Understanding How and Why College Students Engage in Learning

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Abstract

Part of a larger research project, this article presents a phenomenological self-study exploring the qualities of student engagement that occurred in one professors' college classroom over two semesters' time. The purpose of the study was to better understand college students' engagement in learning utilizing a reflective, data-based process. The study piloted a modified Instructional Practices Inventory (IPI) data collection process using a peer observation format. In addition to IPI codes and anecdotal notes, data collection included professor/investigators' written reflections, student course evaluations, and a student focus group. The study addressed two research questions: 1) How do college students engage in learning? and 2) Why do college students engage in learning? College students in the study engaged in learning most often when they paid attention, participated actively in discussion, and used higher order thinking to complete class assignments. They were motivated to engage in learning when they viewed information, activities, and assignments as relevant, felt emotionally connected to the course content, and experienced positive interactions with their professor.

Keywords: Heuristic phenomenology, higher education, Instructional Practices Inventory (IPI), peer observation, student engagement in learning, written self-reflection.

"As an assistant professor, I strive to model best teaching practices for the future teachers in my classroom, but more importantly I want my students to learn. I know a lot about effective teaching, but I also know I have room for improvement. No matter how well prepared I am for my classes, there are days when I notice students glancing frequently at their watches, surreptitiously checking their e-mail, or worse, nodding off. Even on days when they seem interested and actively involved, I can't know for sure my students are fully engaged. I might leave the classroom feeling good, based on a few generalities about what went well and why, but in reality I might be kidding myself." ~ Twila, second year assistant professor, August 2009

Student engagement in learning is closely related to effective teaching. Research shows that student engagement in learning is likely to increase when teachers use instructional time efficiently (O'Neil, 1995), connect classroom learning to real life, practical experiences (Brewster & Fager, 2000; Hancock & Betts, 2002; Lumsden, 1994), and allow student choices regarding what and how to learn (Anderman & Midgley, 1998; Martin, 2003; Schlechty, 2001). Teachers can further increase student engagement by actively

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involving students in collaborative problem-solving that requires higher-level thinking (Gavalcova, 2008) and providing constructive, descriptive, and timely feedback (Stiggins, 1999; Strong, Silver, & Robinson, 1995). In our own college classrooms, we found that brisk pacing and instructional variety, paired with a balance of higher order, student-centered activities and teacher-led activities effectively engaged students in learning (Hunzicker & Lukowiak, 2012).

Even in light of the research, an overwhelmed, second year assistant professor like Twila may ask, why exert all this effort? But the answer is clear: Research shows that student engagement in learning helps students retain information (Dowson & McInerney, 2001; Hancock & Betts, 2002), internalize concepts (Newmann, 1992), and develop an appreciation of lifelong learning (Shulman, 2002).

Although teachers can take a variety of actions to increase student engagement in learning, students themselves make the choice of whether to engage or not. The purpose of this study was to better understand college students' engagement in learning utilizing a reflective, data-based process.

What is Student Engagement in Learning?

Some education professionals depict student engagement in terms of demonstrating appropriate classroom behaviors and displaying a positive disposition. According to Skinner and Belmont (1993):

> [Students] who are engaged show sustained behavioral involvement in learning activities accompanied by a positive emotional tone. They select tasks at the border of their competencies, initiate action when given the opportunity, and exert intense effort and concentration in the implementation of learning tasks; they show generally positive emotions during ongoing action, including enthusiasm, optimism, curiosity, and interest (p. 572).

Similarly, according to Bomia et al. (1997), student engagement occurs when students exert "willingness, need, desire and compulsion to participate in, and be successful in, the learning process" (p. 294).

Jones, Valdez, Nowakowski, and Rasmussen (1994) identify higher order activity as another characteristic of student engagement in learning. In their view, students demonstrate engagement by applying previously acquired skills to creatively solve problems in collaboration with their peers. According to Valentine (2007), student engagement in learning is characterized by "active conversations that construct knowledge… are not teacher dominated…. [and] higher-order thinking is evident" (p. 1, Student Learning Conversations (5)). Additionally, students engage in higher-order learning through activities such as "authentic project work, cooperative learning, hands-on learning, problem-based learning, demonstrations, and research" (Valentine, 2007, p. 1, Student Active Engaged Learning (6)).

These descriptions indicate that student engagement in learning requires a combination of behaviors, motivation, and higher order activity. For teachers such as Twila, who are working to increase their teaching effectiveness, analyzing the quality of student engagement in learning provides useful information for better understanding how and why college students choose to engage in learning.

Analyzing Student Engagement in Learning

As explained in our first publication about this study (Hunzicker & Lukowiak, 2012), Instructional Practices Inventory (IPI) is one process for conducting structured classroom observations for the purpose of assessing student engagement in learning. IPI was created by Drs. Jerry Valentine and Bryan Painter in 1996 for implementation in P-12 schools (Valentine, 2009a). IPI is defined as "a process for collecting valid and reliable data teachers would view as fair and accurate and be willing to use as a basis for reflection and change" (Valentine, 2005, p. 5). During the IPI process, qualified data collectors proceed throughout a school observing in various classrooms for brief intervals of time, coding the observed quality of student engagement according to the following 6-point rubric (Valentine, 2007). IPI codes 6 and 5 are characterized by student centered, higher order thinking, activity, and/or discussion. IPI code 6 involves active engagement in a task, performance, or project, whereas IPI code 5 signifies interactive, student-to-student discussion. IPI code 4 denotes anything teacher-centered (e.g. lecture, directions, discussion-leading) and may or may not engage students in higher order efforts. IPI codes 3, 2, and 1 do not engage students in higher order efforts. IPI code 3 recognizes non-higher order activity in which the teacher is involved with students at the time the code is recorded, IPI code 2 signifies that the teacher is not involved with students at the time the code is recorded, and IPI code 1 signifies that students are completely off-task.

The IPI coding system is designed to recognize the wide range of student engagement that occurs in a classroom setting, yet it supports the belief that student centered activities requiring higher order efforts are more engaging than teacher-centered activities or activities that do not require higher order efforts (Valentine, 2009a). Even though all IPI levels of student engagement can be applicable, activities reflecting IPI codes of 5 or 6 are more likely to engage students in learning.

When using IPI in P-12 schools, strict protocols are followed to maintain validity and reliability (Valentine, 2009b). To begin, only trained data collectors are authorized to use the IPI process. Also, data collectors focus on the first activity they see upon entering the classroom so a random sample may be established. In classrooms where several activities are happening at once, data collectors must consider what the majority of students are doing, asking questions when necessary. Finally, in order to place codes in context, data collectors record a code and then often write brief anecdotal notes describing the activity (Valentine, 2007a).

Research Problem, Purpose, and Questions

Research indicates a positive relationship between student engagement in learning and student academic achievement (Dunleavy & Milton, 2008; Lalley & Miller, 2007; NSSE, 2010). Despite a decades-long dip in college student engagement during the early 2000s (Koljatic & Kuh, 2001), levels of student engagement in learning are beginning to improve due to more effective educational practices ("Wide Range of Colleges," 2009). Specifically, student engagement can be increased through classroom observation and performance feedback, paired with willingness on the part of the teacher to make changes (Colvin, Flannery, Sugai, & Monegan, 2009).

Part of a larger research project (Hunzicker & Lukowiak, 2012), this article presents a phenomenological self-study exploring the qualities of student engagement that occurred in one professors' college classroom over two semesters' time. To better understand college students' engagement in learning, the study addressed two research questions:

> 1) How do college students engage in learning?, and
> 2) Why do college students engage in learning? Toward this end, a heuristic phenomenological approach was employed.

Methodology

Phenomenological inquiry is pursued to deepen understanding of common human experiences, such as student engagement in learning, for the purpose of informing improvement in practices or policies (Creswell, 2007). After collecting data from several people who have experienced the phenomenon under study, data analysis involves reducing the information to significant quotations or segments of text and identifying themes that convey various meanings of the phenomenon (Creswell, 2007; Moustakas, 1994).

Heuristic Phenomenology

This study takes the form of heuristic phenomenology, also known as heuristic inquiry. Heuristic inquiry begins with a question or challenge that engages the researcher in self-inquiry for the purpose of better understanding oneself and/or one's world (Morse & Richards, 2002; Moustakas, 1994). It requires the researcher to occupy a dual role of investigator/research participant, which makes the approach subjective. Because heuristic inquiry is subjective, the researcher should clearly articulate personal assumptions, beliefs, and life experiences that might influence interpretation of the phenomenon under study (Grbich, 2007). Two strategies for accomplishing this are bracketing and memo writing.

Bracketing is "a reflective process by which opinion and prejudice are suspended to focus attention on what is essential in the phenomena" (LeVasseur, 2003, p. 411). LeVasseur (2003) explains that after bracketing one's usual way of viewing the world, phenomenological researchers should embrace a reflective and questioning stance. While bracketing takes place at the beginning of a study, memo writing occurs throughout data collection

and analysis. Memos are "the researcher's field notes recording what the researcher hears, sees, experiences, and thinks in the course of collecting and reflecting on the process" (Groenwald, 2004, p. 13). To increase objectivity, researchers should track their changing assumptions and developing insights throughout a research project (Morse & Richards, 2002; Quaye, 2007). Debriefing frequently with colleagues or supervisors can support this process of articulating and refining one's beliefs, assumptions, and life experiences as they relate to the phenomenon under study (Grbich, 2007).

The final product of phenomenological inquiry is a composite description, which describes the meaning or "essence" of several individual's lived experiences by describing what all have in common (Creswell, 2007). This creative synthesis represents the lived experiences of both the research participants and the researcher by describing what participants experienced and how they experienced it as well as questions, problems, and issues that reflect the interests of the researcher (Moustakas, 1994).

Research Methods

Research Participants and Co-investigators

Interested in better understanding student engagement in learning within her own college classroom, a college professor at a private, Midwestern university (Twila) collaborated with a colleague (Jana) to conduct a phenomenological self-study. Twila served dually as the study's co-investigator and primary research participant. Jana served in the roles of methodologist, peer observer, and focus group facilitator.

College students enrolled in an introductory course about curriculum adaptations for students with exceptionalities, taught by Twila during the fall 2009 and spring 2010 semesters, served as secondary research participants. Thirty students were enrolled during the first semester; 15 were enrolled during the second semester. All secondary research participants were education majors, all held college sophomore, junior, or senior status, and all were of traditional college age (i.e. 18-24). Of the 45 secondary research participants, five were male and 40 were female.

The co-investigators explained the study to students on the second day of classes, making it clear that student participants were not required to do anything differently than usual, individuals would never be singled out, and participation in the study would not affect course grades. One hundred percent of the students in both classes agreed to participate in the study.

Data Collection

Initial data collection included classroom observations, professor/investigator written reflections, and student course evaluations.

Classroom observations. The Instructional Practices Inventory (IPI) rubric and protocols, introduced earlier, were used to structure the classroom observations. Seven obser-

vations were conducted per semester, each lasting the entire 75-minute class period. Using a peer observation format, an IPI code was recorded every five minutes. The peer observer also made brief anecdotal notes for each IPI code. Thirteen to 15 codes were collected during each observation, rendering roughly 100 codes, supported with anecdotal notes, each semester. Within three days of each classroom observation, Jana provided Twila with a copy of the IPI codes and anecdotal notes.

Written reflections. To ensure that data were collected from multiple sources (McKinney, 2007; Morse & Richards, 2002), Twila engaged in written reflection following each classroom observation. The written reflections were structured by three questions:

> 1) What instructional activities were successful in engaging students? Why?
> 2) What instructional activities were not successful in engaging students? Why?
> 3) What can I do to increase students' level of engagement during future class sessions?

Twila also engaged in written reflection, particularly memoing, during data analysis. These memos were also used as data.

Student course evaluations. Additionally, at the end of each semester, numerical and narrative data related to student engagement in learning were collected through student course evaluations. Students were asked to respond to three rated items using a 5-point Likert scale:

> 1) This course/practicum provided a valuable learning experience.
> 2) Class/practicum time was well spent.
> 3) The faculty member stimulated interest in the subject matter.

In addition, they were encouraged to write open-ended comments in response to the following prompt: Method of instruction (i.e. lecture, assignments, case studies, etc.) Although students were given the option to have their course evaluation responses excluded from the study, 100% allowed the co-investigators to use their responses as data.

Data Analysis

Data analysis was guided by two research questions. QSR Nvivo qualitative research software was used to facilitate data analysis. A recursive, four-step coding process was used: descriptive, topical, and analytic coding followed by refining the codes through questioning (Morse & Richards, 2002). Descriptive codes included IPI codes of 1-6, the date data were collected, and the type of data collected (e.g., anecdotal notes, written reflection, etc.). Topical codes included the categories of teacher, student, activity, and other. Analytic codes included high engagement, low engagement, and neutral.

Student focus group. To supplement the student responses provided by all research participants via the end-of-semester student course evaluations, initial data analysis was presented to a focus group of six students from the two observed classes. During the spring

2011 semester, all secondary research participants were invited to participate. The first three students from each class to respond to an email, inviting participation, were selected as participants. All six selected participants were in attendance. The averaged final grade of the focus group was 96%, compared to 92% for both the fall 2009 and spring 2010 classes.

The focus group was convened and led by Jana, who also conducted the classroom observations. Twila was not present, nor did she know which students were participating in the focus group. Following presentation of the data analysis, students were asked the following questions: 1) Based on your experience as a student in this class, is our analysis of student engagement accurate? Why or why not? 2) What have we missed, or forgotten to consider? 3) What other thoughts or ideas do you have about student engagement in today's college classrooms? Discussion was tape recorded and transcribed by Jana. Student confidentiality was protected through use of pseudonyms.

Twila's Beliefs about Student Engagement in Learning

As mentioned earlier, bracketing decreases subjectivity and establishes a context for interpreting the assumptions, beliefs, and expectations of the research participants (Grbich, 2007; LeVasseur, 2003; Morse & Richards, 2002). In July 2010, prior to the data analysis phase of the study, Twila bracketed her beliefs about student engagement in learning:

> To begin, I believe that the teacher, more so than the students, is responsible for creating a classroom environment that engages students in learning. I also believe assignments and activities requiring application, problem solving, and/or creativity are more likely to engage students. Additionally, student engagement in learning occurs when both teacher and students are invested in the content, the learning process, the desired learning outcome(s), or a combination of the three. Moreover, student engagement in learning is supported by teacher knowledge of content and pedagogy. When students view the teacher as a credible source of information, they are more likely to engage in learning. Furthermore, when the teacher finds ways to make learning exciting, even reluctant learners are more likely to engage. Finally, student engagement is supported by a positive working relationship between teacher and students, or a classroom culture of mutual respect. Such classroom culture balances high expectations and hard work with flexibility and entertainment.

With Twila's beliefs about student engagement in learning explicitly stated, we now proceed to the study's findings.

Findings

Findings of this study are presented through composite descriptions of the teaching and learning activities that occurred in Twila's college classroom during the fall 2009 and spring 2010 semesters. The descriptions reflect the perceptions of Twila and her students, as well as the co-investigator, who conducted the classroom observations.

Student-led Presentations and Chapter Quizzes

IPI code 3 represents students working while the teacher assists or monitors. Classroom activities coded 3 vary in degree of teacher or student centeredness, but do not engage students in higher order efforts. During the fall semester, 28% of Twila's class time represented activities such as student-led presentations and chapter quizzes. In the spring, Twila's class time reflected these activities 36% of the time.

Student-led presentations. During fall and spring semesters, one required assignment entailed students working together in pairs to present a textbook chapter and create an interactive activity to enhance understanding of the chapter content. Valuing this assignment, Twila reflected in March 2010: "All students were very focused on presenters and participated in note taking activities. This presentation was of the highest quality and a great learning experience for all."

However, students' evaluations of the assignment generated mixed results. Ten students wrote comments referencing the student-led presentations, and seven comments expressed unfavorable opinions about the assignment, stating the presentations were "boring" and "took a lot of time." Conversely, three comments were positive including, "Chapter presentations are good practice for future teachers."

Information acquired from focus group members painted a clearer, more comprehensive picture of students' opinions concerning the student-led presentation assignment. One student suggested the assignment would have been "more exciting and more engaging" if Twila had instructed them to use the presentations as practice for teaching. Another student voiced dissatisfaction with the student-led presentations: "I was disgruntled to hear somebody give their rendition on the chapter when they may not have fully understood it themselves."

Indeed, most students did not view the student-led presentations as relevant. Students are more likely to remember what they have been exposed to in the classroom when the assignments are both authentic and meaningful to the student (Hancock & Betts, 2002). Moreover, teacher clarity supports student engagement (Pascarella, Edison, Nora, Hagedorn, & Terezini, 1996). Reflecting on ways to improve this assignment, Twila wrote, "If I had been clearer in my original purpose, which was for students to practice teaching, the value of the assignment would have been more apparent."

Chapter quizzes. Twila assessed students' content knowledge of textbook chapters by administering six quizzes each semester. Chapter quizzes were comprised of ten multiple choice and true/false questions. Several students disliked the quizzes and voiced their opinions orally and on the course evaluations. On the course evaluation, one wrote, "If the students teach the lesson, they should make the quiz." Conversely, some students appreciated the quizzes as a learning tool: "Quizzes were very helpful in learning content and studying for the test." The focus group clarified that students felt the quizzes were based on "minute details" rather than "big ideas."

The format of the chapter quizzes did not require students to utilize higher-order thinking skills, but merely required memorization of basic information. According to the National Research Council (1999), students become more engaged when required to provide reasoning and justification for concepts presented. Twila's quizzes did not require students to evaluate or synthesize information, therefore producing lower rates of student engagement and approval.

Lecture and Discussion

IPI code 4 represents teacher-led instruction, which may or may not involve student engagement in higher order efforts. In Twila's classroom, code 4 activities included lecture and teacher-led discussion, occupying 39% of class time during the fall semester and 24% during the spring semester. IPI code 5 distinguishes teacher-led, whole class discussion from students engaged in higher order discussion with one another. In Twila's classroom, student-to-student higher order discussion was coded 20% of the time during the fall semester and 27% of the time in the spring.

Lecture. To vividly illustrate concepts from the course textbook, Twila often shared personal stories about her experiences as a special education teacher and parent of a child with an exceptionality. She often expressed painful, genuine feelings. In October 2009, she reflected, "In sharing a story about my son's academic struggles, I became overwhelmed with emotion and shed tears. After that incident my students viewed me as a real person." Students in the focus group appreciated the real life stories Twila incorporated into lectures. One student commented, "She made lectures more personable and we could relate to it. That is something that makes students more engaged." One recent study confirms that using personal stories during lectures increases students' interest levels (Trim, 2010).

During another class session, Twila presented excerpts from *Christmas in Purgatory*. Written by Burton Blatt and Fred Kaplan in 1965, this book describes the authors' visits to numerous institutions in the United States which housed individuals with intellectual disabilities. *Christmas in Purgatory* contains explicit descriptions of living conditions, and photographs depicting treatment of these individuals.

The lecture incorporating *Christmas in Purgatory* not only evoked emotion in students, but in Twila herself. Her voice quivered several times throughout the lecture and she struggled to maintain her composure, especially when reviewing the treatment of children in these institutions. Twila believes this lecture engaged students because she, as their teacher, conveyed passion and emotion.

Twila also frequently incorporated video clips into her lectures. For example, after discussing the devastating effects of bullying, she presented a clip depicting the possible end result of repeated episodes of bullying on students. She believed topics such as bullying became more authentic when students viewed videos depicting actual life experiences. Hoover (2006) agrees that utilizing video and audio clips enhances student engagement in

learning by capturing and maintaining students' attention.

According to Twila's course evaluations, students considered her highly effective in capturing and maintaining their attention during class time. Students from both semesters described her lectures as "highly emotional" and "captivating." One student wrote, "She constantly had my attention in every aspect of presenting information." Overall, students rated her ability to stimulate interest in the subject matter 4.90/5.00 during the fall semester and 4.93/5.00 in spring.

Discussion. Twila engaged students in whole class and small group discussions during both semesters. Students actively discussed various topics 40 times during the fall semester and 33 times in spring. To facilitate discussion, Twila carefully selected brief, often controversial, reading selections, directed students to discuss the readings in small groups, and then engaged the entire class in discussion. She created an atmosphere accepting of differing viewpoints and encouraged each student to participate. Research confirms that student participation in discussion is likely to increase when teachers are supportive (Armstrong & Boud, 1983) and provide reassurance and praise (Hyde & Ruth, 2002).

In response to such readings, most students participated in discussion enthusiastically and voiced opinions openly. In May 2010, Twila reflected:

> I was impressed with how students in the spring semester voiced their opinions on certain topics, even if sometimes their views were unpopular with peers. Large group discussions provided students opportunities to be heard and their views respected. Discussions were a tool to help build students' self-esteem and self-efficacy. Voicing one's opinions - especially if not popular - takes courage.

During the focus group, students confirmed that the discussions of case study scenarios were constructive and rewarding. One student commented, "I think when you get right down to a real life situation with real people and a real problem that you're trying to solve, that makes it much more likely that I will get excited about trying to figure it out."

Twila also incorporated an assignment which required students to select, read, and critique three self-selected journal articles. Twila guided the assignment by providing potential topics, a list of journals, and the scoring rubric. On three separate occasions, students shared their critiques with peers in small group settings. Each student was provided one minute and thirty seconds to review his or her article and answer questions from peers.

IPI notes written during the spring semester captured one such instance of students sharing their critiques with peers: "Small group discussion around articles. Three to four per group. One person presents; others listen and comment. All students seem highly engaged." Twila attributed students' engagement to having "little to no time to participate in off task behaviors" due to the brief timeframe and her close supervision.

Twila's practice of allowing students to select their own articles is supported by research. Wade (1994) confirms that when students decide what to discuss, their interest increases and they are more likely to engage in both listening and speaking roles. Twila also believed that providing students with limited time to complete the article critiques would keep students on task, but quite the opposite was true. Opinions obtained from students during the focus group revealed the brief timeframe may have impeded student learning.

One student commented:

> I remember actually saying at one point, 'It's great to share these articles', but we went so fast that I didn't get enough information to even think about it. I don't know if it was engagement because I just had no time to *not* be engaged.

Upon reflection, Twila acknowledged her quest to maintain a quick pace to keep students' attention may have unwittingly kept them from fully comprehending information.

Higher Order Efforts

IPI code 6 represents active student engagement in higher order efforts, often through completion of challenging projects. The teaching and learning activities in Twila's classroom involved higher order efforts 14% of the time during the fall semester and 13% of the time during spring.

Curricular adaptation project. Most of the IPI codes recorded as 6 reflected various stages of a long-term project, which was completed in student pairs. The first phase required students to write a profile of an individual with an exceptionality receiving the majority of educational services in a general education classroom. The second phase involved writing a general education lesson plan for a core academic subject, and the third phase required students to modify the lesson plan to meet the academic, social, and emotional needs of the profiled student.

The following anecdotal IPI notes, written in March 2010, depict the high level of student engagement experienced by students as they worked on the project:

> 2:25: Most online viewing the assignment, revising their work, or researching. Twila consults with another group. One hundred percent on task.
> 2:30: Almost all groups are drafting or revising. Twila meets with a third group.
> 2:35: All groups are still on task. Most are drafting or reviewing. One group appears to have stopped for the day, but one of them is viewing pictures from *Christmas in Purgatory*.
> 2:40: All groups are still on task! Twila is meeting with another group.
> 2:45: All groups are still working. Twila never dismisses class. Students begin trickling out at about 2:50 p.m. – five minutes after class is officially over.

Two students wrote comments directly referencing the curricular adaptation project. The first commented, "I loved the variety of assignments such as the curricular adaptation

project, case study, journal critiques, as well as in-class group activities." Another student wrote, "I enjoyed the case study we did and adapting the lesson for the curricular adaptation project."

According to the student focus group, the curricular adaptation project was beneficial, but additional opportunities to practice adapting lessons would have been better. One student commented, "I feel there should have been more projects practicing how to make adaptations, and then maybe students could incorporate moving around to different groups and doing that with different people." Several others affirmed this opinion.

According to Lucas (1990), engagement increases when teachers employ hands-on, practical activities and decreases when students are allowed to remain passive. Student engagement in learning was high when students were working collaboratively to complete the three-part curricular adaptation project. Twila attributed this to students practicing skills they realized they would need to perform well in their future classrooms.

Discussion

College students in the study engaged in learning most often when they paid attention, participated actively in discussion, and used higher order thinking to complete class assignments. They were motivated to engage in learning when they viewed information, activities, and assignments as relevant, felt emotionally connected to the course content, and experienced positive interactions with their professor.

How Do Students Engage in Learning?

Attention. Optimal learning occurs when the teacher captures students' attention and piques their motivation for learning (Gagne, Briggs, & Wager, 1988; Ericksen, 1978). Twila was particularly successful in gaining students' attention by sharing personal stories related to her experiences as a teacher and parent of a child with a learning disability. According to Gigliotti (1995) and Van Dokkum (1995), providing information to students in an entertaining manner fosters interest and engagement.

Twila also maintained students' attention by incorporating a variety of class activities that required active participation. Comments written on course evaluations revealed that several students appreciated the diverse activities Twila incorporated into classes. One student wrote, "There was never a dull moment in this class and the material was taught with a mixture of instructional methods."

Student engagement in learning increases when professors initiate activities that require active student participation (Lucas, 1990). Moreover, professors can promote student engagement in learning by discouraging off task behaviors during class time. During the focus group, one student revealed her thoughts concerning how professors can prevent students from participating in off task behaviors:

Sometimes there are classes you can drift through without participating. There

are other classes where the activities and the way they're planned make it impossible to get through the class without saying a word. I think a lot of those environmental and planning factors are entirely within the professor's control.

If professors allow us to sit quietly in class, most students will multitask. So they need to make it difficult for us to do that.

Active participation in discussion. Active participation in whole class and small group discussion also indicated student engagement in learning for the college students in this study. In the IPI anecdotal notes and reflections, the words "spirited" and "lively" were used to depict discussions that occurred in Twila's classroom.

According to Hockings, Cooke, Yamashita, McGinty and Bowl (2008) heightened engagement occurs when students have opportunities to share information, viewpoints, and experiences with peers. Furthermore, professors must be watchful to ensure all students participate (Fritschner, 2000; Howard, James, & Taylor, 2002). Strategies Twila employed to promote student participation in whole class and small group discussions included providing a variety of stimuli and monitoring student behavior and responses during discussions. She also worked hard to create a safe learning environment.

According to Elkind and Sweet (1998) peer discussion is a good way for students to articulate their opinions and learn to be respectful of varying points of view. Mearns, Meyer, and Bharadwaj (2007) add that students feel more comfortable sharing their opinions when the teacher is understanding and welcoming. During both whole class and small group discussions, Twila worked to remain non-judgmental and encouraged all students to contribute their thoughts and opinions.

Although the article critique assignment provided students with opportunities to actively participate in student-to-student, higher order discussion, the stringent time frame Twila placed on these discussions was ultimately counterproductive. Students seemingly enjoyed these discussions, but reflected the assignment would have been more effective if allotted more time. Their assertions are supported by research. According to Lewis and Doorlag (2011), instructional activities should occur at a quick pace to increase student engagement in learning, but adequate time for students to process information must also be considered.

Higher order thinking. Students engage in learning when they solve problems creatively in a collaborative manner with peers, utilizing the skills they have learned through class (Bennett, 1995; Jones, Valdez, Nowakowski, & Rasmussen, 1994). In Twila's classroom, students engaged in higher order thinking when they worked in pairs to complete the three part curricular adaptation project. This project required students to use information they had acquired in earlier class sessions as well as research additional information. The project took multiple class sessions to complete. After students completed each phase of the project, Twila provided detailed feedback, typically by the following class session. According to Kuh, Kinzie, and Schuh (2005) challenging academic activities requiring

expertise and time to achieve do not discourage students from learning, but instead heighten student engagement in learning.

Unlike the curricular adaptation project, chapter quizzes did not engage students in learning. Twila's students were disgruntled with the multiple choice, true/false format of the chapter quizzes. According to Coates et al. (2008) students do not engage actively in activities or assessments requiring them to simply regurgitate basic information. However, students become highly engaged when learning tasks entail evaluation and application. Similarly, multiple choice, true/false assessments encourage students to learn only factual information. They do not require students to utilize more sophisticated skills such as investigating and synthesizing information, consequently impeding the learning process (McKeachie, 1986).

Why do students engage in learning?

Relevant information, activities, and assignments. Students engage in learning when they make connections between what they learn in class and real life, practical experiences (Brewster & Fager, 2000; Lumsden, 1994). Haworth and Conrad (1997) wrote, "Students participate in learning activities in which they connect theoretical and applied knowledge to complex problems, issues, and situations in the real world" (p. 34).

Twila designed class assignments and activities to be applicable for students. One such assignment was the curricular adaptation project. Discussions of case studies also proved extremely relevant to students. The case studies provided students with opportunities to synthesize, analyze, and discuss authentic scenarios and decide as future teachers how they would resolve posed dilemmas. Twila's lectures provided students with information for completing the course requirements. Course evaluation comments indicated that students thought these activities were relevant to their learning. One student commented, "The classroom assignments encouraged application and evaluation based on concepts taught."

Conversely, most students did not perceive the student-led presentations as relevant. Although Twila thought this assignment would provide an opportunity to practice teaching, students did not make this connection, viewing the assignment as just another task to complete.

Emotional connection to the course content. Several comments from the course evaluations indicated that students thought Twila's class was entertaining. One student wrote, "She was a fabulous teacher. She is knowledgeable and made class fun and exciting!"

Another student voiced her view of Twila's positive teaching attributes during the focus group:

> I think she made class enjoyable and fun, which is really important, even at the college level. At any level, if a teacher applies fun in class, and humor, people are

going enjoy it more. They're going to be more engaged, and they're going to really like the teacher.

Twila strived to make each class enjoyable for her students. At times, she light-heartedly reminisced on her days as a special education teacher, cautioning students not to make the same mistakes. Other times, she utilized competition to enliven a waning class session. One such instance was captured by IPI anecdotal notes: "Student- to-student discussion about accommodations/modifications. Each small group creates a list to share with the class – longest list wins!"

While many of Twila's class sessions were enjoyable, others evoked emotion. One such class featured a video clip depicting a student who committed suicide after being bullied by classmates. Another involved a photo-based lecture about *Christmas in Purgatory*. Students were highly engaged during these class sessions partly because the content and images themselves were shocking and sad. Additionally, Twila was passionate about these topics. Research shows that students' motivation, enjoyment of learning, and engagement increase when professors demonstrate enthusiasm and passion for their subject matter (Brigham, Scruggs, & Mastropieri, 1992; Sass, 1989).

Positive interactions with the professor. Students are most likely to engage in learning when provided with opportunities to interact with a professor who is knowledgeable, well prepared, and approachable (Mearns, Meyer, & Bharadwaj, 2007). College students in this study particularly appreciated Twila's warmth and approachability. During the focus group, one student remarked:

> I think she's just relatable. I missed a week and a half of class and Twila e-mailed me. She had my project partner call me, and she made exceptions for me to come in at different times of the day to make up my work. I stayed in close contact with her. I felt like I could talk to her about anything. I know she respects me so I'm going to respect her that much more.

Another student expressed appreciation for Twila's openness: "She's disarmingly honest. She really does share the mistakes she made early in her career, and her failures and stuff. When you don't come across as being perfect, it's like, 'Wow, you're a real person!'"

Research also shows that professors encourage student engagement in learning when they establish high expectations, readily discuss academic progress with students, and provide frequent and timely feedback (Bowen, 2005; Bryson & Hand, 2007). Students specifically noted Twila's efforts to support them toward successful completion of the course. One explained, "When you speak to her before or after class, or send an e-mail, her responses are quick and friendly; they're not abrupt or abrasive. She doesn't criticize the group. You don't get critical   e-mails saying, "I'm really disappointed…" Another student commented: "Very specific feedback. You will have taken a quiz and you'll have the grades back like within five hours! Timely feedback. It's very good."

Twila's Beliefs about Student Engagement in Learning - Revisited

After carefully analyzing the IPI codes, anecdotal notes, and focus group transcripts collected during this study, Twila revisited her beliefs about college student engagement in learning. The following reflection, written in November 2011, depicts how her beliefs changed:

> One of my original beliefs was the teacher, more so than students, is responsible for creating a classroom environment that engages students in learning. I now believe students must take responsibility for their own learning; however, it is crucial professors employ various strategies to ensure active participation and the occurrence of engagement. Therefore, students must place their efforts and attention into learning and teachers must create a conducive environment. Second, when the teacher finds ways to make learning exciting, even reluctant learners are more likely to engage. I now believe the activities do not necessarily need to be enjoyable, but they need to evoke emotions in students.

Limitations

While this study was very useful to Twila as a way to deeply analyze students' responses to her teaching practices, it has limitations. To begin, the duration of the study was only two semesters. Second, Jana may have coded more leniently during observations than she would have for someone she did not know. Third, it is possible that Twila or her students acted differently when they were being observed, a phenomenon known as the Hawthorne Effect (Cherry, 2010). Additionally, the views of students participating in the focus group may not have been completely representative of their peers.

We took several precautions to minimize the effects of these limitations: earning certification as IPI data collectors, adhering to the established IPI data collection protocols, collecting multiple data sources, articulating Twila's beliefs about student engagement in learning prior to commencing the study, and convening a student focus group to validate and refine our initial data analysis. We believe that, despite any limitations from a scholarly research perspective, the study provided us with meaningful professional development that has directly (Twila) and indirectly (Jana) informed our teaching practices in terms of encouraging student engagement in learning.

Conclusion

The purpose of the study was to better understand college students' engagement in learning by utilizing a reflective, data-based process. In the quest to answer how and why students engage in learning, the researchers utilized both elements of collaboration and self-study. Employing IPI, one type of systematic observational tool, researchers found college students engaged in learning most often when they paid attention, participated actively in discussion, and used higher order thinking to complete class assignments. Findings also revealed students were motivated to engage in learning when they viewed information, activities, and assignments as relevant, felt emotionally connected to the course content, and experienced positive interactions with their professor. The research-

ers strongly believe these results are interdisciplinary and therefore beneficial to all professors, regardless of content area.

This study was extremely advantageous to Twila because it validated aspects of her teaching which were valuable and engaging for students. Consequently, she learned which assignments and teaching methods warranted continued implementation. The results of the study also made clear the aspects of her teaching which fostered decreased levels of engagement in her students. This information was crucial to her teaching and had a substantial impact on how she designed and implemented assignments for students in upcoming classes. She whole-heartedly believes she became a much better teacher after participating in this study, therefore improving the education and learning experiences for all her students.

We encourage professors from all fields of study to consider using peer observation as a means of collaborative self-study to better understand how and why their own college students engage in learning.

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