Chapter 5 - A Cognitive Information Processing Theory for Career Choices: Challenges and Opportunities for Integrating Theory, Research, and Practice

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Beginning in 1971, an approach to career service delivery evolved, first at the Curricular-Career Information Service (CCIS) of the Florida State University (FSU) Counseling Center and later at the FSU Career Center, which intentionally sought to integrate career theory, research, and practice. The *theory* that emerged has become known as the cognitive information processing theory of career problem solving and decision making (Peterson, Sampson, & Reardon, 1991; Sampson, Reardon, Peterson, & Lenz, 2004; & Sampson, 2008). The approach includes both a theory of *vocational behavior* and a theory of *career intervention*. The theory of vocational behavior is derived from cognitive information processing theory and includes the Pyramid of Information Professing Domains (the content of career choice) and the CASVE Cycle (the process of making career choices; Peterson, Sampson, & Reardon, 1991; Sampson, Reardon, Peterson, & Lenz, 2004). The theory of career intervention is also derived from cognitive information processing theory and includes readiness for career decision making (Sampson, Peterson, Reardon, & Lenz, 2000), readiness for career intervention (Sampson, McClain, Musch, & Reardon, 2013), differentiated service delivery (Sampson, Peterson, Reardon, & Lenz, 2000; Sampson, 2008), assessment

of negative career thoughts (Sampson, Peterson, Lenz, Reardon, & Saunders, 1998), and assessment of the career decision space (Peterson, Leasure, Carr, & Lenz, 2010).

The application of CIP theory in practice has been supplemented by three other theories advanced by Holland, Beck, and Gagné respectively. RIASEC theory (Holland, 1997) has been integrated with CIP theory in both the study of vocational behavior and the delivery of career interventions (Reardon & Lenz, 2015). A cognitive therapy theoretical approach to mental health and mental health services (Beck, 1976; Beck, Emery, & Greenberg, 1985; Beck, Rush, Shaw, & Emery, 1979) was integrated with CIP theory in the development of the Career Thoughts Inventory (CTI) and CTI Workbook (Sampson, Peterson, Lenz, Reardon, & Saunders, 1998). Gagné's (1985) learning and instructional theory was integrated with CIP theory in the theory assumptions and the design of learning resources used in self-help, brief staff-assisted, individual case-managed, and programmatic career interventions (Sampson, 2008).

Research since 1971 has emphasized the study of vocational behavior, career assessment, and career

interventions. CIP theory has guided this research with a strong integration of RIASEC theory. *Practice* has involved the delivery of self-help, brief staff-assisted, and individual case-managed career interventions to high school students, college students, and community adults. Descriptions of the application of theory to practice are provided by Reardon and Lenz (2015; RIASEC theory) and Sampson (2008; CIP theory). Attention has also been paid to integrating career and mental health issues in RIASEC and CIP-based career interventions (Dozier, Lenz, & Freeman, 2016; Lenz, Peterson, Reardon, & Saunders, 2010; Walker & Peterson, 2012).

This chapter explores the integration of theory, research, and practice in the context of two career theories and a series of research studies that have been used to guide practice in a university career center. The chapter begins with the relevance of integrating theory, research, and practice and continues with challenges and opportunities in integration. The chapter ends with recommendations for the future.

Relevance of Integrating Theory, Research, and Practice

Young people and adults who seek help in making career decisions access career resources (assessments, information, and instruction) with or without practitioner assistance as well as career services (brief to intensive) from a variety of public, not-for-profit, and private organizations. The sum of all career resources and services available to young people and adults represents practice in vocational psychology. This practice is influenced to varying degrees by theory and research. In turn, theory and research are influenced by each other and by practice. In examining these interactions, theory guides research in vocational behavior and career interventions through the formulation of research questions, the creation of measures, and the interpretation of results (Sampson et al., 2014). Theory guides practice by helping practitioners conceptualize individuals' concerns, create interventions to meet specific needs, and develop theory-based career assessments, information, and instruction. Research guides the creation and validation of new theory as well as the revision of existing theory. Research also improves practice by providing an evidence base for what works best for individuals with specific needs. Lastly, observations from practice contribute to theory

revision and pose research questions for further inquiry (Sampson et al., 2014). The preceding interactions among theory, research, and practice from Sampson et al. (2014) are depicted in Figure 1.
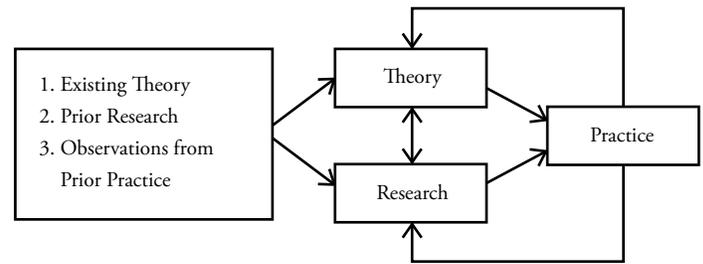

Figure 1. Integrating Theory, Research, and Practice

The preceding figure is not intended to imply that all aspects of theory, research, and practice require integration to maximize our understanding of vocational behavior and to develop effective career interventions. Lent (2017) in this volume noted that "theories do not have to have immediate implications for practice" (p. 21). The same holds true for integrating research and practice. However, I do believe a certain critical mass of integration is required in an applied field such as ours to maximize vocational behavior knowledge and career intervention effectiveness.

Prior literature on integrating theory, research, and practice has focused primarily on (a) the influence of theory on research, (b) the influence of theory on practice, and (c) the influence of research on practice literature (Sampson et al., 2014). These influences are examined in the following sections.

Influence of Theory on Research

The use of career theory to guide the examination of vocational behavior and the establishment of evidence-based practice may be helpful in several ways. Research based on theory can be more systematic in nature and create broader implications (Bringle & Hatcher, 2000). The conceptual basis afforded by theory-driven research increases the likelihood of asking relevant questions and reduces the likelihood of producing unconnected facts (Karr & Larson, 2005). Karr and Larson further explained, "Conglomerations of variables without links to theoretical networks suggesting the specific and significant reasons why they are chosen are essentially meaningless" (p. 301).

Influence of Theory on Practice

Career theory also provides a systematic basis for designing career interventions. Practitioners can use career theory to translate complex vocational behaviors and career development processes into more parsimonious and readily understood concepts that can be more easily applied in practice (Niles & Harris-Bowlsbey, 2017; Sharf, 2013; Shoffner, 2006; Young, Marshall, & Valach, 2007). Theories can suggest hypotheses for practitioners to follow up with clients (Swanson & Fouad, 2015). Practitioners can select more potentially effective interventions by linking theory-based concepts with specific client needs, as well as consider the relative costs in using various theories to deliver interventions (Sampson, Dozier, & Colvin, 2011). Practitioners can also integrate career theory with their local experience in serving individuals to create a customized theory that can be more readily applied in practice (Young et al., 2007). Theory integration can also occur among theories as needed (Patton & McMahon, 2014). Spokane (1991) noted that most career interventions are designed using more than one theory. The reciprocal relationship between theory and practice is evident when actual client concerns in counseling settings are used for testing and refining theories, leading to improvements in both theory and future research (Frazier, Gonzales, & Rudman, 1995). Finally, the importance of using theory to guide practice can be seen in the various career practitioner competency statements that require skill in using theory in developing career interventions (Sampson et al., 2011). A popular, but anonymous quote is relevant here: "Theory without practice is meaningless, but practice without theory is blind."

Influence of Research on Practice

Research has an important role to play in improving practice (Bringle & Hatcher, 2000). Research on vocational behavior clarifies the factors that shape the career choices of young persons and adults. This research can be used to create new career resources and services. Lebow (1988) noted that research on intervention outcomes helps us select specific services to better meet individual needs. The need to integrate research and practice is increasingly apparent as limited financial resources lead to demands for more evidence-based practice (Antony, 2005; Murray, 2009) as well as requirements for increased accountability (Goodyear & Benton, 1986; Sampson, 2008).

Challenges in Integrating Theory, Research, and Practice

Despite the apparent advantages, the integration of theory, research, and practice in career development is limited according to our examination of the extent of integration in the 2013 career development journal articles (Sampson et al., 2014). The greatest amount of integration was theory into research at 55% of publications, while the integration of theory into practice and research into practice were both substantially less at 39%. As a result of this limited integration, we believe the full benefits of mutually supporting theory, research, and practice are unrealized. Specific challenges include (a) differences in perspectives among theorists, researchers, and practitioners, (b) relevance of research to practice, and (c) limited availability of information needed to facilitate integration.

Differences in Perspectives Among Theorists, Researchers, and Practitioners

Several authors have suggested that differences among theorists, researchers, and practitioners account for some of the limited integration of theory, research, and practice. Differences appear to exist in interests, language, personality, and training. In terms of *interests*, practitioners appear less concerned about applying theory to practice (Kidd, Killeen, Jarvis, & Offer, 1994; Morrow-Bradley & Elliott, 1986). A second difference relates to *language*. Jepsen (1996) suggested that theorists and practitioners use dissimilar language to describe similar situations. For example, theorists may focus more on conceptual and research terms while practitioners often focus more on problems, information, and interpretations. Goodyear and Benton (1986) noted that researchers use increasingly specialized language not used by practitioners in delivering career interventions. A third difference concerns *personality*. Goodyear and Benton (1986) suggested that the disconnection between researchers and practitioners is likely due to personality differences between individuals who seek work primarily in research versus practice. The final difference concerns *training*. The nature of training may influence the degree to which theory and research are used to guide practice.

Brown (2002) found that social workers, employment counselors/recruiters, human resource specialists, and career service coordinators were less likely to agree that theory and research had informed their practice than was the case for licensed counselors and psychologists. The disconnection among theorists, researchers, and practitioners appears greater between practitioners and theorists and practitioners and researchers. Theorists and researchers appear to collaborate more, as evidenced by our 2013 literature review (Sampson et al., 2014).

Relevance of Research to Practice

A chasm also appears to exist between many researchers and practitioners, with researchers perceiving that their work is dismissed or ignored and practitioners perceiving that research fails to address their clients' needs (Murray, 2009). A key issue here is the relevance of research to practice, as numerous authors have criticized the applicability of research to practice or practitioners (Anderson & Heppner, 1986; Heppner & Anderson, 1985; Howard, 1985; 1986; Gelso, 1979; 1985; Goodyear & Benton, 1986; Lebow, 1988; Murray, 2009; Reardon, Lenz, Sampson, & Peterson, 2011). Several factors may contribute to the reduced relevance to practice, including differences between (a) the settings for research and the settings for counseling (Antony, 2005), (b) the specific questions posed in research and the questions posed in counseling (Gelso, 1985), (c) the constructs used in research and the constructs used in counseling (Gelso, 1985), and (d) the participants used in research and the clients typically encountered in practice (Martin & Martin, 1989).

Limited Availability of Information Needed to Facilitate Integration

The theory and research that practitioners need to improve career interventions are often initially available only in limited outlets, such as costly scientific journals and books or professional conferences requiring expensive travel to obtain the most up-to-date information. While electronic availability is slowly improving with more open access to publications, dissemination of theory and research remains a problem. I believe this is especially true (and a social justice issue) for practitioners serving disadvantaged and marginalized populations in poorly funded organizations around

the globe that have limited budgets for purchasing or accessing publications and sending staff members to conferences. A similar problem exists for practitioners who aren't even part of an organization as they try to serve marginalized populations. Also, the print or Web-based documentation that accompanies career assessments and career information often does not include a description of the theory or research (if any) used in creating the resource. This incomplete description of content development makes it more difficult to evaluate the quality of a given resource and to integrate it with other theory-based career resources and services.

Opportunities for Integrating Theory, Research, and Practice

While challenges exist in integrating theory, research, and practice, opportunities exist as well. Opportunities include the (a) collaboration among theorists, researchers, and practitioners; (b) creation of laboratories for theory, research, and practice; (c) creation of theory-based learning and assessment resources; (d) modification of refereed journal editorial policy; and (e) dissemination of information necessary for integration.

Collaboration Among Theorists, Researchers, and Practitioners

Increasing the collaboration among theorists, researchers, and practitioners is one of the most common recommendations for better integration of theory, research, and practice (Brown, 2002; Duffy, 2017; Flores, 2017; Fouad, 2017; Gati, 2017; Gelso, 1985; Heppner & Anderson, 1985; Herr, 1996; Jepsen, 1996; Loveland et al., 2006; Patton & McMahon, 2014; Reardon et al., 2011; Sampson et al., 2011; Sampson et al., 2014). The challenge in effective collaboration among theorists, researchers, and practitioners is identifying willing participants and learning how to work together in spite of differences in interests, language, personality, and training. Theorists, researchers, and practitioners need to find common ground to form a basis for collaboration. One potential common ground is a shared interest in making a positive difference in the lives of individuals and groups in our society. A second common ground involves shared interest in a particular theory or client population. An essential first step in finding common

ground is acquiring a familiarity with each other's work and respecting one another's relative contributions.

One option for creating common ground and improving the integration of theory, research, and practice is to build communities of practice. Collaboration among theorists, researchers, and practitioners in a community of practice can increase the relevance of research by improving the congruence of settings, questions, constructs, and participants. Communities of practice are defined as "groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly" (Wenger-Trayner & Wenger-Trayner, 2015, p. 1). Crucial characteristics include (a) shared domain of interest; (b) engagement in joint activities, information exchange, and mutual support; and (c) shared practice in terms of experiences, tools, and approaches to problem solving (Wenger-Trayner & Wenger-Trayner, 2015). Booth (2011a) stated, "Simply bringing together practitioners with a common identity and similar interests is not enough to establish an online community of practice. The community must have a reason for its existence; it must have a clear purpose" (p. 2). Tools that can be used to maintain a community of practice include blogs, Wikis, collaborative-document authoring applications, social bookmarking, media libraries, data visualization, social networking, discussion threads, and Webinars (Booth, 2011b). Websites can be used to aggregate these tools. Additional information on creating and maintaining communities of practice from Wenger-Trayner and Wenger-Trayner (2016) can be found online (http://wenger-trayner.com/faqs). CIP theory can be used as a case in point for a community of practice.

We realize now that the continued development of CIP theory has occurred over several decades within a community of practice. While we did not utilize all of the potential elements of a community of practice identified above, we do have the core elements of common interest, joint action, shared practice, and a clear purpose of better understanding vocational behavior and creating cost-effective career interventions for large numbers of individuals. As students in our counselor education and counseling psychology programs graduated, they have adapted the CIP theory they had learned in training to fit their local client and organizational needs. These students have also conducted research with and without FSU faculty and staff members as collaborators. The same practice and research dynamic occurred as conference attendees and as visitors to the FSU Career Center and the Tech Center established and maintained collaborative relationships over time. Visits by FSU faculty and staff members to other states and countries has had a similar effect. Communication has been maintained with e-mail, videoconferencing, and social media. As a result, the vocational behavior career intervention aspects of the theory have evolved. The intellectual capital and energy provided by these varied collaborations has been a driving force in the ongoing development of the CIP approach. Solberg (2017) provides additional examples of communities of practice.

Creation of Laboratories for Theory, Research, and Practice

When Robert Reardon designed the Curricular-Career Information Service (CCIS) at FSU in 1971 for students, he also conceptualized it as a laboratory for developing and examining career interventions and as a facility for training graduate students. Beginning with Holland's theory (1973) and later with CIP theory (Peterson, Sampson, & Reardon, 1991), CCIS provided a laboratory for fully integrating theory, research, and practice. Faculty members involved in intervention development, research, and counselor training were given offices in CCIS and the subsequent Career Center that provided easy and regular access to staff members, graduate students, and clients. In the present FSU Career Center, four current faculty members and two emeritus faculty members have offices where they maintain regular hours and participate in intervention development, research, and counselor training and supervision. Initial funding for this laboratory was provided by FSU and the Kellogg Foundation, with additional grant funding provided by various government agencies, foundations, and professional associations, as well as donations from alumni, friends, and staff, all to support students. An important distinction exists between a laboratory and a field research setting. Theorists and researchers commonly develop interventions and collect data with practitioners in field settings, such as schools, colleges, employment centers, and agencies. However, working in the same laboratory over time, such as a career center or a counseling center, adds an element of stability that allows for the development of more collaborative relationships with service-delivery staff and better access to clients and

archival data collected over years. This model has the potential to be replicated in other counseling psychology or counselor education training programs and career or counseling centers (Leuty et al., 2015).

Creation of Theory-Based Learning and Assessment Resources

Problems were noted by Jepsen (1996) and Goodyear and Benton (1986) that theorists and researchers tend to use different terminology than practitioners. From the beginning of our CIP theory work, we sought to create a common terminology that theorists, researchers, and practitioners can use in delivering career interventions. In translating CIP theory into practice, we followed the lead of Holland (1973; 1997) in creating terminology and resources that can be used directly by clients (Sampson, Peterson, Lenz, & Reardon, 1992). With Gagné's (1985) theory of learning and instruction providing structure, the following resources were created to facilitate the translation of theory to practice: (a) individual learning plans (http://www.career.fsu.edu/content/download/285314/1984698/ILP.pdf); (b) resource guides/module sheets for selecting and sequencing career assessments and information (http://career.fsu.edu/Resources/Module-Sheets); (c) handouts and exercises on decision making (http://career.fsu.edu/Tech-Center/Resources/Service-Delivery-Handouts); and (d) information handouts on various aspects of career decision making, experiential learning, and employment (http://career.fsu.edu/Resources/Career-Guides).

These learning resources are used for all three levels of the differentiated service delivery model (self-help, brief staff-assisted, and individual case-managed) (Sampson, 2008). Assessments were also created for use in career interventions to measure negative career thoughts (Sampson, Peterson, Lenz, Reardon, & Saunders, 1998) (http://career.fsu.edu/Tech-Center/Topics/Career-Theory-Research-and-Practice/Cognitive-Information-Processing-CIP-Theory-Based-approach) and the career decision space (Peterson, Leasure, Carr & Lenz, 2010) (http://career.fsu.edu/Tech-Center/Resources/Service-Delivery-Handouts). Our most extensive translation of theoretical concepts into practice involved creating a CIP-based undergraduate text for a career planning course (Reardon, Lenz, Peterson, & Sampson, 2017) (https://www.kendallhunt.com/reardon/). One of the

challenges in integrating research and practice noted previously in this chapter was enhancing the relevance of research so as to improve practice. We have attempted to address the relevance of our work by conducting career intervention research that critically examines the use and efficacy of the above resources (http://career.fsu.edu/Tech-Center/Resources/Bibliographies) (See also Brown, 2015).

Modification of Refereed Journal Editorial Policy

Editors of refereed journals have worked diligently to provide theorists, researchers, practitioners, and policy makers with high quality conceptual, descriptive, and empirical literature in vocational behavior and career intervention. Since the available evidence indicated that the integration of theory, research, and practice is not occurring naturally (Sampson et al., 2014), editors for refereed journals need to be more proactive in shaping the manuscripts they receive. With the exception of occasional invited special issues or manuscripts, editors seem to rely on the interests of theorists, researchers, and practitioners to shape the content of a journal. (*The Counseling Psychologist* would be a notable exception here.) Editorial policy needs to be modified to increase content related to integrating theory, research, and practice. This could be accomplished with (a) special issues, (b) regular dedicated sections of journals, and (c) submission guidelines for regular articles including an emphasis on integration (Duffy, 2017; Flores, 2017; Fouad, 2017; Furbish & Smith, 2017; Gati, 2017; Schultheiss, 2017). Ensuring practitioner participation in research will likely require proactive support from journal editors (Duffy, 2017; Flores, 2017). Blustein (1992) provides an integration example where recommendations for practice are based on theory and research. Given that evidence-based practice articles increase research relevancy and provide a natural opportunity for integrating research and practice, manuscripts presenting evidence-based practice (determined by empirical evidence) and best practices (determined by expert judgment) should be proactively solicited (Sampson et al., 2014). Brown (2015), Brown and Roche (2016), and Whiston and Rose (2015) provide helpful recommendations on improving the validity and relevance of the evidence base for career interventions. Attention should also be given to articles that examine the use of the evidence based-practice that we already have, particularly the use of

evidence for career intervention improvement. Finally, the recommendations for journal editorial policy could also be extended to selection criteria for presentations at professional conferences.

Dissemination of Information Necessary for Integration

While the initial dissemination of information about CIP theory used traditional print media (journal articles, books, and book chapters) and presentations at professional meetings with paper handouts, the advent of the Internet in the early 1990s provided theorists, researchers, and practitioners in other locations with easy access to the theory and its application. The focal point for this information dissemination was our research center, the Center for the Study of Technology in Counseling and Career Development (The Tech Center). Given that information and communication technology was one of our research topics, it was natural that we became early adopters of information dissemination via the Internet.

In 1993 we created a Gopher site for the Tech Center. Gopher sites were menu driven Internet pages for locating and distributing documents, which in our case were bibliographies and technical reports. In 1997, we developed our first website for delivering bibliographies, technical reports, and conference presentations. The current Tech Center website includes bibliographies, undergraduate and graduate course resources, conference presentations, service delivery handouts and exercises, technical reports, and training resources (www.career.fsu.edu/Tech-Center). In addition to providing information to anyone interested in our work, the website has also supported sharing information within our community of practice at no cost. A second dissemination strategy has involved posting bibliographies and documents in open-access digital repositories, such as DigiNole (http://diginole.lib.fsu.edu/repository) and ResearchGate (https://www.researchgate.net/). Future website development, such as social media integration and RSS feeds, could further improve dissemination.

Recommendations for the Future

Given the importance, challenges, and opportunities for integrating theory, research, and practice, the following recommendations are offered:

1. Theorists, researchers, and practitioners should intentionally develop and support communities of practice with the goal of improving the integration of theory, research, and practice, while also supporting communities of practice that develop naturally. Professional associations should collaborate to identify teams of theorists, researchers, and practitioners to participate in communities of practice. Professional associations could maintain directories of communities of practice related to specific theories or client populations. Existing professional association special interest groups might create a community of practice. Finally, professional association websites, social media sites, online journals, newsletters, and presentations might highlight the accomplishments of these communities. Financial support for communities of practice might be provided by grants from publishers, foundations, and agencies, as well as private gifts. Publishers and foundations have provided research support in the past related to specific theories and theory-based measures.

2. Theorists and researchers who hold faculty positions could explore creating laboratories in the career centers and counseling centers of their institutions where collaborative relationships with staff members can result in the co-creation of career resources and services and the examination of evidence-based practice. Theorists and researchers interested in populations served by public, not-for-profit, and profit agencies should explore similar laboratory arrangements.

3. Teams of theorists, researchers, and practitioners should co-create theory-based learning and assessment resources and then examine the efficacy of these resources in practice.

4. Journal editors and their editorial boards should review current editorial policy with regard to promoting the integration of theory, research,

and practice. Options to explore include special issues, regular dedicated sections of journals, and submission guidelines for regular articles that would include an emphasis on integration. Options for promoting evidence-based practice should be explored as well.

5. Each career theorist, or group of theorists, should be encouraged to develop a website that provides bibliographies, documents, and presentations related to their theory, as well as any available videos, service delivery materials, and training resources. These resources should be downloadable, or links to these resources could be made available in digital repositories. Researchers, individually or in groups, who have programs of research in vocational behavior related to individual needs or career intervention outcomes should develop websites that provide bibliographies and documents that might inform practitioners interested in improving their career interventions. Practitioners should identify the theories and research that they have used to design career interventions and include this information in the "About Us" section of their service delivery organization.

6. Policy makers should use external grant funding from government agencies, foundations, and professional associations to stimulate improved integration of theory, research, and practice. Grants can be used to incentivize theorists and researchers to collaborate with practitioners to conduct evidence-based practice research on career intervention outcomes.

7. Developers and publishers of career resources (e.g., print and computer-based assessments, information, and instruction) should include explicit documentation of the theory and research used to create their resources as well as examples of evidence-based practices that use them.

References

Anderson, W. P., & Heppner, P. P. (1986). Counselor applications of research findings to practice: Learning to stay current. *Journal of Counseling & Development, 65*, 152–155.

Antony, M. M. (2005). Five strategies for bridging the gap between research and clinical practice. *The Behavior Therapist, 28*, 162–163.

Beck, A. T. (1976). *Cognitive therapy and the emotional disorders*. New York: International Universities Press.

Beck, A. T., Emery, G., & Greenberg, R. L. (1985). *Anxiety disorders and phobias: A cognitive perspective*. New York: Guilford Press.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depressio*n. New York: Guilford Press.

Blustein, D. L. (1992). Applying current theory and research in career exploration to practice. *The Career Development Quarterly, 41*,174–184.

Booth, S. (2011a). *Online communities for educators: Guidelines for planning and implementation*. Available from: http://connectededucators.org/wp-content/uploads/2011/03/0143_OCoP-Design-Guidelines-March-2011.pdf

Booth, S. (2011b). *Technology for online communities of practice*. Available from: http://connectededucators.org/wp-content/uploads/2011/03/0143_Platforms-and-Tools-march-2011.pdf

Bringle, R. G., & Hatcher, J. A. (2000). Meaningful measurement of theory-based service-learning outcomes: Making the case with quantitative research. *Michigan Journal of Community Service Learning, Fall*, 68–75.

Brown, C. (2002). Career counseling practitioners: Reflections on theory, research, and practice. *Journal of Career Development, 29*, 109–127. http://doi.org/10.1023/A:1019916203761

Brown, S. D. (2015). Career intervention efficacy: Making a difference in people's lives. In P. J. Hartung, M. L. Savickas, & W. B. Walsh (Eds.), *APA Handbook of career interventions: Foundations* (Vol. 1, pp. 61–77). Washington, D.C.: American Psychological Association.

Brown, S. D., & Roche, M. (2016). The outcomes of vocational interventions: Thirty (some) years later. *Journal of Career Assessment, 24*, 26–41.

Dozier, C., Lenz, J., & Freeman, V. (2016). Using theory-based career assessments to connect career and mental health issues. *Career Planning and Adult Development Journal, 32*, 100–111.

Duffy, R. D. (2017). Ensuring quality in theory, research, and practice: *The Career Development Quarterly*. In J. P. Sampson, E. Bullock-Yowell, V. C. Dozier, D. S. Osborn, & J. G. Lenz (Eds.), *Integrating theory, research, and practice in vocational psychology: Current status and future directions* (pp. 137). Tallahassee, FL: Florida State University. Retrieved from https://doi.org/10.17125/svp2016.ch13

Flores, L. Y. (2017). *Journal of Career Development*: Recommendations for future journal practices for integrating career theory, research, and practice. In J. P. Sampson, E. Bullock-Yowell, V. C. Dozier, D. S. Osborn, & J. G. Lenz (Eds.), *Integrating theory, research, and practice in vocational psychology: Current status and future directions* (pp. 148). Tallahassee, FL: Florida State University. Retrieved from https://doi.org/10.17125/svp2016.ch15

Fouad, N. A. (2017). The role of theory in improving evidence-based career interventions. In J. P. Sampson, E. Bullock-Yowell, V. C. Dozier, D. S. Osborn, & J. G. Lenz (Eds.), *Integrating theory, research, and practice in vocational psychology: Current status and future directions* (pp. 77). Tallahassee, FL: Florida State University. Retrieved from https://doi.org/10.17125/svp2016.ch7

Frazier, P. A., Gonzales, M. H., & Rudman, L. A. (1995). Evaluating the effectiveness of applying social psychological theory to counseling. *The Counseling Psychologist, 23*, 691–696.

Furbish, D., & Smith, A. (2017). Ensuring quality in theory, research, and practice: *Journal of Employment Counseling*. In J. P. Sampson, E. Bullock-Yowell, V. C. Dozier, D. S. Osborn, & J. G. Lenz (Eds.), *Integrating theory, research, and practice in vocational psychology: Current status and future directions* (pp. 155). Tallahassee, FL: Florida State University. Retrieved from https://doi.org/10.17125/svp2016.ch16

Gagné, R. M. (1985). *The conditions of learning and theory of instruction* (4th ed.). New York: Holt, Rinehart, & Winston.

Gati, I. (2017). Integrating theory, research, and practice: A viewpoint from a member of the editorial board of the *Journal of Career Assessment*. In J. P. Sampson, E.

Bullock-Yowell, V. C. Dozier, D. S. Osborn, & J. G. Lenz (Eds.), *Integrating theory, research, and practice in vocational psychology: Current status and future directions* (pp. 141). Tallahassee, FL: Florida State University. Retrieved from https://doi.org/10.17125/svp2016.ch14

Gelso, C. J. (1979). Research in counseling: Methodological and professional issues. *The Counseling Psychologist, 8*, 7–35. http://doi.org/10.1177/001100007900800303

Gelso, C. J. (1985). Rigor, relevance, and counseling research: On the need to maintain our course between scylla and charybdis. *Journal of Counseling & Development, 63*, 551–553. http://doi.org/10.1002/j.1556-6676.1985.tb00678.x

Goodyear, R. K., & Benton, S. L. (1986). The roles of science and research in the counselor's work. In A. J. Palmo & W. J. Weikel (Eds.), *Foundations of mental health counseling* (pp. 287–308). Springfield, IL: Charles C Thomas.

Herr, E. L. (1996). Toward the convergence of career theory and practice: Methodology, issues, and possibilities. In M. L. Savickas & W. B. Walsh (Eds.), *Handbook of career counseling theory and practice* (pp. 13–36). Palo Alto, CA: Davies-Black.

Heppner, P. P., & Anderson, W. P. (1985). On the perceived non-utility of research in counseling. *Journal of Counseling & Development, 63*, 545–547. http://doi.org/10.1002/j.1556-6676.1985.tb00676.x

Holland, J. L. (1973). *Making vocational choices: A theory of careers*. Englewood Cliffs, NJ: Prentice-Hall.

Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments* (3rd ed.). Odessa, FL: Psychological Assessment Resources, Inc.

Howard, G. S. (1985). Can research in the human sciences become more relevant to practice? *Journal of Counseling & Development, 63*, 539–544.

Howard, G. S. (1986). The scientist-practitioner in counseling psychology: Toward a deeper integration of theory, research, and practice. *The Counseling Psychologist, 14*, 61–105.

Jepsen, D. A. (1996). Relationships between developmental career counseling theory and practice. In M. L. Savickas & W. B. Walsh (Eds.), *Handbook of career*

counseling theory and practice (pp. 135–154). Palo Alto, CA: Davies-Black.

Karr, C. A., & Larson, L. M. (2005). Use of theory-driven research in counseling: Investigating three counseling psychology journals from 1990 to 1999. *The Counseling Psychologist, 33*, 299–326. http://doi.org/10.1177/0011000004272257

Kidd, J. M., Killeen, J., Jarvis, J., & Offer, M. (1994) Is guidance an applied science?: The role of theory in the career guidance interview. *British Journal of Guidance and Counselling 22*, 385–403.

Lebow, J. (1988). Research into practice/practice into research. *Journal of Family Psychology, 1*, 337–351. http://doi.org/10.1037/h0084979

Lent, R. W. (2017). Integration of theory, research, and practice: A social cognitive perspective. In J. P. Sampson, E. Bullock-Yowell, V. C. Dozier, D. S. Osborn, & J. G. Lenz (Eds.), *Integrating theory, research, and practice in vocational psychology: Current status and future directions* (pp. 20). Tallahassee, FL: Florida State University. Retrieved from https://doi.org/10.17125/svp2016.ch1

Lenz, J. G., Peterson, G. W., Reardon, R. C., & Saunders, D. (2010). Connecting career and mental health counseling. *VISTAS Online Journal*, 1–16. Retrieved from http://counselingoutfitters.com/vistas/vistas_2010.htm

Leuty, M., Bullock-Yowell, E., Womack, A., Schmidtman, E., Paulson, D., Andrews, L. M., & Osborne, L. (2015). The integration of science and practice in one training program: Outcomes of a manualized career counseling group. *Counselling Psychology Quarterly.* http://doi.org/10.1080/09515070.2015.1053432

Loveland, J. M., Buboltz, W. C., Schwartz, J., & Gibson, G. (2006). Content analysis of *CDQ* from 1994–2003: Implications and trends for practitioners and researchers from a decade of research. *The Career Development Quarterly, 54*, 256–264.

Martin, D., & Martin, M. (1989). Bridging the gap between research and practice. *Journal of counseling & development, 67,* 491–492.

Morrow-Bradley, C., & Elliott, R. (1986). The utilization of psychotherapy research by practicing psychotherapists. *American Psychologist, 41*, 188–197.

Murray, C. E. (2009). Diffusion of innovation theory: A bridge for the research-practice gap in counseling. *Journal of Counseling & Development, 87*, 108–116. http://doi.org/10.1002/j.1556-6678.2009.tb00556.x

Niles, S. G., & Harris-Bowlsbey, J. (2017). *Career development interventions in the 21st century* (5th ed.). Boston: Pearson.

Patton, W., & McMahon, M. (Eds.). (2014). *Career development and systems theory: Connecting theory and practice* (3rd ed.). Rotterdam: Sense Publishers.

Peterson, G. W., Leasure, K. K., Carr, D. L., & Lenz, J. G. (2010). The Decision Space Worksheet: An assessment of context in career decision making. *Career Planning and Adult Development Journal, 25*, 87–100.

Peterson, G. W., Sampson, J. P., Jr., & Reardon, R. C. (1991). *Career development and services: A cognitive approach.* Pacific Grove, CA: Brooks/Cole.

Reardon, R. C., & Lenz, J. G. (2015). *Handbook for using the Self-Directed Search: Integrating RIASEC and CIP theories in practice.* Odessa, FL: Psychological Assessment Resources.

Reardon, R. C., Lenz, J. G., Peterson, G. W., & Sampson, J. P., Jr. (2017). *Career development and planning: A comprehensive approach* (5th Ed.). Dubuque, IA: Kendall Hunt.

Reardon, R. C., Lenz, J. G., Sampson, J. P., Jr., & Peterson, G. W. (2011). Big questions facing vocational psychology: A cognitive information processing perspective. *Journal of Career Assessment*, *19*, 240–250.

Sampson, J. P., Jr. (2008). *Designing and implementing career programs: A handbook for effective practice.* Broken Arrow, OK: National Career Development Association.

Sampson, J. P., Jr., Dozier, V. C., & Colvin, G. P. (2011). Translating career theory to practice: The risk of unintentional social injustice. *Journal of counseling & development*, *89*, 326–337.

Sampson, J. P., Jr., Hou, P. C., Kronholz, J., Dozier, C., McClain, M. C., Buzzetta, M., Pawley, E., Finklea, T., Peterson, G. W., Lenz, J. G., Reardon, R. C., Osborn, D. S., Hayden, S. C. W., Colvin, G. P., & Kennelly, E. L. (2014). Annual review: A content analysis of career development theory, research, and practice - 2013. *The Career Development Quarterly*, *62*, 290–326. http://doi.org/10.1002/j.2161-0045.2014.00085.x

Sampson, J. P., Jr., McClain, M. C., Musch, E., & Reardon, R. C. (2013). Variables affecting readiness to benefit from career interventions. *The Career Development Quarterly*, *61*, 98–109. http://doi.org/10.1002/j.2161-0045.2013.00040.x

Sampson, J. P., Jr., Peterson, G. W., Lenz, J. G., & Reardon, R. C. (1992). A cognitive approach to career services: Translating concepts into practice. *Career Development Quarterly*, *41*, 67–74.

Sampson, J. P., Jr., Peterson, G. W., Lenz, J. G., Reardon, R. C., & Saunders, D. E. (1998). The design and use of a measure of dysfunctional career thoughts among adults, college students, and high school students: The Career Thoughts Inventory. *Journal of Career Assessment*, *6*, 115–134.

Sampson, J. P., Jr., Peterson, G. W., Reardon, R. C., & Lenz, J. G. (2000). Using readiness assessment to improve career services: A cognitive information processing approach. *The Career Development Quarterly*, *49*, 146–174.

Sampson, J. P., Jr., Reardon, R. C., Peterson, G. W., & Lenz, J. G. (2004). *Career counseling and services: A cognitive information processing approach*. Pacific Grove, CA: Brooks/Cole.

Schultheiss, D. E. (2017). Integrating theory, research, and practice in vocational psychology: Perspectives of a *Journal of Vocational Behavior* editorial board member. In J. P. Sampson, E. Bullock-Yowell, V. C. Dozier, D. S. Osborn, & J. G. Lenz (Eds.), *Integrating theory, research, and practice in vocational psychology: Current status and future directions* (pp. 166). Tallahassee, FL: Florida State University. Retrieved from https://doi.org/10.17125/svp2016.ch17

Sharf, R. (2013). Advances in theories of career development. In W. B. Walsh, M. L. Savickas, & P. J. Hartung (Eds.). *Handbook of vocational psychology*, (4th ed., pp. 3–32). New York and London: Routledge.

Shoffner, M. F. (2006). Career counseling: Theoretical perspectives. In D. Capuzzi & M. D. Stauffer (Eds.), *Career counseling: Foundations, perspectives, and applications* (pp. 40–55). Upper Saddle River, NJ: Pearson.

Solberg, V. S. H. (2017). Personal reflections on a career spent creating and sustaining researcher-practitioner collaborations. In J. P. Sampson, E. Bullock-Yowell, V. C. Dozier, D. S. Osborn, & J. G. Lenz (Eds.), *Integrating theory, research, and practice in vocational psychology: Current status and future directions* (pp. 108). Tallahassee, FL: Florida State University. Retrieved from https://doi.org/10.17125/svp2016.ch11

Spokane, A. R. (1991). *Career intervention*. Englewood Cliffs, NJ: Prentice-Hall.

Swanson, J. L., & Fouad, N. A. (2015). *Career theory and practice: Learning through case studies* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Walker, J. V., & Peterson, G. W. (2012). Career thoughts, indecision, and depression: Implications for mental health assessment in career counseling. *Journal of Career Assessment*, *20, 497–506* http://doi.org/10.1177/1069072712450010

Wenger-Trayner, E., & Wenger-Trayner, B. (2015). *Communities of practice: A brief introduction*. Available from: http://wenger-trayner.com/introduction-to-communities-of-practice/

Wenger-Trayner, E., & Wenger-Trayner, B. (2016). *Frequently asked questions*. Available from: http://wenger-trayner.com/faqs

Whiston, S. C., & Rose, C. S. (2015). Career counseling process and outcome. In M. L. Savickas, W. B. Walsh, & P. J. Hartung (Eds.), *APA handbook of career interventions* (Vol. 1, pp. 43–60). Washington, D.C.: American Psychological Association.

Young, R. A., Marshall, S. K., & Valach, L. (2007). Making career theories more culturally sensitive: Implications for counselling. *The Career Development Quarterly*, *56*, 4–18.