, which could subsequently negatively impact the overall discussion. It is better for the instructor to handle disagreements initially on his or her own. As success is noted in helping the Pessimist engage with content in a more positive manner, the instructor can take measures similar to those advocated for participants adopting a non-collaborative stance.

A key provision in both the use of the taxonomy and facilitative prompts is that it is an iterative process. One facilitative prompt may not be enough to effectively engage the participant in the manner necessary to move him/her to the sought after level of the taxonomy, especially if the participant is not exhibiting engagement with the content or peers. The instructor must be an active participant in the discussion to successfully use the concepts set forth within the taxonomy as the questions they pose are crucial to the knowledge construction process (see Kanuka & Garrison, 2004). Examples of potential facilitative prompts are included in the Appendix to support instructors as they fulfill this role. In the long run, active participation with facilitative responses will improve the quality of discussions as more participants ultimately attain the higher levels of the taxonomy, facilitating scaffolding and other tenets associated with socially mediated knowledge construction. As a result, a true community of learners may be established.

Conclusions and Future Directions for Research

It is important that we examine the function and form of the discussions that are used to facilitate participant development as we conduct research focused on the validation of best practices and the identification of structures for discussions that are most effective in online courses (Grandzol & Grandzol, 2006). The taxonomy proposed as the focus of this investigation provides several useful lines of research that should be conducted to not only confirm the

stances and the use of facilitate prompts, but to also extend the current framework to encompass additional areas. One such endeavor includes expanding the taxonomy to include a metacognitive component. For the purposes of the initial development of the taxonomy, we have included reflection as a component within cognitive engagement. However, the act of reflecting on information and how it applies to one's context ideally falls within the realm of metacognition, thus adding it as an additional variable could further refine the definitions of the current stances and potentially add new ones. This could help researchers more accurately portray stances relative to each other as they would be differentiated along three axes.

Moving beyond the examination of stances solely by instructors, an additional promising line of research may involve participant self-evaluations with respect to adopted stances. This may increase the participant reflection and, subsequently, improve outcomes. It would also support the aforementioned changes to the taxonomy. Similar work has been conducted using De Bono's thinking hats (see Schellens et al., 2009) with the positive outcomes. Such research could also be utilized to validate participants' own perceptions regarding their perceived level of and attitude toward collaborative work. As participants become proficient in this regard, the notion of facilitative prompts could be introduced to them and examinations could be conducted to note the impact of these on learning through scaffolding and using socially mediated knowledge construction.

Without a doubt, instructors who utilize asynchronous online discussions have experienced participants who exhibit characteristics consistent with the stances proposed as part of the taxonomy. Perhaps, these stances represent a method for participants to "find the mix of interaction and learning style to enhance their individual capacity to learn or be trained" (Porter, 1997, p. 15). It is imperative that the instructor acknowledges this and assumes responsibility for guiding participants within this process. Using the facilitative prompts described in relation to the adopted stances may facilitate this process and may enhance the instructor's success in effectively maintaining learner engagement and maximizing opportunities for critical examination of content. Additional research will be vital in exploring this further and for answering calls for empirical research to identify and use best practices in regard to online instruction.

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Appendix
Descriptive Information Relating to Participant Stances

Stance	Description of characteristics	Exemplars of stances	Instructor's facilitative prompts
Counselor	• Addresses prompt • Stays on task • Cites research or personal experience to support position • Compares and presents examples • Offers practical advice • Focuses on struggles of others • Asks questions to encourage further learning	"If you don't feel like you are getting enough information, maybe your director at head start can email your survey to other head start workers . . . I am sure many of them are using similar programs . . . This is just a suggestion and it could be more time-consuming. Another suggestion might be to make another survey for the parents of the children that are receiving the programs. I am doing this as well . . ."	• Focus participant on self-reflection within context of practice • Ask questions about how information compares to actual experiences • Extend focus from current experiences to address how information might impact future practices
Information Filter	• Very task-oriented • Contributes relevant factual information to discussion • Focus of posting is to provide and/or acquire information • Does not usually relate personal opinion • Little or no effort made to collaborate with others	". . . the book is a support system as they: • organize assessment data so it truly informs instruction; • track each child's strengths and goals, thereby maximizing time with him or her; • create flexible groups of students, all focused on a specific reading strategy; and • help students remember and retrieve the reading strategies they learned. (Those points are copied directly from the back of my book.) It has a CD that comes with it that has several forms on it. The book says that it is good for grades K-5 . . .	• Focus participant on engagement with others • Ask specific questions regarding other participants' posts • Request that participant respond specifically to another participant's post
Pessimist	• Posts suggest course material would be ineffective in current context • Projects how techniques would not be effective • Offers excuses or blames others for lack of success • Gravitates toward and supports other's negative comments	". . . this may work well with younger students, but it sure wouldn't work with my students . . ."	• Multiple stage response • Acknowledge and restate individual's position • Clarify source of disagreement • Use references to personal experiences, literature, or data that reinforce content • As success is noted, reference other participant's posts

Reflective Practitioner	• Talks about experiences in relation to learning that is occurring • Willing to look at practices, compare them with content, and integrate knowledge into future actions • Finds similarities and differences and determines potential changes to practice • Introspective about practices • Shows enthusiasm for integrating new routines/practices • Task-oriented • Seeks, analyzes, and shares information to facilitate understanding • Collaboration with others is viewed as an important source of information	This story made me think about something that happens in our school often. There are several students that run in the hallway when a teacher is not around, but once they see a teacher they walk. Doesn't this tell us that these students are only doing the right thing when an adult is present? Don't we want them to do the right thing all the time? How do we do this? I think we just have to think about our classroom management systems and really analyze them. Are we just teaching our students to do the right thing out of bribery or fear? Or are we teaching them to do the right thing because it is right? . . . Every time I would peek around the corner I would see my class walking amongst all the other runners. I never rewarded or punished them, but I taught them WHY they should walk."	
Reinforcer	• Offers evidence that course information parallels evidence from current context • Indicates satisfaction with using practices addressed within course content • Shares stories of success • Confirms others' success stories • Posts often do not extend academic discussion/content	"You are so right about children coming to school with different experiences and that has an effect on how they do in school."	• Focus participant on course content and engagement with course materials and other participants • Ask for citations of evidence from course related materials • Request specific examples relative to context of practice • Prompt continued engagement through reflection on future practices • Ask specific questions regarding other participants' posts
Restator	• Repeats information, but does not engage in interpretation or analysis • Seldom contributes new ideas or substantive knowledge • Focused on creating a sense of belonging for community of learners	"I am glad that we are learning about bullying as well as how to deal with it. Some people have talked about how boys as well as girls can be bullies, that the bullies are more at risk for problems in the future, and ways for teachers, paraprofessionals, parents, school counselors, and principals to prevent as well as intervene"	• Focus participant on course content and engagement with course materials and other participants • Ask for citations of evidence from course related materials • Request specific examples relative to context of practice • Prompt continued engagement through reflection on future practices • Ask specific questions regarding other participants' posts

Supporter	• Very positive • Complimentary toward others • Provides little or no substantive information to discussions • Demonstrates empathy	"Very detailed . . . Great job!! I think that sounds like you have things broken down very well so you won't have any trouble getting things completed!"	• Focus participant on course content and engagement with course materials • Ask for citations of evidence from course related materials • Request specific examples relative to context of practice • Prompt continued engagement through reflection on future practices