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Research of Teaching in Counselor Education: A Collective Effort of Improved Rigor

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This special issue in *Teaching and Supervision in Counseling* offers several perspectives of teaching, pedagogy, and learning theory in counselor education. In this article, the author conceptualizes signature pedagogies: surface, deep, and implicit structures in terms of research questions. Methodological design considerations are discussed to broaden the scope and rigor of research on teaching in counseling. Finally, strategies for improving a favorable review of research manuscripts for publication are provided.

Keywords: pedagogy, counseling, research, teaching, learning theory

In this special issue, leaders in counselor education presented a persuasive perspective that signature pedagogies are foundational to teaching practice and addressing learning outcomes for counseling students (Baltrinic & Wachter Morris, 2020). In her rebuttal, Borders (2020) argues a singular signature pedagogy may be more applicable and that the learning process (i.e., how students learn) may be more advantageous in research of teaching for counselor education. As counselor educators digest these proposals into their existing schemas to conceptualize what signature pedagogy(ies) mean to them, what remains replete in the literature is that there is scant research of teaching (Barrio Minton et al., 2014; Barrio Minton et al., 2018).

In their review of research on teaching in counseling across 15 years and two content analyses, Barrio Minton and colleagues (2014, 2018) summarize the need for counselor educators to increase their exploration of rigorous methodologies for teaching and learning. Indeed, one of the identified aims of *Teaching and Supervision in Counseling* is to publish high-quality research in teaching (Wester, 2019). Therefore, I offer counseling researchers methodological considerations when developing research projects related to teaching. I review the development of research questions, as well as methodological elements: procedures, samples,

and data analysis. Finally, I propose strategies for addressing some of the errors often made in the manuscript writing process that challenge journal reviewers from assigning a favorable determination. In this process, I encourage a collective response to progress the rigor of research on teaching in counselor education.

Research Questions

At the onset of developing a new project the research question is critical, however, for whatever reason, may be overlooked. Perhaps in the initial excitement of starting a new research project, researchers skip to data collection with a partially written, or thoughtful question. Before proceeding, researchers must brainstorm (carefully) the intent of their project, which is central to developing the research question(s). Most simply: What are the researchers looking to assess? In research of teaching, there are different facets of potential focus. Consistent with articles in this special issue, I conceptualized them from Shulman's (2005) framework: surface structure, deep structure, and implicit structure.

Surface Structure Questions

Shulman (2005) described surface structure as the operationalized tasks or actions in the classroom. Baltrinic and Wachter Morris (2020) surmised surface structure represents what counselor

educators are doing in their classrooms (e.g., group discussion, role-plays, case studies). In a traditional course, arguably, the most time is spent in the classroom with instructors looking for ways to keep students engaged and yet teach imperative content. What educators do in the classroom — these teaching techniques, in-class activities, or assignments — may be examples of the surface structure. In counseling, researchers of teaching have considered their surface structure in various published studies. For example, the use of a specific movie (Moe et al., 2014), implementation of an experiential activity (Williams et al., 2015), participation in a mindfulness group (Bohecker et al., 2016), or utilization of a flipped classroom (Merlin-Knoblich & Camp, 2018). But it is the research question that guides the intent.

There are several avenues one might consider when researching the outcome or impact of a teaching technique, experiential activity, or course requirement. For example, is the researcher assessing that the use of the surface structure resulted in increased knowledge? Moe et al. (2014) empirically supported that students were able to label key constructs of group work from the characters and themes in the movie. Counselor educators may also want to assess if their surface structure choices are well-received by students. For example, researchers considered students' perceptions of a flipped-classroom to determine if they were satisfied with their experience (Merlin-Knoblich & Camp, 2018). When developing a research question for assessing surface structure, researchers need to be mindful of their intent from the onset. What are they seeking to assess about the teaching technique, or what do they want to know about an in-class activity? Indeed, Barrio Minton et al. (2018) suggested researchers strive to make a better connection between the techniques and learning outcomes. For example, if the technique is aimed at increasing awareness of privilege and oppression, the question must reflect the attainment of new knowledge or perspective of those constructs. Having a specific variable of interest allows the research question to be focused on an intended learning outcome. Surface structure activities may not be the best focus for the question, but their intended use is the outcome for research.

Deep Structure Questions

According to Shulman (2005), deep structure represents “a set of assumptions about how best to impart a certain body of knowledge” (p. 55). Baltrinic and Wachter Morris (2020) applied deep structure to counselor education as pedagogy, or the educator's framework. In this way, deep structure may represent the philosophical underpinnings of a counselor educator's beliefs about teaching. In counselor education, research on pedagogical practice is rare, representing only 9.13% of the 230 teaching articles reviewed between 2001–2010 (Barrio Minton et al., 2014). However, in their follow-up content analysis, pedagogical-related articles more than doubled (Barrio Minton et al., 2018), meaning that counselor educators may be considering their teaching philosophy more intentionally in research. The challenge may be more about what educators are asking about their pedagogical choices. For example, Casado Pérez and Witherspoon (2019) researched the implementation of problem-based learning in the classroom, but findings were more indicative of the students' likes and dislikes, not necessarily how the approach impacted what they learned about human growth and development.

I also suggest that the “set of assumptions” (Shulman, 2005, p. 55) is not only influenced from the educator's pedagogical framework, but also on the assumptions of how students learn, such as an applied learning theory. Barrio Minton et al. (2014) concluded only 6.52% of teaching articles were on topics of teaching and learning. So, although conclusions in research may assert that students liked an activity or that they perceived an activity to be helpful in class, the connections to how the students learn from that activity might be lesser understood. Additionally, how students learn may be a more challenging research question to assess. However, Borders (2020) reasoned that it would be advantageous for counselor educators to develop research projects that consider how students learn. There seems to be room for growth in the profession's assessment of deep structure.

Implicit Structure Questions

Finally, Shulman (2005) proposed implicit structure, which are the agreed upon values or dispositions of the profession. Baltrinic and Wachter
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Morris (2020) synthesized that in counseling there are characteristics of professional identity that can represent implicit structure. In curriculum, counselor educators aim to develop agreed upon professional dispositions among students to be consistent with expectations of the profession. In counselor education, research related to implicit structure is represented when researchers explore professional dispositions. For example, when they explore empathy development (Lyons & Hazler, 2002) and ethical decision-making (Neukrug & Milliken, 2011).

Baltrinic and Wachter Morris (2020) noted that implicit structure may be largely influenced by the profession's code of ethics or competency documents. Indeed, accreditation standards certainly have influenced the research conducted in counselor education. In their follow-up review of teaching articles, Barrio Minton et al. (2018) observed an increased prevalence of student learning outcome research. The timeframe of the research reviewed (2011–2015) aligned with the release of accreditation guidelines in which all standards required evidential proof. However, does an assessment of a learning outcome on an accreditation standard equate to acting like a professional counselor? Researchers have pursued implicit structure from the perspectives of professionals. In a series of grounded theory studies, researchers sought to define the development of counselor professional identity through the lens of professionals with various degrees of experience (Dollarhide et al., 2013; Gibson et al., 2010; Moss et al., 2014). Research questions may also be more complicated because assessing for an implicit structure may be accomplished via a surface structure. In the surface structure example I proposed regarding privilege and oppression, a teaching technique (e.g., watching the film *Crash*) to measure growth in this area is one perspective of the question. However, counselors' awareness of their own privilege and oppression may represent a shared value, or implicit structure. This nuance is an important consideration for researchers when developing their question(s).

Whether the aim of the study is to investigate surface, deep, or implicit structure in research of teaching, social validity must remain at the forefront. Wester (2011) encouraged researchers to consider the following: How will this project better counselor training? A clearly defined purpose

(grounded in previous research and theory) can certainly support the development of a meaningful research question. I propose to take this process one step further in research on teaching to consider the following: What aspects of teaching are being considered: surface, deep, or implicit structure? What is the greater good (social validity) that can come from this project?

Methodological Decisions

Once a research question(s) is formalized, then researchers can move forward with other methodological decisions, such as procedure, sampling, and data analysis. In this process, questions may be adapted. Indeed, the reciprocal nature of considering how to answer the research question may impact the wording or help focus the true intent (e.g., predictive, descriptive, relational). Methodological decisions in research on teaching may be further impacted by the nature of research in the classroom, which is outlined for consideration.

Procedure

The procedure of the research project is influenced by ethical principles. Researching one's teaching and students consequentially requires more ethical considerations. Human subjects research protocols clearly mandate that institutional review board (IRB) approval is required if the intention of the project is publication (Department of Health and Human Services, 2018). Therefore, planning for research in the classroom may require preparation an entire semester ahead of the projected course start date. Anecdotally, I have observed colleagues successfully obtain IRB approval with quick turnaround when the start of the semester loomed. However, not all institutions offer such flexibility, and not all researchers have relationships with an IRB representative that allows for such expedited reviews.

Research of one's teaching in one's classroom is also inherently challenged with power differentials. The American Counseling Association (ACA; 2014) *Code of Ethics* has an ethical standard aimed at preventing the coercion of students and supervisors in research (G.2.b). In the development of the procedures, attention must be given to how students are invited to participate. Does the informed consent adequately address the choice to participate (ACA,

2014, G.2.f)? Researchers must consider if the risk to students inherent in the power differential is worth potential benefit of the study. This is where having a meaningful, socially valid research question works in favor of the researcher.

There are also accommodations in the procedure that can be made to reduce the power differential, such as research teams to collect data, rather than the instructor of record. For example, in their implementation of a mindfulness group for students enrolled in a counseling course, the instructors did not lead the groups (Bohecker et al., 2016). Additionally, in a pre-post design in the classroom, researchers had participants create unique identifiers to maintain anonymity, but allow for comparisons (Giordano et al., 2019). Separating the instructor from the data collection is certainly an additional level of protection to participants, such as having a noninstructor research team member collect data from students. Finally, assurances for the protection of participants' identities (ACA, 2014, G.4.d) can be challenged by small class sizes and data sources, such as those traditionally used in qualitative research. Researchers may need to consider protocols in which data are not analyzed until after final grades are submitted to help assure students that their performance in the class is not associated with their data. Researchers have options in their procedures to address ethical principles. Documentation of those accommodations need to be clearly written in the participant informed consent form, as well as the manuscript submitted for publication.

Sampling

The purpose of the study and research questions may also influence the sample of participants recruited for the research project. For example, a project assessing surface structure, such as an experiential activity, may be limited to the students enrolled in the researcher's course (e.g., Williams et al., 2015). However, the researchers may consider replicating the study across multiple sections of the course within the same program to increase sampling capacity. One limitation to this replication may be risks to fidelity. In her assessment of students' competence and understanding of process addictions in a newly developed course, Giordano et al. (2019) collected data from one class of students. Coordination with an instructor teaching another

section of the course might increase sample size and diversity; however, it may also require the instructors to design and conduct the course in the same way — this is not an easy feat, but it is plausible. Further, the same instructor conducting research for the same course each semester faces similar fidelity concerns because confounding variables to environmental context and different students in the room add a layer of design complexity. Researchers may have more flexibility in sampling when the research questions aim to explore broader professional values among trainees. For example, when conducting a study on an implicit structure, such as empathy development, researchers recruited counseling students from five counseling programs in one state (Lyons & Hazler, 2002). The research question reflected the acquisition of empathy, rather than how or through what interventions it was developed, allowing for a cross-institutional sampling method.

Sampling also includes an estimation of sample size, which is dictated by the research question. With quantitative research questions, researchers may rely on a priori calculations using G*Power (Faul et al., 2009) to determine a minimum sample size for adequate power. It may become clear to the researcher at this point that a sample size of one class is not sufficient to meet minimal thresholds. However, in research of teaching, there may be fewer independent variables and researchers may be pleasantly surprised to learn that minimum sample sizes are realistic. For example, a paired *t*-test with $\alpha = .05$, $d = .5$, and power = .80 requires a minimum of 27 students (Faul et al., 2009), which may be reasonable in a didactic counseling course. Additionally, researchers may consider quantitative analyses that require smaller samples. For example, Lenz (2015) proposed that single-case research design is sufficient with samples between 1–3 participants and although analyses is conducted at the individual level (i.e., the participant is their own comparison), several cases can be interpreted to understand the intervention more deeply. Applied to research on teaching, single-case research design may allow for students in a class to be analyzed individually, but the results of the study could be collective. When researchers are asking experience-based or perception-based questions of their teaching, they may find themselves leaning toward qualitative design.

In this case, researchers need to consult with the salient texts of the qualitative research tradition to determine an acceptable sample size. A case study may represent one participant, one class, or one program (Yin, 2014); consensual qualitative research cap samples at 15 participants (Hill, 2012); and grounded theory may represent upwards of 50 participants (Hays et al., 2009).

Data Analysis

Simultaneous with assessment of minimum sample size is the consideration of data analysis, as one influences the other. A researcher must know what analysis to conduct, based on their research question, which inevitably influences the calculation of sample size. There are several quality research textbooks often cited in counseling literature that can be used to guide research design (see Balkin & Kleist, 2017) and analyses in statistical software (see Field, 2018). In research of teaching, the desired outcome of the project is dictated by design choices — meaning, the implications drawn from the study are limited in scope to the executed research design. For organizational purposes, I review data analysis from quantitative and qualitative perspectives.

Quantitative Methods

In their review of research on teaching, Barrio Minton and colleagues (2014, 2018) proposed counselor educators develop stronger connections between a teaching technique and learning outcomes. Additionally, there is greater attention to pedagogy in the classroom (Barrio Minton et al., 2018), meaning, how do the surface and deep structures impact student outcomes? Correlational and causal research designs would certainly assist in answering these questions in research of teaching. Wester (2019) encouraged researchers to demonstrate teaching effectiveness with outcome-based research. Researchers have suggested that single-case research design might be a potential solution to outcome-based research with limited sample sizes (Lenz, 2015; Wester, 2019). Although, further consideration is warranted before designing such studies because the single-case research design proposes an established baseline and an A-B-A-B design (Chambless & Hollon, 1998) — meaning, without the intervention, the participants would return to their baseline. In

terms of research on teaching, this could be interpreted to mean that without the teaching technique, the students would not retain newly established knowledge or skills.

An additional consideration for developing quantitative studies are the assessments chosen (Balkin & Kleist, 2017). A reliable and valid assessment may not already exist to measure the construct in teaching or learning that educators aim to explore. Indeed, researchers of teaching have relied on survey design when preexisting measures were not available. Although there are inherent limitations to using an assessment without established psychometric properties, there are ways to do so that promote quality. For example, Burton and Furr (2014) wanted to assess how instructors of diversity courses managed conflict in the classroom. They developed their survey, including scenarios of conflict in the classroom and typical responses, based on existing literature. There are strategies to minimize measurement error and demonstrate validity of the newly developed survey; for example, they accounted for prestudy activities that assumed appropriate instrument development (Burton & Furr, 2014).

Research of teaching may also require researchers to consider the sensitivity to change of the chosen measures. In their analysis of a wellness intervention in practicum courses, Ohrt et al. (2015) cited that the measure of wellness may not detect change, but rather a static belief about wellness. Similarly, Moe et al. (2014) noted that their measure of group leadership facilitation was not adequately spaced within the schedule of the semester. If researchers are able to find measures that are sensitive to change in limited timeframes, then data analysis procedures that account for growth over time become an option. For example, researchers in psychology suggested the use of multilevel models allows measurement of progression over time with client treatment (Tasca & Gallop, 2009). The same principle may be applied to teaching research, in which students' development can be assessed over time.

Similar to potential creative uses of designs for surface structure research, researchers of teaching have also offered some unique perspectives on how counselor educators may want to assess for implicit structure of the profession. For example, Duys and

Headrick (2004) offered Markov chain analysis as a means to explore the interactions in counseling as they researched skill acquisition among first semester master's students. Assessing research questions of implicit structure, such as counselor trainees demonstrating their capacity to conduct themselves with dispositions congruent to the profession, may be more complicated to assess because they require long-term outcomes. Researchers of teaching may want to consider how they might follow-up with students postgraduation, when they are employed as professional counselors.

Qualitative Methods

I often hear researchers make inferences that access to a smaller sample must mean a qualitative research design is warranted. However, the research question guides the design. (Am I sounding like a broken record yet?!) If the research question can be appropriately answered with a qualitative research tradition, then certainly a smaller required sample size is a contextual benefit in research on teaching, where class size may be limited. Although, researchers are advised to proceed with caution, because qualitative investigations in their own classrooms present challenges for researchers to attend to power differentials and confidentiality of participants. Qualitative data sources require vulnerable disclosures from participants (Hays & Singh, 2012) and the dual role of researcher and instructor may unduly impact findings. Similarly, data analysis of qualitative research often requires interpretation or meaning-making of participants' experiences. The dual role of instructor and researcher may complicate this analysis process because of the increased potential for bias (i.e., inability to bracket one's assumptions when the topic is their own teaching). Currently, in research on teaching, counselor educators have largely captured the experiences or perceptions of counseling students with qualitative designs. For example, a narrative inquiry of three counseling students who participated in an immersion activity (Hipolito-Delgado et al., 2011), a single case study of 10 students' perceptions of a flipped classroom experience (Merlin-Knoblich & Camp, 2018), and a Q-method of 35 counseling students' preferences of teacher characteristics (Moate et al., 2017). Although these studies are additive to

the literature in several ways, they also suggest researchers use the perceptions to construct further projects. Subjectively, the next step in the research trajectory is missing — meaning, informing techniques, pedagogy, and learning theory is not often pursued after perceptions of students are established.

There may be ways to attend to learning outcomes, deep structure, and implicit structure with qualitative traditions. An agreed upon professional value (implicit structure) is that professional counselors refer clients under appropriate circumstances. In research on teaching, Lloyd-Hazlett et al. (2020) used content analysis to examine how counseling students interpret this belief into action. For learning outcomes, in their assessment of a suicide training for counselor trainees, Shannonhouse et al. (2019) applied content analysis to a pre-post training intervention as a means to demonstrate acquisition of knowledge. They then followed up with participants during their internship experience to describe how, if at all, they had used their suicide training skills on-site with real clients (Shannonhouse et al., 2019). Although the accounts are descriptive in nature, from a program evaluation perspective, it allowed researchers to speak to the learning objectives of the intervention and utility of the skills in practice. Qualitative research may not be used to the greatest capacity in terms of outcome research. For example, Yin (2014) asserted that a rigorous case study is useful for replication intervention studies. In research on teaching, counselor educators may be missing opportunities to use qualitative designs to answer complex questions of deep and implicit structures.

When designing studies of teaching in counselor education, there are several factors to consider from the logistics of procedures to the complexity of data analysis. There is a collective initiative to move the trajectory of research on teaching toward outcomes (Barrio Minton et al., 2018), signature pedagogies (Baltrinic & Wachter Morris, 2020), and how students learn (Borders, 2020) — all under the umbrella of publishing higher-quality scholarship (Wester, 2019). To accomplish these goals in research on teaching, I encourage counselor educators to make intentional decisions from conception of idea to the writing of the manuscript. In this process, the research questions, procedures, sampling,

and data analysis decisions will be intrinsically strengthened, allowing a focused, concerted effort to demonstrate the profession's surface, deep, and implicit structures.

Considerations for Publication

Human subjects research, such as counselor educators' research of teaching, is not conducted in laboratories where the researcher can control confounding variables. Therefore, no submission of research on teaching to a journal is reflective of a flawless design. However, there are ways to demonstrate the strengths and rigor of the study while also maintaining transparency to interpret the findings in light of the limitations. When manuscripts are reviewed for publication, it behooves the authors to be clear of methodological choices, which gives a sense to the reviewer that the research was conducted ethically and competently. Therefore, in an effort to collectively contribute to the betterment of research on teaching, I offer some key elements to address in the methods, results, implications, and limitations sections of the manuscript, which may improve likelihood of a favorable outcome during the review process.

Method and Results

In the construction of the method section, it benefits researchers to disclose the philosophical framework of their teaching. If researchers are asking questions related to teaching, then the disclosure of theoretical framework may be essential for a reader to know the foundations of the teaching practice under investigation (Baltrinic & Wachter Morris, 2020; Barrio Minton et al., 2014, 2018). Barrio Minton et al. (2014) found that only 14.78% of the teaching articles in their review fully disclosed the learning theory, and 12.1% did so minimally. The profession is shifting, as Barrio Minton et al. (2018) noted an increased attention to grounding the teaching technique researched with a learning theory nearly doubled in their follow-up review. However, connecting the surface structure and deep structure of teaching research may be more valuable for the profession as continued dialogue on signature pedagogy(ies) is apparent. And despite the greater attention, thus far, counseling researchers have favored using competencies or accreditation standards as the

framework for their research, rather than pedagogy (Barrio Minton et al., 2018).

The use of competencies, which is certainly influential to implicit structure, may be a reasonable addition to the framework, but limits the role of pedagogy or learning theory. Additionally, use of accreditation standards as a framework creates complications because not all counseling programs subscribe to accreditation standards and therefore, they may not be the best representation of the agreed upon professional expectations or values. Regardless of adherence or opinion to the notion of signature pedagogy(ies) in the profession, what appears to be more agreeable is that philosophical underpinnings matter in research on teaching. Indeed, Borders (2020) inferred disclosure of learning theory supports transparency of "how and why [counselor educators] do what they do" (p. 16). The deep and implicit structures matter when researching the surface structures and therefore, need to be thoughtfully addressed in the method section.

Within the method section, there are some common errors in the description of data analysis that can be avoided. Doing so allows the reviewers to assess the full merits of the study without questioning the rigor. For example, in quantitative designs, as previously discussed, ensuring the sample size is appropriate for the statistical analysis is essential. In the description of the assessments used in the study, it is beneficial to report the reliability (e.g., Cronbach's alpha) of the scale(s) as reported in previous research and in the current study. Moreover, addressing how the developers of the measure established validity is important. If the researchers used survey design and developed their own measure, then attention to how the measure or questionnaire was established is essential to demonstrate efforts toward rigor.

There is an expectation that assumptions are met before conducting the primary statistical analyses (Field, 2018), and the absence of confirming assumptions renders the results questionable for a reviewer. Assumptions are dependent upon the statistical analysis specifically, but may include verification of independence, normality, linearity, and homoscedasticity (Field, 2018). However, even in times when assumptions are not met, researchers can discuss how they addressed the concerns. For example, violations in normality might be handled

with a nonparametric statistic (Burton & Furr, 2014) or the removal of an independent variable from analysis that violated assumptions of skewness and kurtosis (Giordano et al., 2019). Additionally, there are statistical analyses that require fewer assumptions. For example, Tasca and Gallop (2009) reported an advantage of multilevel modeling is that the assumption of sphericity is not required and data collection does not need to follow a rigid schedule, as is required with other analysis, such as repeated ANOVAs. Finally, in reporting results, the omission of effect size renders the results meaningless (Watson et al., 2016). Indeed, Watson and colleagues recognized the importance of framing statistically significant findings with effect size and confidence intervals. Effect size allows readers to assess practical significance of the statistical difference. For example, Burton and Furr (2014) demonstrated statistical significance with a small effect size between the instructors' intensity of feeling challenged and type of conflict experienced when teaching a multicultural course. The small effect size indicates caution in the interpretation of the statistical difference, as it does not indicate a large magnitude of difference. Transparency of data analysis reassures the journal reviewers (and future readers) that the quality of the data is confirmed and provides context for interpretation.

In qualitative designs, reviews of counseling research publications (generally, not only in teaching) concluded researchers did not consistently report the paradigm, tradition, or trustworthiness strategies employed (Flynn et al., 2019; Hays et al., 2016). Further, Kline (2008) emphasized that coherence across the qualitative design is important — meaning, when a manuscript depicting qualitative research is under review, reviewers are looking for attention to congruence among the chosen tradition and research questions; consistent use of paradigm throughout the procedure and analysis; and reflection of the tradition's data analysis procedures.

In the method section of a qualitative study, reviewers are also cognizant of data sources. Do the selected data sources reflect the chosen tradition? For example, a single, individual interview as a data source may be sufficient for grounded theory (Hays et al., 2009) or consensual qualitative research procedures (Hill, 2012), but would not meet the mini-

mal expectations for multiple data sources in phenomenology and case study designs (Prosek & Gibson, in press). Additionally, several qualitative traditions have identified variations of the designs. For example, Prosek and Gibson (in press) espoused the critical differences between descriptive and interpretive phenomenology and multiple philosophical approaches to case study. Therefore, it is important that distinctions are clearly expressed, and the analysis is consistent with the specific tradition. Finally, in qualitative research, the authors must describe their trustworthiness strategies, which Hays et al. (2016) purported in their review of counseling research. Researchers often cite Lincoln and Guba's (1985) four criterion for trustworthiness and Morrow (2005) also offers strategies for trustworthiness that are useful in the counseling profession.

Regardless of the type of research design, citations of salient methodological texts are expected throughout the method section. Researchers exploring teaching can improve the quality of scholarship by attending to details in the method section, allowing reviewers and readers to conclude appropriate implications and limitations.

Implications and Limitations

The implications of a study are guided by the design. For example, a quantitative, experimental design regarding a teaching technique may draw conclusions on the effectiveness of the surface structure. However, a phenomenological exploration of students' experiences in a summer intensive diversity course may not conclude the pedagogy used in the course equates to best practice for all courses in a counseling curriculum. In the latter, the implications drawn are outside the scope of the study. Lemberger-Truelove (2019) cautioned that overextending results of a study may inappropriately impact the way counselors implement clinical practice and training. For example, drawing conclusions outside the scope of the design may be cited in the future and inadvertently misinform teaching practices.

Given the nature of human subjects research, it is expected that research on teaching has limitations. However, it is better for authors to identify and address those limitations, rather than not disclose them. One limitation noted across research of teaching is calculating and reporting a response rate.

When participants are students enrolled in the course, researchers should identify how many students chose to be participants. In survey research, use of listservs or program coordinator contacts have complicated how to best calculate a response rate. Some researchers have addressed this concern by reporting the number of contacts made compared to the number that responded (Neukrug et al., 2013) whereas others have targeted a limited number of programs and requested the total number of students on their listservs in order to calculate response rates (Giordano et al., 2018), which can be difficult when program contacts do not report the total number of students or when they provide inaccurate reports (Prosek & Hurt, 2014).

Another common concern in research of teaching is finding an assessment with psychometric properties that measures unique aspects of teaching or content. While some address this limitation by reporting survey development protocols (Burton & Furr, 2014), others have chosen to simply list it as a limitation (Giordano et al., 2019). Finally, given the push in qualitative research for multiple data sources (see Flynn et al., 2019; Hays et al., 2016), authors who only report one data source are challenged to address this decision in their limitations.

Although not an exhaustive list of errors to avoid, these suggestions are an offering to support the efforts to increase the likelihood of a positive determination in the review process. Additionally, each journal has specific suggestions to follow in its author guidelines; following those instructions reflects the authors' intention to remain aligned with the journal's readership.

Conclusion

In this special issue, leaders in the field proposed that counselor educators develop questions in research on teaching with higher-order thinking strategies (Baltrinic & Wachter Morris, 2020; Borders, 2020). It is evident that counselor educators can do more in research of teaching than answering "Did students like it?" And although there is certainly value in the perceptions of students, there is significant room for researchers to consider the surface, deep, and implicit structures with attention to the philosophical framework and progression toward outcome-based research to promote teaching effectiveness in counselor education.

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