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Encouraging Cognitive Complexity in the Counseling Profession

Cognitive Complexity in Counseling and Counselor Education: A Systematic and Critical Review

Abstract
Cognitive complexity has found a small yet established niche in the counseling and counselor education literature over the last 40 years. This body of research has highlighted how individuals with high cognitive complexity have greater consistency in empathy, show more varied responses to clients, demonstrate greater toleration of ambiguity, and show higher frequencies of unbiased clinical judgements towards clients. This article provides a systematic and critical review of the cognitive complexity literature and discusses future implications of cultivating cognitive complexity in emerging and professional counselors and supervisors.

Keywords
cognitive complexity, cognitive development, counselor education

Counseling and counselor education researchers have recognized the complex, ambiguous, and multifaceted experiences of counselors (Duys & Hedstrom, 2000; Welfare & Borders, 2010a) and have called for counselor educators to integrate pedagogies that promote cognitive development and complexity into preparation programs (Choate & Granello, 2006; Duys & Hedstrom, 2000; Goldberg, 1974; Granello & Underfer-Babalis, 2004; Hillerbrand, 1989; Welfare & Borders, 2010a). Granello (2010) defined cognitive complexity as "the ability to absorb, integrate, and make use of multiple perspectives" (p. 92). Similarly, Dolan, Perz, McComb, and Kirkpatrick (2013) referred to cognitive complexity as "an individual's ability to synthesize disparate perspectives" (p. 538). Earlier, Bieri (1955) theorized that individuals perceive the social world through a system of constructs, describing individuals who possess a system of constructs that differentiate more significantly as more cognitively complex.

The aim of this review is to provide a systematic and critical analysis of the cognitive complexity literature within counseling and counselor education. This review will provide recommendations for cultivating cognitive complexity in the field, as well as in counselor and supervisor training programs. Lastly, this review will outline future avenues to explore cognitive complexity in counseling and counselor education.

Cognitive-Developmental Frameworks

Research examining cognitive complexity in counseling and counselor education has primarily utilized three cognitive-developmental theoretical frameworks—Conceptual Systems (Harvey, Hunt, & Schroder, 1961), Perry's (1970) Theory of Intellectual and Ethical Development, and Ego Development (Loevinger, 1976). Collectively these frameworks describe individuals moving across stages of concrete and rule following positions of cognitive development, to more flexible, integrative thinking, with a tolerance for ambiguity.

Harvey et al. (1961) defined a conceptual system as "a schema that provides the basis by which the individual relates to the environmental events he experiences" (p. 244-245). Harvey et al. stated that by knowing one's conceptual level (i.e. cognitive complexity) a better understanding of a person's situational behaviors can occur. In other words, individuals make sense of how they interact in their environment by understanding where they are positioned conceptually. Four sequential stages of conceptual development were identified; whereby, individuals progress from concrete stages to those represented by more cognitive flexibility (Harvey et al., 1961). Latter stages are characterized by more openness to multiple perspectives and less reliance on concrete rules or external authority figures for decision-making.

Perry (1970) identified nine total stages of cognitive development. Stages range from the most simplistic (dualistic) to the most complex (committed relativistic). According to Perry, individuals who demonstrated dualistic thinking were absolute in their thinking and views. Individuals described as committed relativistic, however, were described as having the ability to make decisions based on their previous knowledge, and personal and ethical beliefs (Perry, 1970).

Lovinger's (1976) ego development is a stage theory integrating theories of cognitive, moral, character, interpersonal, and self-development. Stages are identified by one's increasing ability to differentiate and integrate alterative views of self, others, and the world through 10 stages. Individuals at the early *conformist* stage are motivated by rule following, social acceptance, appearance, and disapproval (Lovinger, 1976). Individuals who accept individual differences, conflict, and can cope with ambiguity and complexities reflect the highest stages—*autonomous* and *integrated*.

Cognitive Complexity and Counseling Skills

Utilizing the aforementioned cognitive-developmental frameworks to conceptualize cognitive complexity, scholarship in counseling has demonstrated positive influences on counseling skills such as empathy and clinical interventions. Ten studies have shown that individuals with high cognitive complexity demonstrated more consistent empathic responses to clients than individuals with lower cognitive complexity (Alcorn & Torney, 1982; Benack, 1988; Blaas & Heck, 1978; Goldberg, 1974; Heck & Davis, 1973; Kimberlin & Friesen, 1980; Lutwak & Hennessy, 1982; McAuliffe & Lovell, 2006; Lutwak, 1993; Strohmer, Biggs, Haase, & Purcell, 1983).

Influence on Empathy

Heck and Davis (1973) investigated the impact of cognitive complexity on the empathy scores of counseling graduate students (n = 40). Cognitive complexity was defined using Harvey et al's (1961) conceptual levels and measured via the Paragraph Completion Test (PCT: Hunt, Kingsley, Massari, Shore, & Sweet, 1967). Participant empathy were assessed on their responses to 12 client statements. Statements varied across two levels—concrete (low cognitive complexity) and abstract (high cognitive complexity). Participants with higher cognitive complexity displayed high levels of empathy across both client statement levels ($p < .01$).

Goldberg (1974) investigated the relationship between an individual's cognitive complexity and one's style of relating to simulated client situations. Master's-level counseling students (n = 86) completed a measure of cognitive complexity and responded to a series of 20-simulated expressions. Results displayed students with higher cognitive complexity as more likely to respond to client affect, display an understanding towards the client, encourage client exploration, and maintain attention to core issues. Goldberg concluded that verbal interactions

were indicative of one's ability to establish a positive counseling relationship and that cognitive complexity predicted such verbal interactions.

Blaas and Heck (1978) examined the influence of cognitive complexity on four counseling process variables—counselor-client congruency, counselor empathy, counselor verbal role, and counselor sub-role. First-semester counseling graduate students (n = 33) completed simulated counseling sessions with two different role-playing clients and completed a measure of cognitive complexity. Students were clustered into two groups—high and low cognitive complexity. The two groups were significantly different in cognitive complexity (p < .01); however, cognitive complexity did not significantly discriminate the measures of the counseling process variables. Low complexity counselors demonstrated significantly higher empathy for one of the two role-play clients. High-complexity counselors demonstrated consistent empathy across both conditions. Blaas and Heck posited that cognitive complexity of counselors may not be the sole contributor to counselor behaviors; rather, differences within client dispositions may play a larger role than originally perceived.

Kimberlin and Friesen (1980) integrated varied client dispositions in their investigation of an individual's sex, cognitive complexity, and type of client affect (ambivalent/non-ambivalent), in relation to individual' empathic ability. Undergraduate students (n = 80) were selected from a sample of N = 340 based on their scores on the PCT. The final sample consisted of students with high cognitive complexity (top 40%: n = 40) and low cognitive complexity (lower 40%; n = 40). Both groups received empathy training for an hour a week for two weeks then were asked to provide helpful responses to 20-videotaped role-plays after the third week. The most significant effect was the interaction found between student cognitive complexity and type of client affect. Significant effects in the participants' ability to provide empathy was

dependent on the participants' cognitive complexity F (1,70) = 3.99, $p < .05$), sex F (1,70) = 4.74, $p < .05$, and type of client affect F (1,70) = 4.96, $p < .05$. Those who demonstrated a lower complexity were limited in their abilities to display consistent empathic responses to those clients displaying complex affect, consistent with Blaas and Heck (1978).

Lutwak and Hennessy (1982) continued this area of research though required participants to submit a tape of their clinical work to explore the relationship between cognitive complexity and empathic behaviors. First-year graduate students and advanced undergraduate students (n = 97) completed a cognitive complexity measure at the start of a thirteen-week interview skills training program. After the program, participants were asked to submit a 10-minute counseling tape for raters to review and score empathic responses. Differences in observed empathy were related to the cognitive complexity of the participants, even though all were subject to the skills training. These results suggested that more than just completing a skills training was accountable for competence and engagement in complex clinical functioning. In both real and simulated environments, individuals with low cognitive complexity performed the skills less consistently than their peers with greater cognitive complexity. Utilizing a setting similar to a natural counseling environment and utilizing a sample of mostly graduate level counseling students, Lutwak and Hennessy designed a study that improved on the external and internal validity concerns from previous studies that used analogue methods (Goldberg, 1974; Heck & Davis, 1973; Kimberlin & Friesen, 1980).

Strohmer et al. (1983) explored the factors that contribute to engaging in empathy with clients with disabilities, in order to inform future training and education with individuals with disabilities. Graduate counseling students (n = 28) viewed eight counseling vignettes of actors portraying clients. Four of the vignettes represented a client with a disability (i.e. upper extremity

amputee, paraplegia, speech handicap, and facial disfigurement). Of the three independent variables investigated (cognitive complexity, counselor anxiety, and disability condition of client), cognitive complexity was the only significant main effect on empathy ($p < .05$). Students who demonstrated higher complexity displayed a higher mean of empathy. High complexity students demonstrated their highest empathy score with clients with disabilities when under low anxiety, and lowest mean empathy scores when under high anxiety ($p < .01$). Students who demonstrated low cognitive complexity exhibited the highest mean empathy with clients without disabilities under low anxiety, and lowest mean with clients without disabilities under high anxiety, thus the empathy scores between the two student groups were opposites. This study demonstrated that potential engagement with clients with disabilities may be linked to level of anxiety and cognitive complexity in counselor trainees.

Unlike previous studies investigating cognitive complexity and empathy using undergraduate or graduate students, Alcorn and Torney (1982) demonstrated a link between cognitive complexity of one's emotional self-awareness to one's empathic abilities in practitioners (i.e. social workers). Cognitive complexity was measured by scoring the differentiation in emotional subcategories participants identified to describe their emotional experiences with regards to fear, anger, happiness, contempt, and depression. Participants ($n = 40$) listened to pre-recorded excerpts of client interviews and chose emotional descriptions from a word list developed by the researchers. Emotions from the word list were weighted based on prior judge ratings who created a standard for accurate emotional identification. In addition, the Wechsler Adult Intelligence Scale was also completed to correlate participant cognitive complexity with verbal ability. Significant Pearson's product-moment correlations were found between cognitive complexity and empathy ($p < .01$), as well as with verbal ability ($p < .05$).

Benack (1988) completed three studies in her article "Relativistic Thought: A Cognitive Basis for Empathy in Counseling" where she investigated the relationship between dualistic and relativistic epistemologies of students (Perry, 1970), with their level of empathy in counseling experiences. Benack (1988) found that in each of the three studies, relativistic thinkers demonstrated more accurate empathic understandings of others. For example, in one study graduate students who scored as relativist thinkers (high in cognitive complexity) demonstrated the most significant differences ($p < .001$) to dualist thinkers in their engagement in non-directive counseling interventions, and in their overall ability to demonstrate empathy.

Lutwak (1993) examined the role of cognitive complexity with a counselor's ability to understand and integrate cognitive and affective information when developing clinical interventions with clients, a process termed *therapeutic responsiveness*. Lutwak examined if empathy could be predicted by a counselor's therapeutic responsiveness to real counseling sessions with graduate students ($n = 69$) in counseling. Cognitive complexity was significantly correlated with therapeutic responsiveness and empathy ($p < .01$). When compared to participants who demonstrated low cognitive complexity, higher cognitively complex participants were more significantly able to identify feelings and develop effective counseling interventions (Lutwak, 1993).

Lyons and Hazler (2002) examined the relationship on the development of affective/trait-based empathy and cognitive/skill-based empathy with the cognitive complexity of master's level counselors-in-training. Lyons and Hazler utilized a cross-sectional sample of first and second year counseling students ($n = 162$) enrolled in five CACREP accredited counseling training programs in Ohio. The Learning Environment Preferences (LEP; Moore, 1987) assessed an individual's cognitive complexity and positioning within Perry's (1970) model. Second-year

students scored significantly higher on affective empathy (p = .02) and cognitive/skill-based empathy (p < .01) than their first-year peers. No significant relationships, however, were found between affective empathy, cognitive/skill-based empathy, and cognitive complexity. Additionally, there were no significant differences in the Perry (1970) positions between first and second year students. Lyons and Hazler (2002) analyzed the scores of students who scored low and high in complexity, removing the middle data points. Although this analysis of extreme scores demonstrated a significant relationship with affective empathy (p = .02), cognitive/skill based empathy was not significant across the high and low complexity groups.

More second year students were positioned the highest stage of cognitive development according to Perry's (1970) stages; whereas, more first year students were positioned in the lowest stage. Even with these observed differences, group differences were not significant (Lyons & Hazler, 2002). These findings suggest empathy can be learned; however, the interaction between the two variables was only demonstrated after central scores were removed.

The relationship between empathy and cognitive complexity has demonstrated that individuals with higher cognitive complexity display more consistent empathic responses (Alcorn & Torney, 1982; Benack, 1988; Blaas & Heck, 1978; Kimberlin & Frieson, 1980; Lutwak & Hennessy, 1982; McAuliffe & Lovell, 2006; Lutwak, 1993; Strohmer et al., 1983); thus, suggesting that demonstration of foundational counseling skills (i.e. empathy) can be influenced by cognitive complexity. However, limitations must be acknowledged. Of the 10 studies presented, only Alcorn and Torney (1982) examined empathy and cognitive complexity among professional practitioners; however, this sample was made of social workers and not professional counselors. The remaining studies sampled undergraduate and graduate students; therefore, it is difficult to extend these findings to professional counselors and/or supervisors.

Clinical Interactions

Six studies investigated cognitive complexity and its influence on the clinical interactions between counselors and clients. In these studies, individuals who demonstrated higher cognitive complexity demonstrated more structural complexity of counselor responses (Hurndon, Pepinsky, & Meara, 1979), more varied responses to clients (Lichtenberg & Heck, 1979), greater toleration of ambiguity (Holloway & Wampold, 1986; McAuliffe & Lovell, 2006), and a demonstration of unbiased clinical judgments (Holloway & Wolleat, 1980; Spengler & Strohmer, 1994; Walker & Spengler, 1995).

Hurndon et al. (1979) correlated the scores of cognitive complexity and structural complexity in language to examine whether cognitive complexity predicted specific behavior or structure in the language of a counselor. Computer-Assisted Language Analysis System (CALAS) was used to determine the structural properties of participants' responses. Together, the Paragraph Completion Method (PCM: Hunt, Butler, Noy, & Rosser, 1977) and CALAS were used to gain insight into the cognitive complexity of the participants. The variance between individuals of different cognitive complexity was significantly explained by the quantity of language used in writing and in in-person interviews (Hurndon et al., 1979). In other words, individuals with a higher cognitive complexity were more likely to write and speak more than a peer with lower cognitive complexity. Hurndon et al. concluded that significant relationships between measures of structural complexity and cognitive complexity scores existed.

Lichtenberg and Heck (1979) questioned if differences existed between two groups of counselors—high and low cognitive complexity—and their in-sessions interactions with clients. Second semester master's-level counselors-in-training (*n*= 30) were recruited to participate. There were no significant differences in how high cognitively complex counselors engaged

across both interactions. In addition, no significant differences in how low cognitively complex counselors engaged across both interactions were observed. Compared across groups, a significant interaction process difference between the first and second interviews (χ^2 (81) = 108.277 were observed, as well as when viewed across both groups and both interviews (χ^2 (81) = 151.418. Counselors of higher cognitive complexity provided clients with more varied responses than counselors of low complexity.

Holloway and Wolleat (1980) examined if counseling student (n =37) cognitive complexity and/or professional counseling experience influenced integration of client information in their clinical hypothesis formation. Results highlighted significant relationships between cognitive complexity and the participants' quality and clarity of expression in forming and substantiating their clinical hypothesis ($p < .002$). Professional counseling experience was not significant. Holloway and Wolleat stated that cognitively complex individuals were more likely to identify and integrate information from different sources rather than remaining fixed on a single source.

Spengler and Strohmer (1994) continued the investigation of clinical hypothesis formation and investigated cognitive complexity as a moderator of clinician's clinical judgment biases in case vignettes of clients with disabilities and corresponding psychopathology information. Participants (n = 119) received one of two case descriptions of a client who met the diagnostic criteria for schizophrenia. The only manipulation of the case description for those who received the experimental description was added information describing intellectual development and functional behavior. Counselors with low cognitive complexity were three times more likely to disregard the clinical symptoms of schizophrenia and focus only on the intellectual and developmental characteristics than their peers who demonstrated higher

complexity. Thus, individuals with high complexity were less likely to stereotype client presentations and better able to integrate potentially incongruent client information in their clinical judgments.

In Walker and Spengler's (1995) study, participants received a vignette of a client with major depression and one of three medical conditions (AIDS, terminal cancer, or no medical issue), and were asked to rate the likelihood of 10 psychological diagnosis and treatment options (i.e. antidepressant medication). The presence of AIDS in the client vignette had a significant impact on the counselors recommendation for antidepressant medications $F(2, 170) = 3.44$, R^2 change = .04, $p < .03$. Counselors with low cognitive complexity were more likely to suggest medication for depression for clients with terminal cancer or no medical condition, than for the client described as having AIDS. Cognitive complexity served as a moderator of clinical judgment (Spengler & Strohmer, 1994; Walker & Spengler, 1995). Counselors with higher cognitive complexity were able to differentiate client information and seek alternative hypotheses.

McAuliffe and Lovell (2006), however, examined if a relationship existed qualitatively between a counselor-in-training's developmental-epistemological position within Perry's (1970) model, and their counseling behavior. McAuliffe and Lovell utilized the LEP to identify participants' cognitive complexity and place them within one of Perry's (1970) positions. In order to ensure differences among participants, only participants who scored either stage one (dualism; low cognitive complexity) or four (committed relativism; high cognitive complexity) were included in the final sample ($n = 12$). Five categories of counselor-in-training interview behaviors emerged—source of point of view, depth, reflectiveness, relationship to ambiguity, and use of evidence. Dualistic trainees had difficulty separating their point of view from their

clients or from another authority figure, an inability to probe for mixed feelings or implicit emotions/meanings in client behavior, displayed conventionality (i.e. engaged in rote skill application), and had a tendency to look for definite answers. Committed Relativist trainees were able to distinguish their view from others, probe personal meanings and consider alternative coping methods, embrace ambiguity and not foreclose on conceptualization, and display intentional interventions (McAuliffe & Lovell, 2006). Although the sample was small, the characteristics of the counselors-in-training were consistent within Perry's (1970) model of intellectual and ethical development.

The most resounding limitation of the literature surrounding cognitive complexity and clinical interaction is the large span of time with few studies. Although the findings offer critical significance to clinical practice, the most recent study (i.e. Walker & Spengler, 1995) was published over 20 years ago. These works highlight an additional area of clinical practice that can be affected by a counselor's level of cognitive complexity (i.e. toleration of ambiguities and treatment recommendations). Furthermore, they demonstrate how low cognitive complexity can lead to clinical misjudgments and bias against clients.

Counselor Characteristics in Predicting Cognitive Complexity

Within the counseling literature, six studies examined predictors of counselor cognitive complexity utilizing individual demographics and professional characteristics. This section will highlight personal and professional characteristics that predict an individual's level of cognitive complexity. Sias, Lambie, & Foster (2006) found a significant positive relationship between cognitive complexity and education, experience, recovery status, age, gender, and race in counselors (n – 188), $F(6, 168) = 2.25$, $p < .040$. This accounted for 7.5% of the total variance. Education level was a significant predictor of counselor cognitive complexity ($p < .045$);

however, years of counseling experience, and recovery status were not. Counselors can expect to increase in cognitive complexity with more education, a finding that supports integrating pedagogies into counselor education and training programs that cultivate cognitive development.

Lambie (2007) tested the relationship between ego development levels of professional school counselors (n = 225) and their level of burnout. School counselors with higher ego development did not experience less burnout. Examining the three subscales of the burnout measure (Maslach Burnout Inventory-Human Services Survey; Maslach & Jackson, 1996), emotional exhaustion, depersonalization, and personal accomplishment to predict ego development level, only personal accomplishment held a significant relationship F (3,217) = 2.414, p = .048 (R^2 = .033, adjusted R^2 = .019). School counselors positioned in higher ego developmental levels (higher cognitive complexity) demonstrated higher levels of personal accomplishment.

Sheaffer, Sias, Toriello, and Cubero (2008) investigated the relationship between ego development, a construct of cognitive complexity, and attitudes towards individuals with disabilities. First year graduate students in rehabilitation counseling, communication science disorders, occupational therapy, and physical therapy were sampled (n = 102). Attitudes towards individuals with disabilities was measured using The Preferred Social Distance Scale (Bogardus, 1932) which asks participants to specify the closest relationship they would be willing to have with an individual identified as having one of 21 disabilities. Ego development was measured using the Washinton University Sentence Completion Test (WUSCT: Hy & Loevinger, 1996). A significant inverse relationship for preferred social distance and ego development was found using general linear modeling F(1,3) = 8.447, p = .005. In other words, individuals who demonstrated higher ego development preferred less social distance from individuals with

disabilities; whereas, participants who demonstrated lower ego development preferred higher social distance. Although rehabilitation counselors demonstrated significantly lower preferred social distance of the four student groups sampled, the group as a whole did not exhibit high preferences of social distance.

The results of this study demonstrate that cognitive complexity, measured via the construct of ego development, does have an influence on ones need for social distance when engaging individuals with disabilities. As such, this study supports the need for more education and training that fosters cognitive development in order to encourage students to challenge their attitudes and assumptions of this client population.

Granello (2010) assessed 122 licensed counselors using the LEP to measure cognitive complexity. Years in the counseling profession, years as a practicing counselor, age, gender, race, and highest degree earned in the counseling profession, were regressed on cognitive complexity. Number of years in the counseling profession, accounting for 10% of the variance, emerged as the most significant variable in predicting one's cognitive complexity. Surprisingly, the number of years in counseling practice was not a significant indicator. Time in the general profession was more influential in predicting cognitive complexity than any one individual role. Granello also noted that an alarming 17% of supervisors were in the lowest stage of Perry's (1970) model.

Welfare and Borders (2010a) examined the extent of specific counseling related variables contributing to cognitive complexity. Counselors-in-training and professional counselors who graduated from CACREP programs were sampled for this study (n = 120). Domain specific complexity was measured using the Counselor Cognitions Questionnaire (CCQ; Welfare & Borders, 2007), which measures a counselor's ability to list client characteristics (differentiation)

and then categorize those traits (integration). The WUSCT was utilized to measure a counselor's general level of ego development. Counseling experience, supervisory experience, counselor education experience, and highest counseling degree completed significantly predicted cognitive differentiation (R^2 = .34, adjusted R^2 = .31, F(4, 111) = 14.08, p < .01) and integration (R^2 = .23, adjusted R^2= .20), F(4, 112) = 8.28, p < .01) scores. Domain specific cognitive complexity did not predict general cognitive complexity, thus suggesting that counselors who demonstrate higher levels of general cognitive complexity might not demonstrate high counseling specific cognitive complexity.

Lambie, Ieva, Mullen, and Hayes (2011) recognized the need for practicing school counselors to have developed skills in ethical decision-making, as we well as a strong foundation of ethical and legal knowledge to navigate the multi-faceted responsibilities encountered in the school environment. Lambie et al. (2011) hypothesized that school counselors with higher ego development would demonstrate stronger ethical decision-making and have ethical and legal knowledge, aligning with previous ego development research in counselors and counselors-in-training (Borders & Fong, 1989; Lambie, 2007; Lambie, Smith, & Ieva, 2009; Sheaffer et al., 2008). Professional school counselors (n = 186) from three school districts in Florida participated in the study. Older participants had a significantly higher level of ego development; whereas, younger and less experienced participants demonstrated significantly higher levels of ethical and legal knowledge. Ethical knowledge and ethical decision-making accounted for 5.2% of the variance. Ethical knowledge was the only significant predictor (p = .007). Although much variance is left unexplained, this finding indicates a relationship between ego development, ethical decision-making, and knowledge of ethics and legal principles. This finding supports that cognitive complexity of counselors can be increased during counselor education and training.

Critique and Limitations

Although the research surrounding cognitive complexity has demonstrated significant positive relationships with critical clinical skills, other scholars have found mixed results (Borders, 1986; Borders, Fong, & Neimeyer, 1986; Lyons & Hazler, 2002; Wendler & Nilsson, 2009). For example, Wendler and Nilsson (2009) investigated counseling trainees' cognitive complexity and sociopolitical advocacy and found that cognitive complexity did not significantly predict their awareness and acceptance in the differences of others. Additionally, school counseling graduate student cognitive complexity decreased over the course of their graduate training. Graduate students in community, clinical, rehabilitation, and marriage and family counseling, however, demonstrated expected increases in cognitive development over their training (Granello, 2002).

Granello (2010) found roles in the counseling profession (i.e. counselor, supervisor, administrator) to be not significant predictors of cognitive complexity, only general time in the profession was predictive. Fong, Borders, Ethington, and Pitts (1997) and Lyons and Hazler (2002) found counselors-in-training did not demonstrate a significant increase in cognitive development within their training program; whereas, Sias et al. (2006) identified education level to be a significant predictor of cognitive complexity. Contrast to Granello (2010), Welfare and Border's (2010a) study displayed a relationship with counseling specific experiences. One possible explanation with these contradicting findings might be the result of how the construct of cognitive complexity was conceptualized and measured. For example, Sias et al. 2006 utilized Hunt's 1971 conceptual development framework and assessed level of cognitive complexity with the PCM. Granello (2010), situated cognitive complexity within Perry's (1970) ego developmental model and assessed for complexity with the LEP. Thus, the contrasting findings

observed may be the result of how cognitive complexity was theoretically conceptualized and/or due to instrumentation.

Many instruments have been used to capture the construct of cognitive complexity (i.e. PCT, PCM, LEP, WUSCT). As such, the need for improved and psychometrically validated measures for cognitive complexity constructs is needed (Alcorn & Torney, 1982; Fuqua, Johnson, Anderson, & Newman, 1984; Lutwak, 1993; Mclennan, 1995; Wendler & Nilsson, 2009; Welfare & Borders, 2010a). The central critique of prior instruments assessing cognitive complexity has surrounded construct validity. Van Hiel and Mervilde (2003) suggested that prior assessments of cognitive complexity measured two separate constructs, cognitive differentiation and cognitive integration, rather than a one general construct. Addressing these limitations to measurement may bring more consistency to future empirical investigations on the impact of cognitive complexity and potential predictors of it. The CCQ (Welfare and Borders, 2010b) was developed to address the measurement limitation; however, the instrument requires more sophisticated psychometric validation.

Sampling methodology is another consistent limitation. Convenience sampling and the use of non-counseling students or non-counselor practitioners, weakens external validity. Utilizing analogue procedures for assessing counselor clinical skills, rather than en vivo cases also posed consistent limitation.

Summary

Greater education levels (Sias et al., 2006; Welfare & Borders, 2010a), years in the counseling professional (Granello, 2010), and higher amounts of counseling, supervisory, and counselor education experience (Welfare & Borders, 2010a) have contributed to higher cognitive complexity. Additionally, individuals who demonstrated higher cognitive complexity displayed

higher levels of personal accomplishment (Lambie, 2007), preferred lower social distance from individuals with disabilities (Sheaffer et al., 2008), and higher legal and ethical knowledge (Lambie et al., 2011). Combined, these studies highlight a relationship between higher education levels and counseling related experience with higher cognitive complexity. Counselors who have demonstrated higher levels of cognitive complexity have established positive counseling relationships with clients (Goldberg, 1974), managed complex client affect (Kimberlin & Friesen, 1980; McAuliffe & Lovell, 2006), and demonstrated more consistent empathic responses (Lutwak & Hennessy, 1982; McAuliffe & Lovell, 2006). Counselors with higher cognitive complexity have been more open to multiple perspectives and less reliant on concrete rules or external authority figures for decision-making (Harvey, et al., 1961). Lastly, counselors with higher levels of cognitive complexity have demonstrated an ability to adapt interventions to meet the individual needs of clients, and show flexibility in their interventions during challenging situations (Sias et al., 2006). Therefore, pedagogical methods that cultivate cognitive complexity in counselors and supervisors-in-training are needed.

Promoting Cognitive Complexity: Implications for Counselor Educators

Cognitive growth occurs when individuals are presented with complex, contextual, personal, and/or ill-defined problems that require novel ways of thinking (Pelech & Pieper, 2010). In his theory of cognitive development, Piaget (1977) outlined equilibration, a process of cognitive growth via assimilation and accommodation of new information into existing schemas. During these processes, individuals experience disequilibrium when new information cannot be easily integrated existing schemas. As information assimilates/accommodates, new schemas are created and equilibrium is re-established (Piaget, 1977). Aligning with Piaget's theory of

cognitive growth, counselor educators may find experiential constructivist pedagogies to be most supportive in cultivating cognitive complexity in students.

Constructivism follows the principles that individuals restructure pre-existing knowledge bases by connecting previous experiences and knowledge with new experiences (Pelech & Pieper, 2010, Piaget, 1977). Experiential activities provide students with opportunities to integrate and synthesize course content and have demonstrated to increase cognitive complexity in counseling students (Duys & Hedstrom, 2000; Little, Packman, Smaby, & Maddux, 2005). Therefore, counselor educators must be more focused on organizing a learning community where students engage with course concepts and practical skills as related to real world situations and problems, and move away from traditional formats centered primarily on content sharing.

Problem-based learning is one pedagogical tool grounded in constructivism that can be utilized to foster cognitive complexity in counselor training programs (Kindsvatter & Desmond, 2013). Problem-based learning seeks to create a learning experience that presents students with ill-defined problems that are open to being solved in a number of different ways (Pelech & Pieper, 2010). Kindsvatter and Desmond (2013) highlight three central problem-based learning tasks that can be integrated into counselor training—adaptation tasks, role-taking and observation tasks, and collaborative inquiry. When focused on adaptation tasks, counselor educators may assist students in identifying personal experiences similar to course concepts in order for students to connect prior knowledge with the new. Role-taking and observations tasks are already common practice in counselor training. Kindsvatter and Desmond highlight that it is the experience of enacting various roles within the counseling relationship (as counselor and as client), and observing peers in role plays from outside the dyad that create a space for deconstructing skills and engaging in reflective thinking. In the final task, collaborative inquiry,

the role of the counselor educator is to facilitate critical reflective thinking in students. Socratic questioning, modeling professional reasoning, and supporting students to connect concepts and professional principles to problems are pedagogical interventions that can be infused (Kindsvatter & Desmond, 2013).

Individual (Glosoff & Durham, 2010) and group supervision (Granello & Underfer-Babalis, 2004; Hillerbrand, 1989) have also been identified as opportunities for counselor educators to enhance cognitive complexity by increasing the flexibility and openness to multiple perspectives of their supervisees. Hillerbrand (1989) suggested that group supervision provided an opportunity for a novice scaffolding process, as individuals observed supervisor processes, receive feedback, and begin integrating new cognitive processes into their own practices. Peers are also able to observe and model a wide spectrum of skills among themselves. Hillerbrand offered several strategies for consideration: (a) encouraging individuals to talk out loud during their reasoning process to make cognitive processes overt; (b) having individuals identify why, when, and how particular counseling skills were used in sessions; and (c) articulating the metacognitive skills used to assess their own memory, attention, comprehension, problem-solving, hypothesis-testing, and progress towards goals.

Granello and Underfer-Babalis (2004) posed an additional approach for group supervision based on the Taxonomy of Educational Objectives (Blooms Taxonomy) (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956). Bloom et al. (1956) identified six sequential levels of cognitive domains of learning: (a) knowledge, (b) comparison, (c) application, (d) analysis, (e) synthesis, and (f) evaluation. Granello and Underfer-Babalis (2004) suggested supervisors base supervisory interventions based on Bloom's Taxonomy to enhance supervisee cognitive complexity. As supervisors become aware of the cognitive level of their supervisees, they can

engage in intentional interventions (i.e. role plays, modeling, direct questions) that facilitate cognitive growth. Blooms Taxonomy provides a framework for supervisors enhance cognitive development in supervisees (Granello & Underfer-Babalis, 2004).

Clinical supervisors may also utilize Rigazio-DiGilio's Supervisee Cognitive-Developmental Assessment (SCDS) (1995) to assess the cognitive-developmental positionality of their supervisees. The assessment identifies four distinct categories of cognitive development (sensorimotor, concrete, formal, and dialectic) that range from more disorganized/emotional frames to reflective and complex patters of thinking. Once the supervisor recognizes the position of their supervisee within the SCDS, Rigazio-DiGilio provide key intervention questions to promote both horizontal (expansion within a category) and vertical (expansion to an underdeveloped category) development. Counselor educators might also find these interventions useful for group discussions and seminars to facilitate cognitive-developmental growth in courses. Counselor educators may also use the assessment and intervention questions when presenting feedback or during mentoring/advising meetings.

Outside of supervisors, Choate and Granello (2006) identified faculty advisors as another facilitator of cognitive development. In this model, the faculty advisor is "reconceptualized as that of a person who helps coordinate and facilitate student cognitive development across the program" (Choate & Granello, 2006, p.121). The model asks faculty advisors to meet with advisees at three key points during their time in the program to facilitate cognitive growth—upon admission, pre-practicum and internship, and pre-graduation. At initial meetings, advisors provide structure for students (i.e. providing student handbooks, program information), promote professional identity (i.e. connect students with mentoring), and show interconnectedness of program coursework. All new students must pass through the early stages of cognitive growth in

counseling, thus, advisors should not assume the levels of students, even adult learners (Choate & Granello, 2006).

As students progress from pre-practicum to an internship, faculty advisors are encouraged to provide support as the initial experiential experiences create anxiety and heighten feelings of incompetence in students. Faculty advisors can assist students in synthesizing feedback received from on-site supervisors and encourage students to integrate previous learning experiences into their current practice. In the final pre-graduation sessions, Choate and Granello (2006) suggest that faculty advisors assist their students with the transition from being a student to a professional. Advisors are encouraged at this point to instill their students with the drive and commitment for lifelong learning. This model places additional responsibilities on faculty; therefore, the reality of the academic environment should be considered in its application. All counselor education programs are unique and may not have the extra resources to fully embrace such a model. However, counselor educators should recognize the importance of cognitive development and move toward a model that promotes such growth into their curriculum.

Lastly, counselor training programs may consider sequencing counseling skills training courses early in the training curriculum. When compared to students not enrolled in counseling skills courses, students who participated in counseling skills courses demonstrated higher gains in cognitive complexity (Duys & Hedstrom, 2000; Little et al., 2005). The learning and practicing of micro-skills, engagement in early self-reflection of skills, and participation in supervision are experiential tools that can establish a foundation for positive cognitive development early in training programs (Duys & Hedstrom, 2000; Little et al., 2005). Benefits of promoting cognitive complexity in emerging counselors and supervisors, and professional counselors and supervisors, is evident and needs to be embraced by counselor educators.

Future Avenues of Research

First and foremost, there is a need in counselor education research to capture a contemporaneous scope of cognitive complexity and its influence on counseling and supervisory skill and skill development. Expanding knowledge on the relationship between cognitive complexity and empathy and clinical formulations in counselors-in-training, supervisors-in-training, professional counselors, and supervisors is warranted. Counselor educators and supervisors may seek to integrate pedagogical and/or supervisory interventions in training programs to cultivate cognitive complexity in trainees and/or supervisees.

In addition, research evaluating pedagogical and/or supervisory interventions regarding cognitive development is needed. Developing a library of counselor education curriculum and supervision models that have been empirically shown to cultivate cognitive complexity in counselors and supervisors would be a tremendous contribution to the field. Counselor educators may utilize the CCQ to asses development of cognitive complexity throughout the training experience. Greater utilization of the CCQ can also contribute to the growing psychometric properties of the counseling specific instrument of cognitive complexity.

Conclusion

Even considering the limitations outlined surrounding cognitive complexity, the reviewed literature overwhelmingly supports the theory that individuals who demonstrate higher cognitive complexity demonstrate more effective counseling skills. Thus, cognitive complexity has demonstrated to be a critical developmental area to be cultivated in counselor training and supervisor-in-training programs. Empirically supported clinical and pedagogical methods for enhancing cognitive complexity are needed, as well as assessments of their impact on counselor and supervisor development.

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