

STUDENTS' RESPONSES TO THE CRITICAL INCIDENT TECHNIQUE:

A QUALITATIVE PERSPECTIVE

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ABSTRACT

This qualitative research reports findings on whether students' reflective writings during the course of one semester produced qualitative differences in several courses offered online and on-ground at two different universities. Eighty-six students from two universities responded to Brookfield's (1995, 1998) critical incident questionnaire. Because of the descriptive nature of our research design, our study utilized a qualitative descriptive methodology for the purpose of data analysis. The basic findings of our research indicate that reflective practice enables students to think reflectively upon course expectations. Engaging students in reflective practices during the course of a semester helps faculty gauge students' engagement or disengagement with course materials.

Key Words: Qualitative Descriptive Design, Critical Incident, Reflective Practices

The purpose of this qualitative research was to investigate the role of critical reflection for online and traditional courses taught at two universities. We used cognitive and socio-cultural theories as the theoretical lenses for our study. There were two primary research questions guiding our research: (1) what type of reflective writings would emerge from the participants' weekly reflective logs? (2) Would there be significant qualitative differences in participants' reflections from week to week?

Eighty-three graduate and undergraduate students enrolled at two different regional universities in the Southeastern U. S. participated in the study over one semester. Participants responded to the critical incident questionnaire (CIQ) in online and face-to-face classes. The data were analyzed using the technique of constant comparative methodology. The next section of the manuscript discusses the background of the study, methodology, and findings and conclusions.

BACKGROUND

Many universities in the United States use end-

of-the-semester course evaluations from students as a way to collect data on matters concerning learning, management, and overall evaluation of a specific course offered. These evaluations may not be very effective in showing what a student has learned during the course of one semester. Therefore, instructors may find difficulty in capturing possible disconnects between course materials and student learning using only course evaluations. Faculty members need more immediate access to student feedback, particularly in preservice teacher education courses. Parker (1998) indicated that grading and other course structures often do not allow changes within the semester. The challenge, therefore, in both online and traditional courses, is to create and organize course material to promote more student participation and reflection in a course.

One way to supplement course evaluations is to use critical incident questionnaires (CIQ). The CIQ can help highlight participation in class activities that may help or impede learning. Brookfield

(1998) explained that the CIQ captures moments or actions in class and reveals student judgments of those activities as they learn. The critical incident technique has a long history beginning with the seminal work of Flanagan (1954) in the United States Air Force. Flanagan's technique included the following: (1) setting the aim of an activity, (2) creating a tool to collect incident, (3) gathering data using either interviews or written observations, (4) analyzing data in an objective way, and (5) interpreting results and disseminating those that make significant impact on the activity.

While the CIQ has been used in education, researchers have also used the technique to collect data in fields ranging from health services, engineering, sport, and business. For example, Hoffman and Chung (1999) utilized the CIQ to evaluate hotel services, while Urquhart et al. (2003) employed it in their assessment of the application of information behavior in Health Service Library Projects in Britain. Radford (2006) evaluated citywide library projects for Brooklyn Public Library and Queens Borough Public Library in New York with the technique. Critical incidents have also been utilized by researchers in the health profession (Bradley, 1992; Schluter, Seaton, & Chaboyer, 2008). More recently, Hardin, Ruibley and Verlado (2013) examined game day experiences in college football using critical incidents, while Milner, Ostemeier and Franke (2013) examined cross-cultural aspects of coaching using critical incidents.

An important argument for the use of critical incidents comes from the current business world. Berger, Stratton, Thomas and Cook (2012) argued that critical incidents meet the "demand for this new genre of shorter, more focused cases" in business education (p.2). Similarly, Hanson and Brophy (2012) argued for the use of critical incidents as "an established method for cognitive task analysis" (p. 1).

Because analyzing critical incidents is a reflective technique, it is particularly useful in teacher education. Brookfield (1998) indicated that critical reflection is about a "process," a deliberate act of knowing about one's trade and "discovering" about the assumptions relating to the teaching profession (p. 197). Brookfield (1998) suggested that practitioners should evaluate their practices through "multiple lenses" (p.197) because people

learn about their professional practices through multiple experiences and perspectives. Therefore, a reflective practitioner through the process realizes many factors that go into creating the craft of teaching. A reflective practitioner reflects through their own perspectives, the perspectives of their students, and the body of literature or theories that inform our practice as teachers. Brookfield (1998) calls these "complementary lenses" (p. 197).

Self-reflection of the practitioner and the students under training can be possible and effective in understanding skills to be learned (Goodell, 2006). It shows how teachers at times can negotiate difficult situations with students and value of their personal thoughts in learning professional skills within the classroom (Lin, 2011; Mento & Desai, 2012). Khandelwel (2009) used critical incidents in understanding teachers' classroom behavior in higher education, while Andreou, McIntosh, Ross, and Kahn (2015) investigated the experience of educators in efforts to sustain school-wide positive behavior after training.

Research in the field of reflective practices documents students' positive responses when engaged in an open learning environment where they can discuss class activities. For example, Cacciamani, Cesareni, Martini, Ferrini, and Fujita (2012) reported that students' metacognitive reflection space aided participation and building of knowledge. Cacciamani et al. studied 64 students using blended learning environments. Their findings indicated reflection enabled students to develop skills that enhanced their classroom experiences and the creation of new knowledge. Other researchers agree that it is possible to foster reflection in students and gauge progress or growth. For example, instructional devices, such as writing online or having students create reflective journals or self-reports, assist students with their development of critical thinking and respective professions skills (Boyer, Maher, & Kirkman, 2006; Chimera, 2006; Hanson & Brophy, 2012; Kitchenham, 2006; Trepal & Hammer, 2014).

PURPOSE

The purpose of this qualitative descriptive research was to investigate the utilization of reflective practice using critical incident questionnaire in order to collect qualitative data that reflects learners' perceptions of course material

throughout a semester. Edvardsson and Roos (2001) indicated that data collection using critical incidents is possible through a variety of approaches ranging from interviews to direct observations. Brookfield (1998) argued that critical incidents can be used to collect data that reflects a professional's work. The data could be through the lens of others (colleagues and learners) or through one's own stories. The process and the data collection can help unearth assumptions one makes about own practices that may be distorted or may not be useful according to self-knowledge. The assumptions of the present research were that critical incidents would enable instructors to learn new information evidences about their actions as they teach and that the CIQ would reveal how students perceive or interpret course materials.

THEORETICAL FRAMEWORK

This research emphasizes the process of reflection, and therefore, we utilized several complementary theoretical frameworks. Learning to create new knowledge involves interpreting experiences through multiple modalities, but this process in constructivism is not always linear. In fact, Piaget (1966, 1970a, 1970b) argued that individuals acquire new knowledge by the process of fitting new information with old information, a process coined disequilibrium, or a state of confusion experienced by the learner.

Actions can be understood as *modus operandi* from which individuals engage and are engaged in the process of creating new knowledge. Learning in constructivist theories indicates that individuals seek knowledge actively. Thus, knowing does not exclusively involve the mind or cognition, but the mind is used as a tool to mediate prior knowledge with novel information in order to create new knowledge through adaptation, assimilation, and accommodation (Piaget 1966, 1970a, 1970b). Also, knowledge is embedded in culture and language, so that individuals learn by engaging with and becoming engaged by others (Driver, Asoko, Leach, Mortimer, & Scott, 1994; Fosnot, 1996; Shuell, 1986; von Glasersfeld, 1996).

The other theoretical lens is adult learning theory because adults learn in distinct ways. How adults learn is different from learning in children and animals (Knowles, 1973, 1980, 1984; Knowles, Holton, & Swanson, 2012). According

to Merriam, Caffarella, and Baumgartner (2007), adult learning models indicate diverse ways that adults learn; adult learning models suggest adults learn via self-directed attempts, transformative approaches, and experiences.

Using these theoretical frameworks, students in both online and traditional settings create their own knowledge by actively pursuing meaning constructively. Additionally, we theorize that individual reflection by *modus operandi* should be considered a constructive act in light of the fact that it is knowledge being created by the individual reflection in action. We feel that constructivism as a theoretical lens grounds our study well because the nature of learning is an individual and social act mediated by experiences.

METHODOLOGY

We utilized a qualitative descriptive-interpretive design for our study since our goal was to understand students' perspectives of their class activities. Qualitative descriptive-interpretive design employs less detailed interviews that are not typical of other qualitative research designs (Elliott & Timulak, 2005; Sandelowski, 2000). The data gathering in descriptive-interpretive design is flexible. Brookfield's (1995) CIQ allowed such data gathering in the form of students' quick responses after classes or at the end of every four weeks. The CIQ consists of five questions aimed at what engaged, distanced, affirmed, surprised and confused the participants during class activities. Second, the rationale for using descriptive-interpretive design was that it did not need additional data analysis techniques to categorize or conceptualize data. While the CIQ already categorizes comments according to listed themes, we also conducted constant comparative analysis to generate additional categories that captured a "recurrent pattern" of the types of activities that affected the participants (Merriam, 1998) which emerged from across "the preponderance" (Taylor & Bogdan, 1984), and of the responses (Creswell, 2015; Glaser & Strauss, 1999; LeCompte, Preissle, & Tesch, 1993).

The CIQ lists the five questions with sufficient space under each question for the students to write the critical moments or actions in the class as they perceived and judged them. Eighty-six participants responded to the five questions freely after class

sessions every four weeks for a total of 15 weeks. Participants were instructed not to write their names or anything that identified them on the sheets. Anonymity, as Brookfield (1998) argues, ensures reliability of data because consistent sincerity of the instructor distinguishes the professional as an entity from his actions and his performance.

We read and analyzed the data immediately for both online and on-ground classes. For the purpose of systematic analysis of the responses from the participants, we read and analyzed data from each class and highlighted phrases that indicated situations aligned with each question. We then used data logs to enter phrases and words that specified a situation or incident in the class for further analysis of data and themes according to the questionnaire.

RESULTS

The CIQ categorizes responses according to the following themes: engaged, distanced, affirmed, confused, and surprised. These recurrent themes

reflected the participants' thinking about the course activities. The findings for online and on-ground courses were different, but the responses from week to week did not vary much for any of the classes. In addition, responses were occasionally inconsistent. For example, instructor's reviews of previous sessions and discussions worked for some and distanced others from learning. Participants also appeared to perceive their class activities differently. Typical comments from the participants are as follows:

- "Feel engaged when responding to the journals written by classmates..."
- "Engaged when reading reflections on experiences of other learners..."
- "Most engaged when reading..."

Table 1
Themes and Corresponding Responses from Students

Themes	Response On ground	Response Online
Engaged	During discussions Thoughts and ideas from my peers When presenting our research In groups reasoning out for answers When learning what I can use as a teacher Discussion after class videos Team projects	When going over new information When responding to journals
Distanced	Going over questions from the text book Discussing scenarios from the text. When ideas are not engaging and making me interact When discussing new concepts or content. Lectures Reading certain chapters in the textbook When it was time to read articles in class	When instructor does not confirm the information and I get confused Doing assignments because I have 3 classes to deal with
Affirmed	Going over course materials and getting different perspectives Discussing articles we bring to class as a whole class Exercises where we come up with ideas Useful concepts I can use When we worked as group Giving examples or explaining something I don't understand Review in the beginning of class and hands on activities When the instructor writes on the board what we are talking about	When the instructor responses to posts When multiple explanations were used from groups and instructor
Confused	When the discussion strays, it throws me off. A student asks stuff she should know When someone talks over someone else, and I can't hear When the class wanted to negotiate with instructor	Discussion questions Some assignments confuse me
Surprised	How integrated subject matter was There are many ways of looking at things The community that exists between teacher & students and among students How much easier it is to comprehend with small class size How practical this class is Conversation style of the class instead of hearing lecture Surprised how well everyone worked together.	How fun the class discussions are Not knowing what I learned before

Next, we examined the types of situations participants mentioned in their responses. The categories that emerged were assignments, interactions, and intrinsic or personal factors. Participants expressed being distanced or engaged by their assignments, being distanced or engaged by class interactions, and having intrinsic factors unique to the individual that affected their engagement. Assignment, interactions and personal factors

influenced additionally the CIT themes of surprise and confusion. However, we noted differences in student responses to activities in online and on-ground classes. While 88% of the participants reported being engaged by discussions in on-ground classes, it was the least engaging method reported by online classes in comparison. Online participants were also more likely to report distanced by personal factors, such as health problems or personal problems.

Table 2

Examples of data with categories that showed what distanced students

Assignments	Interaction	Intrinsic	Individual factors
Knowing when assignment was due	Going over questions from the text book	I do take responsibility for my own learning	When ideas are not engaging and making me interact
Reading materials	Group activities	If had a question about something, I would ask	Things that haven't come easy for me
Being responsible for due dates	When ideas are not engaging and making me interact	I have energy and clear head	Making sure I stay focused
A bunch of assignments due at once.	When students nearby laugh and talk loudly	I need this class to graduate	I don't procrastinate
Not letting students work in class because most of the assignments are done outside the class.	When working with classmates.	Continue to learn how to do more things in the computer	I need detailed content page in the site.
			Personal issue going on.
			Giving my full attention

DISCUSSION

The rationale of this qualitative descriptive research was to examine whether critical incidents would emerge from students' weekly reports and how students interpreted class activities. The CIQ indicated online participants were engaged when they read course materials, posted online, and when reading other participants' journals and postings. However, the on-ground participants' comments showed they were engaged during class discussions and in collaborative groups. Recurring comments were engaged when in "groups" or "when talking to people." Participants in on-ground classes also reported responding to class activities well when the instructor reviewed materials and wrote on white-board or introduced new material.

This study supports previous findings that reflection through classroom experiences such as writing online or asking students to create reflective journals helps keep students engaged in learning (Boyer, Maher, & Kirkman, 2006; Cacciamani et al., 2012; Chimera, 2006; Kitchenham, 2006). However, in this study, online and on-ground participants differed in how they viewed collaboration in class. While the on-ground class viewed it favorably, collaborative groups distanced online participants because they reported that some of the group members abused the online format by not contributing. When the course format and materials did not make sense, particularly in the

beginning of the course, all participants reported feeling distanced. This underscores the importance of having an organized, easy-to-follow format or outline for the online course. However, on-ground participants were distanced by abstract discussions of theories and principles discussed during class time. On-ground participants reported being distanced by personal matters like lack of sleep the previous night or by other students distracting them in class.

Online participants stated that instructor comments affirmed their learning and resolved issues. They said reading the text was both affirming and surprising for them, depending on their interest or relevance of the topics discussed in the textbook. However, on-ground participants said they were more engaged and interested in practical assignments and reviews. For on-ground participants, reading and discussing the textbook seemed to distance them from learning. Reading seems to be a critical source of divergent views for participants in both learning environments. While reading the textbook engaged online participants, it distanced on-ground participants. Extra materials brought into the class distanced online participants, while it was engaging to on-ground participants.

Therefore, to address the research questions that guided the study, we found, through the CIQ, that participants shared their judgments about course activities. Most of the participants' responses were

reflections on their individual learning. However, as mentioned in the results, the responses did not vary much from week to week. This is an indication that participants' impressions of course activities were consistent, and they responded to course activities and materials in a regular manner. Of course, the most striking finding was the difference between how helpful participants in online and on-ground classes found the textbook and group discussions.

CONCLUSION AND IMPLICATIONS

From this study, we concluded that the student engagement in the learning situation for on-ground participants depended on hands-on activities and mostly happened when collaborating with peers. For example, on the question of what engaged them, they wrote, "Talking to other students, collaborative activities, visuals and computers," or "laidback environment and discussions." On the question of when they felt distanced from class activities, they said when they did not understand information delivered. They wrote, "When discussing new concepts or content," "lectures," or "reading certain chapters in the textbook." On-ground participants also reported being distanced by information they thought was not useful to them. Participants' interpretation of class time and class activities did not necessarily match instructors'. They indicated that they needed to understand why they were learning certain concepts, and they were engaged by activities beyond what they could learn through the textbook. This indicates a different need than what online participants expressed. Online participants did not express being engaged by supplementary material, but they reported being engaged by the activities they did themselves, such as reading and responding to the textbook. The implications of this finding are important for instructors of online classes. While supplementary materials may be provided with the goal of enhancing the online experience, students may not view them that way. They were most engaged with materials that were required for completion of coursework, not those they thought were ancillary.

One of the limitations of this study is that it is restricted to a small sample of students. The findings are not necessarily generalizable outside the scope of this qualitative research. The next step would be to replicate the study using a quantitative or mixed methods research design. This qualitative

study's aim was on gaining knowledge from participants' experiences as opposed to predicting behavior. Nevertheless, we think that our results are promising because they tap into issues relating to student learning and engagement in course materials in online and traditional courses. Additional research is needed on this topic to explore possible causes of the difference in student engagement in virtual and campus-based classes. We think that both qualitative and quantitative empirical studies are necessary in order to gain additional knowledge on students' engagement in learning activities.

We recommend further inquiry applying the technique. Different methodologies can be used as flexible designs to explore different facets of and issues in students' learning. Multiple case studies could be useful because of their ability to compare findings across cases (Baxter & Jack, 2008; Yin, 2003). They also have the potential, in their results, to develop models to implement in teaching and learning.

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