Observing the Development of Constructivist Pedagogy in one Counselor Education Doctoral Cohort: A Single Case Design

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Abstract

This study explores the pedagogical development of a doctoral cohort utilizing constructivist teaching theory in a counselor education program. Researchers implemented an A-B-C design, treating the four-member cohort as a single case. A framework consisting of 12 constructivist interventions was used. Implications for counselor education programs are discussed.

Development and demonstration of a personal philosophy of teaching is an integral aspect of effective practice for emerging counselor educators. Doctoral training that increases knowledge of counselor educators' roles, responsibilities, and various activities should be included in counselor education programs accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP, 2009). In addition, ethical codes and professional standards of practice (ACA, 2005; CACREP, 2009) mandate counselor educators to serve as gate-keepers (ACA, 2005; Standards F.9.a & F.9.b) to the counseling profession and ensure students are competent in their academic and clinical knowledge and skill (Ziomek-Daigle & Christensen, 2010). In adhering to ethical and professional standards for counselor training, counselor educators should have knowledge of instructional theory that informs pedagogical practice to ensure adequate counselor preparation (CACREP, 2009). However, curriculum and the institutional push for educational accountability have significantly deterred educators from allowing pedagogy to influence teaching practices (Hammonds, 2008).

As emerging counselor educators develop skill and knowledge pertaining to pedagogical practice, developing and demonstrating a personal philosophy of teaching and learning can be challenging when applied to the counselor education classroom. While there are several pedagogical theories (i.e., behaviorism and human centered) to draw from in the development of an instructional theory, constructivist instructional theory seems to encompass both the science and art of teaching in the counselor education classroom (Nelson & Neufeldt, 1998). Specifically, constructivism as a theory of learning has been influenced by the humanistic paradigm (Rudes & Guterman, 2007) in that students' personal meaning making is recognized as a vital component of learning new concepts and subsequent practical application. A constructivist approach can be useful in the counselor education classroom because of the humanistic nature of the counseling process where individual students construct their own subjective realities and form new meaning from course content.

Constructivist Pedagogy

Constructivist pedagogy challenges the scientific notion of truth as definite, and posits a learner's beliefs and assumptions are influenced by social context. Students are not merely blank slates waiting for knowledge to be imparted; rather, students are viewed as active participants in their own learning, building upon existing knowledge and experience to make meaning. This is a shift away from the historical structure of a classroom, in which the teacher is seen as expert (Nelson & Neufeldt 1998; Sudzina, 1997) and students as passive beings whose learning ultimately depends upon the knowledge and skill of the educator. From a constructivist perspective, responsibility is shared between teacher and learner, and all who participate in the classroom experience present knowledge and skill. Based on student self-report, constructivist pedagogy has been shown to promote transparency in teaching, which in turn promotes student learning and further enhances the student experience in the classroom (Dollarhide, Smith, & Lemberger, 2007). Basic tenets of constructivist pedagogy align with a humanistic educational perspective, in that the teacher acts as a facilitator for learning, engaging the holistic experiences of the students including cognitive and social perspectives (Underhill, 1989). The current study aimed to explore the extent to which counselor educators-in-training demonstrate those facilitative skills that encourage shared responsibility. For the purpose of this study, those skills were identified as the 12 constructivist teaching interventions outlined by Brooks and Brooks (1993):

- Encourage and accept student autonomy and initiative.
- Use raw data, primary sources, and interactive and physical materials.
- Use cognitive terminology to frame tasks.
- Allow student responses to drive lessons.
- Inquire about students' understanding of concepts before sharing their own.
- Encourage students to engage in dialogue with the teacher and each other.
- Encourage student inquiry by asking open-ended questions.
- Seek elaboration of students' initial responses.
- Engage students in experiences that may engender contradictions to their initial hypotheses and then encourage discussion.
- Allow wait time after posing questions.
- Provide time for students to construct relationships and create metaphors.
- Nurture students' natural curiosity.

The idea that students can be the experts of their own learning is reflective of the postmodern perspective in counseling practice. When taking a postmodern approach to counseling, practitioners refrain from the role of expert so clients may be empowered to direct their own success. As counselors adopt the perspective that clients are the experts of their own lives, a client's previous life experiences and independent reality become the foundation for the counseling process (Teyber, 2006). This is in alignment with a humanistic perspective as it emphasizes the phenomenological experiences of the student, as well as those of the group and the teacher, in the co-construction of meaning (Underhill, 1989). In addition, a constructivist classroom promotes reflexivity of students, encouraging them to consider their own phenomenological experiences and promoting self-awareness that is imperative to their development as effective practitioners (Nelson & Neufeldt, 1998).

The counselor education classroom is an ideal environment for modeling constructivism, as constructivist teaching parallels the postmodern influence on the counseling relationship. Similar to the way that clients are viewed as experts of their own lives in counseling sessions, students become the experts in the classroom. While a wealth of literature exists regarding the application of constructivist pedagogy in counselor education programs (i.e., Dollarhide et al., 2007; Nelson & Neufeldt, 1998), there is a dearth of research regarding the emergence of a theory of instruction in counselor educators in-training. In an effort to further understand the emergence of constructivist pedagogy in a counselor education doctoral student cohort, the researchers in the current study observed their own pedagogical development as indicated by the implementation of constructivist teaching interventions (Brooks & Brooks, 1993) over the duration of one semester of a doctoral-level teaching practicum.

Single Case Design

Single case design was utilized as the research methodology for this study. Single case design methodology has a long history of application in many areas of social science research (Barlow & Hersen, 1984), and is often used for gathering information on any system treated as a single unit (Bloom, Fischer, & Orme, 1995). Single case ($N = 1$) design has also been regarded as a sound yet underutilized way to measure counselors' clinical effectiveness and "a scientifically acceptable and clinically feasible method of demonstrating the effectiveness and the means for incorporating the scientific method into day-to-day counseling practice" (Lundervold & Belwood, 2000, p. 93). The utility of this method as a means for observing counseling interventions can also be applied as a means for observing pedagogical interventions, which was the focus of the current study. Single case ($N = 1$) designs have also been identified as a useful research methodology for studying counselor supervisor effectiveness and accountability (Holahan & Galassi, 1986; Tracey, 1983; White, Rosenthal, & Fleuridas, 1993). Despite the presence of this methodology in counselor supervision, there exists a paucity of research regarding the use of the methodology to explore teaching, specifically in the field of counseling. The researcher-participants in this study desired to employ this methodology in a novel way through implementation of this study.

Single case ($N = 1$) designs remove the experimental requirement of measurement against an expected or population mean. Phenomena are instead observed in their unique existence, and hypotheses are made based on such observations. In this study, the utilization of a single-case design allowed researcher-participants to observe the effectiveness of their constructivist teaching interventions as measured only by the presence of these interventions in a unique setting. Hypotheses were made in relation to constructivist theory, but no experimental hypotheses were made to compare the statistical findings of this study to the measurements of any previous study. As the goal of this study was to come to further understanding of one doctoral cohort's application of constructivist theory, this methodology was appropriate in this case as it allowed researcher-participants to focus on the phenomenon of the development of their shared pedagogy.

Present Study

The focus of the present study was to observe whether participation in an instructional theory course, and teaching in a concurrent undergraduate counseling course, affected the number of constructivist teaching interventions used by researcher-participants as they developed their understanding and usage of constructivist theory. It was hypothesized that enrollment in an instructional theory course would influence researcher-participants' awareness and intentionality in their teaching, as measured by the number of constructivist teaching interventions implemented across the duration of one semester. While there is a requirement for the demonstration of learning outcomes regarding doctoral students' knowledge of instructional theory in counselor education as evidenced in the CACREP standards (2009), literature regarding the development of pedagogy in counselor education programs remains scant. In order to further explore the phenomenon of developing an instructional theory within a counselor education program, researcher-participants recorded their teaching sessions using the Landro Play Analyzer Software (LPA, Produced by Iris Technologies, Inc.). The LPA was used to code 12 constructivist teaching interventions as outlined by Brooks and Brooks (1993). By observing the extent to which neophyte counselor educators are implementing theory-specific pedagogical techniques, the authors hoped to explore the development of constructivist pedagogy as measured by theory-specific interventions, as well as to inform future research regarding the development of pedagogy in counselor education.

Methods

Single case design was utilized as the research methodology for this study. Single case design methodology has a long history of application in many areas of social science research (Barlow & Hersen, 1984), and is appropriate for gathering information on a specific individual or phenomenon treated as a single unit (Bloom, Fischer, & Orme, 1995).

Participants

The single case observed in this experiment was a four-member cohort of second-year counselor education doctoral students enrolled in an instructional theory course, also referred to as researcher-participants in this study. This cohort was comprised of two males and two females. Three members of the cohort identified as White, and one member identified as Biracial. The ages of the researcher-participants ranged from 27 to 31. All members of the cohort worked together as a unit to develop constructivist pedagogical practices, hence a single case design.

The instructional theory course took place across the duration of one semester, and the researcher-participants made up the entirety of students enrolled in the course. The course involved a teaching component in which the researcher-participants taught undergraduate students in an Introduction to Counseling class. The goal for the researcher-participants was to develop and implement a pedagogical theory. The researcher-participants chose a constructivist pedagogical theory on which to focus their teaching interventions and pedagogical development, and the development and application of theory was primarily an expectation of the Instructional Theory course. The current study was developed after the researcher-participants individually identified with constructivist theory, out of the realization that the data already being gathered

for the instructional theory course could be analyzed in an effort to inform the field of counselor education in respect to pedagogical development.

Each week, one researcher-participant taught a 50-minute class period of the Introduction to Counseling class to undergraduate students. The other three researcher-participants and their instructional theory professor were present for each class period as observers. Teaching sessions were recorded as part of the course requirement for the Instructional Theory course. After the 50-minute undergraduate Introduction to Counseling course concluded each week, the researcher-participants and professor met for their 2.5 hour Instructional Theory class, during which time they discussed the undergraduate Introduction to Counseling class and various pedagogical theories.

Procedures

Each of the 11 undergraduate class sessions was recorded using the Landro Play Analyzer (LPA), and stored within the LPA database for future coding and analysis. All class periods were coded at the end of the semester, preventing the confounding variable of coding from impacting the number of interventions used during the class sessions. Coding procedures are described in detail in the Coding section. The criteria used to code teaching sessions were the 12 constructivist teaching interventions defined by Brooks and Brooks (1993):

- Encourage and accept student autonomy and initiative.
- Use raw data, primary sources, and interactive and physical materials.
- Use cognitive terminology to frame tasks.
- Allow student responses to drive lessons.
- Inquire about students' understanding of concepts before sharing their own.
- Encourage students to engage in dialogue with the teacher and each other.
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- Allow wait time after posing questions.
- Provide time for students to construct relationships and create metaphors.
- Nurture students' natural curiosity.

Design

The treatment was divided into three separate phases, or an A-B-C design. The first phase, (Phase A, or the baseline phase) was a four-week duration in which each doctoral student member of the cohort taught one class period of the Introduction to Counseling course. The second phase (Phase B) occurred when the cohort was introduced to constructivist teaching pedagogy and specific constructivist teaching interventions during their Instructional Theory course. The third phase (Phase C) consisted of the cohort continuing to solidify their constructivist pedagogical theory and attempting to teach the Introduction to Counseling course using constructivist teaching interventions. At the end of the three phases, all classroom sessions were coded using the LPA.

The development of a constructivist pedagogical theory was honed by the researcher-participants in the context of the Instructional Theory Course with the feedback, instruction, and support of the professor. While the researcher-participants were not all expected to choose the same pedagogical theory for the purpose of the instructional theory course, each of the researcher-participants chose to develop a constructivist pedagogy, thus providing the context of this study, which was developed after realization of the shared pedagogical orientation of the four cohort members. Each phase, as well as the coding process, will be discussed in further detail below. Recording and teaching demonstrations and coding teaching skills was a requirement of the instructional theory course, and the current study utilized that preexisting data.

Phase A – baseline. During the baseline, each researcher-participant taught a 50-minute class period of the undergraduate Introduction to Counseling with minimal knowledge of and no training in constructivist pedagogical theory. Each researcher-participant member of the cohort was present to observe each researcher-participant teach under direct supervision of the course professor. Little to no purposeful effort was involved in implementing constructive teaching interventions or techniques during this phase. Each member of the cohort taught one 50-minute class session during Phase A. Landro software was used to record each teaching session.

Phase B – theory training. As the semester progressed, the researcher-participants were educated about multiple pedagogical theories, including a constructivist perspective. The new knowledge of pedagogical theories was applied to discussions regarding instructing, developing a curriculum, and governing a classroom. The researcher-participants then used this knowledge to instruct undergraduate students in the Introduction to Counseling course. New pedagogical skills, interventions, and techniques were used in the classroom. These new skills, interventions, and techniques were taken from multiple pedagogical theories (including a constructivist pedagogy), as the researcher-participants began to narrow down their pedagogical theory choice. Each cohort member taught one 50-minute class period during this four-week phase. Landro recording software was used to record each teaching session.

Phase C – theory choice. By the final teaching rotation, each member of the cohort identified as using a constructivist pedagogical theory. As a result of their identification with constructivist theory, during the final four class sessions of the Introduction to Counseling course, the four researcher-participants purposefully utilized teaching techniques specific to constructivist teaching theories (identified as Brooks & Brooks' 12 constructivist teaching interventions, discussed in the "Procedures" section of this paper). Each researcher-participant taught one 50-minute undergraduate class session during the Phase C, which lasted four weeks. One Landro recording of Phase C failed, resulting in only three recordings for this phase, and 11 recordings total.

Coding. In order to code the class sessions, researcher-participants developed a playbook (a list within the LPA system) consisting of the 12 constructivist interventions used (Brooks & Brooks, 1993). Researcher-participants viewed and coded one another's teaching sessions using the LPA in order to objectively identify individual constructivist interventions. Coding was completed at the end of the semester after all teaching demonstrations had been

recorded. The researcher-participants utilized a round-robin approach: each member coded a different one of each of their cohort's teaching demonstrations per phase (i.e., for Phase A, Participant A coded Participant B's session; for Phase B, Participant A coded Participant C's session; and for Phase C, Participant A coded Participant D's session), in order to ensure that all researcher-participants were reviewed by one another during the course of this study. To code the interventions, researcher-participants watched each recorded session assigned for their review. When one of the 12 constructivist interventions (Brooks & Brooks) was observed, a "marker" on the digital recording was set by the reviewer. After sessions were viewed and coded, they were re-watched to ensure no interventions were missed during review. Interventions that were not constructivist interventions were not coded. When questions arose regarding how or whether to code an observed teaching intervention, the researcher-participants consulted with one another on how to proceed.

After every class session was coded using the LPA, the data was exported to Excel (Version 12) in order to analyze the data. In exporting the data, the total number of interventions observed in each teaching demonstration recording (i.e., the "markers"), was compiled for export. Descriptive statistics were used to identify the total number of constructivist teaching interventions used during each class session. Implications drawn from data analysis are discussed below.

Results

A single-case design ($N = 1$) was utilized to analyze the data collected in this study. This study had an A-B-C design, where Phase A was baseline, Phase B was theory training, and Phase C was theory choice. The treatment in this study was introduction and implementation of constructivist instructional theory.

Twelve 50-minute class sessions were conducted; however, only 11 were coded and analyzed, as one of the 12 original recordings was compromised. Table 1 shows the raw number of interventions within each 50-minute class session, as well as each phase of treatment. Across the duration of one semester, the number of interventions across all instructors ranged from a low of 21(Participant B) to a high of 90 (Participant D).

Table 1 - *Number of Teaching Interventions Across Semester*

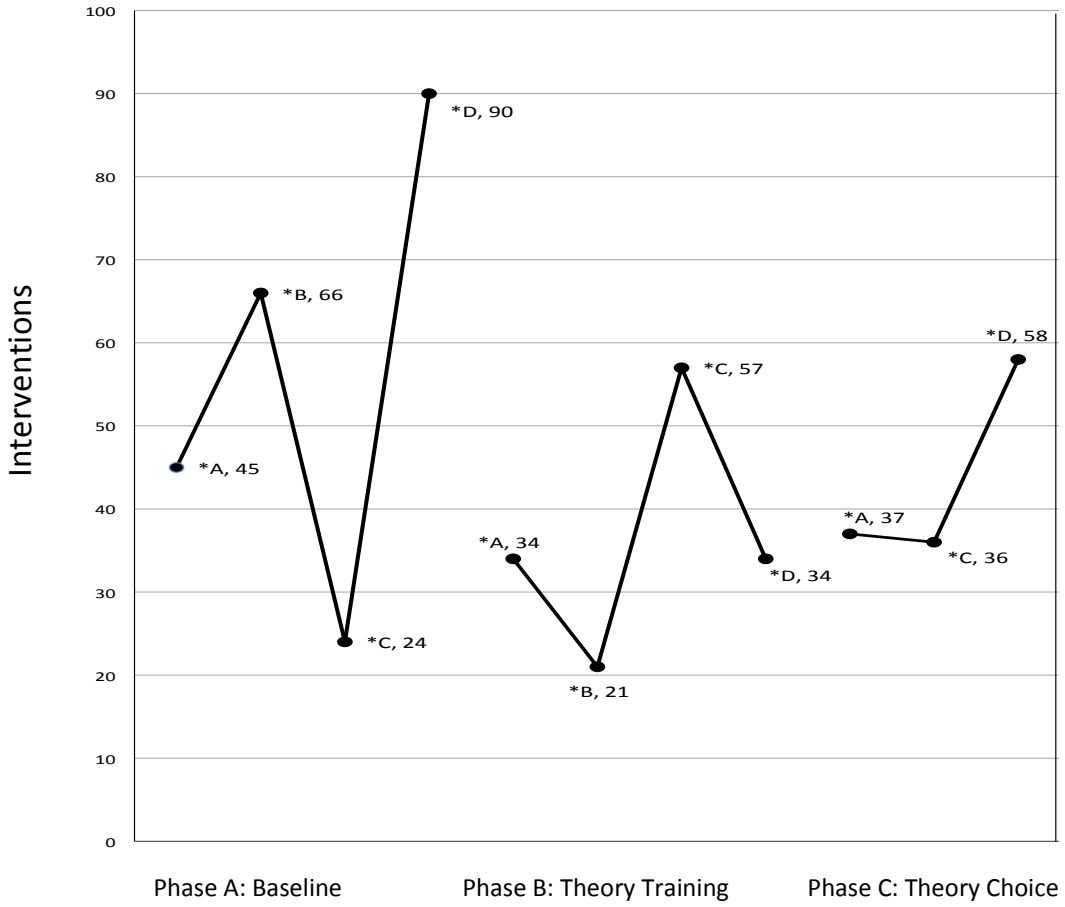

Table 1. Number of teaching interventions across the duration of the semester, is separated into phases. Phase A (Baseline) consisted of teaching sessions one through four. The number of interventions in this phase ranged from 23 to 91. Phase B (Theory Training) consisted of teaching sessions five through nine, with a range of 21 to 44 interventions. Phase C (Theory Choice) consisted of teaching sessions 10-13. The number of interventions in Phase C ranged from 32 to 58.
* The researcher-participant corresponding to each teaching session is denoted with an A, B, C or D.

Table 2 shows the mean number of interventions for each of the three research phases. The highest mean number of interventions (M = 56.25) occurred during the first phase, Phase A (Baseline), which included lectures one through four. The lowest mean number of interventions (M = 36.50) occurred during Phase B (Theory Training), which included teaching sessions five through eight. Phase C (Theory Choice) had a mean of M = 43.67, and consisted of teaching sessions nine through eleven (only three teaching sessions were included in this phase due to the missing data). The number of teaching interventions did not continually decrease across the semester, but had the lowest point in the middle of the semester, during Phase B (see Table 2).
Table 2 - *Mean Number of Teaching Interventions*

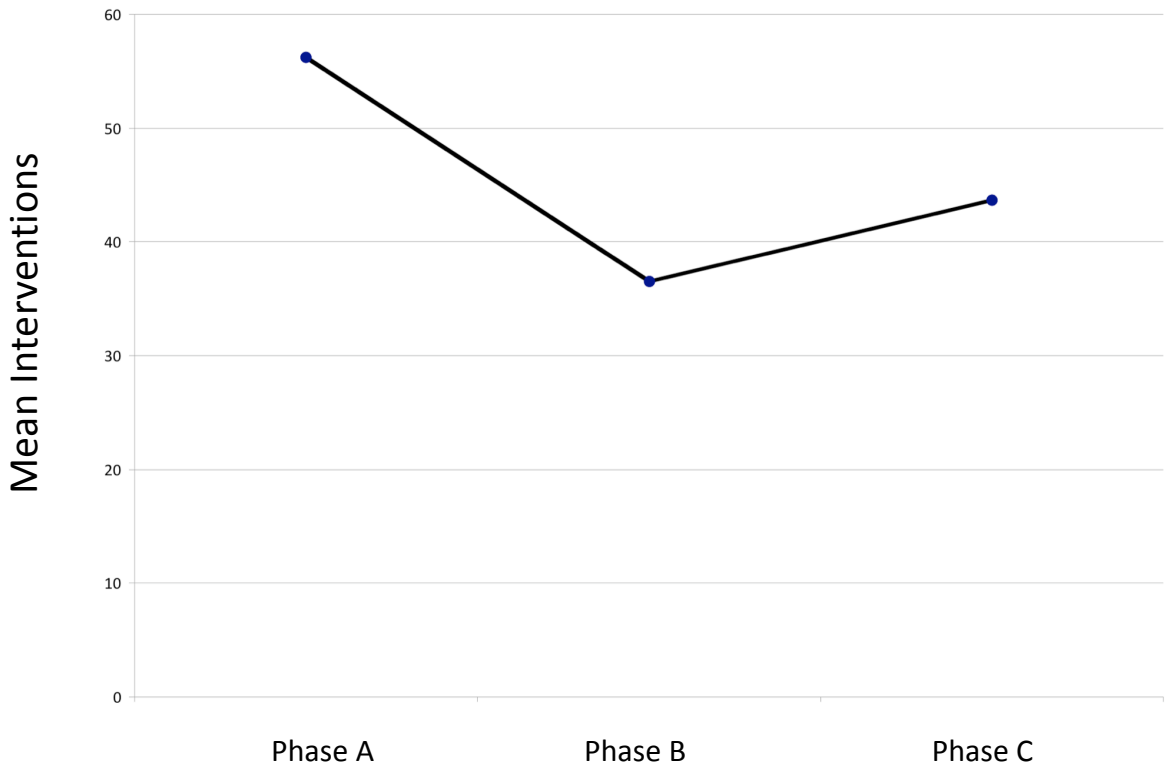

Table 2. Mean number of teaching interventions for each phase, across the duration of the semester. Phase A (Baseline) had a mean number of teaching interventions of $M = 56.25$. Phase B (Theory Training) had a mean number of teaching interventions of $M = 36.50$. Phase C (Theory Choice) had a mean number of teaching interventions of $M = 46.37$.

Discussion

As suggested in the literature (Brooks & Brooks, 1993), constructivist teaching principles are designed to elicit heavy student involvement in the classroom and are in alignment with the humanistic perspective of focusing on students' phenomenological experiences (Underhill, 1989). Educators successfully employing constructivist foundations are likely to use fewer teaching interventions, including constructivist interventions, over time, than educators operating from non-constructivist perspectives; once constructivist norms are set in the classroom, increased reliance on student initiative occurs. In other words, the more active and engaged students are in the classroom learning process, the less frequent the need for prompting/intervention by the instructor. In essence, students will take control and responsibility when it comes to the classroom.

Given that implication of constructivist teaching, it is reasonable to expect that the number of observed constructivist teaching interventions would decrease over the course of the semester as the Introduction to Counseling class developed the norms of self-regulated learning and student control over classroom discussions, that are a goal of constructivist education (Loyens & Gijbels, 2008). In the current study, and contrary to that expectation, the highest

number of constructivist interventions ($M = 56.25$) occurred during Phase A, before researcher-participants were introduced to constructivist theory. This may be explained by initial attempts by the researcher-participants' to mimic teaching interventions, including constructivist interventions, they had experienced as students, as well as by the enthusiasm of their new role as instructors. In addition, the number of constructivist interventions increased from Phase B (introduction of constructivism) to Phase C, which is also not consistent with the assumption that the mean number of interventions would decrease overall, as the classroom became a student-regulated, cooperative learning environment. One potential explanation for this discrepancy would be that the researchers better understood and were thus more able to identify and implement basic constructive interventions due to an increased grasp on the subject matter. Another explanation could be regarding the level of student self-regulation and cooperative learning that actually occurred, a variable not measured in this study. Clearly, additional attention to the use of these interventions is necessary.

A secondary result of this study was the realization that teaching interventions, specifically constructivist teaching interventions, cannot solely be measured from an objective point of view, and there is a need for further understanding of the internal and interpersonal processes that occur when pedagogical theory is both learned and implemented. As counselor educators work to intentionally develop pedagogical philosophy into their teaching, better understanding of said processes can help counselor education mentors to provide improved supervision and support during a student's pedagogical learning experience. In addition, having an understanding of the processes that unfold for counselor educators in training might help provide solace, understanding and confidence when applying newly learned pedagogical concepts in the classroom.

Limitations and Future Initiatives

Several limitations were identified in this study. Throughout the duration of the Introduction to Counseling course, the cohort had to attend to several maintenance tasks. Included in these tasks were keeping attendance, handing back assignments, and discussing upcoming tests. These tasks sometimes resulted in unequal amounts of time for each member of the cohort to instruct the class during certain weeks of the semester.

Another limitation was due to technological difficulties. On two occasions, portions of the class period were not recorded due to technological complications, with one entire class period not being recorded altogether. For the purposes of this study, means were calculated and examined to account for the lost data. Accounting for technological limitations in the design of future studies could increase the accuracy of actual constructivist-based teaching interventions used by emerging counselor educators developing a theory of pedagogical practice.

Future research initiatives tracking individual instructors' development of theory could yield different results. In the current study, researcher-participants coded one-another's work in order to ensure objectivity and control for researcher bias, which only allowed for coding of observable interventions, and did not include interventions the instructor in question might have been implementing that might not be readily noticeable to an observer. Qualitative inquiry regarding the development and application of constructivist theory and interventions would

provide more insight into the internal and interpersonal processes that occur, and that are not as objectively measurable.

Clearly, the dearth of literature regarding counselor educators' development of an instructional theory merits increased attention in the research. The manner in which instructional theory relates to theories of counseling and supervision utilized by the counselor educator could prove informative as well. The use of qualitative interviews with students in the course as well as the counselor educator doctoral students could provide additional context and depth into the overall experience of constructivism in the classroom and offer insight into the implementation and reception of its' intended purposes. Further, the process surrounding the implementation and identification of constructivist interventions could lend integrity to the current study and highlight the need for additional literature surrounding the experience of developing an effective theory of instruction. Recreating the current study using one instructor only over the course of the semester would control for individual differences between the researcher-participants in this study. A focus on the use of instructional theories in addition to constructivism could greatly benefit the field as an increased focus on pedagogy in counselor education (i.e., CACREP, 2009) is evident.

Conclusion

The pedagogical development of one doctoral-level counselor education cohort was the focus of this study. Members of this cohort individually identified constructivism as their instructional theory of choice. Constructivist interventions were observed in order to explore the extent to which that theory was integrated into the researcher-participants' classroom instruction. This study indicated that the highest number of interventions was observed during the first weeks of the course, while the lowest number of interventions occurred during the middle weeks of the course, a phenomenon that is not fully understood within the scope of this study, as discussed above. Clearly, increased attention into the development of instructional theory, including but not limited to constructivism, is merited from the findings of this study, including both phenomenological and objective exploration.

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