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Evidence-informed programming in Student Affairs: A mixed methods study examining behaviors, perceptions, and barriers related to the use of theory and research in program development

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Evidence-Informed Programming in Student Affairs: A Mixed Methods Study Examining Behaviors, Perceptions, and Barriers Related to the Use of Theory and Research in Program Development

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[1] ...unless I don't have a full-time job. In that case, drinks on Tom and Derek!

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Abstract

For decades, professional organizations and leaders in the field of student affairs have called for student affairs professionals to engage in evidence-informed programming (EIP). EIP refers to the use of theory and empirical research to build programs intended to impact specific student learning or development outcomes. The benefits of EIP range from increasing the likelihood that newly developed programs will "work" to increasing the efficiency of the assessment process and facilitating the use of assessment results for program improvement. Despite the many calls for EIP, there is concern that EIP in student affairs is rare; however, empirical research on professionals' engagement in EIP is limited. In this study of 143 student affairs professionals at a large public East-coast institution, a mixed-methods approach was used to examine the extent to which student affairs professionals engage in EIP, value EIP, and feel confident in their EIP-related skills. Additionally, major barriers to EIP and strategies for addressing these barriers were identified. The quantitative results suggested student affairs professionals value EIP and believe they have many of the skills needed to engage in EIP. Paradoxically, professionals reported rarely consuming research and only "sometimes" engaging in EIP. The quantitative results also indicated time was the most significant barrier to professionals' engagement in EIP. However, qualitative interviews with participants revealed "lack of time" is often a symptom of other issues such as lack of training and lack of organizational support. With respect to strategies for addressing these barriers, participants overwhelmingly advocated for a top-down approach. In

particular, they underscored the importance of clear expectations and accompanying support from leadership.

CHAPTER 1

Introduction

Whereas the first student personnel administrators were little more than caretakers and disciplinarians, modern student affairs professionals are considered educators who share responsibility with faculty (and students themselves) for student learning and development (American Association for Higher Education [AAHE], American College Personnel Association [ACPA], & National Association of Student Personnel Administrators [NASPA], 1998; Nuss, 2003). Student affairs professionals facilitate student learning and development through educational programs and other learning experiences often offered outside the classroom (e.g., residence halls, counseling centers, recreation centers, off-campus sites). In addition to providing these learning experiences, student affairs professionals are expected to evaluate program effectiveness via student learning outcomes assessment (ACPA & NASPA, 2015; Council for the Advancement of Standards in Higher Education, 2015; Finney & Horst, 2019a).

As summarized by Suskie (2009), outcomes assessment is "an ongoing process of:

- Establishing clear, measurable expected outcomes of student learning
- Ensuring that students have sufficient opportunities to achieve those outcomes
- Systematically gathering, analyzing, and interpreting evidence to determine how well student learning matches our expectations
- Using the resulting information to understand and improve student learning" (p. 4).

It is this last step—use of results for improvement—that is most important. The assessment process has little value if results are not used to inform meaningful changes that result in improved learning and development. Unfortunately, there is little evidence to suggest assessment results are routinely used in higher education (Blaich & Wise, 2011), and even less evidence of assessment efforts resulting in student learning improvement (Banta & Blaich, 2011; Jankowski, Timmer, Kinzie, & Kuh, 2018). In short, "the promise of assessment" is seldom realized in higher education (Fulcher, Good, Coleman, & Smith, 2014, p. 4).

This disheartening state of affairs has sparked many discussions among assessment experts about the barriers to engaging in high-quality assessment, particularly assessment that leads to improved student learning (Bresciani, 2006; Bresciani, 2010; Fulcher, et al., 2014; Suskie, 2009; Banta & Palomba, 2014; Upcraft & Schuh, 1996). Some of the most commonly discussed barriers to student affairs professionals' engagement in outcomes assessment include individual-level attitudes and abilities: perceptions of assessment's purpose (accountability vs. improvement), assessment-related knowledge and skills, assessment-related self-efficacy, and value for assessment (Bresciani, Gardner, & Hickmott, 2009; Elkins, 2015; Henning & Roberts, 2016; Sriram, 2014). Additionally, institution-level barriers are widely discussed, such as unclear institutional expectations regarding assessment, lack of assessment infrastructure, and lack of commitment/support from upper administration in the form of time, resources, and rewards (Balser & Kniess, 2017; Busby & Robinson, 2012; Schuh & Gansemer-Topf, 2010; Upcraft & Schuh, 1996). Finally, some researchers cite barriers

specific to demonstrating learning improvement in higher education, such as unclear definitions about what constitutes “improvement” (Fulcher et al., 2014; Fulcher, Smith, Sanchez, Ames, & Meixner, 2017), and lack of interdisciplinary collaboration (Pope & Fulcher, 2019).

For the current study, I instead focus on a potentially critical barrier to outcomes assessment that is rarely discussed yet aligns with step two of Suskie’s process: “Ensuring that students have sufficient opportunities to achieve those outcomes”. This important step of the assessment process assumes educators know how to build educational experiences that provide students with sufficient opportunity to learn and develop. When this assumption is not met—for example, when student affairs professionals cannot clearly articulate how their programs should influence student learning and development—assessment loses its power as “a confirmatory process” used to test hypotheses about the effectiveness of intentionally designed programming built to impact specified student learning outcomes (Pope, Finney, & Bare, 2019, p.7). In the absence of thoughtful, intentional programming, the assessment process becomes inefficient at best, as educators adopt a “trial and error” approach to programming. At worst, assessment becomes a waste of institutional resources and students’ time as educators struggle to collect meaningful information that can be used to improve programs and student learning (Banta & Blaich, 2011; Blaich & Wise, 2011; Bresciani, 2010).

Fortunately, through the use of theory and empirical research, it is possible to build high-quality educational programs that should “work” (i.e., should improve

student learning and development). I refer to this approach to program development as "evidence-informed programming" (EIP). In the current study, I investigate whether student affairs professionals engage in EIP, value EIP, feel confident in their EIP skills, and perceive barriers to engaging in EIP. Locally, the findings of this study will inform the development of assessment-related professional development offerings at James Madison University (JMU). Within the field of student affairs, the findings will provide a glimpse into the alignment between student affairs professional standards and student affairs practice. If misalignment exists, this study will explore potential reasons for the misalignment and strategies for reducing the disconnect. These findings may have implications for student affairs administrators seeking to engage in EIP, higher education student affairs (HESA) program faculty responsible for training future professionals in EIP, and assessment practitioners partnering with student affairs professionals to evaluate and improve programming. Although the study is limited to a single institution, the survey and research protocol may serve as templates for other researchers seeking to explore student affairs professionals' engagement in EIP. Overall, the implications for this study extend well beyond JMU to the student affairs profession at large.

In this chapter, I 1) define EIP and briefly note its origins in healthcare and K-12 education; 2) review what is expected of student affairs professionals with respect to EIP, as articulated in the standards for the profession; 3) summarize current research on EIP in student affairs; 4) explain the benefits of engaging in EIP; and 5) note the need for

more research about EIP in student affairs. Finally, I close the chapter by presenting the research questions that guided this mixed-methods study.

The Origins of Evidence-Informed Programming

EIP is defined as programming that is designed to impact student learning or development and is informed by theory or research evidence. For example, an evidence-informed alcohol intervention program would incorporate current research about what influences student drinking behavior and effective strategies for impacting alcohol-related outcomes (e.g., knowledge, attitudes, skills, behaviors). The foundational principle upon which EIP is based (i.e., that interventions should be supported by research) first emerged in the healthcare field, where evidence-based medicine (EBM) has long been considered best practice (Guyatt et al., 1992). EBM "de-emphasizes intuition, unsystematic clinical experience, and pathophysiologic rationale as sufficient grounds for clinical decision-making and stresses the examination of evidence from clinical research" (Guyatt, 1992, p. 2420). More specifically, the EBM process involves the following steps: (a) define a clinical question, (b) conduct a search of relevant literature, (c) critically appraise the research, (d) use the research to inform clinical decision-making, and (e) evaluate outcomes of the EBM process (Sackett, 1997).

Evidence-based practice (EBP), a general term I will use to describe the use of evidence across various disciplines, has also taken root in primary/secondary education, particularly in the US and UK (Slavin, 2002). In particular, educational researchers have advocated for research-informed teaching practice (RITP), which refers to the use of research alongside other forms of evidence (such as teachers' tacit expertise) to inform

pedagogical decisions (Brown, Schildkamp, & Hubers, 2017). Unlike healthcare, there is no single model or series of steps for engaging in RITP (Brown et al., 2017). However, discussions about the use of evidence in education often center on the implementation of specific evidence-based teaching practices. More specifically, teachers are encouraged to adopt pre-existing practices that have been empirically shown to have positive educational outcomes for students (Cook, Tankersley, Landrum, Scruggs, & Mastropieri, 2013), and researchers are encouraged to generate inventories of such practices (Cook, Tankersley, Cook, & Landrum, 2014).

Calls for EIP in Student Affairs

Although EIP is less established in student affairs than in healthcare and K-12 education, conversations about use of evidence in student affairs (often referred to as theory-to-practice or research-to practice) can be traced back to seminal documents published throughout the mid-to-late 1900's and early 2000's (Finney & Horst, 2019b). In 1949, *The Student Personnel Point of View* highlighted the "interplay of research and practice" as a "dominant characteristic of modern [student] personnel work" (Williamson, 1949, p. 35). Nearly fifty years later, ACPA published another seminal document, *The Student Learning Imperative: Implications for Student Affairs*, which stated that student affairs divisions committed to student learning and development should base programs on "promising practices from the research on student learning" (1994, p. 4). More recently, ACPA and NASPA published *Learning Reconsidered,* which called for professionals to develop educational interventions informed by theories and research (Keeling, 2004). Additionally, over the last 20 years, many renowned student

affairs professionals have advocated for theory and research to play a more prominent role in guiding student affairs programming and practice (e.g., Bresciani, 2010; Carpenter, 2001; Evans & Guido, 2012; Fried, 2002; Reason & Kimball, 2012; Sriram & Oster, 2012).

These calls for evidence-informed programming and practice are also reflected in the field's professional standards. Finney and Horst (2019a) mapped three sets of student affairs professional standards to their seven-step assessment cycle and uncovered eight standards (both individual- and program-level) related to step two, "Create and map theory-based programming to objectives" (p. 313). Furthermore, Pope, et al. (2019) identified 16 student affairs professional standards related to knowledge and use of theory and research. For example, the Council for the Advancement of Standards in Higher Education (CAS) General Standards note that "Programs and services must be guided by theories and knowledge of learning and development" (CAS, 2015, p. 6). Similarly, the Student Learning and Development (SLD) competency area of the ACPA/NASPA *Professional Competency Areas for Student Affairs Educators* (ACPA & NASPA, 2015) states that professionals should be able to "Design programs and services to promote student learning and development that are based on current research on student learning and development theories" (p. 32). Overall, the standards emphasize that student affairs professionals should 1) keep abreast of current theoretical and empirical research related to their practice (particularly research on student learning and development), 2) be able to judge the quality and appropriateness of the research they consume, 3) develop student learning outcomes that are informed by theory and

research, and 4) use theory and research to guide their practice, including the development of evidence-informed programming (ACPA, 2006; ACPA & NASPA, 2015; CAS, 2015).

Current Research Related to EIP in Student Affairs

From this brief review of student affairs seminal documents and professional standards, it would appear the field has embraced the use of evidence (i.e., theory and research) to inform practice. Yet, several prominent student affairs researchers have questioned whether the values espoused in these standards and documents reflect the culture of the field. Indeed, many student affairs professionals have described the existence of a research-practice divide (Blimling, 2001; Carpenter & Stimpson, 2007; Fried, 2002; Sriram & Oster, 2012). In particular, a perception exists that many student affairs professionals do not regularly consume theoretical or empirical literature (Bresciani, 2010; Fried, 2002; Pope et al., 2019; Sriram & Oster, 2012). Furthermore, there is concern that student affairs professionals do not use theory and research to guide their practice (Fried, 2002; Carpenter & Stimpson, 2007). Little research has been conducted, however, to determine whether these perceptions reflect reality. Although several studies examine the value or importance student affairs professionals place on assessment, evaluation, and research (AER) knowledge and skills (see Herdlein, Riefler, & Mrowka, 2013 for a review of these studies), I was able to find only two studies that examined research engagement behaviors among student affairs professionals (Sriram, 2014; Sriram & Oster, 2012) and no studies explicitly investigating the extent to which

student affairs professionals use theory and research to inform program development (i.e., to engage in EIP). The current study will address this gap.

Despite the lack of direct evidence indicating a problem, some researchers have discussed potential barriers to engaging in EIP in student affairs. In particular, Pope, et al. (2019) suggested that student affairs professionals' lack of knowledge of relevant theory/research as well as their lack of guidance on applying theory/research to practice constitute major barriers to EIP. With respect to the former, they noted that although student affairs professionals are often knowledgeable about foundational student development theories (e.g., Chickering's Theory of Identity Development), "theories related to non-cognitive outcomes such as civic engagement, inter-cultural competence, and self-regulation … are largely overlooked, even though these constructs are often the focus of programming" (Pope, et al., 2019, p. 14). Likewise, Fried (2002) and Barber (2015) noted a lack of knowledge in the domains of learning and cognition, essential areas of knowledge for any educator hoping to impact student learning and development. With respect to the second barrier, Pope et al. (2019) noted that student affairs professionals have been told *what* to do for decades (i.e., build educational programs informed by theory and research), but they are seldom taught *how* to engage in this EIP process. Although theory-to-practice models do exist, these models often lack practical tips and strategies, making them too vague to be useful (Bloland, Stamatakos, & Rogers, 1994; Reason & Kimball, 2012). Pope et al. (2019) addressed this need by presenting a four-step process for building evidence-informed programs:

1. Articulate a feasible and malleable distal outcome (i.e., What is the problem or distal outcome that needs attention?)
2. Articulate theory-based intermediate outcomes (i.e., What is the etiology of the distal outcome based on current theory and research?)
3. Develop intentional, evidence-informed programming (i.e., What program components should affect the intermediate SLOs based on current theory and research?)
4. Assess program effectiveness (i.e., Do assessment results suggest the programming impacts the intermediate and distal SLOs?)

Notably, the steps presented here are reminiscent of the generally accepted steps of the EBM process in healthcare. In both cases, practitioners are tasked with articulating a problem, reviewing relevant literature, applying literature to practice, and evaluating the resulting outcomes. Importantly, by outlining this process in the healthcare field, a general roadmap was provided not only for clinicians seeking to engage in EBM, but also for researchers seeking to assess clinician's engagement in EBM. Similarly, the EIP process outlined by Pope et al. (2019) informed the development of the survey employed in the current study to assess student affairs professionals' engagement in EIP.

The Benefits of Evidence-Informed Programming

Despite calls for EIP across many disciplines, the benefits of engaging in EIP are seldom described explicitly. Instead, the merits of EIP are often perceived as common sense:

> ...what student, client, or patient would choose a program aimed at solving a problem or increasing capabilities that was based on hunches, assumptions, or beliefs when they could engage in a program that 'should' be effective given it was intentionally designed using research and theory? (Pope, et al., 2019, p. 6)

Beyond common sense, researchers in a variety of disciplines have begun to empirically study the impacts of EIP. In both healthcare and K-12 education, there is evidence of improved outcomes for patients and students when professionals engage in EIP (e.g., Brown et al., 2017; Melnyk, Fineout-Overholt, & Mays, 2008).

One major reason EIP may result in improved outcomes, particularly in education, is that it reduces decision-making based exclusively on personal experiences, anecdotal success stories, tradition (i.e., doing what has always been done), or hunches (Blimling, 2001; Cook & Smith, 2002; Landrum, 2015). Although these approaches can sometimes lead to effective educational practice and are based on a similar logic to exploratory empirical research, they are much more likely to result in Type I errors (i.e., concluding an *ineffective* program or intervention *worked*) or Type II errors (i.e., concluding an *effective* program or intervention *did not work*) than approaches informed by theory and research. The reason these errors are more likely to occur is that lessons learned through personal and anecdotal experiences rely on small sample sizes (limited by the number of students an individual comes into contact with) and biased "instrumentation" (i.e., the biases of the teacher or facilitator observing student performance). With respect to the latter point, educators are highly susceptible to the illusory-causation phenomenon whereby they "pay attention to what they already

believe to be true, thereby establishing the perception of causal relationships consistent with their a priori beliefs regardless of whether such a relationship exists in reality" (Cook & Smith, 2002, p. 282). In other words, if educators are looking for evidence of a program's effectiveness, they will often find it (regardless of the program's true efficacy). Conversely, if educators expect a program or practice to be ineffective, they may overlook or misattribute evidence of its effectiveness. In sum, if program effectiveness is the primary goal, it is preferable to build programming informed by empirical research, which provides some protection against these errors in human judgment.

Another important benefit of EIP is increased use of outcomes assessment results. A major issue in higher education is that faculty and student affairs professionals do not often use outcomes assessment results to improve student learning. However, knowledge of theory and research may facilitate the interpretation and use of assessment results making it easier to close the assessment loop. In fact, this was the primary finding by Bresciani (2010) who examined barriers to student affairs professionals' engagement in outcomes-based assessment of student learning and development:

> Those student affairs professionals who understand the nature of their profession (e.g., the theories that underlie their work) were able to more effectively engage in outcomes-based assessment and identify how their programs contribute to student learning and development. Without an understanding of theories, others were having difficulty evaluating their

> programs, even though they had a general understanding of how to implement outcomes-based assessment. (p.86)

By using theory and research to 1) identify a feasible/malleable distal SLO, 2) articulate intermediate SLOs that are linked to the distal SLO, and 3) develop program components that should help students achieve the intermediate SLOs, student affairs professionals lay a strong foundation for assessing program effectiveness (Pope, et al., 2019). More specifically, developing an evidence-informed program where the three elements above are articulated allows for the collection of more nuanced outcomes data. Instead of only collecting data on the program's distal outcome(s), it becomes possible to gather important information about intermediate outcomes as well. With this additional information, more detailed interpretations related to program effectiveness can be made. For example, if assessment results revealed a program was ineffective, student affairs professionals could determine if this was due to one or more intermediate outcomes not being met (an indication of poor or insufficient programming). If certain intermediate outcomes were not met, professionals would be able to identify the specific programming components in need of modification. In sum, EIP allows professionals to engage in assessment that is more intentional and produces more meaningful assessment results than would be possible for programs developed without theory or research.

Purpose of the Current Study: The Need for Further Research on EIP in Student Affairs

EIP increases the likelihood of improving student learning by helping student affairs professionals develop programs that have the best chance of being effective and

helping them engage in high-quality assessment that enables meaningful use of results. Given the potential impact of EIP, it is unsurprising there is a strong emphasis in the student affairs professional standards and seminal documents regarding EIP. What is surprising, however, is the lack of research on this topic. It is unclear whether (or to what extent) student affairs professionals engage in EIP, if they value EIP, or if they feel equipped to engage in EIP. It is also unclear what facilitates engagement in EIP for this population. Given the lack of research in this area, the current study was guided by the following exploratory research questions:

1. **How much time do student affairs professionals at JMU spend consuming empirical research and other sources of evidence?**

   Health-care professionals report reading empirical research very infrequently (Boström, Sommerfeld, Stenhols, & Kiessling, 2018; McColl, Smith, White, & Field, 1998; Melnyk, Fineout-Overholt, & Mays, 2008). Similarly, researchers have found that, on average, student affairs professionals do not spend much time reading research from peer-reviewed journals (Sriram, 2014; Sriram & Oster, 2012). Furthermore, many professionals report not reading any of the top professional publications in the field (Sriram & Oster, 2012). As such, I predict the professionals in my study will report infrequent consumption of empirical research and other types of published literature.

2. **Do student affairs professionals at JMU value EIP?**

   Among health-care professionals, value for research and EBP is high (e.g., Hankemeier et al., 2013; Heiwe et al., 2011; McCarty, Hankemeier, Walter,

Newton, & Van Lunen, 2013). Similarly, relative to other student affairs competencies, student affairs professionals report valuing research-related knowledge and skills highly (Herdlein, Riefler, & Mrowka, 2013). Given this previous research and the emphasis on EIP in student affairs standards, I predict professionals will report moderate-to-high levels of EIP value.

3. **Do student affairs professionals at JMU believe they possess the necessary knowledge, skills, and resources to engage in EIP (self-efficacy)?**

   Health-care professionals often report low self-efficacy with respect to EBP in general and specific EBP-related skills such as interpreting statistics (Chang & Crowe, 2011; Hendricson et al., 2011; Salbach, Jaglal, Korner-Bitensky, Rappolt, & Davis, 2007). Similarly, student affairs professionals report that research skills are one of the competency areas for which they are least confident (Herdlein et al., 2004; Sriram, 2014; Sriram & Oster, 2012). Given this research, I predict student affairs professionals will report low EIP and research self-efficacy.

4. **Do student affairs professionals at JMU engage in EIP (behavior)?**

   In the healthcare field, where research about EBP is plentiful, researchers have found that EBP engagement is limited (e.g., Boström et al., 2018; Melnyk, Fineout-Overholt, Gallagher-Ford, & Kaplan, 2012) despite being heavily emphasized for over two decades. Within student affairs, researchers have found that student affairs professionals seldom consume research (Sriram, 2014; Sriram & Oster, 2012) and professionals may lack other essential skills for engaging in EIP, such as the ability to apply theory to practice (Bresciani, 2010).

Based on this research, I predict that student affairs professionals will report rarely engaging in EIP.

5. **Are EIP behaviors, values, and self-efficacy related?**

Amongst health-care professionals, there is evidence to suggest both EBP self-efficacy (Boström et al., 2018) and EBP attitudes/values (Squires et al., 2011) are related to EBP behaviors. Based on these findings and theoretical literature (e.g., expectancy-value theory), I predict similar relations for student affairs professionals. Note, however, that although a positive relationship exists between EBP behavior and value, even health-care professionals with high value for EBP often report infrequent EBP behavior (e.g., Jette et al., 2003), suggesting that positive attitudes are insufficient for engagement in EBP. I predict a similar conclusion will be drawn for student affairs professionals.

6. **Are EIP behaviors, values, and self-efficacy related to preferred sources of information for developing programs or evaluating program success?**

Although researchers have examined the sources of information (e.g., empirical research, professionals' own professional experience, advice from colleagues) health-care professionals prefer to consult to inform their practice (e.g., Kitto et al., 2007), they have not examined whether these preferences are linked to EBP behaviors, values, or self-efficacy. However, given the importance of research for EIP (Pope et al., 2019), I predict that student affairs professionals who value research (compared to other sources of evidence) will have more positive EIP value and exhibit stronger EIP engagement than professionals who value

research less. Additionally, given the purpose of EIP is to increase the likelihood of program effectiveness, I predict professionals who do not regard a program's effectiveness as an important indicator of program success will have less positive EIP attitudes and engage in EIP behaviors less frequently.

7. **Are EIP behaviors, values, and self-efficacy related to organizational culture?**

   Health-care researchers found organizational culture was a perceived barrier to EBP (e.g., Kajermo et al., 2010). However, there has been little empirical investigation of the relation between organizational culture and EBP value, self-efficacy, and behavior. In contrast, this is a major topic within the primary/secondary education literature. One study found perceived organizational culture was a major determinant of EBP values for educators (Brown & Zhang, 2016). Given these findings, I predict organizational culture will positively relate to EIP value. Notably, I was not able to locate research on the relationship between organizational culture and EBP self-efficacy or behavior. However, given the theoretical and empirical relations between values and behavior, I predict organizational culture will also positively relate to EIP behavior.

8. **Are EIP behaviors, values, and self-efficacy related to personal characteristics (e.g., education, experience)?**

   Among health-care professionals, higher levels of education are consistently associated greater EBP self-efficacy (Hankemeier et al., 2013; Salbach, et al., 2007). There is also evidence of positive relations between education and EBP

engagement (Melnyk et al., 2008). However, years of experience is often found to have a negative relation with EBP attitudes and self-efficacy (Jette et al., 2003; Melnyk et al., 2008; Salbach et al., 2007), and no relation with EBP behavior (Boström et al., 2018; Jette et al., 2003). An explanation for these findings is that modern educational programs teach students EBP and help develop EBP-related skills, thus influencing EBP values, behaviors, and self-efficacy. Because younger (less experienced) professionals receive this education, they score more highly on these outcomes than their older, more experienced peers who did not experience the same degree of EBP education. Given I am uncertain if student affairs graduate programs discuss EIP or build EIP-related skills (although Hutchinson and Lovell (2004) suggest they do not), I am uncertain what relations will emerge between education, experience, and EIP value, behaviors, and self-efficacy.

9. **Are EIP behaviors, values, and/or self-efficacy related to training?**

Among health-care professionals, participation in EBP-related trainings is common (Melnyk et al., 2008; Salbach et al., 2007) and there is evidence to suggest training is positively related to EBP engagement (Melnyk et al., 2008). Additionally, studies have been conducted to examine the impact of EBP trainings on EBP knowledge, attitudes, skills, and behaviors, with results varying based on the characteristics of the training (Shaneyfelt et al., 2006). Although I am unsure how many student affairs professionals will report receiving EIP-

related training, I predict greater EIP training will be related to greater EIP value, self-efficacy, and behavior.

10. **What barriers do JMU student affairs professionals perceive regarding their engagement in EIP?**

    In health-care professions, time is consistently reported as the greatest barrier to EBP engagement (e.g., Heiwe et al., 2011; Kajermo et al., 2010; McCarty et al., 2013). Given the hectic nature of student affairs practice, I predict student affairs professionals will also indicate time is a major barrier to EIP engagement. I am not sure, however, what other barriers student affairs professionals will identify as important.

Whereas the previous research questions were explored using quantitative methods, I explored the research questions below using qualitative methods. Notably, the results from the quantitative phase of the study were used to purposefully select participants for the qualitative interviews who possessed varying levels of EIP value and engagement:

11. **How do student affairs professionals design new programs intended to impact student learning and/or development, and how does the design process differ for professionals with high and low EIP value and engagement?**

12. **How do student affairs professionals decide whether a newly developed or unassessed educational program should be implemented, and how does the decision-making process differ for professionals with high and low EIP value and engagement?**

13. **How does evidence-informed programming fit into JMU student affairs professionals' notions of what it means to engage in high-quality student affairs practice?**

14. **What strategies do participants recommend for increasing student affairs professionals' engagement in evidence-informed programming at JMU?**

Finally, in keeping with my mixed methods research design, I integrated the quantitative and qualitative strands of my study to explore the following mixed methods research question:

15. **Given the results of both the quantitative and qualitative strands of this study, what interventions should be implemented to increase professionals' engagement in EIP at JMU?**

CHAPTER 2

Literature Review

As stated in Chapter 1, the focus on evidence-based practice (EBP) in the healthcare and primary/secondary education domains paved the way for evidence-informed programming (EIP) in student affairs. Thus, in this chapter, I review the literature on EBP in healthcare and primary/secondary education. I first discuss the rise of EBP in healthcare. Next, I describe the various measures used to assess EBP behaviors, skills, attitudes, and other related constructs among health-care professionals in a variety of fields. I dedicate substantial space to the review of these measures, as these measures informed the development of the survey instrument used in the current study. I then present the findings from various studies of health-care professionals' EBP outcomes (e.g., behaviors, attitudes, self-efficacy). Finally, I highlight the distinct differences between how EBP is discussed in the primary/secondary education literature as compared to in healthcare.

The Rise of Evidence-Based Practice in Healthcare

Across a wide variety of health-related professions, both in the United States and abroad, evidence-based medicine (EBM) or EBP has become the standard for patient/client care (Jette et al., 2003; Kitto et al., 2007; Melnyk et al., 2008; Welch et al., 2011). This standard represents a major shift among health-care professionals "from a traditional emphasis on actions based on the opinions of authorities…to an emphasis on data-based, clinically relevant studies and research" (Jette et al., 2003, p. 787). In the early-to-mid 1900's, clinical practice was guided by the belief that content expertise and

clinical experience were sufficient to guide practice with respect to selecting diagnostic tests, making patient prognoses, and evaluating treatment efficacy (Guyatt et al. 1992). By the late 1960's, however, this belief began to be publicly challenged. A small number of influential physicians in the United States and Canada became increasingly vocal about the weaknesses of standard clinical practice and the need for improved clinical decision-making (Sackett, 2002; Sur & Dahm, 2011). They highlighted a major deficit in medicine—that "biomedical science often had no translational application to clinical medicine" (Sur & Dahm, 2011, p. 487). In other words, there was a stark research-to-practice divide—the types of medical research being conducted did little to inform the day-to-day, life-or-death decisions health-care professionals had to make.

To address this gap, clinical epidemiology was born. Clinical epidemiology, which can be thought of as "a marriage between quantitative concepts used by epidemiologists to study disease in populations and decision-making in the individual case" (Last, 1988, p. 159), began to gain popularity in the late 1970s and early 1980s. Around the same time, another important development also contributed to the paradigm shift in medicine: the rise of the randomized control trial (Daly, 2005; Sur & Dahm, 2011). With this new method of evaluating treatments and interventions, clinical epidemiologists could now apply "the scientific method in determining the optimal management of the individual patient" (Guyatt, 1991, p. A-16). This production of research with clear clinical applications paved the way for EBM. Today, health-care professionals have a wide variety of resources at their fingertips (e.g., the Cochrane Database) for locating research to answer specific clinical questions.

The increased emphasis on evidence throughout the latter half of the twentieth century makes intuitive sense: by implementing therapies/treatments/interventions that have been shown to be effective, health-care professionals can have greater confidence that their interventions should "work" with respect to patient outcomes (Guyatt et al., 1992). Furthermore, greater efficiency and cost effectiveness may be expected when practitioners base their practice on a solid understanding of what works and under what conditions (Manspeaker & Van Lunen, 2011). Indeed, there is growing evidence to support the use of EBP in health-related professions. Not only is EBP associated with better clinical outcomes, there is also evidence to suggest health-care professionals who engage in EBP are more satisfied with their work, with EBP serving to renew the "professional spirit" (Melnyk et al., 2008, p. 209).

Quantitative Measures Related to Evidence-Based Practice in Healthcare

Despite the widespread promotion of EBP by health-care experts, there is a perception that health-care professionals do not use evidence to aid in clinical decision-making (Jette et al., 2003; Kajermo et al., 2010; McCarty, Hankemeier, Walter, Newton, & Van Lunen, 2013; Melnyk et al., 2008). A number of anecdotal barriers are cited as reasons for the sluggish adoption of EBP, such as lack of time, resources, interest, value, and necessary knowledge/skills (Guyatt et al., 1992; Manspeaker & Van Lunen, 2011). Only within the last 30 years have researchers begun to empirically investigate the extent to which health-care professionals engage in EBP and potential barriers to that engagement. In the sections that follow, I provide an overview of the various

instruments that have been created to measure constructs related to implementation of EBP. This review of instruments informed the measurement of EIP for the current study.

Behavior. Although EBP is defined in different ways depending on the discipline (see Table 1), there seems to be consensus among the health-care professions that EBP involves a series of steps. These steps are drawn from the seminal literature in clinical epidemiology (e.g., Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996) and can be summarized as follows: (a) define a clinical question; (b) conduct a search of relevant literature; (c) critically appraise the research; and (d) use the research to inform clinical decision-making. Thus, a measure that seeks to evaluate EBP behavior should ideally address health-care professionals' engagement in each of these steps. In practice, however, most measures tend to focus on two critical pieces of the EBP process: searching for relevant literature and using research to inform clinical decision-making (a notable exception, however, can be found in a survey developed by Wallin, Boström, and Gustavsson in 2012**,** which explicitly asks about behaviors related to each step).

For all the behaviors previously described, self-report measures of varying specificity have been created (see Table 2). For example, a survey developed by Kitto et al. (2007) to assess surgeons' EBP-related behaviors asks respondents to report whether they use various sources of research (i.e., primary research articles, systematic review articles, clinical practice guidelines) to aid in clinical decision-making (yes or no). With respect to the same behavior (i.e., use of research), Wallin, Boström, and Gustavsson (2012) requested further detail, asking respondents how often ("rarely/never" to "several times a month") they recall "using databases to search for knowledge." The

most specific measures ask respondents to indicate how many articles they read in a typical month (Jette et al., 2003; Melnyk et al., 2008). Instead of relying on Likert-style items with subjective response options, respondents are given clear-cut categories to select (e.g., 1 article or less, 2-5 articles, 6-10 articles, 11-15 articles, 16+ articles).

Notably, in a systematic review of 104 instruments used to evaluate EBM educational interventions from 1980 to 2006, a small number of studies were uncovered in which EBM-related behaviors were directly assessed (Shaneyfelt et al., 2006). One such study described the use of an online database to track and encourage the use of EBP among medical residents (Crowley et al., 2003). The database was designed to "collect [clinical questions] raised by internal medicine residents on ward rotations" (p.271). For each clinical question (CQ), residents provided information about the patient's diagnosis, summaries of any electronic resources they found helpful in addressing the CQ, an evaluation of the quality of each resource, and a description of how they ultimately used the information they found to impact patient care decisions. Other residents could then access this database and search for relevant information to aid in the treatment of their own patients. Over the course of ten months, the researchers determined that over 600 patient-based CQs were entered into the database. Furthermore, residents obtained "useful information from the medical literature" over 80% of the time (p. 272). Another interesting finding involved the 105 CQs for which residents attempted but failed to obtain useful data. In 40% of these instances, no information addressing the specific question could be found in the medical

literature. This finding suggests lack of available research was a significant barrier to EBP.

Another interesting study of EBP described a process by which discharge summaries were obtained for 483 patients at a general hospital (Straus, Ball, Balcombe, Sheldon, & McAlister, 2005). Researchers reviewed each summary and identified the primary patient diagnosis and primary treatment/intervention. From there, two clinical epidemiologists independently evaluated whether the primary treatments/interventions were 1) supported by evidence from systematic reviews of randomized controlled trials (RCTs) or individual RCTs, 2) supported by "convincing nonexperimental evidence", or 3) lacking substantial evidence altogether (Straus et al., 2005, p. 341). They found that 43% of treatments/interventions were supported by high-quality RCTs or systematic reviews of RCTs. It is worth noting, however, that whereas the first study by Crowley et al. (2003) evaluated residents' engagement in the EBP process, Straus et al. (2005) evaluated the (presumed) outcome of engaging in this process—prescription of evidence-based treatments. It is entirely possible, however, that there were instances in which evidence-based treatments were prescribed even though the clinician(s) did not engage in the EBP process.

EBP Knowledge and Skills. Within the literature, there are both indirect measures (e.g., Melnyk et al., 2008) and direct measures (e.g., Hankemeier et al., 2013; Ramos, Schafer, & Tracz, 2003; Welch et al., 2011) of EBP knowledge and skills. Indirect measures tend to ask respondents to endorse very general statements about their competency in certain areas, often using Likert scales (e.g., "I am clear about the steps

of EBP", "I believe that I can search for the best evidence to answer clinical questions"). Although common, these indirect measures of knowledge/skill are not ideal. To collect trustworthy responses from such measures, respondents must 1) know enough about the stated competency area(s) to be able to engage in meaningful reflection, and 2) be able to accurately assess their knowledge/skills with respect to the stated competency areas. Unfortunately, these criteria are seldom met. Researchers have found self-report measures of knowledge/skill tend to be more strongly correlated with affective outcomes, such as motivation and self-efficacy, than respondents' actual abilities (Sitzmann, Ely, Brown, & Bauer, 2010).

Fortunately, several direct measures of knowledge and skills related to EBP exist—one of the most comprehensive being the Fresno Test of Evidence-Based Medicine (Ramos et al., 2003, see Table 2). This test, originally designed to assess the effectiveness of EBP-related instruction in medical programs, presents test-takers with two clinical scenarios. For each scenario, test-takers respond to a series of short answer questions that require them to demonstrate knowledge/skills related to the first three steps of the EBP process (define a clinical question, conduct a literature search, critically appraise the literature). Their responses are then rated using a detailed rubric. Bennett et al. (1987) provided another example of a performance assessment that can be used to assess EBP knowledge and skills. Their instrument assesses respondents' ability to critically appraise the literature and make a clinical decision (EBP steps 3 and 4). More specifically, test-takers are given a clinical scenario and a brief journal article advocating for the use of a specific diagnostic test or treatment. They must then critically appraise

the article and “take and defend (in writing) a stand on whether to use the advocated diagnostic test or treatment” (p. 2452).

Performance assessments, similar to the two described above, provide the most direct assessment of respondents’ EBP skills. However, extensive time is required to both administer and score such instruments. As an alternative, researchers often rely on multiple-choice measures (e.g., Fritsche, Greenhalgh, Falck-Ytter, Neumayer, & Kunz, 2002; Hankemeier et al., 2013; Welch et al., 2011). Although these instruments cannot directly measure EBP-related skills, they are commonly used to assess lower-level cognitive outcomes (i.e., knowledge, comprehension, some application). The Berlin Questionnaire is one of the most widely used multiple-choice measures of EBP knowledge because it is designed to assess knowledge related to the last two steps of EBP process (i.e., critically appraise the research and use research to inform clinical decision-making). More specifically, the Berlin Questionnaire measures doctors’ ability to identify the best research designs to answer particular clinical questions, as well as their ability to interpret and use quantitative information from research studies to solve clinical problems. In contrast, other multiple-choice measures of EBP tend to focus more narrowly on health-care professionals’ basic knowledge of statistics terms and research design concepts (e.g., Hankemeier et al., 2013; Weberschock et al., 2005; Welch et al., 2011). Although this knowledge is related to one’s ability to critically appraise the literature, it represents only a small portion of the knowledge/skills needed to successfully engage in EBP.

Attitudes, Beliefs, and Values. According to the motivation literature (e.g., theory of planned behavior, expectancy-value theory; Ajzen, 1991; Wigfield & Eccles, 2000), attitudes are an important antecedent to behavior. How much an individual values an activity will significantly impact their intention to engage in it (Wigfield & Eccles, 2000). Given this link, researchers have attempted to assess health-care professionals' attitudes towards EBP.

A review of the literature reveals that attitudinal measures of EBP can be broadly categorized into three types (see Table 2): 1) measures of general beliefs about EBP, 2) measures of personal attitudes toward engaging in EBP, and 3) measures of the relative or absolute value attributed to various sources of evidence used in clinical decision-making. A promising example of the first type of measure comes from McCarty et al. (2013). The survey has two types of items targeting general beliefs about EBP in athletic training: benefits to practice items and negative perception items (see Table 2). Although these items are presented separately, they are not formally treated as separate subscales. The benefits to practice items ask respondents to endorse statements that reflect the most commonly discussed benefits of engaging in EBP (e.g., more informed clinical decisions, better patient outcomes, greater efficiency, increased credibility for the profession). However, given EBP is widely regarded as a best practice in athletic training, socially desirable responding may be a concern. Thus, the negative perception items attempt to address this issue by providing respondents with an opportunity to endorse commonly held non-favorable perceptions related to EBP. By including negative perception items, the researchers position themselves as neutral with

regard to EBP, which may encourage more honest responding. For example, respondents are asked if they believe “Evidence-informed practice improves the quality of patient care” (benefit), and they are asked if they believe “Using evidence-informed practice will reduce professional independence in clinical decision-making” (negative perception; McCarty et al., 2013).

Jette et al. (2003) provided a good example of the second type of attitudinal measure (i.e., measure of personal attitudes toward engaging in EBP). In this survey, respondents indicate the degree to which they agree with statements such as “I need to increase the use of evidence in my daily practice” and “I am interested in learning or improving the skills necessary to incorporate EBP into my practice”. Here, respondents reflect on their *personal* attitudes for engaging in EBP. This type of measure acknowledges that respondents may feel favorably towards EBP, in general terms, but feel less positive about the idea of having to disrupt their routine or rearrange their priorities to incorporate it into their clinical practice.

Finally, there are two promising examples of the third type of measure (i.e., measures of the relative and absolute value attributed to various sources of evidence). The EBP questionnaire developed by Leo, Peterson, Haas, LeFebvre, and Bhalerao (2012) captures whether respondents believe all types of evidence are equally important in making clinical decisions (and in particular, how respondents value research as compared to expert or clinical opinion). For example, respondents are asked to indicate the extent to which they agree with statements such as “Research evidence is more important than clinical experience in choosing the best treatment for a patient” and

"When you are confronted with a specific problematic clinical case, the best resource…is the advice of a senior colleague you respect." In contrast, Kitto et al. (2007) presented respondents with a list of sources of information (e.g., face-to-face contact with colleagues, your own judgement, textbooks and journals, databases such as Medline or the Cochrane Library) and asked them to indicate how comfortable they would be consulting or relying on that resource when making a clinical decision. Thus, whereas Leo et al. (2012) attempted to assess the relative value of research compared to other forms of evidence, Kitto et al. (2007) asked about the value of various sources independently.

Self-Efficacy. Although self-efficacy (e.g., outcomes expectancy, perceived behavioral control) is an attitudinal construct, it is discussed separately due to its theoretical importance. According to the Theory of Planned Behavior (Ajzen, 1991), the likelihood of an individual performing a behavior is a function of their level of intention and their perceived behavioral control. Intention is comprised of "motivational factors that influence a behavior" (p. 181), whereas perceived behavioral control refers to an individual's belief that they are able to perform the action (also referred to as self-efficacy). Likewise, expectancy-value theory states that "individuals' choice, persistence, and performance can be explained by their beliefs about how well they will do on the activity and the extent to which they value the activity" (Wigfield & Eccles, 2000, p. 68). Thus, possessing the knowledge/skills to engage in EBP is not enough. Practitioners must believe they can successfully apply their knowledge/skills to practice.

Given the link between self-efficacy and behavior, it is unsurprising that many EBP measures include items specifically targeting respondents' beliefs about their ability to engage in EBP (generally) or specific EBP-related behaviors. These items typically begin with "I am confident in…" or "I believe I can…". For example, the Melnyk et al. (2008) Beliefs Scale asks participants to endorse statements such as, "I am confident about my ability to implement EBP where I work", "I believe that I can overcome barriers in implementing EBP", and "I believe EBP is difficult" (reverse scored). In contrast, McCarty et al. (2013) addressed self-efficacy in a slightly different way. Instead of asking directly about respondents' confidence, they evaluated whether respondents perceived their lack of certain EBP knowledge and skills (e.g., ability to develop an answerable clinical question, an understanding of statistical analyses) to be significant barriers to their engagement in EBP. Salbach and Jaglal's (2011) Evidence-Based Practice Confidence (EPIC) scale is the most comprehensive measure of self-efficacy among the measures reviewed. It is comprised of 11 items that ask respondents to report their level of confidence engaging in practices related to each step of the EBP process—from articulating a clinical question to evaluating the effect of one's course of action on patients' outcomes (see Table 2).

External Factors Related to EBP. Other less commonly evaluated constructs include the accessibility/availability of EBP-related resources, organizational support for EBP, and education/training in EBP. Items or measures of accessibility/availability relate to the second step of the EBP process (i.e., conducting a search of the most current literature). To engage in this step, it is essential for clinicians to have access to resources

such as books, peer-reviewed journal articles, and systematic review databases (e.g., the Cochran Collaboration). Some measures focus exclusively on accessibility. For example, McCarty, et al., (2013) asked respondents to review a list of resources and indicate whether they have access to each (see Table 2). Other measures distinguish between *accessibility* (i.e., whether one has access to an existing resource) and *availability* (i.e., whether a resource exists). For example, in Jette et al. (2003), the authors asked respondents to indicate the extent to which they endorse statements such as "I am able to access practice guidelines online" (accessibility) and "Practice guidelines are available for topics related to my practice" (availability).

Items or measures of organizational support for EBP attempt to identify whether one's environment is supportive of or conducive to engagement in EBP. Items assess whether clinicians perceive their colleagues as holding favorable views toward EBP, whether they believe their administrators hold favorable views toward EBP, and whether they believe sufficient resources are provided to allow for engagement in EBP. Across the measures reviewed, only a few items aligned with organizational support. The BARRIERS scale developed by Funk, Champagne, Wiese, and Tornquist (1991) is the most comprehensive, with a full scale devoted to determining the extent to which "Characteristics of the Organization" (p. 42) are perceived as barriers to using research in practice. Other measures contain only one or two items related to organizational support, such as Jette et al. (2003) and McCarty et al. (2013).

Items or measures of education in EBP ask respondents to self-report the amount of formal training they have received in EBP (generally) or specific steps of the

EBP process. Collecting data on training allows researchers to make statements about the relation between training and EBP knowledge, attitudes, skills, and behaviors. Of the measures reviewed, Jette et al. (2003) are the only researchers who created items related to training (see Table 2).

Perceived Barriers to Engaging in EBP. When promoting the use of any new innovation (e.g., EBP), it is important to consider barriers to its adoption (Wensing, Laurant, Hulscher, & Grol, 1999). Within the health-care literature, early discussions surrounding barriers to the adoption of EBP often focused on practitioner values and skills, research quality and accessibility, resource limitations, and organizational support (Funk, et al., 1991, p. 39). To examine these hypothesized barriers to EBP engagement, measures (like those I have described in the sections above) were developed to assess these constructs and relate them to EBP behavior. Notably, however, this research about barriers typically reflected the opinions of researchers and administrators. Missing were the voices of the clinicians actually called to engage in EBP. As noted by Funk et al. (1991), "The views of clinicians (the potential adopters [of innovations like EBP]) are critical because they influence adoption behavior. Only when specific barriers are identified can we effectively intervene to reduce or eliminate them or to alter clinicians' perceptions of them" (p. 40).

The recognition of this gap in the literature led to the creation of various measures designed to evaluate *perceived* barriers to the adoption of EBP. The most comprehensive of these measures, the BARRIERS (Barriers to Research Utilization) Scale, was designed to assess nurse practitioners' perceptions of barriers to the use of

research in practice (Funk et al., 1991; see Table 2). This measure was developed using literature on research utilization and informal data from nurses. Respondents are asked to rate the extent to which they believe the use of research in nursing is impacted by barriers related to “the adopter” (i.e., the nurse’s research values, skills, and awareness), “the organization” (i.e., setting barriers and limitations), “the innovation” (i.e., qualities of the research), and “the communication” (i.e., the presentation and accessibility of the research). For this measure, items are rated on a four-point scale (1 = “to no extent” to 4 = “to a great extent”).

McCarty et al. (2013) and Jette et al. (2003) also provided examples of items/scales that are used to evaluate perceived barriers. In particular, the measure developed by McCarty et al. (2013) asks athletic trainers to rate the extent to which barriers related to “personal skills and attributes” and “support and accessibility to resources” affect their engagement in EBP (p. 408). The measure used by Jette et al. (2003), on the other hand, asks respondents (physical therapists) to rank their three greatest barriers from a list of nine potential barriers.

Measures of perceived barriers must be interpreted cautiously because perceived barriers will not always align with actual barriers. For example, practitioners may perceive a lack of relevant research as a barrier to engaging in EBP although relevant research is plentiful (i.e., the perceived barrier does not actually exist). Alternatively, practitioners may dismiss EBP-related knowledge as a barrier when, in reality, their lack of knowledge is a major contributor to their inability to effectively engage in EIP (i.e., the actual barrier is not perceived). Practitioners may also perceive

some barriers as being more salient than they truly are. For example, they may cite lack of time as a major barrier, but when given more time, engagement in EBP does not increase. In each of these instances, valuable information is gained by exploring the misalignment between perceived and actual barriers. These examples highlight the importance of assessing perceived barriers and comparing these perceptions to other sources of evidence.

Health-care Professionals' EBP Behaviors, Values, Knowledge and Self-efficacy

Behavior. Given the prevalence of self-report measures of EBP behaviors, the results from using such instruments are presented here. In a study of 127 nurses, physicians, occupational therapists, and physical therapists, respondents reported engaging in EBP somewhere between once a month and once every six months (Boström et al., 2018). The EBP behaviors most frequently engaged in were "searching other sources (e.g., books, journals or asking colleagues)", followed by "searching databases". The EBP behavior least frequently engaged in was "appraising research reports". In contrast, Heiwe et al. (2011) found that health-care professionals engaged in EBP behaviors more frequently. On average, the 227 physical therapists, occupational therapists, and dieticians they surveyed reported reviewing research literature and using databases between two to five times per month. Similarly, a study of 488 physical therapists found the majority of respondents (66%) reported reading between 2 and 5 research articles per month, on average (Jette et al., 2003). Additionally, with respect to using research in clinical decision-making, the bulk of respondents (49%) reported doing

so 2 to 5 times per month. However, a sizable portion of respondents (25%) indicated using research in their practice less than two times per month.

Using an indirect measure of EBP behavior, nurse practitioners were asked about their perceptions of EBP use (Melnyk et al., 2012). Of the 488 nurses surveyed, 54% agreed or strongly agreed that EBP was consistently implemented within their organization and 46% agreed or strongly agreed that research findings were "routinely implemented to improve patient outcomes" (p. 412). However, only 35% of nurses agreed or strongly agreed that their colleagues "consistently implement EBP with their patients".

Overall, these results suggest minimal engagement in EBP, particularly with respect to the use of research in practice. Given the number of patients a clinician is likely to see in a given month, it is concerning that most EBP behaviors are only engaged in a few times per month.

Attitudes/Beliefs/Values. With respect to attitudes, findings are generally consistent across health-care professions. In a study of 1,209 athletic trainers, athletic training educators, and athletic training students, attitudes towards EBP were exceedingly positive (McCarty et al., 2013). Overall, respondents agreed that EBP has benefits to clinical practice. More specifically, nearly all respondents agreed that EBP improves the quality of patient care and is important to the credibility of the profession. Additionally, they agreed that literature and research findings are useful in day-to-day practice and that EBP helps them make decisions about patient care.

Moreover, they disagreed with most of the negative perceptions presented about EBP. For example, they disagreed that EBP is a ‘‘cookbook’’ clinical practice or a “fad” that will come and go. They also disagreed that EBP places unreasonable demands on their daily practice or reduces their professional independence in clinical decision-making. However, some negative perceptions were endorsed. In particular, respondents believed EBP does not take into account patient preferences or the limitations of one’s clinical practice. Nonetheless, 93% of respondents were ‘‘interested in learning or improving the skills necessary to incorporate evidence-based practice into clinical practice” (p. 409). Additionally, between 90% and 100% of respondents believed the following specific EBP behaviors were moderately or very important: developing a clinical question, searching the literature for information to support clinical practice, critically appraising the literature for use in decision-making, and basing clinical decision-making on current best evidence (Hankemeier et al., 2013). Similar results were found for physical therapists (Heiwe et al., 2011; Jette et al., 2003; Salbach et al., 2007), surgeons and general practitioners (Kitto et al., 2007; McColl et al., 1998), as well as occupational therapists and dieticians (Heiwe et al., 2011).

Although practitioners tend to have positive attitudes toward EBP, it is interesting to assess the relative value of research versus other sources of “evidence”. Historically, physical therapists have relied on their experience first and foremost when making clinical decisions (Carr, Mungovan, Shepherd, Dean, & Nordholm, 1994; Turner & Whitfield, 1997). Likewise, a small study of surgeons found that they valued their own judgement above any other resource, including research databases and colleagues

(Kitto et al., 2007). In contrast, a study of 138 dental students found that colleagues were used most frequently as sources of evidence to inform practice, whereas peer-reviewed articles were only used “rarely” or “occasionally”, and systematic review databases were used “never” (Straub-Morarend et al., 2016).

Thus, despite favorable attitudes about EBP across health-care professions, EBP behavior still lags. Although EBP is believed to be beneficial, it does not trump reliance on experience or colleagues to make decisions. Positive attitudes about EBP are not enough to spur action.

Knowledge/Skills. It has been hypothesized that lack of knowledge/skill is a barrier to engagement in EBP, which may explain why health-care practitioners’ positive attitudes toward EBP are not coupled with high levels of EBP engagement. In a study of 1,209 athletic trainers, athletic training educators, and athletic training students, nearly 50% of respondents indicated that their “understanding of the evidence-based practice process” was a barrier to EBP implementation (McCarty et al., 2013). Furthermore, it appears skills related to interpreting statistical results and critically appraising research literature are lacking (Heiwe et al., 2011; Jette et al., 2003; Kajermo et al., 2010; Salbach et al., 2007). For example, Kajermo et al. (2010) found nurses’ perceived inability to evaluate research quality (Step 3 of the EBP process) was identified as a major barrier to EBP in 25 of the 53 studies they reviewed. With respect to knowledge of basic statistical terms (related to Step 3 of the EBP process), both Heiwe et al. (2011) and Jette et al. (2003) found that although health-care professionals reported understanding more

common terms, like “reliability” and “systematic review”, terms such as “odds ratios” and “confidence intervals” were overwhelmingly reported as not understood.

Interestingly, direct measures of knowledge tell a slightly different story with respect to health-care professionals’ understanding of the EBP process. The same sample of athletic trainers from the McCarty et al. (2013) study were evaluated on their EBP knowledge using a direct measure. Although 50% of the trainers indicated their understanding of EBP was a barrier to engaging in EBP, on average, they were able to answer 4 out of 6 EBP knowledge items correctly (Hankemeier et al., 2013). Notably, however, limited validity information was provided for this measure of EBP knowledge.

Overall, results suggest that knowledge may, indeed, be a barrier to engagement in EBP. Missing from these results, however, are findings from direct measures on EBP skills (e.g., the ability to articulate clinical questions or find relevant research), which are distinct from knowledge. Unfortunately, given the extensive time it takes to administer and score direct assessments of EBP skills (e.g., the Fresno test), skills assessments are most commonly used as part of intervention studies with small samples (Shaneyfelt et al., 2006). As such, it is difficult to generalize findings of such studies to the population of health-care professionals. However, it is worth noting that several of these studies have found respondents’ baseline EBP skills to be low, particularly with respect to more complex skills such as incorporating clinical expertise with research evidence to make a clinical decision (Fritsche et al., 2002; Welch et al., 2011).

Self-Efficacy. Although EBP knowledge and skills are important factors for understanding and explaining EBP behavior, individuals’ *perceptions* of their

knowledge/skills (i.e., self-efficacy) are also important. In a study of 174 nurses and midwives (Chang & Crowe, 2011), researchers found that self-efficacy was highest for the first step of the EBP process, identifying a clinical problem/defining a clinical question. Notably, however, the mean for this subscale was 6.45 out of 10 (*SD* = 1.83), suggesting only moderate self-efficacy. The subscales for which respondents reported the least self-efficacy were those related to the second and fourth steps of the EBP process, searching for relevant literature and using evidence to make clinical decisions. In particular, the mean for the latter subscale was only 5.50 (*SD* = 1.93). Boström et al. (2018) also found that occupational therapists, physicians, physiotherapists and nurses reported low self-efficacy with respect to applying evidence to their practice.

In contrast, although a study of 270 physical therapists (Salbach et al., 2007) also found that respondents reported the greatest confidence in their ability to identify a clinical problem, the step of the EBP process for which they were least confident was critically appraising the literature. Furthermore, respondents reported extremely low confidence in their ability to interpret the results of statistical procedures (a necessary skill for critically appraising the literature). This lack of confidence with respect to interpreting statistics and critically appraising research literature also emerged for dental students (Hendricson et al., 2011; Straub-Morarend et al., 2016). Additionally, the ability to interpret statistics was perceived as a barrier to engaging in EBP for nurses, dieticians, occupational therapists, and physical therapists (Heiwe et al., 2011; Kajermo et al., 2010).

Overall, it appears that self-efficacy with respect to EBP knowledge and skills is moderate at best across a wide variety of health-care professions. Interestingly, one study found that knowledge and self-efficacy were only weakly related (Hankemeier et al., 2013). This suggests individuals' perceptions of their competencies may be inaccurate, which underscores the importance of not using self-efficacy as a proxy for actual knowledge/skill. Importantly, self-efficacy *has* been linked to professionals' use of EBP, as predicted by expectancy-value theory. More specifically, Boström et al. (2018) found a correlation of .60 between EBP capability beliefs (i.e., self-efficacy) and EBP use.

Health-care Professionals' Personal Characteristics Related to EBP

Researchers have explored the relation between EBP outcomes (e.g., attitudes, self-efficacy, behavior) and personal characteristics such as age, education, and experience. With respect to EBP attitudes, results are mixed. A study of 270 physical therapists found that respondents with a bachelor's degree (compared to a master's degree) and respondents with less than five years of experience (compared to those with more than 15 years of experience) were more likely to report positive EBP attitudes (Salbach, et al., 2007). Similarly, Jette et al., (2003) found that age and years of experience were both negatively related to EBP attitudes in a sample of 488 physical therapists. In both of these studies, the researchers made sense of these finding by noting that, given the growing emphasis on EBP in physical therapy, modern physical therapist education programs may focus more heavily on use of evidence than programs of the past. As a result, younger, more recently licensced health-care professionals are likely to have received more training on EBP concepts than older, more experience

practitioners, thus influencing their attitudes. In contrast, however, positive relations have been found between education and EBP value for nurses (Melnyk et al., 2008), athletic trainers (Hankemeier et al., 2013), and mental health providers (Aarons, 2004).

With respect to EBP knowledge, skills, and self-efficacy, higher levels of education are typically related to greater confidence and competency. In a study of 141 athletic trainers, Welch et al. (2011) found that respondents with a terminal degree had higher EBP knowledge and were more comfortable with the EBP process than those without a terminal degree. This finding was replicated in a larger study of 1209 athletic training educators, clinicians, and postprofessional students (Hankemeier et al., 2013). Similarly, Salbach et al. (2007) found that physical therapists with a master's degree reported greater EBP self-efficacy than physical therapists with a bachelor's degree. In contrast, age and experience appear to be unrelated (Hankemeier et al., 2013) or even negatively related (Jette et al., 2003; Salbach et al., 2007) to EBP self-efficacy across health-care professions. Indeed, Boström et al. (2018) found that pre-professional students reported greater capability beliefs than practicing health-care professionals in occupational therapy, physiotharapy, nursing, and general practice. As previously mentioned, this may be due to the fact that students and younger, more recently licensed health-care professionals have received more training on EBP concepts than older, more experience practitioners, thus influencing their self-efficacy.

Finally, with respect to EBP behaviors, there is evidence to suggest education is related to EBP engagement. In a study of 333 nurses, Melnyk et al. (2008) found that participants with doctoral degrees scored highest on a measure of EBP implementation,

whereas respondents with associate degrees scored lowest. There may be a number of reasons for this relationship. For example, it may be that graduate programs provide more training in interpreting statistics and appraising research literature—two commonly identified barriers to EBP. As for experience, Boström et al. (2018) found no relationship between experience and use of EBP in their study of 127 occupational therapists, physicians, physiotherapists, and registered nurses. Similarly, Jette et al. (2003) found no relationship between experience and research engagement in a sample of 488 physical therapists. Given professionals with less experience have been shown to possess more positive EBP attitudes and greater EBP self-efficacy than their more experienced colleagues, it is interesting that this does not seem to translate to greater engagement in EBP.

External Factors Related to EBP in Healthcare

EBP training and organizational culture are two commonly discussed factors that may influence EBP outcomes. With respect to training, it appears many health-care professionals have received some degree of formal EBP education. In a study of physical therapists, 47% (of 264) reported receiving formal training in "search strategies for finding research relevant to my practice", whereas 56% (of 268) reported receiving formal training in "how to critically evaluate research literature" (Salbach et al., 2007, p. 1290). Similarly, 60% of nurses in a sample of 330 indicated having received some sort of exposure to EBP through school, continuing education, or professional literature (Melnyk et al., 2008). It would seem, however, that the training these professionals receive is insufficient given health-care professionals' lack of EBP knowledge and low

reported EBP self-efficacy. Nonetheless, Melnyk et al. (2008) found that those nurses who had prior exposure to EBP scored twice as high on a measure of EBP engagement than nurses with no prior EBP exposure.

With respect to organizational culture, Kajermo et al. (2010) found barriers related to organizational support were identified by nurses as significant in as many as 36 of the 53 studies they reviewed. Similarly, in a qualitative study of nurses in Canada (Estabrooks et al., 2004), nurses noted that organizational structures often limited their ability to engage in EBP and the organizational culture encouraged sticking to the "status quo" (i.e., not using research to inform practice). In contrast, a study of 488 physical therapists found that "lack of collegial support"—an important element of organizational culture—was one of the least frequently identified barriers to EBP engagement. Unfortunately, research on this topic is limited. It appears, however, that organizational culture may vary substantially by health-care profession.

Perceived Barriers to EBP in Healthcare

Research on perceived barriers to engaging in EBP are relatively consistent across health-care professions. Kajermo et al. (2010) conducted a systematic review of over 50 studies published between 1991 and 2009 that used the BARRIERS scale (Hankemeier et al., 2013) to evaluate nurse practitioners' perceptions of barriers to EBP. Across these studies, they found the following barriers were most commonly reported in the top ten: "there is insufficient time on the job to implement new ideas," "the nurse does not have time to read research," "the nurse does not have enough authority to

change patient care procedures," "the statistical analyses are not understandable," and "the relevant literature is not compiled in one place."

Overall, barriers related to organizational support were most salient to nurses, followed by barriers related to the presentation and accessibility of research. Four items were never identified as a top ten barrier in any study: "the nurse does not see the value of research for practice," "the research is not relevant to the nurse's practice," "the nurse is uncertain whether to believe the results of the research," and "the conclusions drawn from the research are not justified." Thus, barriers related to nurses' research values and the quality of research were the least endorsed.

Similar results have been found for physical therapists, occupational therapists, dieticians, and athletic trainers (Heiwe et al., 2011; Jette et al., 2003; Salbach et al., 2007; McCarty et al., 2013). In a study of 227 physical therapists, occupational therapists, and dieticians, 84% perceived lack of time as a major barrier to engaging in EBP (Heiwe et al., 2011). Additionally, lack of statistical knowledge, lack of research skills, and poor ability to appraise the literature were substantial barriers. Similar to the nurses, barriers related to value for EBP and the quality/availability of research were *not* deemed significant among the other health-care professionals. These results were replicated using other large sample studies of physical therapists (Jette et al., 2003; Salbach et al., 2007). A notable difference, however, between the perceived barriers of nurses and other health-care professionals concerns the perception of organizational culture as a barrier. Whereas nurses perceived other staff members' negative attitudes towards EBP implementation to be a major barrier (Kajermo et al., 2010), lack of

colleague support for EBP was one of the least endorsed barriers among physical therapists, occupational therapists, and dieticians (Heiwe et al., 2011; Jette et al., 2003).

In a larger study of 1,209 athletic trainers, athletic training educators, and athletic training students, time was again identified as the greatest barrier to engaging in EBP (McCarty et al., 2013). Additional barriers included respondents' understanding of statistical analyses, their understanding of the EBP process, and the perceived relevance/applicability of the research literature to patient populations. Again, support from administration and colleagues was not identified as a major barrier to implementing EBP. However, whereas an inability to critically appraise the literature was identified as a barrier for other health-care professionals, athletic trainers did not identify this as a major barrier to EBP implementation.

Given time is indicated as the greatest barrier across all health-care professions, it deserves further discussion. It is the *perception* of a lack of time that is reported as the most significant barrier to engaging in EBP. As noted by Heiwe et al. (2011), however, "time is a complex phenomenon with multiple dimensions, and lack of time may be a proxy for other more complex barriers" (p. 203). For example, in a longitudinal study conducted by Tyden (1996), lack of time was initially identified as the primary barrier to research use in practice. However, as the study continued to unfold, it became clear that perceived lack of time was actually a symptom of a lack of personal interest and organizational support (in the form colleagues' approval). Similarly, a more recent study found that nursing units with greater organizational support for EBP and more positive attitudes towards research utilization among management had higher research

utilization scores (Estabrooks, Scott, Rutakumwa, Duan, & Rozanova, 2004). This study also found there was no relationship between workload and research utilization. In fact, the nursing unit with the highest workload had higher research utilization than the unit with the lowest workload.

One final qualitative study investigated the relation between time and research utilization (Thompson et al., 2008). Researchers found that perceived lack of time for EBP among nurses stemmed, in large part, from overvaluing physical busyness. Nurses described a "'culture of busyness'…in which the physical performance of tasks was valued above time spent reading or reflecting" (p. 545). Unpacking this concept of busyness further, they note that,

> By maintaining an image of busyness, nurses shield themselves from additional and unfamiliar duties or roles. Using research in practice can involve unfamiliarity for nurses (McCaughan et al. 2002) requiring extra initiative to be inquisitive about current practices (Profetto-McGrath et al. 2003). As such, one aspect of an image of busyness may be to shield oneself from the unfamiliar aspects of research utilization. In so doing, nurses create a culture that supports the familiarity of nursing tasks over the unfamiliarity of research utilization (p. 546).

In sum, although health-care professionals often cite "lack of time" as a barrier to implementing EBP, there is typically more to the story. As such, interventions that focus exclusively on making the EBP process more efficient or providing protected time for clinicians to engage in EBP are not likely to be effective on their own.

Evidence-Based Practice in Primary and Secondary Education

Over the last two decades, there has been a growing international focus on EBP in education, particularly in the U.S. (Slavin, 2002), the U.K. (Brown, 2017b; Cain 2019) and Australia (Stephenson, Carter & O'Neill, 2013). Although this movement has its origins in evidence-based medicine (Cook, Tankersley, & Landrum, 2013), there are some distinct differences between healthcare and education with respect to how EBP is conceptualized, the role of research in the EBP process, and the extent to which practitioners' EBP behaviors and attitudes have been empirically examined. I will discuss each of these differences below.

The Conceptualization of EBP in Education. In healthcare, seminal works (e.g., Sackett et al., 1996; Sackett, 1997) define EBM and outline the EBM process. From these works, a general consensus has emerged across a wide variety of healthcare professions (e.g., nursing, physical therapy, dentistry, general medicine) as to how EBP should be practiced. More specifically, individual practitioners are expected to articulate specific clinical questions, find quality research to answer those questions, then use that research to inform clinical decisions for specific patients (Straus & Sackett, 1998). In education, EBP is less clearly defined. In fact, there is no consistent terminology, with a variety of phrases such as "evidence-based", "research-informed", and "empirically supported" being used by different researchers to refer to the same general concept (Mazzotti, Rowe, & Test, 2012). More fundamentally, there appear to be distinct differences among educational researchers in terms of how EBP is conceptualized. Four primary approaches to using evidence are commonly discussed in the education

literature: the use of research evidence to inform school-level decisions (Brown, 2017b; Coldwell et al., 2017), to inform classroom-level decisions (Cain, 2019), to alter teaching mindsets (Cain, 2019; Landrum, 2015), and to identify evidence-based practices (Cook et al., 2013; Cook et al., 2014).

The first use of evidence is arguably the most straight-forward. It involves the use of research to inform school-level educational policies and decisions, such as policies about homework and uniforms, or decisions about whether to widely adopt practices such as peer coaching and collaborative learning (Coldwell et al., 2017). Brown (2017b) referred to this type of evidence use as direct or "instrumental" (p. 5), noting that the instrumental use of research typically involves identifying school-level problems and using research to find policies, programs, or practices that may effectively address these problems.

On a smaller scale, research may be used by individual teachers to inform their teaching practice (i.e., teacher research; Cain, 2019). This use of research most closely reflects the EBM process. Teachers are called to identify specific problems or areas in need of improvement within their classrooms (e.g., "the gifted students in my class seem bored and disengaged"), consult research to develop a theory of action to address the identified problems (i.e., develop a plan informed by research on how to effectively engage gifted students), implement some sort of evidence-informed change, then evaluate whether the change resulted in desired outcomes (i.e., assess whether all students are engaged). The most significant drawback to this type of evidence use is that it requires teachers to find the time to 1) reflect on their practice to identify areas

in need of improvement, 2) synthesize the research related to a specific area of concern, and 3) determine how to apply the research to practice. As noted by experts in the field (Cain, 2019; Landrum, 2015), this expectation is often infeasible at a large scale given the hectic reality of the typical teacher's day-to-day practice. Thus, what works in healthcare may not be practical in education.

In response to the challenges of implementing EBP at the classroom level, two alternatives have been suggested. The first explores the possibility of using research to alter teacher's *mindsets*. As noted by Cain (2019), "for teachers, deliberate decision making rarely occurs in classrooms, because classroom decisions are made very quickly, in the heat of the moment" (p. 33). These automatic decisions are informed by a teacher's mindset, which consists of the teacher's core mission and identity as an educator, their deeply engrained beliefs about students and learning, and the pedagogical skills they have mastered (Korthagen & Vasalos, 2005). Within this context, research may be used in a more indirect way to change teachers' fundamental beliefs about students/learning, thus altering how they perceive their environment as well as their automatic responses in the classroom (Cain, 2019). Landrum (2015) provides an interesting suggestion for how to alter teaching mindsets, drawing from research conducted on firefighters and nurses. Within these fast-paced, high-stress professions, it was found that "recognition-primed decision-making" was commonly responsible for firefighters' and nurses' abilities to make correct, split-second decisions (Landrum, 2015, p. 433). Recognition-primed decision-making involves recognizing key patterns or characteristics within a scenario and automatically connecting those patterns to a

particular course of action considered to be best practice. Thus, Landrum (2015) argues educational research should focus on identifying these key patterns and best practices.

The second alternative involves using research to identify specific evidence-based practices (EBPs), defined as "programs or practices shown by sound research to meaningfully and positively impact student outcomes" (Cook et al., 2013, p. 2). The benefit of this use of evidence is that educational researchers are the ones responsible for identifying EBPs; classroom teachers need only to find and adopt these practices. A drawback, however, is that this use of evidence pre-supposes a large repertoire of research on the effectiveness of specific programs and practices. The reality is far from this ideal—although there are many programs and practices *informed* by research, few have been studied to provide evidence of their effectiveness (Slavin, 2002).

From Evidence-Based to Evidence-Informed. Another difference between EBP in education versus healthcare is the role of research. Whereas randomized controlled trials are common in healthcare and can be used to establish causal relationships between interventions and outcomes, such carefully controlled research designs are rarely feasible in educational contexts. Instead, correlational research and quasi-experimental designs are much more common (Slavin, 2002), and single-subject designs are also used in some disciplines (Vannest & Davis, 2013). Given the limitations of educational research, there is a strong emphasis on practice being evidence-*informed* as opposed to evidence-*based*. This slight semantic shift reflects a major change of emphasis "to consider how teachers can employ research alongside other forms of evidence such as their tacit expertise, in order to make effective pedagogic decisions in

specific situations" (Brown, 2017, p. 2). Although EBM similarly notes the importance of integrating research with clinical expertise (Sackett, 1997), the balance between research evidence and professional judgment is even more strongly emphasized in education, where it may be argued the complexity and unpredictability of the classroom makes the application of research findings less straightforward than in healthcare (Hammersley, 2001; Landrum, 2015). Thus, teachers' decisions should be informed not only by research, but by their contextual knowledge of each learner's needs, the (sometimes conflicting) goals of education, the educational environment, and the teachers' own skills, among many other considerations.

Research on EBP. Another major difference between education and healthcare is the amount and type of research that has been conducted on EBP. Given the more recent focus on EBP in education as compared to healthcare, studies on teachers' behaviors and attitudes related to EBP is are less plentiful. Furthermore, large-scale quantitative studies are uncommon. Instead, the research conducted on EBP in education is typically qualitative in nature and action-oriented (i.e., focused on describing EBP behaviors or attitudes within a single institution to inform change efforts). Two studies, however, stand out as exceptions. In a study of 300 educators in England, researchers found that 69% of respondents agreed that information from research played an important role in informing their teaching practice (Nelson, Mehta, Sharples, & Davey, 2015). Furthermore, 81% disagreed with the statement "I do not believe that using information from research will help to improve pupil outcomes". Similarly, Brown et al. (2016) surveyed 696 educators across 79 schools in the U.K. and

found that 76% agreed research informed their teaching practice. Interestingly, they also found that whereas the relationship between EBP attitudes and behaviors was relatively low, there was a much larger relationship between self-reported EBP behavior and an indicator of EBP organizational culture. Thus, there is evidence to suggest teachers in England both value and engage in EBP, and that organizational culture is a significant barrier to teachers' use of research evidence.

CHAPTER 3

Methods

I intentionally selected a mixed methods research design for this study of evidence-informed programming (EIP) in student affairs. A mixed methods approach allows researchers to capitalize on the strengths of both quantitative and qualitative methods to provide a better understanding of the phenomenon being studied than could be achieved by either method on its own (Meixner & Hathcoat, 2018). Mixed methods research involves more than simply collecting both quantitative and qualitative data in a single study and reporting both sets of results. Mixed methods research necessitates the *intentional integration* of quantitative and qualitative data to answer research questions.

Overview of Mixed Methods Design

This mixed methods study used an explanatory-sequential, QUANT → qual design (Creswell & Plano Clark, 2018). As denoted by this design, the study was conducted in two sequential phases (see Figure 1). The first phase of the study (Quantitative Phase) was weighted most heavily. It involved administering a survey to capture the extent to which student affairs professionals at JMU engage in EIP, value EIP, and feel equipped to engage in EIP (i.e., Research Questions 1 to 5). Additionally, the survey captured potential barriers and supports to the use of evidence in student affairs programming (i.e., Research Questions 6 to 10). Results from the quantitative survey informed the selection of participants for a qualitative phase.

The second phase of the study (Qualitative Phase) involved conducting semi-structured interviews with purposefully selected student affairs professionals to answer Research Questions 11 to 14. Participants who scored either high or low on survey variables (described below in more detail) were selected to participate in the interview. I also purposefully selected professionals from a variety of offices, at various levels of leadership, and with various EIP attitudes and behaviors to gather a wide range of perspectives.

Justification for Mixed Methods Approach

Before conducting a mixed methods study, it is important for researchers to consider the following: 1) how the researcher's philosophical perspectives inform the study's design, 2) the appropriateness of a mixed methods approach given the study's purpose, and 3) the degree to which methodological design decisions are compatible or incompatible. With regard to the philosophical perspectives held by the researcher, these should be made explicit. My philosophical orientation with respect to research favors the postpositivist paradigm, which is built on the fundamental assumption that there is an objective reality that can be known (or approximated) if one engages in rigorous enough observation (Meixner & Hathcoat, 2018). Researchers subscribing to this paradigm often look for evidence of causal relations between variables (e.g., "how does Program X impact Outcome Y?") and typically rely on quantitative methodology to do so. My postpositivist philosophical orientation is evident in my decision to weight the quantitative strand of my study most heavily. This decision reflects my belief that student affairs professionals' engagement in EIP is influenced by a number of individual

(e.g., value, self-efficacy) and external (e.g., organizational culture) factors that can be most reliably identified using quantitative methods and descriptive/inferential statistics (see Appendix C for more detail on my positionality as a researcher).

With regard to the appropriateness of a mixed methods approach, it is necessary to justify the use of mixed methods given the purpose of the study. Although I could have attempted to conduct a purely quantitative study given my post-positivist philosophical orientation, doing so would have posed several limitations. First, quantitative approaches to research generally prioritize the collection of small amounts of data from large numbers of participants (Creswell & Plano Clark, 2018). In the context of the current study, this prioritization of breadth over depth is problematic. For example, although my quantitative results suggest a weak-to-moderate relationship between EIP value and behavior, these results cannot illuminate *why* a stronger relationship does not exist. By engaging in a mixed methods study, however, I was able to gain greater insight into participants' perceived value and behavior through interviews that allowed for in-depth exploration via targeted questions.

Another limitation of a quantitative-only approach is that survey data are limited by the provided response options. Using previous EIP research (e.g., Funk, et al., 1991; Hankemeier et al., 2013; McCarty, et al., 2013; Sriram & Oster, 2012) and my assessment/student affairs experience, the response options for the survey employed in this study were developed to be as relevant and inclusive as possible. However, given the inevitable influence of my researcher bias, I surely overlooked some relevant response options. Fortunately, I partially addressed this limitation by using a mixed

methods approach to allow student affairs professionals the space to describe, in their own words, their EIP attitudes and behaviors, along with perceived barriers and supports to EIP. This qualitative data enriched and challenged the quantitative results.

Perhaps the most significant limitation to using a quantitative-only approach for this study is that it may suppress participants' voices. This study was situated within a larger initiative within the Center for Assessment and Research Studies (CARS) at James Madison University to "improve higher education by inspiring and empowering faculty and staff to make evidence-based decisions to enhance student learning and development" ("Assessment: Mission & Vision," n.d.). Thus, my goal in conducting this study was not simply to understand the perspectives of student affair professionals at JMU, but to provide meaningful, actionable information that could move the Division of Student Affairs towards evidence-based practice that improves student learning. Given this purpose, it was essential that the professionals who would be affected by any initiatives that stemmed from this study were given a stronger voice than would be possible through a purely quantitative approach. Through my use of a mixed methods approach, professionals' voices were heard, valued, and amplified.

Lastly, with regard to methodological design, mixed methods researchers must be careful to avoid *conditional incompatibility*, which is when actions are taken within a study that are philosophically inconsistent (Hathcoat & Meixner, 2017). For example, it would be philosophically inconsistent for a researcher to conduct phenomenological interviews (where the goal is to richly describe the essence of individuals' lived experiences of a phenomenon) and also administer a survey (which necessitates

drastically simplifying/reducing the phenomenon into a handful of items) in the same study. For my study, I appropriately used qualitative interviews as a means to expand upon, corroborate, and challenge the findings from my quantitative survey. Furthermore, the qualitative strand of my study provided an opportunity for participants to reflect on the quantitative results and make recommendations for next steps following the study's completion.

Procedures and Participants: Quantitative Phase

This study was reviewed and approved by the Institutional Review Board prior to data collection (Protocol ID: 20-1480). Per the submitted IRB protocol, an informed consent form for the quantitative phase of the study was provided in an email containing a link to the on-line survey. After reviewing the form, student affairs professionals were able to opt into the study by clicking the survey link.

On December 2, 2019, a Qualtrics survey was sent to 249 of the 336 full-time professionals and graduate assistants employed within the Division of Student Affairs and University Planning (SAUP) at JMU. Thus, 74% of professionals in the division received the survey. Notably, 61 professionals were excluded from data collection because their job responsibilities did not pertain to student learning and development (e.g., administrative assistants, building managers, housekeeping staff). Additionally, 26 healthcare professionals who belonged to their own professional disciplines (e.g., psychiatrists, nurse practitioners, pharmacy technicians) were excluded from data collection as well.

The survey was sent using the distribution function within Qualtrics, which allowed me to identify who had or had not completed the survey. Several leaders in the division encouraged participation in the survey by noting that the data would be used to address professional development needs. Specifically, on November 19th, the Associate Vice President sent an email alerting professionals that they would be receiving the survey later in the week. The next day, (November 20th), the survey was sent through Qualtrics. To encourage participation, I sent two reminder emails through Qualtrics on December 2nd and 12th. Additionally, the Associate Director of Finance, IT, and Assessment for the division sent an encouragement email on December 5th. Finally, the Vice President of Student Affairs sent a reminder email on December 16th. Data collection ended on December 18, 2020.

Of the 249 professionals who received the survey, 172 individuals started the survey and 143 individuals completed the full survey and submitted it. Of the 143 participants who completed the survey, 13 individuals (i.e., "non-programmers") indicated they had *never* overseen student affairs programs intended to impact student learning, development, or skills. These 13 individuals were only asked for their demographic information and about their consumption of literature (i.e., RQ 1). See Table 3 for demographics related to this sample of 143 professionals.

The remaining 130 student affairs professionals (i.e., "programmers") completed all of the non-behavior items (i.e., items related to EIP value, self-efficacy, preferences for sources of information when developing programs/evaluating program success, organizational culture, perceived barriers, training, and demographics). See Table 3 for

demographics related to these 130 professionals, as this sample was used to answer several research questions. With respect to the EIP behavior items, the 130 professionals indicated whether *in the last three years*, they had either developed student affairs programming intended to impact student learning/development, facilitated such programming, both, or neither. Participants who indicated they had both developed and facilitated educational/developmental student affairs programming (*N* = 87) received all of the EIP behavior items. Participants who had facilitated, but not developed programming (*N* = 17) only received the behavior items related to program facilitation. Likewise, participants who had developed, but not facilitated programming (*N* = 13) only received the behavior items related to program development. Finally, 13 participants indicated they had neither facilitated nor developed programming in the last three years. These participants did not receive any of the EIP behavior items. See Table 3 for demographics related to the 87 professionals who answered all EIP behavior items, as this sample was used to answer several research questions.

Procedures and Participants: Qualitative Phase

Between January 14 and 21, 2020, select participants (from the sample of 87 professionals who answered all EIP behavior questions) were emailed an invitation to participate in the qualitative portion of the study. Results from the quantitative phase informed selection of participants for the semi-structured interviews. More specifically, in alignment with a previous qualitative study of evidence-informed practice in primary/secondary education (Brown, 2019), the following characteristics were used to identify potential interview participants:

- EIP Behavior: I identified professionals who reported engaging in EIP behaviors relatively frequently (scored in the 80th percentile or above on an averaged measure of all four behavior subscales) and professionals who reported engaging in EIP behaviors relatively infrequently (scored in the 20th percentile or below on an averaged measure of all four behavior subscales).
- EIP Value: I identified professionals who reported relatively high value for EIP (scored in 80th percentile or above on the EIP Value scale) and professionals who reported relatively low value for EIP (scored in the 10th percentile or below on the EIP Value scale).

Brown (2019), who described evidence-informed practice as an "optimal rational behaviour" (i.e., a behavior deemed beneficial to society in terms of long-term benefits), noted that individuals' responses to optimal rational behaviors tend to vary with respect to two main factors: their attitudes toward the behavior and their engagement in the behavior (p. 171). As such, Brown interviewed teachers who fell into one of four categories with respect to their attitudes toward and engagement in evidence-informed practice: high value, high engagement; high value, low engagement; low value, high engagement; and low value, low engagement. Given I was unable to find participants in my sample who reported high engagement in EIP, but low value, I selected participants who displayed one of the following three profiles: high EIP value, high engagement in EIP behavior (high-high); high EIP value, low engagement in EIP behavior (high-low); and low EIP value, low engagement in EIP behavior (low-low).

Additionally, the following characteristics were used to select diverse participants within each of the above profiles:

- EIP Self-Efficacy: I identified professionals who reported varying levels of confidence in their ability to engage in EIP.
- EIP Organizational Culture: I identified professionals who reported working offices that displayed varying levels of EIP supportiveness.

By selecting professionals with differing characteristics, I was able to determine if/how approaches to program development vary based on professionals' EIP behaviors, values, or self-efficacy (Research Question 11: How do student affairs professionals design programs intended to impact student learning and/or development, and how does the design process differ for professionals with high and low EIP value and engagement?). Furthermore, I could gather the perspectives of a wide variety of student affairs professionals regarding how to evaluate a newly implemented program (Research Question 12: How do student affairs professionals decide whether a newly developed or unassessed educational program should be implemented, and how does the decision-making process differ for professionals with high and low EIP value and engagement?) and EIP's role in student affairs (Research Question 13: How does evidence-informed programming fit into JMU student affairs professionals' notions of what it means to engage in high-quality student affairs practice?). Most importantly, I was able to identify strategies for promoting EIP (Research Question 14: What strategies do participants recommend for increasing student affairs professionals' engagement in evidence-

informed programming at JMU?) that appeal to professionals with various levels of engagement and interest in EIP.

I sent invitations to 10 student affairs professionals (3 with high value/high engagement profiles, 3 with high value/low engagement profiles, and 4 with low value/low engagement profiles). I intended to interview two professionals representing each of the three profiles for a total of six interviews. For both the high value/high engagement profile and the high value/low engagement profile, two of the three invited participants accepted the invitation. For the low value/low engagement profile, however, only one participant accepted the invitation. Thus, I completed five interviews between January 24th and February 21st.

Each interview was conducted in-person and lasted between 50 minutes and 75 minutes. Prior to the beginning of each interview, participants reviewed and signed an informed consent form, per the submitted IRB protocol. All interviews were audio-recorded for later transcription using the Otter.ai conversation recording and transcription application (version 2.1.5.499). Participants chose one of two on-campus locations for the interview: a private room in the Student Success Center (SSC) or a private room in Lakeview Hall. The former location was intentionally offered for two reasons: the vast majority student affairs professionals work near the Student Success Center, and, unlike Lakeview Hall, the SSC is not associated with assessment. As such, participants may be more comfortable in this location and less inclined to say what they believe I, an assessment professional, wants to hear (thereby enhancing confirmability).

Two participants elected to be interviewed in the SSC. The other three participants chose to meet with me in Lakeview Hall.

Measures

On-line survey. The survey in the quantitative phase was the primary tool used to collect information about professionals' EIP behaviors, values, and self-efficacy, as well as the barriers and supports to engaging in EIP (i.e., Research Questions 1 to 10). Given I was unable to find a pre-existing instrument to adequately measure these constructs in a student affairs context, I developed one (see Appendix A). After reviewing the literature on EBM/EBP in healthcare, RITP in primary/secondary education, and research engagement in higher education, I identified 16 promising scales, as summarized in Chapter 2. From these scales, select items were adapted to suit a student affairs audience. Additionally, I developed items based on my knowledge of student affairs practice and assessment to address attitudes and barriers I believe may be unique to EIP in student affairs (e.g., preferences for sources of information for evaluating program success). Although the survey items were not intentionally developed to form scales, the items align with the following content areas: EIP behaviors, EIP value, EIP self-efficacy, preferred sources of information for evaluating program success, preferred sources of information for developing programs, EIP organizational culture, EIP training, and perceived barriers to EIP. Furthermore, participants provided the following demographic information: current office, position (e.g., entry-level), years of experience (in student affairs), years of experience (in current

office), and education level. As shown in Appendix A, all items were mapped to particular research questions (no ancillary items to reduce survey time).

Literature consumption. This section of the survey consisted of four items that asked participants to identify how many hours per month (0 to 40 hours sliding scale) they spend consuming various types of student affairs literature (i.e., peer-reviewed journals, academic magazines/newsletters, educational books, other web-based resources).

EIP behaviors. This section of the survey consisted of 10 items that asked participants to reflect on how often (1 = never to 5 = always) they engaged in specific EIP behaviors within the last 3 years (e.g., “Created SLOs informed by current empirical research").[2] More specifically, participants completed four self-report behavior items that asked about to their use of evidence to evaluate and revise existing programs. Given the internal consistency of these items (α = .89), a subscale score was computed by averaging the items (i.e., EIP Facilitation Behaviors Subscale). Like the individual items it is comprised of, the subscale ranges from 1 = never to 5 = always.

[2] Originally, participants were asked to identify for what percentage of the programs they had developed or facilitated in the last 10 years (0 to 100% sliding scale) had they engaged in specific EIP behaviors. After conducting several cognitive interviews, it was determined that these questions were unclear and difficult for respondents to answer accurately and the scale was changed to range from 1 = never to 5 = always.

Additionally, participants completed six self-report behavior items that asked about to their use of evidence to develop new programs. These items investigated participants' use of three different types of theory/research ("current empirical research", "foundational student development theories", and "other theoretical literature bases") when completing two distinct tasks relating to program development ("Create SLOs" and "Develop program components"). Notably, the listed behaviors reflect the four-step process for articulating program theory developed by Pope et al. (2019), particularly steps two (articulate theory-based intermediate outcomes) and three (develop intentional, evidence-informed programming). Furthermore, the consideration of professionals' use of theory (and not only empirical research) stems from the standards for the profession (ACPA, 2006; ACPA & NASPA, 2015; CAS, 2015).

Separate internal consistency reliability estimates were computed after grouping the items first by type of evidence and then by task. Given reliability was highest when the items were grouped by type of evidence, three subscales were created: EIP Development Behaviors-Research (EIP Development Behaviors-R Subscale; $\alpha = .89$), EIP Development Behaviors-Student Development Theories (EIP Development Behaviors-SDT Subscale; $\alpha = .89$), and EIP Development Behaviors-Other Theories (EIP Development Behaviors-OT Subscale; $\alpha = .83$). Each subscale is comprised of two items and scores range from 1 = never to 5 = always.

EIP Value. This section of the survey consisted of 14 items that asked participants to rate the extent to which they value research engagement, in general, and EIP, specifically. With respect to the latter, participants were presented with both

positive and negative statements regarding the purpose, importance, and limitations of EIP (e.g., “Engaging in evidence-informed programming is important for the credibility of the student affairs profession”, “Engaging in evidence-informed programming will limit my creativity and professional independence”). They rated their level of agreement (1 = strongly disagree to 7 = strongly agree) with each statement. These statements were designed to reflect commonly held beliefs and misperceptions about EIP. Although most of the items were adapted from various health-care measures, some items were newly developed for this study to capture beliefs about EIP that may be unique to higher education/student affairs (e.g., “Evidence-informed programming does not take into account the needs of marginalized or underserved student populations”). Given the internal consistency of these items (α = .88), a total score was computed by reverse-scoring the six negatively worded items and averaging all 14 items together (i.e., EIP Value Scale). The scale ranges from 1 = strongly disagree to 7 = strongly agree.

EIP self-efficacy. This section of the survey consisted of 10 items that asked participants to rate their level of agreement (1 = strongly disagree to 7 = strongly agree) with statements regarding their confidence to engage in specific EIP behaviors. The EIP self-efficacy items were developed to align with the four-step process for articulating program theory developed by Pope et al. (2019), particularly steps one (articulate a feasible and malleable distal outcome), two (articulate theory-based intermediate outcomes), and three (develop intentional, evidence-informed programming). Given the internal consistency of these items (α = .94), a subscale score was computed by

averaging the items together (i.e., EIP Self-Efficacy Subscale). The subscale ranges from 1 = strongly disagree to 7 = strongly agree.

Five additional items reflected basic information literacy skills such as finding relevant research and evaluating the quality and appropriateness of research (Breivik, 2005). Given the internal consistency of these items (α = .90), a subscale score was computed by averaging the items together (i.e., Research Self-Efficacy Subscale). The subscale ranges from 1 = strongly disagree to 7 = strongly agree.

Preferences for sources of information for evaluating program success. This section of the survey consisted of seven items that asked participants to rate the importance of various sources of information when *determining the success* of an educational student affairs program (e.g., large student attendance, positive student feedback, positive student learning outcomes). Professionals then ranked the two sources of information they believed to be most important. One additional item asked professionals to rank sources of information to evaluate if an existing program should be re-implemented.

The purpose of these items was to determine the perceived importance of evidence of program effectiveness (via student learning outcomes assessment) relative to other potential indicators of program success (e.g., attendance). If program effectiveness is *not* considered an important indicator of program success, this may limit student affairs professionals' perceptions of the value of EIP, given EIP is a tool used to increase the probability that a program will be effective (i.e., facilitate achievement of stated student learning outcomes). In short, how professionals gauge program success

may relate strongly to EIP value and, through this relation, may influence EIP self-efficacy and behavior.

Preferences for sources of information for developing a program. This section of the survey consisted of 10 items that asked participants to rate how likely they would be to rely on information from various sources (1 = extremely unlikely to 7 = extremely likely) when *developing* an educational student affairs program (e.g., their professional experience, colleagues, empirical research). Furthermore, participants ranked the two sources of information they believed to be most useful. These items, adapted from health-care measures, were designed to reveal the perceived utility of research relative to other compelling sources of information. Endorsement of these items allowed me to examine if preferred sources of information when developing programs were related to EIP behavior, value, and self-efficacy.

EIP organizational culture. This section of the survey consisted of 13 items that asked participants to rate (1 = strongly disagree to 7 = strongly agree) the culture in their offices with respect to EIP. More specifically, these items (largely adapted from health-care measures) asked participants to indicate whether research is discussed within their offices (e.g., “People in my office are eager to share current research and theory related to our work”), whether colleagues’ value or engage in EIP (e.g., “My colleagues value the use of current research and theory to inform program development”), whether upper administration communicates expectations for EIP (e.g., “My direct supervisor [e.g., Associate Director, Director, AVP, VP, President] asks me to explain the logic of why a particular program should be effective”), and whether

resources are made available for engaging in EIP (e.g., “In my office, time is made available for reading current research and theory”). Given the internal consistency of these items (α = .92), a total score was computed by averaging the items together (i.e., Organizational Culture Scale). The scale ranges from 1 = strongly disagree to 7 = strongly agree.

EIP training. This section of the survey consisted of 12 items that asked participants to evaluate their training in various EIP-related skills including information literacy and the application of theory/research to practice. More specifically, participants indicated whether various EIP-related topics were covered as part of their formal graduate education (0 = no coverage to 3 = substantial coverage) and whether they’ve attended on-the-job professional development opportunities focused on building EIP competencies (yes or no).

EIP barriers. This section of the survey consisted of 17 items that asked participants to rate barriers to their engagement in EIP (1 = not a barrier to 4 = major barrier). These items, largely based on the Barriers to Research Utilization Scale (Funk et al., 1991), were initially grouped into four categories: barriers related to values (e.g., “I am not interested in engaging in EIP”), self-efficacy (e.g., “I have difficulty evaluating the quality of the research I encounter”), organizational culture and training (e.g., “My direct supervisor is not supportive of EIP”), and research quality (e.g., “There is not enough available research related to my practice”). Given the internal consistency of these items were low when grouped as indicated above (Cronbach’s alphas ranging from .64 to .72), I did not report subscale scores.

Given a new instrument was developed for this study, attention was paid to reliability and validity concerns. These concerns were addressed in three ways. First, the items were designed according to best practice guidelines for self-report items (Gonyea, 2005). Additionally, I engaged in an extensive literature review process to provide validity evidence related to content. More specifically, the items were developed after reviewing 16 pre-existing measures on EIP behaviors, values, self-efficacy, and barriers (see Chapter 2), identifying all non-redundant items, selecting a sufficient number of items to cover the breadth of each construct, and revising these items to ensure relevancy for a student affairs audience. Finally, the items were reviewed by both student affairs professionals and assessment experts to ensure their relevance and clarity. For the student affairs reviewers, a think-aloud process was used to gather detailed feedback and provide validity evidence related to response processes. Three student affairs professionals (current CSPA student, new professional, 20-year professional) provided an oral description of their cognitive processing when completing the full survey. Two additional professionals (7-year professional, 19-year professional) examined the survey items on their own and provided written feedback on item clarity or areas of confusion. Both sets of feedback informed changes to the original items and the creation of the final survey in Appendix A. The final survey was examined by the Dean of Students (20-year professional) as part of his role on this dissertation committee and examined by three assessment professionals who also served on the dissertation committee.

After administering the instrument and collecting the data, I determined whether it was possible to construct scales that produced reliable scores for the constructs targeted by multiple items. More specifically, I examined the internal consistency of scores for the following scales and subscales: EIP Facilitation Behaviors, EIP Development Behaviors-R, EIP Development Behaviors-SDT, EIP Development Behaviors-OT, EIP Value, EIP Self-Efficacy, Research Self-Efficacy, EIP Organizational Culture, EIP Barriers-Value, EIP Barriers-SE, EIP Barriers-RQ, and EIP Barriers-OC. The reliability estimates for these scales, presented above, indicated high internal consistency for all averaged scores, with the exception of the four EIP Barriers subscales (for which subscale scores were not reported).

Semi-structured interviews. An outline of the interview protocol is provided in Appendix B. I began each interview by introducing myself, being sure to highlight my connections to student affairs and emphasize that my primary goal in engaging in this research project is to be an advocate and voice for student affairs professionals.

The first question served as an introduction to build rapport with the participant and set the tone for the interview. This question was designed to be easily answered and to draw on participants' student affairs experience/expertise to help position them as the authority in the room and position the me (the researcher) as an avid listener.

The remaining questions were designed to answer the study's research questions. In particular, Key Question 1 encouraged participants to explain how they engage in program development for programs that target specific student learning/development outcomes (Research Question 11: How do student affairs

professionals design programs intended to impact student learning and/or development, and how does the design process differ for professionals with high and low EIP value and engagement?). Key Question 2 asked participants to consider how they would evaluate a newly developed or unassessed program (Research Question 12: How do student affairs professionals decide whether a newly developed or unassessed educational program should be implemented, and how does the decision-making process differ for professionals with high and low EIP value and engagement?). Key Questions 3 through 5 encouraged participants to reflect on their beliefs regarding the role of EIP in student affairs (Research Question 13: How does evidence-informed programming fit into JMU student affairs professionals' notions of what it means to engage in high-quality student affairs practice?). Finally, Key Questions 6 and 7 gave participants an opportunity to brainstorm strategies for promoting EIP in their offices, particularly after reviewing select results from the quantitative survey (i.e., top barriers to EIP engagement; Research Question 14: What strategies do participants recommend for increasing student affairs professionals' engagement in evidence-informed programming at JMU?).

Several tools were used to enhance the trustworthiness of the qualitative data collected as part of this study. Before the interviews began, I drafted a positionality statement to make explicit my biases, connections to the topic, connections to the participants, and other relevant information that may have informed how the data were interpreted and presented. I also engaged in a pilot interview to fine-tune the interview

protocol and make the interview questions would enable the collection of rich information related to the research questions.

Consensus coding and peer examination were used to address dependability concerns (Krefting, 1991; Merriam & Tisdell, 2016). Consensus coding refers to the process of having a small number of individuals who are knowledgeable about the research topic code a transcript separately, then review the transcript together and come to consensus about what initial codes will be used moving forward. Peer examination refers to the process of having individuals who are knowledgeable about the research topic review the raw data and determine if the primary researcher's conclusions are justified given the data. For this study, I consensus coded the first interview with my advisor. Although I did not create a formal codebook based on the initial codes we developed, the consensus coding process served as an informal calibration procedure that helped informed the coding of subsequent interviews. Additionally, my advisor reviewed the final themes I developed and confirmed their alignment with the data.

Once the themes were finalized, member checking was used to ensure my interpretations aligned with participants' own lived experiences. Member checking refers to the process of having interview participants review the results of the qualitative analysis and confirm that their behaviors, values, and beliefs have been accurately reflected. For this study, all participants believed their perspectives were accurately captured. Only spelling and grammatical revisions were made based on their feedback.

Thick description (of data collection processes, analysis decisions, and findings) was also used to provide context for the qualitative results. To enable thick description, I used field notes to capture my non-verbal observations during interviews and memos to construct a clear audit trail (i.e., record of decisions I made during data collection and analysis).

Finally, the use of mixed methods itself was a mechanism to increase the trustworthiness of results through triangulation. For example, if the same barriers to EIP were identified in both the quantitative and qualitative phases of the study, I had greater confidence in the findings.

CHAPTER 4

Results

The results of this study are presented in three parts. First, I report the results of the quantitative phase of my study, followed by a brief summary and discussion. Next, I report the results of the qualitative phase of the study, also followed by a brief summary and discussion. Finally, the results from both sections are integrated and discussed.

Quantitative Results

The results in this section are presented by research question (RQ). Given different samples were used to answer various questions, to ease interpretation, the research questions are ordered, for the most part, from the largest sample of professionals to the smallest. I begin by presenting results for the items that were answered by all of the professionals who completed the Qualtrics survey (*N* = 143). I then focus on a smaller subset of professionals (*N* = 130; "programmers") who indicated they either currently oversee or have previously overseen student affairs programming intended to impact student learning. Finally, a majority of the research questions were answered using the smallest subset of professionals (*N* = 87)—those who indicated they had both developed and facilitated educational student affairs programming in the last three years.

RQ 1: How much time do student affairs professionals at JMU spend consuming empirical research and other sources of evidence?

All 143 student affairs professionals who completed the survey were asked to indicate how many hours per month, on average, they spent engaging in the following

behaviors: reading peer-reviewed empirical research studies; reading thought or opinion pieces in academic publications, professional magazines, and/or newsletters; reading educational books related to student learning and development; and consulting other web-based sources of information about student learning and development (see Table 4). As predicted, professionals indicated spending very little time per month consuming evidence. Although programmers (*N* = 130) reported consuming more information, on average, than non-programmers (*N* = 13), neither group indicated spending more than four hours per month, on average, consuming any source of evidence.

Both groups spent the most time reading thought/opinion pieces in professional magazines and publications (M_{prog} = 3.89, *SD* = 4.53; M_{non} = 3.08, *SD* = 5.91). For the remaining behaviors, programmers reported spending three or more hours per month consuming the various sources of information, on average, whereas non-programmers spent less than an hour consuming these sources of information, on average. Notably, programmers spent the *least* amount of time reading empirical research (M_{non} = 3.03, *SD* = 5.55) as compared to reading books, web-based material, and opinion pieces. In contrast, non-programmers spent the *least* amount of time "consulting other web-based sources of information about student learning and development" (M_{non} = 0.46, *SD* = 1.39). The distributions for these items were substantially positively skewed. For example, approximately 54% of programmers and 92% of non-programmers reported spending one hour or less per month reading empirical research.

RQ 2: Do student affairs professionals at JMU value EIP?

The 130 student affairs professionals in the programmer group completed 14 EIP value items and received an EIP Value Scale score (see Table 5). As predicted, on average, student affairs professionals reported valuing evidence-informed programming ($M_{EIPValue}$ = 5.29 out of 7; *SD* = 0.79). Participants overwhelmingly agreed that evidence-informed programming is important for the credibility of the student affairs profession (*M* = 6.06, *SD* = 0.99) and is necessary for high-quality student affairs practice (*M* = 5.68, *SD* = 1.13). In fact, approximately 80% of participants agreed or strongly agreed with the first statement, and 67% agreed or strongly agreed with second statement.

A few of the EIP value items asked participants about their perceptions of the utility of research and theory when engaging in specific programming behaviors. For example, when asked whether current theory and research are useful when "specifying student learning outcomes/objectives" and "developing programming components (e.g., activities, discussions, lectures)" for programs intended to impact student learning and development, 68% and 65% of participants, respectively, agreed or strongly agreed.

Although 72% of student affairs professionals agreed or strongly agreed that remaining current with research pertaining to higher education was important to them, only 41% agreed or strongly agreed that it was important for student affairs professionals to spend one to two hours per week reading current research on student learning and development. This finding supports the low number of hours professionals reported spending consuming empirical research each month, as reported above (RQ 1).

Six of the EIP items were negatively worded to capture participants' negative perceptions about evidence-informed programming. Nearly 85% of participants

disagreed or strongly disagreed with the statement "I do not see the value of using research to inform student affairs programming" (*M* = 1.86, *SD* = 1.05). Thus, there appears not to be a response set present where professionals are providing the same answer to items no matter how they are phrased (i.e., invalid responding).

Values were the most varied with respect to whether "evidence-informed programming places unreasonable demands on my day-to-day practice" (*M* = 3.47, *SD* = 1.52) and whether "evidence-informed programming requires time and resources that would be better spent on more important aspects of my job" (*M* = 3.28, *SD* = 1.51). Likewise, professionals' opinions varied substantially with respect to whether evidence-informed programming took into account the needs of marginalized/under-served student populations (*M* = 3.78, *SD* = 1.49) or individual student needs (*M* = 3.47, *SD* = 1.48). In fact, nearly one-third of participants (30%) agreed to some extent that EIP does *not* take into account the needs of marginalized/under-served populations, and over one-fourth of participants (28%) agreed or strongly agreed that EIP does *not* take into account individual students' needs.

RQ 3: Do student affairs professionals at JMU believe they possess the necessary knowledge, skills, and resources to engage in EIP (self-efficacy)?

The 130 student affairs professionals in the programmer group completed nine items about their EIP self-efficacy and five items about their research self-efficacy. Additionally, subscale scores were computed for both constructs (see Table 6). On average, professionals indicated moderately high research self-efficacy (*M* = 5.26, *SD* = 1.02). These findings are surprising given previous research suggesting student affairs

professionals lack confidence in their research skills (Sriram, 2014). In particular, participants were *most* confident in their ability to interpret the findings of a research study (*M* = 5.49, *SD* = 1.08) and evaluate whether the findings of a study are applicable to their student population (*M* = 5.42, *SD* = 1.10). Participants were *least* confident in their ability to interpret the basic statistics (e.g., standard deviations, effect size measures) commonly presented in research studies (*M* = 4.89, *SD* = 1.43), which aligns with research on health-care professionals.

Contrary to prediction, participants also reported moderately high EIP self-efficacy (*M* = 4.96, *SD* = 1.12). However, in contrast to participants' ratings of the research self-efficacy items, which focused primarily on interpreting and evaluating research, participants reported less confidence in their ability to *find* relevant research and *use* that research to engage in specific EIP-related tasks. In particular, relative to the other self-efficacy items, participants expressed less confidence in their ability to find research to answer questions like, "What knowledge, attitudes, and skills do students need to achieve broad outcome X?" (*M* = 4.75, *SD* = 1.50) and "What types of programming will help students attain desired knowledge, attitudes, and skills?" (*M* = 4.91, *SD* = 1.41). Additionally, participants displayed substantial variability with respect to their ability to use existing research to determine if a broad student learning outcome is malleable (*M* = 4.91, *SD* = 1.41) or if it can be feasibly achieved (*M* = 4.91, *SD* = 1.41). Indeed, there was a large amount of variability for all of the EIP self-efficacy items. Even for the item with the highest mean score ("I am confident in my ability to find peer

reviewed journal articles related to a broad student learning outcome of interest"; *M* = 5.32, *SD* = 1.51), 17% of participants disagreed to some extent.

RQ 4: Do student affairs professionals at JMU engage in EIP (behavior)?

As previously mentioned, participants received different sets of EIP behavior items depending on whether they reported facilitating programming, developing programming, both, or neither. The results for Research Questions 4 to 9 are presented for the 87 student affairs professionals who indicated *both facilitating and developing programming in the last three years* (see Table 7).

As predicted, most professionals reported engaging in all four EIP behaviors only "sometimes" or less. On average, participants were least likely to report engaging in EIP behaviors when facilitating programs (i.e., EIP Facilitation Behaviors Subscale; *M* = 2.44, *SD* = 0.89). In particular, over half of participants said they never or rarely "evaluated whether pre-existing programming reflected current empirical research" (54%) or "contributed to changing pre-existing programming by integrating current empirical research" (54%). In contrast, participants were somewhat more likely to use current theory, as opposed to empirical research, to evaluate and revise existing programming (see Table 7).

With respect to participants' engagement in EIP behaviors when developing programs, participants were least likely to use current research to build programs (i.e., EIP Development Behaviors-R Subscale; *M* = 2.82, *SD* = 0.92), with over one-third of participants reporting they rarely or never used this type of evidence to create SLOs (40%) or develop program components (40%). Participants were somewhat more likely

to use foundational student development theories than current research to build programs (i.e., EIP Development Behaviors-SDT Subscale; *M* = 2.98, *SD* = 1.05), although 36% of participants still reported never or rarely using this type of evidence when both creating SLOs and developing program components. Finally, participants were most likely to use "other theoretical literature bases" to build programs (i.e., EIP Development Behaviors-OT Subscale; *M* = 3.27, *SD* = 0.90). Even so, a substantial number of participants reported never or rarely using this type of evidence to create SLOs (21%) or develop program components (21%).

RQ 5: Are EIP behaviors, value, and self-efficacy related?

I hypothesized that EIP value and self-efficacy would be related to EIP behaviors. To test this hypothesis, I examined the correlations between the EIP behaviors, value, and self-efficacy variables (see Table 8)[3]. Participants' EIP value related positively to use of foundational student development theories to develop evidence-informed programs (i.e., EIP Development Behaviors-SDT; $r = .46$, $p < .001$, approximately 21% of variance shared between the two variables). EIP value had a similar relation with the use of "other theoretical literature bases" to develop evidence-informed programs (i.e., EIP Development Behaviors-OT; $r = .37$, $p < .001$, approximately 14% of variance shared between the two variables), as well as the use of current research to develop evidence-informed programs (i.e., EIP Development Behaviors-R; $r = .30$, $p < .01$, approximately 10% of variance shared between the two variables), and EIP facilitation behaviors (r =

[3] Given the large number of correlations and other effects tested in this study, inferential tests should be interpreted cautiously as the actual probability of a type I error is inflated well above the nominal rate of .05.

.30, $p < .01$, approximately 10% of variance shared between the two variables). In fact, using Steiger's test of dependent correlations, I found the correlations between EIP value and the four EIP behaviors were not significantly different from one another.

Likewise, using Steiger's test of dependent correlations, I found the correlations between EIP self-efficacy and the four EIP behavior variables were not significantly different from one another (i.e., EIP self-efficacy was similarly related to all behaviors). More specifically, EIP self-efficacy related positively to participants' EIP facilitation behaviors ($r = .32$, $p < .01$, approximately 10% of variance is shared between the two variables), their use of current research to develop evidence-informed programs (i.e., EIP Development Behaviors-R*;* $r = .31$, $p < .01$, approximately 10% of variance is shared between the two variables), their use of "other theoretical literature bases" to build programs (i.e., EIP Development Behaviors-OT; $r = .26$, $p < .05$, approximately 7% of variance is shared between the two variables), and their use of foundational student development theories to build programs (i.e., EIP Development Behaviors-SDT; $r = .19$, $p < .05$, approximately 4% of variance is shared between the two variables). A similar pattern of correlations emerged for research self-efficacy.

To determine which variables (i.e., EIP value, EIP self-efficacy, or research self-efficacy) were the strongest predictors of EIP behaviors, I examined the correlations between the aforementioned variables and each EIP behavior subscale. Using Steiger's test of dependent correlations, I found that EIP value had a stronger relationship with EIP Development Behaviors-SDT than did EIP self-efficacy, $z = 2.22$, $p = .026$, or research self-efficacy, $z = 2.93$, $p = .003$. For the other behavior variables (i.e., Facilitation

Behaviors, Development Behaviors-OT, and Development Behaviors-R) these correlations were not significantly different, indicating EIP value, EIP self-efficacy, and research self-efficacy relate to the three behaviors in similar ways.

To further explore the relations between EIP behaviors, value, and self-efficacy, I conducted eight multiple regression analyses to predict each EIP behavior (Facilitation Behaviors, Development Behaviors-R, Development Behaviors-SDT, and Development Behaviors-OT) from either EIP value and EIP self-efficacy, or EIP value and research self-Efficacy (see Table 9)[4]. I did not include both EIP self-efficacy and research self-efficacy in the same regression analyses due to their high multicollinearity (r = .71)[5].

Overall, the total variability explained in each behavior by the combination of EIP value and either EIP self-efficacy or research self-efficacy ranged from 15% to 22%. Thus, value and self-efficacy seemed to explain a sizeable amount of the variance in behavior.

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[4] For each model, I first tested for an interaction between EIP value and the self-efficacy variable when predicting behavior. Given none of the interactions were significant, I reported the main effects models.

[5]This decision was further supported by the fact that when EIP self-efficacy and research self-efficacy were used in separate regression analyses (along with EIP value) to predict the various EIP behaviors, the overall amount of variance explained by the models was comparable. For example, when predicting Facilitation Behavior, the model with EIP self-efficacy explained 16% of the variance in the DV, whereas the model with research self-efficacy explained 15% of the variance in the DV.

More specifically, EIP value was a significant predictor of all four behavior variables, explaining as much as 20% ($sr^2_{\text{EIP Dev Behaviors}-\text{SDT}} = .20$) and as little as 4% of the variance in EIP behaviors ($sr^2_{\text{EIP Fscil Behaviors}} = .04$) after controlling for research self-efficacy, and as much as 18% ($sr^2_{\text{EIP Dev Behaviors}-\text{SDT}} = .20$) and as little as 5% of the variance in EIP behaviors ($sr^2_{\text{EIP Fscil Behaviors}} = .04$) after controlling for EIP self-efficacy. EIP self-efficacy was a significant predictor of only Facilitation and Development Behaviors-R after controlling for EIP value ($sr^2_{\text{EIP Fscil Behaviors}} = .07$; $sr^2_{\text{EIP Dev Behaviors}-\text{R}} = .06$). However, for both behaviors, EIP self-efficacy was a slightly stronger predictor than EIP value. Similarly, research self-efficacy was only a significant predictor of EIP Facilitation Behaviors after controlling for EIP value, ($sr^2_{\text{EIP Facil Behaviors}} = .06$). However, it was a slightly stronger predictor of this behavior than EIP value.

RQ 6: Are EIP behaviors, values, and self-efficacy related to preferred sources of information for developing programs or evaluating program success?

With respect to preferred sources of information for developing programs, professionals rated advice from others ($M_{colleagues}$ = 6.38, *SD* = 0.69; $M_{experts}$ = 6.44, *SD* = 0.74) and their professional experience (*M* = 6.34, *SD* = 0.73) as most useful. Professionals believed published evaluations (*M* = 5.49, *SD* = 1.52), unpublished evaluations (*M* = 4.36, *SD* = 1.60), and empirical research (*M* = 5.23, *SD* = 1.55) were least helpful, although published evaluations and empirical research were still rated moderately high. Paradoxically, although empirical research was *rated* relatively low, it was *ranked* as the second most preferred source of information for developing

programs by more professionals, with "advice/perspectives for experts in the field" as the most preferred source (see Table 10).

To evaluate the relations between preferred sources of information for developing programming and EIP behaviors, value, and self-efficacy, I created two groups of participants: those who ranked empirical evidence (i.e., "empirical research" or "published evaluation studies") as the most useful source of information for developing programs and those who did not. I then examined whether these groups differed on the following subscales: EIP Facilitation Behaviors, EIP Development Behaviors-R, EIP Development Behaviors-SDT, EIP Development, Behaviors-OT, EIP Value, EIP Self-Efficacy, and Research Self-Efficacy (see Table 11). As predicted, those professionals who ranked empirical evidence as most important reported significantly higher value for EIP, $t(85) = 4.29$, $p < .01$ than their peers who did not prioritize assessment results. Contrary to prediction, however, the two groups did not significantly differ on any of the EIP behavior outcomes.

With respect to preferred sources of information for evaluating program success, on average, professionals reported the same level of value for assessment results (M = 4.23, SD = 0.83) as they did for anecdotes from students describing the program's impact (M = 4.24, SD = 0.70). When asked to rank the sources of evidence, however, 47% of professionals ranked assessment results as most important, whereas 37% ranked student feedback as most important (see Table 12). Notably, professionals, on average, were least likely to endorse attendance (M = 2.67, SD = 0.83) or students' level of fun (M = 2.93, SD = 0.93) as indicators of program success.

To evaluate the relationship between preferred sources of information for evaluating program success and EIP behaviors, value, and self-efficacy, I created two groups of participants: those who ranked assessment results as the most important factor for determining the success of a program and those who did not. I then examined whether these groups differed on the same subscales used above (see Table 13). As predicted, those professionals who ranked assessment results as most important reported significantly higher value for EIP, $t(85) = 2.64$, $p = .010$ than their peers who did not prioritize assessment results and reported more frequently using foundational student development theory to develop programs than their peers, $t(85) = 2.08$, $p = .041$.

To determine preferred sources of information for evaluating program success, I also asked participants to rank the importance of three pieces of information (research indicating program is outdated, assessment results showing negligible learning gains, and positive student feedback) when making a decision about whether to continue implementing a program. Assessment results were ranked as most important by the majority of participants (55%), followed by student feedback (24%) and, finally, research (21%). I created two groups based on how participants responded to this item. More specifically, I compared participants who ranked research as most important with participants who did not on the same list of subscales above (see Table 14). As predicted, participants who ranked research as most important reported engaging more frequently in EIP behaviors than professionals who did not rank research as most important. In particular, those professionals who prioritized research reported using

research and "other theoretical literature bases" to develop programs significantly more than their peers, $t(85)_{\text{EIP Dev-R}} = 2.78$, $p < .01$, $t(85)_{\text{EIP Dev-OT}} = 2.29$, $p = .02$. Aligning with my predictions, professionals who prioritized research also had significantly higher value for EIP, $t(85)_{\text{EIP Dev-OT}} = 2.98$, $p < .01$, and research self-efficacy for these professionals was higher as well, $t(85) = 2.21$, $p = .03$.

RQ 7: Are EIP behaviors, attitudes, and self-efficacy related to organizational culture?

Participants were asked 13 questions about the organizational culture in their offices with respect to EIP (see Table 15). Additionally, a total score was created. Overall, professionals did not rate the organizational culture in their offices as overwhelmingly positive or negative, on average ($M_{OrgTot} = 4.19$, SD = 1.12). The most strongly endorsed item related to supervisor values/expectations, "My direct supervisor expresses interest in whether students who participate in my programs (or programs I oversee) attain desired student learning outcomes" ($M = 5.25$, SD = 1.58). Participants also tended to agree that their colleagues valued the use of current research and theory to inform program development ($M = 4.92$, SD = 1.42), that they had discussed relevant research findings with their colleagues in the last year ($M = 4.59$, SD = 1.75), and that remaining current with research pertaining to student learning/development in higher education was an expectation of their job, ($M = 4.59$, SD = 1.63). The most strongly rejected items concerned available resources: "In my office, time is made available for reading current research and theory" ($M = 3.40$, SD = 1.71) and "My office has forums/mediums for sharing current research and theory among staff" ($M = 3.56$, SD = 1.87) Notably, responses to the organizational culture items were highly variable (SDs

ranged from 1.56 to 1.90 on a 1 to 7 scale). For example, for the item with the most variability (i.e., "My direct supervisor asks me to explain the logic of why a particular program should be effective"), although professionals slightly agreed with the statement, on average, nearly one-third of participants (32%) disagreed to some extent. This variability suggests different offices may have drastically different office cultures.

To explore this hypothesis, I compared mean organizational culture scores across four offices that had at least 10 respondents: University Recreation (UREC; *N* = 15; M = 4.36 SD = 1.13), Career and Academic Planning (CAP; *N* = 12; M = 4.30 SD = 1.14), Office of Residence Life (ORL; *N* = 12; *M* = 4.08 SD = 1.10), and University Unions (Unions; *N* = 12; *M* = 3.62 SD = 0.92). None of the offices were statistically significantly different regarding culture, $F(3, 47) = 1.23$, $p = .31$. However, given the test was underpowered due to low group sample sizes, these results may not be trustworthy.

To explore the relations between organizational culture and EIP behaviors, value, and self-efficacy, I examined the correlations between the variables (see Table 8). As predicted, organizational culture had uniformly positive relations with all four EIP behaviors (correlations ranging from .22 to .26). Additionally, organizational culture was significantly related to EIP self-efficacy, $r(85) = .31$, $p < .01$. Contrary to prediction, however, there was no statistically significant relation between organizational culture and EIP value, $r(85) = .20$, $p = .07$ or research self-efficacy, $r(85) = .20$, $p = .06$.

RQ 8: Are EIP behaviors, values, and self-efficacy related to personal characteristics?

Based on the literature, I examined whether professionals significantly differed with respect to EIP value, self-efficacy, and behaviors depending on their office (UREC,

CAP, ORL, Unions), position (entry-level, mid-level, upper-level), education level (bachelor's, master's, doctorate), and years of experience in student affairs. In cases where one or more groups were too small for inclusion in the analysis of variance, the sample size does not equal 87. Descriptive statistics are provided in Table 16.

Office. There were no significant differences across offices with respect to EIP value, $F(3, 47) = 1.25$, $p = .30$, EIP self-efficacy, $F(3, 47) = 1.66$, $p = .19$, or research self-efficacy, $F(3, 47) = 1.06$, $p = .37$. Additionally, the offices did not differ on three of the four EIP behavior subscales: Facilitation Behaviors, $F(3, 47) = 0.29$, $p = .84$, Development Behaviors-R, $F(3, 47) = 0.33$, $p = .80$, or Development Behaviors-OT, $F(3, 47) = 0.23$, $p = .87$. The offices did differ, however, with respect to use of student development theories to inform the development of programs (i.e., Development Behaviors-SDT), $F(3, 47) = 4.78$, $p < .01$. More specifically, Tukey's pairwise comparisons revealed that, on average, professionals in both UREC (M = 3.33, SD = 0.82) and ORL (M = 3.33, SD = 1.15) engaged in this EIP behavior more frequently than professionals in University Unions (M = 2.08, SD = 1.02).

Position. There were no significant differences based on position with respect to EIP value, $F(3, 83) = 1.33$, $p = .27$, EIP self-efficacy, $F(3, 83) = 0.74$, $p = .53$, or research self-efficacy, $F(3, 83) = 1.07$, $p = .36$. Furthermore, there were no significant differences on any of the EIP behavior subscales, including Facilitation Behaviors, $F(3, 83) = 0.32$, $p = .81$, Development Behaviors-R, $F(3, 83) = 0.80$, $p = .50$, Development Behaviors-SDT, $F(3, 83) = 1.83$, $p = .15$, and Development Behaviors-OT, $F(3, 83) = 1.09$, $p = .35$.

Education. There were significant differences based on education level with respect to EIP value, $F(2, 80) = 4.76$, $p = .01$, EIP self-efficacy, $F(2, 80) = 4.97$, $p = .01$, and research self-efficacy, $F(2, 80) = 3.54$, $p = .03$. On average, professionals with a doctorate degree reported significantly greater value and self-efficacy than those with either master's or bachelor's degrees. Additionally, there were significant differences based on education level for three of the four EIP behavior subscales: Development Behaviors-R, $F(2, 80) = 4.40$, $p = .02$, Development Behaviors-SDT, $F(2, 80) = 7.05$, $p < .01$, and Development Behaviors-OT, $F(2, 80) = 4.47$, $p = .01$. More specifically, professionals with a doctorate engaged in Development Behaviors-R and Development Behaviors-SDT more frequently than professionals with a master's degree or professionals with a bachelor's degree. Professionals with a doctorate engaged in Development Behaviors-OT more frequently than professionals with a bachelor's degree.

Experience. Years of experience in the student affairs profession did not relate to EIP value, $r(85) = .10$, $p = .33$, EIP self-efficacy, $r(85) = .04$, $p = .69$, or research self-efficacy, $r(85) = -.03$, $p = .82$. Years of experience also did not relate to any of the EIP behavior subscales: Facilitation Behaviors, $r(85) = -.07$, $p = .52$, Development Behaviors-R, $r(85) = -.12$, $p = .28$, Development Behaviors-SDT, $r(85) = .13$, $p = .22$, or Development Behaviors-OT, $r(85) = .03$, $p = .80$.

RQ 9: Are EIP behaviors, attitudes, and/or self-efficacy related to training?

Of the 87 professionals who indicated both facilitating and developing programming in the last three years, 52 (60%) reported earning a degree or certificate from a student affairs/higher education program. Although I did not have hypotheses

with respect to training, I was unsurprised to find that 88% of professionals indicated there was moderate or major coverage of “student development theory” (see Table 17). More unexpectedly, over three-fourths (77%) of respondents reported moderate or major coverage of “applying theory to practice”. With respect to research, 63% and 62% of respondents, respectively, indicated there was moderate or major coverage of “finding relevant research literature” and “evaluating the quality of research literature”. Unfortunately, however, most professionals indicated receiving little instruction in “building evidence-informed programs”, with only 38% of respondents noting moderate or major coverage of the topic. Finally, the least covered topic in graduate programs was the “science of teaching and learning”. Only 8% of respondents indicated moderate or major coverage of this topic. In fact, over half of participants (56%) indicated that there was no coverage the science of teaching and learning in their graduate programs.

I also examined professionals’ participation in professional development opportunities. It was encouraging to find that the majority of professionals reported participating in professional development opportunities that addressed the following: “student development theory” (67%), “applying theory to practice” (63%), and “building evidence-informed programs” (55%). In contrast, less than half of professionals reported attending professional development opportunities that addressed “finding relevant research literature” (40%), “evaluating the quality of research literature” (33%), or the “science of teaching and learning” (32%).

To examine how professional development training relates to EIP behavior, value, and self-efficacy, I tested for mean differences between those who reported

participating in each type of professional development training ("Yes" group; see Tables 18 and 19) and those who didn't ("No" group) on seven EIP-related outcomes (EIP Facilitation Behaviors, EIP Development Behaviors-R, EIP Development Behaviors-SDT, EIP Development Behaviors-OT, EIP Value, EIP Self-Efficacy, and Research Self-Efficacy; see Table 18). On average, professionals who participated in professional development training on student development theory reported more frequently building programs using student development theory (M = 3.24, SD = 1.00) than professionals who did not (M = 2.45, SD = 1.08), t(85) = 3.54, $p < .01$. Additionally, professionals who participated in this type of training, on average, also had significantly greater EIP value (M = 5.47, SD = 0.71) than their colleagues who did not (M = 5.06, SD = 0.89), t(85) = 2.31, $p = .02$.

With respect to professional development training on the science of teaching and learning, on average, professionals who participated in this type of training reported significantly greater engagement in all EIP behaviors than their colleagues who did not receive training, *except* for EIP Development Behaviors-SDT (i.e., building programs using student development theory). These professionals did *not* significantly differ from their untrained colleagues, however, with respect to EIP value, EIP self-efficacy, or research self-efficacy.

On average, professionals who participated in professional development on "applying theory to practice" reported significantly greater engagement in all four EIP behaviors and also reported significantly greater EIP value (M = 5.52, SD = 0.80) than those who did not participate in this type of training (M = 5.02, SD = 0.71), t(85) = 2.93, $p < .01$. Similarly, professionals who participated in professional development on

"building evidence-informed programs", on average, reported greater engagement in three of the four EIP behaviors (EIP Development Behaviors-SDT being the exception) and also reported significantly greater EIP value and EIP self-efficacy than their untrained colleagues.

Finally, professional development in research-related topics was not related to any EIP behavior. However, those who participated in professional development on "finding relevant research literature", on average, had significantly higher EIP self-efficacy (M = 5.27, SD = 1.08) than those who did not (M = 4.79, SD = 1.06), t(85) = 2.08, p = .04. And, on average, those who participated in professional development on "evaluating the quality of research literature" had significantly higher EIP self-efficacy and research self-efficacy than those who did not.

RQ 10: What barriers do JMU student affairs professionals perceive regarding their engagement in EIP?

On average, student affairs professionals reported that most of the provided potential barriers to EIP reflected only "slight" barriers to their engagement in EIP (see Table 20). In fact, the only barriers considered "moderate" were those related to time. On average, professionals believed lack of time to read current literature (M = 3.16, SD = 1.14) and lack of time to implement EIP (M = 2.78, SD = 0.96) were the largest barriers to their engagement in EIP, although there was substantial variability in the responses to these items. In contrast, professionals were least likely to identify personal lack of interest in EIP as a barrier (M = 1.29, SD = 0.62). On average, they also did not identify personal lack of perceived necessity for EIP (M = 1.38, SD = 0.78), lack of supervisor

support (M = 1.33, SD = 0.68) or methodological inadequacies (*M* = 1.33, SD = 0.64) as substantial barriers to their engagement in EIP.

Given these results, it is unsurprising that nearly 30% of professionals ranked "insufficient time to read current research" as the top barrier impacting their engagement in EIP. Additionally, 19% of professionals ranked "insufficient time to implement EIP" as their top barrier. Interestingly, 15 professionals (nearly 13% of the sample) ranked "I do not have enough authority to change programming to reflect theory and research" as their top barrier, making it the third most frequently identified top barrier. Further analyses revealed that 6 of these respondents (40%) were graduate students. Indeed, half of the graduate students in the sample (*N* = 12) believed a lack of authority was their greatest barrier to engaging in EIP. Although not often ranked as professionals' top barrier, one of the barriers most frequently ranked second was "there is not enough available research related to my practice" (13%). The other barriers frequently ranked second were insufficient time to implement EIP (14%) and not having enough authority to implement EIP (12%).

Summary and Discussion of Quantitative Results

Below, I provide a brief summary of the quantitative findings, organized to align with the research questions addressed above. Additionally, I discuss these findings, situating them in previous literature related to EIP in other domains, and provide recommendations for future studies.

EIP Behavior and Research Consumption. Although previous research on evidence-informed programming in student affairs is non-existent, many leaders in the

field have expressed concern that student affairs professionals do not use theory and research to guide their practice (Fried, 2002; Carpenter & Stimpson, 2007). The results of this study partially validate these concerns. As predicted, student affairs professionals reported only "sometimes" engaging in EIP behaviors, with a large percentage of professionals "never" or "rarely" engaging in these behaviors. These results mirror what has been found in healthcare (e.g., Boström et al., 2018; Melnyk et al., 2012). Professionals were least likely to report engaging in facilitation behaviors (i.e., the use of theory/research to revise an existing program one facilitates), which may be a reflection of the fact that, when facilitating programming, professionals may not feel they have the authority to make changes. Indeed "lack of authority" was a top barrier identified by 24% of professionals. This barrier is not unique to student affairs; it has also been identified in healthcare, particularly amongst nurses (Kajermo et al., 2010).

Although professionals did not often use *research* to engage in EIP, whether facilitating or developing programs, professionals were far more likely to report using *theory*. In fact, approximately 40% of professionals reported "often" or "always" using some type of theory to inform various aspects of program development. This preference for theory may be a reflection of the fact that student affairs professionals are more familiar with theory—60% of the professionals that facilitated *and* developed student affairs programs in the last three years received a degree from a student affairs master's or certificate program, where professionals reported that student development theory received major coverage.

With respect to research consumption, many student affairs experts have expressed the belief that student affairs professionals do not regularly consume theoretical or empirical literature (Bresciani, 2010; Fried, 2002; Pope et al., 2019; Sriram & Oster, 2012). The results of the quantitative survey support this assertion. Similar to health-care professionals (Boström et al., 2018; McColl et al., 1998; Melnyk et al., 2008), student affairs professionals did not spend much time consuming empirical research (on average, only three hours per month). However, despite the infrequent consumption of research, 60% of professionals reported using research sometimes, often, or always to create SLOs and develop program components. These paradoxical findings beg the question, are professionals truly using research to inform programming as often as they claim? If so, it may be that professionals are relying on older research that they read years before (research that may no longer reflect best practice) to inform programming instead of using the most current research. Although over 70% of professionals agreed or strongly agreed that it was important to remain current with the student affairs literature, when a time commitment was attached to the activity (i.e., importance of student affairs professionals spending one to two hours per week reading current research), value decreased (only 41% of professionals agreed or strongly agreed). These contradictory results may suggest that student affairs professionals *want* to read the literature, but do not believe they have one or two hours per week to devote to this activity. Indeed, “insufficient time to read current literature” was found to be the top barrier to EIP engagement in this sample. Supporting this finding, in a study of 74 student affairs professionals and graduate students, Sriram (2012) found that 64% of

participants indicated their current engagement of EIP was less than they wanted it to be, and 65% of participants indicated the reason they were not consuming research was because they could not find the time.

Value. As predicted, and similar to health-care professionals, student affairs professionals expressed high value for EIP (Hankemeier et al., 2013; Heiwe et al., 2011; Jette et al., 2003; McCarty et al., 2013; Salbach et al., 2007). More specifically, professionals overwhelmingly agreed that EIP was important for the credibility of the profession. Additionally, they seemed to recognize the utility of EIP, noting that current research is useful for specifying SLOs and developing program components, and that programs informed by evidence have a higher probability of being effective than programs not informed by evidence. Although some professionals did harbor negative perceptions about the applicability of EIP (i.e., they believed EIP does not take into account the needs of individual students' or marginalized/under-served populations), these professionals were in the minority. Professionals further manifested their high value for EIP by providing the least endorsement to the following barrier to engaging in EIP: "I am not interested in engaging in evidence-informed programming."

Notably, although most professionals expressed high value for EIP, engagement in EIP was still limited. These results are unsurprising given similar findings in healthcare (Jette et al., 2003) and K-12 education (Brown & Zhang, 2016). Additionally, EIP value and the EIP behavior variables were weakly to moderately correlated, with value explaining, at most, 21% of the variance in EIP behavior. Thus, although EIP value was the strongest predictor of most EIP behaviors, these findings suggest value is not

enough on its own to inspire action. Hence, it was important to examine whether self-efficacy may be a moderator of the positive relation between EIP value and behavior. For example, it could be that a strong positive relation between EIP value and behavior only exists when self-efficacy is high.

Self-Efficacy. There was no significant interaction of EIP self-efficacy and EIP value on EIP behavior. In other words, the relation between value and behavior was not dependent on level of self-efficacy. With respect to the relation between EIP behavior and self-efficacy, EIP and research self-efficacy were significant predictors of Facilitation Behaviors and Development Behaviors-R. At most, however, self-efficacy explained 7% of the variance in these EIP behaviors after controlling for EIP value. These results suggest that, although self-efficacy matters for some EIP behaviors, engagement in EIP is largely determined by factors other than self-efficacy.

The unexpected lack of predictive utility of self-efficacy may be due to the surprisingly high (and possibly inaccurate) self-efficacy ratings. On average, professionals reported moderately high EIP self-efficacy and research self-efficacy. Moreover, between 35% and 45% of professionals indicated their abilities to find, evaluate, and use research were *not* barriers to engaging in EIP. These findings contradict previous research on student affairs professionals' research self-efficacy (Herdlein et al., 2004; Sriram, 2014; Sriram & Oster, 2012). In fact, Sriram (2014) found that research skills and research behaviors were two of student affairs professionals' weakest competencies. One possible explanation for the contradiction is that competency with respect to finding, evaluating, and using research has grown in the

field over the last six years. Alternatively, it may be that professionals in this specific sample possess above average research/EIP competency. However, given the large number of professionals who reported rarely consuming research and hardly ever engaging in EIP, it may also be that the self-efficacy scores are inaccurate reflections of professionals' competencies. Indeed, researchers have found, in general, that self-report measures of knowledge/skill do not correlate very strongly with respondents' actual abilities (Sitzmann et al., 2010). Similarly, a study of athletic trainers found that EBP knowledge and self-efficacy were only weakly related (Hankemeier et al., 2013). These findings make sense; if professionals do not actively engage in finding, evaluating, and using research to develop programs, they may overestimate their ability to do so effectively.

Although I was unable select or design a direct measure of EIP knowledge and skills for this study, future studies should test professionals' ability to find, evaluate and use research to develop programs. With this information, researchers will be able to evaluate whether student affairs professionals' perceptions regarding their EIP skills align with reality. This information could be highly useful. For example, if professionals' perceptions were biased upward, it may impact their use of professional development resources (i.e., professionals may not seek out necessary professional development opportunities if they perceive themselves as proficient). Knowing about these misperceptions in advance could help facilitators more effectively market EIP trainings.

Sources of Information for Developing and Evaluating Programs. On average, professionals rated their professional experience and advice from others as most useful

when developing programs. This finding aligns with results from previous studies in the healthcare field (Carr et al., 1994; Kitto et al., 2007; Straub-Morarend et al., 2016; Turner & Whitfield, 1997). Furthermore, professionals rated empirical research and published/unpublished evaluation studies as least helpful. These findings may illuminate why student affairs professionals reported spending less than five hours per month consuming research—they may prefer using other sources of evidence to inform program development. In particular, the sources of information professionals tend to prefer are those that can be accessed and used with the smallest time and cognitive energy investment.

With respect to preferred sources of information for evaluating program success, professionals highly valued both assessment results and feedback from students describing the program's impact. More specifically, 47% of professionals indicated they would prioritize assessment results over all other sources of information when evaluating a program. These results are encouraging because they suggest student affairs professionals care about whether their programs help students achieve desired student learning outcomes. However, nearly 40% of professionals indicated they would prefer anecdotal evidence of their program's impact over empirical evidence (in the form of assessment results). Professionals' heavy reliance on testimonials is concerning. Although the student voice is important, unsolicited testimonials are not a high-quality source of information given the many issues associated with this type of "evidence" (e.g. placebo effects, the "vividness" problem; Stanovich, 1996, p. 54). If professionals want to gather student feedback, it must be done in a systematic way, with due attention

paid to maximizing the trustworthiness of the data (i.e., professionals should engage in rigorous qualitative research with clear research questions; Krefting, 1991).

More concerning, however, is professionals' lack of regard for research. Whereas professionals indicated they would be most likely to act based on assessment results for a program showing negligible gains, they said they would be least likely to act based on research suggesting a program is outdated and a new approach may be more effective. Although assessment results are important because they can be used to determine whether students are achieving specified outcomes, without theory and research, those outcomes may be misguided. For example, it is possible for a program to successfully aid students in achieving intermediate outcomes that do not relate to achievement of the distal outcome (Pope et al., 2019). For most of the professionals surveyed, this possibility did not seem to register.

Finally, as predicted, professionals who expressed a preference for using empirical evidence to either develop or evaluate programs tended to value EIP more than their peers and engaged in certain EIP behaviors more frequently. Although it is not possible to determine the direction of the effects in this study, these results could suggest that preferences for using empirical evidence to *develop* programs may be influenced by professionals' value for and engagement in EIP. These results also provide some evidence to support my hypothesis that preferences for using assessment results to *evaluate* program success may impact professionals' value for and engagement in EIP. More specifically, given EIP is a tool used to increase the probability that a program will help students meet desired learning outcomes, I hypothesized that if a professional

does not consider assessment results (i.e., the achievement of SLOs) to be an important indicator of program success, they may not see the value of engaging in EIP. Although these results do not support my hypothesis, the relation between the variables is promising.

Organizational Culture. Mean scores for most of the organizational culture items hovered between slightly disagree and slightly agree. However, responses to these items were highly variable; sizeable numbers of professionals tended to select all but the most extreme response options. At present, the sources of this substantial variability are unclear. When I compared organizational culture across four offices in the division, I found no significant differences. Based on these results, it may be more fruitful in future studies to examine within-office sources of variability, such as direct supervisor characteristics. Future qualitative studies could also be conducted (e.g., focus groups, interviews) to determine how the experiences of professionals who report a more or less EIP-positive organizational culture differ.

Although organizational culture was positively related to all four EIP behaviors and EIP self-efficacy, the correlations were small. These results suggest that if organizational culture plays a role in determining how frequently professionals engage in EIP or how confident they feel engaging in EIP, this role is minimal. Furthermore, organizational culture was not related to EIP value at all. These results are surprising given previous research in K-12 education has found organizational culture to be a major determinant of EBP (Brown & Zhang, 2016).

These unexpected results paired with the high percentages of professionals who selected “neither agree nor disagree” for some items lead me to question the validity of the items. In hindsight, there are some items that participants may not have had enough context to answer (e.g., “If I asked my colleagues to explain why a particular program should result in stated student learning and development outcomes, most could justify the programming using current research and theory”). Thus, these results may not be trustworthy.

Personal Characteristics and Training. The only personal characteristic found to be related to EIP behavior was level of education. Professionals with a doctorate degree reported more frequently engaging most EIP behaviors than those with a either a master’s or bachelor’s degree. This difference in behaviors may reflect their significantly higher EIP value, or their significantly higher self-efficacy (EIP and research). These findings mirror what has been found for health-care professionals (Boström et al., 2018; Hankemeier et al., 2013; Jette et al., 2003; Melnyk et al., 2008). The higher EIP value, self-efficacy, and behavior reported by those with higher degrees suggests educational opportunities may be fruitful for those without advanced degrees.

With respect to training, previous researchers (Bloland et al., 1994; Pope et al., 2019; Reason & Kimball, 2012) have asserted that student affairs professionals are seldom taught how to engage in the EIP process. My findings partially support this assertion. On average, student affairs professionals reported that their graduate programs did not cover “building evidence-informed programs”. However, the majority

of professionals (55%) indicated they had participated in a professional development training on the topic[6].

In contrast, "finding relevant research literature" and "evaluating the quality of research literature" were covered primarily in graduate programs, not in professional development trainings. Given 40% of professionals indicated they did *not* go through a student affairs graduate or certificate program, this gap in professional development could be problematic. However, only 15% of professionals believed their inability to search effectively for relevant research was a "moderate" or "major" barrier to engaging in EIP. Similarly, only 18% of professionals believed their inability to evaluate the quality of research was a barrier. One conclusion that could be drawn based on these results is that student affairs professionals have adequate research skills, even without professional development on the topic. However, as discussed previously, this conclusion seems unlikely given previous research found that research skills are one of the competency areas in which student affairs professionals are least confident (Herdlein, 2004; Sriram, 2014; Sriram & Oster, 2012). It is more likely that student affairs professionals lack sufficient research skills, as has been found for health-care professionals (Heiwe et al., 2011; Jette et al., 2003; Kajermo et al., 2010; Salbach et al., 2007), and that the reason such a low percentage of professionals perceive research skills as a barrier to EIP is because they believe themselves to be more proficient than they are (as discussed above).

[6] It is important to note that this finding is likely heavily influenced by the fact that I have implemented several workshops on EIP for faculty and staff over the last three years while conducting my research.

Notably, professionals reported receiving limited training on the "Science of Teaching and Learning", both in their graduate programs and through professional development. Pope et al. (2019) speculated about this training deficit, arguing that graduate programs often focus heavily on student development theory to the exclusion of other relevant literature bases that should inform program development. Similarly, other researchers (i.e., Barber, 2015; Fried, 2002) have discussed a perceived lack of knowledge amongst student affairs professionals in the domains of learning and cognition as well. My findings support these speculations.

Although I could not assess the impact of professional development sessions on EIP-relate behaviors, I could examine their relation. Professionals who reported participating in professional development trainings on "applying theory to practice", "building evidence-informed programs", and "the science of teaching and learning" reported more frequently engaging in most EIP behaviors than professionals who did not participate in these trainings. Notably, professionals with training on the latter two topics did *not* more frequently engage in building programs using student development theory (i.e., EIP Development Behaviors-SDT) than their untrained colleagues; that specific EIP behavior was only related to training on "student development theory" and "applying theory to practice". These findings suggest that the training needed to engage in EIP may differ depending on the type of theory/research used to inform program development. For example, training on the science of teaching and learning may not be necessary for professionals seeking to build programs using student development

theory. However, for professionals seeking to use EIP to revise an existing program (i.e., Facilitation Behaviors), training on the science of teaching and learning may be helpful.

Although I could not assess the impact of professional development sessions on EIP-relate attitudes, I could examine their relation. Professionals with professional development training in “student development theory”, “building evidence-informed programs”, and “applying theory to practice” reported significantly greater EIP value than their untrained colleagues. In contrast, EIP self-efficacy was related to training in “building evidence-informed programs” and both research-related topics (“finding relevant research literature” and “evaluating the quality of research literature”). The only training related to research self-efficacy was “evaluating the quality of research literature”.

Given the correlative nature of these findings, it is unclear whether professional development opportunities play an important role in boosting EIP value, self-efficacy, and behavior, or if the inverse is true: professionals with greater EIP value, confidence, and experience are more likely to seek out and participate in various EIP-related trainings (this seems particularly likely with respect to EIP value). Fortunately, studies in the healthcare domain found EIP-related trainings (of varying formats and lengths) can have a significant impact on EIP knowledge, skills, value, and confidence (e.g., Cabell, Schardt, Sanders, Corey, & Keitz, 2001; Fritsche et al., 2002; Melnyk, 2007; Ross & Verdieck, 2003). Given the correlational results from the current study, future experimental or quasi-experimental studies should examine the impact of professional development EIP training on student affairs professionals’ EIP behavior, value, and self-

efficacy. Researchers may find similar positive effects in student affairs as found in healthcare.

Qualitative Results

As described in Chapter 3, five student affairs professionals provided qualitative data to answer four additional research questions. Using the quantitative results presented above, I was able to select and interview two professionals with relatively high EIP value and high EIP behavior (high-high), two professionals with relatively high EIP value and low EIP behavior (high-low), and one professional with relatively low EIP value and low EIP behavior (low-low). By interviewing professionals that differed in EIP value and behavior, I was able to explore if/how these professionals differed with respect to their approaches to building and evaluating programs, as well as explore any differences in how they conceptualized the role of EIP in student affairs. Importantly, I was also able to identify differences in what they perceived to be the greatest barriers to engaging in EIP and what strategies they believed would be most likely increase engagement in EIP within the division.

RQ 11: How do student affairs professionals design new programs intended to impact student learning and/or development, and how does the design process differ for professionals with high and low EIP value and engagement?

To determine how student affairs professionals develop educational programs, participants were asked to walk through the steps they would take to build a program intended to “increase students’ civic engagement”. When answering this question, participants were told to assume they had access to unlimited resources. Overall, the

steps participants described can be classified into three themes: clarifying the distal outcome/specifying intermediate SLOs, building programming, and assessment considerations. Additionally, a fourth theme related to participants' EIP fluency while discussing the steps (see Table 21). Yet as expected, *how* participants engaged in these steps varied depending on their self-reported value for and engagement in EIP. These differences are explored below.

Clarifying the Distal Outcome and Specifying Intermediate SLOs. Across all three value-engagement profiles (high-high, high-low, and low-low), professionals noted that the distal outcome, civic engagement, was too vague. They stressed that in order to begin programming, they would first need to 1) clarify what was meant by civic engagement (i.e., establish an operational definition) and 2) articulate more specific goals or objectives (i.e., specify intermediate SLOs). What differed across professionals, however, were the processes they indicated they would undergo to accomplish these tasks.

The high-high professionals described using research or theoretical frameworks to clarify the distal outcome and identify intermediate SLOs. For example, one participant discussed using the Social Change Model of Leadership (i.e., The Seven C's) to frame their thinking about the distal outcome of civic engagement and identify potential intermediate outcomes:

> *So, I think about social change right from the jump, like the Seven C's…how are you learning about yourself? How's that impacting your community? And then how are you equipped to impact the broader community around you? That's very*

> *specific, but in general, sort of starting with theory would inform how we would start to attach goals and outcomes and objectives to [the program] in an appropriate way.* – SA Pro #1 (High-High)

In contrast, professionals in both the high-low and low-low groups did *not* discuss using theory or research to help clarify the distal outcome or specify intermediate SLOs. Instead, these professionals described relying on the institution's leadership to clarify what was meant by "civic engagement", and relying on themselves or other student affairs professionals (potentially those with more experience) to identify appropriate intermediate SLOs. For these professionals, it was common for them to talk at length about their perceptions of students' needs with respect to civic engagement, and what distal/intermediate SLOs could be specified given these perceived needs. For example, one participant emphasized the importance of JMU students being able to "embrace difference" as a part of civic engagement:

> *You don't say 'I want somebody to improve in civic engagement'…we say, 'I want students to understand how to navigate local government, to know what are the issues facing the town that they're a part of, maybe navigating difference. A lot of JMU students look the same, have the same upbringing…background, but then there's students here that don't fall into those categories. And how do we embrace that here in a setting of learning and support before we put you into the real world where you don't have that level of understanding and support?"* – SA Pro #5 (Low-Low)

Another notable difference between the three groups of professionals concerned what was emphasized when discussing the development of intermediate SLOs. When describing the process of specifying SLOs, professionals in the high-low group focused on SLOs being "clear" and measurable. In contrast, the focus for high-high professionals tended to be on ensuring the SLOs were logically connected to the distal outcome (in addition to being clear and measurable). Finally, the single low-low participant emphasized the importance of specifying SLOs, but did not discuss the quality of the SLOs or whether a logical connection existed between the SLOs and the distal outcome.

Building Programming. With respect to building programming, professionals in the high-high group described using theory to develop specific interventions (e.g., lectures, activities, discussions, etc.) that could be mapped back to the intermediate SLOs. Furthermore, both professionals in this group discussed constructing "logic models" to help clarify the alignment between program components and intermediate SLOs:

> *If you've got a theoretical framework of multiple theories, patching together the interventions in such a way—to use your cause language—the logic model. How are we gonna demonstrate on paper how the interventions we're intending to do are gonna result in the outcomes we're looking for?* – SA Pro #2 (High-High)

> *And so, if I'm thinking back to...like logic mapping, logic models, then we would take the theory attached to that and start to build out what is the student experience through our outcomes.* – SA Pro #1 (High-High)

In addition to using theory to inform the development of specific interventions, professionals in this group also described using empirical research to identify "best practices" or programs that have worked at other institutions.

In contrast, the low-low professional did not describe using theory *or* empirical research during the program development process. Instead, they provided suggestions for programming based on their personal experiences. Additionally, the low-low professional did not discuss any type of mapping between program components and intermediate SLOs.

Results for the high-low group were mixed. Although one professional described mapping intermediate SLOs to theory-based interventions and using empirical research to identify effective existing programs, the other high-low professional's process more closely resembled that of the low-low professional—they did not discuss using theory or research, and relied primarily on their personal experiences to provide suggestions for programmatic interventions.

With respect to building programming, I made two other interesting observations. First, whereas the high-high professionals described relying primarily on theory and research to inform their program development efforts, the high-low and low-low professionals frequently described consulting others. More specifically, one of the professionals in the high-low group noted they would use student affairs listservs to figure out what other institutions are doing to impact civic engagement, and the low-low professional indicated they would reach out to other professionals within the student affairs division at JMU. Another interesting observation concerns additional

considerations during the program development process. Professionals in the high-high group spent very little time talking about aspects of program development not directly related to student learning (e.g., logistical considerations such as cost and attendance). In contrast, the high-low and low-low professionals discussed logistics and strategies for boosting student satisfaction and attendance.

Assessment Considerations. Professionals in both the high-high and high-low groups noted that the program development process should include laying the groundwork for assessment. More specifically, professionals in both groups noted the importance of specifying SLOs that are measurable and selecting/developing instruments that align with the SLOs:

> *At the same time as [you're building the program], you've got to be having a simultaneous and parallel conversation regarding assessment and how that's going to work, practically. You know, once we've got our SLOs, we need to ensure that we have the assessment methodologies.* – SA Pro #2 (High-High)

> *…and then also starting to look at what instrument you could actually use to measure those objectives. And maybe bump that up a little bit, make sure your objectives are actually measurable.* – SA Pro #4 (High-Low)

Although assessment considerations were discussed by professionals in both groups, for the high-high professionals, these considerations were clearly secondary to EIP-related concerns when designing a new program intended to impact student learning and/or development. In contrast, for professionals in the high-low group, assessment considerations were discussed as much as or more than EIP-related concerns when

designing a new program. Notably, the low-low professional did not talk about assessment as a consideration during program development. Instead, assessment was discussed as a distinct process considered after program implementation.

EIP Fluency and Familiarity. Two final observations with respect to this research question concern the fluency with which professionals were able to discuss EIP-related topics, and the frequency with which they highlighted barriers to engaging in the EIP process. Professionals in the high-high group were able to clearly describe, in their own words, how to use theory and research to construct a logic model and build an evidence-informed program. In contrast, when professionals in the high-low group described using theory and/or research during the program development process, their descriptions tended to be vague or unclear. Additionally, these professionals struggled to find the language to describe the EIP process. Whereas the high-high professionals consistently used terms like “evidence-informed programming” and “evidence-based practice”, the high-low professionals often used imprecise or roundabout language when referring to EIP, (e.g., “we did some of that evidence-based *stuff*”, “my research class…I don't know that it gave me enough of foundation for *what we're talking about*”). These results suggest that professionals in the high-high group may be more familiar with the EIP process—potentially because they have more experience engaging in it.

Interestingly, while explaining how they would build a civic engagement program, professionals in the high-high group often discussed the challenges of using theory and research to inform program development whereas professionals in the high-low group did not. For example, one of the student affairs professionals in the high-high

group noted that finding high-quality research conducted with adequate sample sizes is a challenge. Similarly, the other high-high professional also discussed the challenges of finding high-quality theory/research, noting that many foundational student development theories are "steeped in white supremacy" and not applicable to contemporary college students. Although this penchant for discussing the challenges of EIP may seem strange for professionals who self-report high value and engagement in EIP, it makes sense that professionals who actually engage in EIP would be more aware of the challenges associated with building evidence-informed programs.

Overall, both professionals in the high-high group were able to articulately describe how they would use theory and/or research to 1) clarify the distal outcome of "civic engagement", 2) specify intermediate SLOs that map to the distal outcome, and 3) build programming that maps to the intermediate SLOs. Additionally, both professionals described 4) using assessment to evaluate whether the evidence-informed program they created was effective. These steps align with the four-step process for articulating program theory/developing evidence-informed programs outlined by Pope et al. (2019). Professionals in the high-low group were more varied with respect to their responses. Generally speaking, however, these professionals were less articulate than the high-high professionals when describing their use of theory and research during the program development process. Furthermore, these professionals did not describe going through all four of the above steps. For example, neither of the high-low professionals described using theory and/or research to clarify the distal outcome or to articulate intermediate SLOs. Finally, the student affairs professional in the low-low group did not discuss

engaging in any of the above steps for developing evidence-informed programs. Although this professional strongly emphasized the importance of clarifying the distal outcome and articulating intermediate SLOs, they did not discuss using theory and/or research to accomplish these tasks.

RQ 12: How do student affairs professionals decide whether a newly developed or unassessed educational program should be implemented, and how does the decision-making process differ for professionals with high and low EIP value and engagement?

For this research question, participants were asked to imagine that a civic engagement program had been developed (but not implemented) by someone they supervise. Furthermore, the student affairs professionals were to imagine it was up to them to decide whether the program should be implemented. With that context, I asked them to talk me through how they would make this decision. The primary considerations professionals described fell into four major themes: need for program, program logic, assessment, and supervisee support (see Table 22). These categories are described in more detail below.

Need for Program. Across all three value-engagement profiles, student affairs professionals indicated the importance of establishing a need for the program. More specifically, one professional from each group discussed need. How professionals sought to establish this need, however, varied depending on their level of value for and engagement in EIP. For example, the high-high professional (SA Pro #2) described using "the literature" to help demonstrate a need for the program. In contrast, the high-low professional (SA Pro #4) did not describe using theory or research to justify the program,

and instead focused on determining the alignment between the program's goals and the mission/vision of the institution or office. Finally, the low-low professional (SA Pro #5) suggested that need could be established very informally—for example, through personal observations or conversations with students.

Program Logic. Both professionals in the high-high group placed primary emphasis on asking their supervisees to unpack the logic of the program and provide support for how the program was designed using theory and/or research:

> *And so, I would simply ask, "show me the theory". If you can, show me a pseudo-academic style literature review where you are ultimately defending the theory—why you have chosen what you've chosen and, if necessary, why you've excluded what you excluded. I would then essentially want to see the logic model. Show me how your learning outcomes link to your theory. How are those linked to your interventions?* – SA Pro #2 (High-High)

> *Take me through the process of the development of this program. What theories are framing it? What outcomes are framing it? How did you develop those? What are you thinking about when you start to put those bigger pieces together of this experience?* – SA Pro #1 (High-High)

In contrast, professionals in the other two groups (high-low and low-low) made no mention of wanting to investigate the theory and/or research supporting the program before making a decision.

Assessment. Whereas the high-high professionals emphasized program logic, professionals in the high-low group were primarily concerned with whether their

supervisees had factored in assessment during the program development process (e.g., specified measurable outcomes, mapped programming to outcomes, identified instruments). Indeed, one of the high-low professionals (SA Pro #3) noted that the only way to provide justification for a program was to "have some kind of report to show that [students] learned". As such, this professional expressed major concern about the quality of the newly developed program's assessment plan. In contrast, although the low-low professional placed heavy emphasis on the specification of SLOs (the first step of the assessment cycle), they did not describe any efforts to evaluate the quality of those SLOs, and did not indicate that they would ask any other assessment-related questions.

Supervisee Support. Interestingly, some of the most prominent considerations factoring into the low-low professional's decision about whether to implement the hypothetical program concerned perceived obligations to the supervisee who developed it. More specifically, the low-low professional considered it a part of their job to support the supervisee by advocating for their programming ideas and giving them an opportunity to express their passions via programming. As such, the low-low professional made it clear that they would be likely to support the development of *any* program as long as it was "feasible" with respect to logistics (e.g., cost, marketing, planned attendance) and they could tell the supervisee devoted substantial time and energy to developing it:

> *So, I think for me it's like, have they really thought about it and have they really devoted their time and attention to creating this? Or is this something that*

> *they're just like on a whim going to put on? But ultimately, a lot of my job is supporting my [supervisees], so if they want to do it and it's feasible and they've really thought about it and thought through the process and have a solid framework for getting the program started, I'm probably going to let them.* – SA Pro #5 (Low-Low)

In fact, the low-low professional even noted that if one of their supervisees created a program that was not needed locally, they would go out of their way to find an "appropriate audience to get [the] information" before they would scrap the program. Thus, in comparison to the high-high and high-low professionals, the low-low professional seemed less concerned with the impact of the program on students and more on how they could support the supervisee who developed it.

Overall, it is clear that student affairs professionals in the high-high group value the use of theory and research during the program development process. Whether they are building a program themselves or evaluating a program built by others, they believe the logic underlying the program should be clearly articulated and supported by evidence. In contrast, the high-low professionals expressed some inclination to use theory/research when building programs themselves, but when evaluating a program built by others, they did not mention program theory or research. Instead, they were primarily concerned with whether the program could be assessed. Finally, the low-low student affairs professional provided a unique perspective, focusing not only on their obligations to students, but also on their perceived obligations to the professionals they supervise.

RQ 13: How does evidence-informed programming fit into JMU student affairs professionals' notions of what it means to engage in high-quality student affairs practice?

To explore this research question, participants were asked to respond to three separate prompts. The first prompt asked them to review several EIP-related standards for student affairs programs/professionals and discuss whether these standards resonated with them. The second prompt asked them to consider why these standards might *not* resonate with some student affairs professionals (even highly-esteemed, well-respected professionals). Finally, participants were asked to consider what they would tell a mentee who asked them whether engaging in evidence-informed programming was necessary to be successful in the field. From professionals' responses to these prompts, I was able to identify several positive and negative perceptions toward EIP in Student Affairs. With respect to positive perceptions, the following themes emerged: EIP is a professional/moral obligation, EIP is central to student affairs professionals' professional identity, EIP results in stronger programs and assessment, and EIP is a valued personal and organizational goal (see Table 23). These themes, as noted below, were drawn primarily from interviews with the high-high and high-low professionals.

EIP-Positive Perceptions. With respect to positive perceptions, the following themes emerged: EIP is a professional/moral obligation, EIP is central to student affairs professionals' professional identity, EIP results in stronger programs and assessment, and EIP is a valued personal and organizational goal (see Table 23). These themes, as

noted below, were drawn primarily from interviews with the high-high and high-low professionals.

EIP is a Professional/Moral Obligation. For professionals in the high-high and high-low groups, EIP was seen as "the right thing to do". Furthermore, these professionals frequently discussed EIP being a necessary tool to help them meet important obligations to students, parents, and taxpayers:

> *I think we have a deep responsibility to invite students into varied outside-the-classroom learning experiences that will change who they are, hopefully in ways we've thought a lot about.* – SA Pro #1 (High-High)

> *This is not a luxury. If we don't feel like we have the responsibility to undergo this type of assessment cycle, then we better get out of this line of work. Because we really owe it to our students.* – SA Pro #3 (High-Low)

> *And there's an obligation for us, if we're using these resources—whether those are state resources, or whether those are monies paid by clients/customers, whatever you want to call them—to be giving them a product that is commensurate with the salaries we are paying each other.* – SA Pro #2 (High-High)

In contrast, one of the high-low professionals discussed EIP being required for accountability and reporting. Thus, whereas the other high-high and high-low professionals' sense of obligation to engage in EIP was intrinsic, for SA Pro #3, this

obligation was extrinsic in origin. Finally, the low-low professional did not frame EIP as either a moral or professional obligation.

EIP is Central to Student Affairs Professionals' Professional Identity. Professionals in the high-high groups described EIP as being integral to "professional identity". More specifically, one of the high-high professionals noted that use of theory and research in student affairs practice is what gives professionals' work meaning and elevates them to the role of "educator":

> *In a lot of ways, it comes down to professional integrity. I mean, these standards are what really challenge you to think, are you preserving the dignity and integrity of student learning? And if that's not the central core of your relationship to your work in this field, then you [are] just an event planner.* – SA Pro #1 (High-High)

Although professionals in the high-low group expressed value for EIP (see below), they did not discuss EIP being linked to one's professional identity. The low-low professional also did not mention engagement in EIP being a part of their professional identity.

EIP is a Valued Personal and Organizational Goal. Both the high-high and high-low professionals expressed the belief that EIP was an important goal to strive for—both for themselves as professionals and for the division. However, when the high-high professionals spoke about EIP, their tones were overwhelmingly positive. For example, one of the high-high professionals likened engaging in EIP to "coming back home to an old friend":

> *I totally agree with [the EIP standards]. And I'll be honest with you, I'm at year nine as a student affairs professional…and I would say [EIP] was not really being modeled for me much until very recently. And so, I'm like, "oh, this feels like coming back home to an old friend". I'm like, "this is what we should be doing all along, rather than solely and simply attaching [programming] to institutional values and mission".* – SA Pro #1 (High-High)

In contrast, although the high-low professionals indicated the EIP standards resonated with them, they did not seem to embrace EIP as wholeheartedly as the high-high professionals. For example, when one of the high-low professionals was asked about their beliefs related to EIP, they noted the following:

> *The need to develop programs that are grounded and evidence-based definitely resonates with me…I do have some concerns sometimes that there's the potential to over-emphasize that to the point where it becomes a barrier to what you're trying to achieve, given the resources and expertise that people have.* – SA Pro #4 (High-Low)

Thus, although this theme (EIP is a Valued Personal and Organizational Goal) reflects the sentiments of both the high-high and high-low groups, the high-high professionals expressed more enthusiasm about the idea of engaging in EIP. On the other end of the spectrum, the low-low professional did not express personal value for EIP. They were able to articulate the potential benefits of engaging in EIP for others in the division, but they did not seem to internalize these benefits. They noted that EIP "might be important" in some circumstances, but immediately followed this statement with a

lengthy counter-example to demonstrate why they do not perceive EIP as useful to their work (see the section "EIP is Not Realistic" below for more details).

EIP Results in Stronger Programs and Assessment. Across all three groups, professionals recognized the potential benefits of engaging in EIP. More specifically, participants noted that EIP was useful for establishing a direction for programming/clarifying distal and intermediate outcomes, as well as for evaluating the effectiveness of existing interventions to inform program development. Additionally, one professional noted that EIP made programs "easier to assess". Notably, although professionals in all three groups were able to articulate the benefits of engaging in EIP, professionals in the high-high group seemed the most convinced that engaging in EIP would produce stronger programs than could be achieved with less intentional approaches:

> *There's a distinct difference between work that has been produced that has done research, and work that is produced that has, you know, maybe had some critical and imaginative thinking attached, which has value, but in some places, and not others.* – SA Pro #2 (High-High)

In contrast, although the professionals in the high-low and low-low groups all began by noting the benefits of EIP, they often followed these statements with extended discussions about the limitations of EIP—suggesting that, in some contexts, EIP would *not* be ideal or result in the best outcomes for students. These negative perceptions are described in more detail below.

EIP-Negative Perceptions. With respect to negative perceptions, the following themes emerged: EIP is unnecessary, EIP is not valued, EIP is not realistic, and EIP is not prioritized (see Table 24). When interpreting the results for these themes, it is important to recognize that, due to the wording of the interview prompts, the responses summarized below reflect a mix of professionals' own negative sentiments about EIP and their perceptions of *others'* negative sentiments. Thus, unlike the positive themes presented above, the themes described below should not be interpreted as beliefs held by the participants unless explicitly stated.

EIP is Unnecessary. Several participants noted that EIP may be seen by some professionals as unnecessary. This perception of EIP being unnecessary, they explained, often stems from a belief that programming is already "good" or "working". In particular, when student affairs professionals rely on non-learning metrics such as attendance or participant feedback to evaluate the success of their programs, they may be able to paint a picture of "success", even if the program does not result in student learning or development:

> *I think a lot of [the perception of EIP as unnecessary] is because what we do, we believe is okay...Or what we're measuring allows us to believe that what we do is working. And we're fine with that. You know, no one is no one's getting hurt. Everyone seems to be generally okay, and we're tracking on positive data.* – SA Pro #1 (High-High)

> *As long as you cross those two thresholds: students like it, and they think it was valuable to them—that's all we need in Student Affairs. Whereas really getting to*

that next level of actually showing the achievement of learning objectives, behavior change, those type of things, we don't do as much of that, of course, because it's harder. – SA Pro #4 (High-Low)

Participants also described a culture of complacency at JMU. According to the participants, there is a collective belief that JMU programs are inherently good and this belief is reinforced by the external validation programs receive (e.g., receiving recognition and/or awards from external audiences):

I've heard that a lot, or felt a lot of, "Hey, this is a great [program]. People tell us it's good. People want to come and watch us do it. People want to write about it. When we go to conferences, people clap for us. You know, like, we've won these awards and we're not gonna change. We don't need to change anything." – SA Pro #1 (High-High)

In addition to the belief that EIP is unnecessary because programs are already "working", participants also discussed the perception that the current process for building programs is "good enough". With respect to this belief, participants noted that many student affairs professionals may believe professional experience is sufficient to guide program development and that the value added of engaging in EIP (in terms of program impact) is small and does not justify the additional resources needed to engage in EIP. In other words, some professionals may see EIP as "over-engineering".

EIP is Not Realistic. Several professionals expressed concerns about the feasibility of EIP in student affairs. For this theme, the sentiments expressed seemed to reflect participants' personal beliefs as opposed to their perceptions of other's beliefs.

For example, SA Pro #2 (high-high) noted that it may not be feasible to stop operations in an office long enough to rebuild programs using evidence ("*When other issues come up that need to be addressed more urgently, the first thing to go is always the blocked period on my calendar for [EIP] work*"). Indeed, several professionals noted that the time required to consume research and redesign programs may be unrealistic given other job demands (e.g., administrative work, one-on-one student consultations, event planning logistics). SA Pro #3 (high-low) heavily emphasized the belief that EIP is not applicable to all offices and/or positions (*"If I am the maintenance guy at UREC in charge of the pool...if I'm the doctor or a nurse in the health center, that person can't do [EIP]*"). SA Pro #4 (high-low) considered widespread implementation of EIP unrealistic given professionals' lack of resources and training/relevant skills:

> *I think we have the potential sometimes to get to an 80% solution, and that's going to be good enough in student affairs, you know, both with the quality of the program and the degree to which programming is grounded in evidence-based research and theories, etc...because we just don't have the expertise sometimes, or the resources to accomplish [EIP] to the degree that we would like to accomplish it.*

SA Pro #1 (high-high) expressed their concern that the theories often used to inform programming may be biased, non-inclusive, or in some other way inappropriate for today's students:

> *I think you need to be critical of the theories themselves and think about, is this the theory that is the most appropriate for this group of students? Is this theory*

> *centering a majority audience? Is this theory making space for underrepresented populations? Is this theory, I don't know, steeped in white supremacy? Probably.*

Similarly, SA Pro #2 discussed the challenge of finding high-quality research on which to base a program (*"One of the challenges is always finding things that sound really good but [only] worked well with 'a group of 23 people' who are studied"*). Finally, SA Pro #5 (low-low) argued that EIP is unrealistic because theory and research are not responsive enough to account for individual students' (or groups of students') needs:

> *Every single class has their own set of needs. The set of needs for the class of 2024 are going to be drastically different than the needs for the class of 2025. So, while I think it's harder to find out those needs and create new programs year after year, I think it's necessary. I think if we use these standards of learning, this evidence-based learning, sure it's important—but by the time you've gotten to the point where you've implemented [that evidence] you're now working with a different [group of students].*

EIP is Not Valued. Participants noted that individual value for EIP may be low for some professionals who enjoy the status quo and view EIP as an unwelcome change to practice. Furthermore, some professionals may believe that EIP conflicts with or undermines their professional experience. In addition to these individual-level value concerns, participants also talked about various indicators of a lack of institutional value for EIP. For example, the professionals noted that attendance and student feedback are sometimes valued over student learning as program outcomes. Additionally, one professional lamented the "culture of busyness" in the division, where student affairs

practitioners are primarily rewarded for taking on more responsibilities and never saying no, not for their ability to build effective programs (i.e., quantity valued over quality):

> *I think you're sort of almost starting to bump up against a culture of busyness or a culture of output value. What is the reason why you have your job? Is it to generate a bunch of events that look good on Instagram?...I think what's hard is that a lot of times we advance in our field by the amount we're willing to say, "Yes, I'll do one more thing". And by the amount of sacrifice that we're willing to make to create more output.* – SA Pro #1 (High-High)

Relatedly, participants noted that their performance is not evaluated based on knowledge of theory or engagement in EIP. Thus, the implicit message professionals receive is that these practices are not truly valued by upper administration.

EIP is Not Prioritized. Related to institutional value for EIP, participants noted that EIP is often not prioritized by individuals or leadership. It is common for other job responsibilities (e.g. administrative tasks, event planning, marketing) to be prioritized over EIP:

> *I think you get on the hamster wheel of like, "Who did the catering? Who printed the things? Did we train the students? Who is standing in this spot to like point to things?" And I think you drop so quickly into the weeds of the operational success of your program.* – SA Pro #1 (High-High)

> *Most weeks I'll spend more time working on [emails and logistics] than I would on program development. So, it's a prioritization thing, and I think it is just the way it is. You've got a certain number of staff members and you've got to get all*

these things done and maybe there's too many things? I don't know. – SA Pro #2 (High-High)

Thus, a discrepancy seems to exist between the espoused importance of student learning and educational programming in student affairs, and the time/attention allocated to it.

RQ 14: What strategies do participants recommend for increasing student affairs professionals' engagement in evidence-informed programming at JMU?

For this research question, participants were first asked to identify and describe what they believed to be the most significant barrier to JMU professionals' engagement in EIP. If the barrier they identified aligned with the results from the quantitative survey, I asked them to provide a feasible strategy/plan for addressing this barrier. If the barrier they identified did *not* align with the results from the quantitative survey, I asked them to provide a strategy/plan for addressing the barrier they identified *and* a strategy/plan to address the most commonly identified barrier from the quantitative survey: time. From professionals' responses to these prompts, the following barriers were identified: lack of time, lack of EIP knowledge, lack of organizational value/support for EIP, and lack of clear expectations from leadership (see Table 25). These barriers are described in more detail below, followed by professionals' recommended strategies for addressing them.

Barriers - Lack of Time. The most frequently discussed barrier was lack of time. Across all of the value-engagement profiles, however, there was a recognition that "lack of time" is often a symptom of something else. More than one participant linked the

perceived lack of time to a lack of knowledge, stressing that student affairs professionals perceive that there is not enough time because they are not familiar enough with EIP to know how much time it will take, and they don't possess the skill to engage in EIP effectively:

> *There's a perception that doing this type of rigor is hugely time intensive. I think that's wrong. I think that's incorrect. And that [perception] comes from ignorance, on the one hand, but also just not being sure how to do [EIP].* – SA Pro #2 (High-High)

> *I think [the perception of time as a barrier] is a misconception from not having the knowledge…once the training is there it becomes much easier to do it.* – SA Pro #5 (Low-Low)

Others talked about the connection between time and value/expectations. These participants noted that for EIP to happen, other things must stop happening. The problem occurs when there is a disconnect between leadership's espoused EIP value and concrete actions taken to make space for EIP:

> *Maybe no one's explicitly saying that you can't do [EIP], but you have so much stuff on your plate and no one is saying, "let me take some stuff off your plate so that you can spend time developing evidence-informed programming".* – SA Pro #1 (High-High)

Barriers - Lack of EIP Knowledge. Two professionals (i.e., SA Pro #3, high-low; SA Pro #5 low-low) talked about lack of knowledge/skill as a barrier to EIP, noting that student affairs professionals—especially older, more experienced professionals—have

often not received training in how to engage in EIP. In fact, when asked about barriers, SA Pro #5 (low-low) discussed lack of ability/training as the primary barrier to their personal engagement in EIP:

> *I think you can look at me as a prime example, just the ability to do it. Because I don't necessarily have a lot of the training and background in doing [EIP]. What does it even look like to get that level of training and expertise to the point where I can [engage in EIP]?* – SA Pro #5 (Low-Low)

Some participants also noted that EIP can be intimidating, causing professionals to experience fear or apprehension about learning a new skill. Thus, for these participants, addressing the barrier of "lack of knowledge" also involved managing the emotions of student affairs professionals who may be inclined to avoid EIP because it triggers discomfort.

Barriers - Lack of Organizational Value/Support for EIP. Several participants talked about a lack of organizational value or support for EIP. One participant (SA Pro #2; high-high) put leadership into three categories: those who value and support EIP; those who do not value or support EIP; and those who value, but do not support EIP. From my conversations with other participants, it seems most identified with the latter scenario. They felt that although leadership in the division often expressed value for EIP, these statements of value felt superficial because they were not accompanied by the support needed to make EIP possible (e.g., time, resources, training, shifts in responsibilities, personnel):

> *And the third category [of leadership] are those who value [EIP] but don't encourage, they're just like, "You make it happen, good for you. But I'm not going to go out of my way to provide you with the support".* – SA Pro #2 (High-High)

> *We have an entire Division of Student Affairs, and we have one person, of which assessment is 20% of their job. It's not going to change anything. And if we acknowledge that and say, "that's the reality and we accept that", I'm okay with that...But don't say we need to do more assessment and then at the same time, staff ourselves in a way that doesn't set us up to do that."* – SA Pro #4 (High-Low)

Barriers - Lack of Clear Expectations from Leadership. Related to organizational value, several participants highlighted the lack of clear expectations surrounding EIP as a major barrier. These participants noted that although EIP may be encouraged in their offices, it is never required. Indeed, it is often regarded as a "bonus" activity:

> *When you lay out your hopes and dreams [with respect to EIP] at the beginning of the year...the response I've always received [from leadership] has been, "That's optimistic. I'm not going to discourage you. That's great…if you don't get there, that's okay."* – SA Pro #2 (High-High)

Additionally, participants noted that their performance is never evaluated based their knowledge of theory/current research or their ability to build evidence-informed programs. As such, even participants who expressed strong intrinsic value for EIP admitted they often chose *not* to engage in EIP because they did not believe leadership truly valued it, and they knew they would not be evaluated on the extent to which their programs were supported by evidence:

There's a saying...."what interests my boss ought to fascinate me." And the reality is, we don't see much true interest from senior leadership...It's not enough of where they're showing that interest in [EIP] that it fascinates me, because I know it's not a priority for them. – SA Pro #4 (High-Low)

Strategies for Addressing Identified Barriers. With respect to knowledge as a barrier, professionals noted that mandatory training in EIP would likely be necessary. This training, they asserted, should involve as many opportunities for hands-on, practical experience as possible. One professional also lauded the effectiveness of on-the-job mentorship for his own development. This professional noted that their proficiency in EIP and assessment had been built over several years while working on projects with more experienced colleagues and assessment liaisons in JMU's Center for Assessment and Research Studies.

With respect to the other three barriers, all of the participants' strategies focused on leadership. Participants noted that leadership must demonstrate a strong commitment to EIP by doing some or all of the following: showing that they are willing to sacrifice other office/divisional efforts to create space for EIP, hiring full-time professionals in the division who are responsible for EIP and assessment, creating a realistic plan and clear timeline for introducing EIP into the division, creating a framework to evaluate programs and professionals based on EIP standards, rewarding offices and professionals for engaging in EIP, putting EIP in position descriptions (and protecting time allocated to EIP), and providing mandatory training opportunities to accompany any new expectations with respect to EIP. In short, professionals perceived

EIP as a major shift for the division that would require systemic, top-down changes to be feasible and sustainable. Supporting these perceptions, in a study of 696 practitioners in 79 school, Brown and Zhang (2016) concluded that evidence-informed practice "cannot be achieved without the direct support and buy-in of school leaders" (p. 797).

Summary and Discussion of Qualitative Results

Below, I provide a brief summary of the qualitative findings, organized to align with the research questions addressed above. Additionally, I discuss what these findings suggest with respect to student affairs professionals' EIP knowledge, behaviors, values, and self-efficacy.

Steps for Developing Programs. With respect to developing programs, professionals in the high-high category emphasized the importance of articulating program logic and using theory/research throughout the program development process (from clarifying the distal outcome to building programming components). In contrast, professionals in the high-low category did not discuss using theory and research to clarify distal outcomes or specify intermediate SLOs, only to select "theory-based" or research supported interventions. Unsurprisingly, the single low-low professional did not discuss using theory or research during the program development process at all. Furthermore, whereas the high-high professionals described using theory and research as their primary source of information when developing programs, the high-low and low-low professionals relied heavily on consultations with colleagues and personal experience to inform program development. Notably, the professionals in the high-high category were able to more clearly describe how to use theory and research to

construct a logic model and build an evidence-informed program than those in either the high-low or low-low categories. These results suggest a potential link between EIP knowledge/skills and EIP engagement: professionals with a stronger understanding of evidence-informed programming may be more equipped to engage in EIP. Alternatively, it could be that through engaging in EIP, the high-high professionals gained a stronger understanding of the process.

Criteria for Evaluating Programs. As for evaluating programs developed by a supervisee, professionals in the high-high category focused on the supervisee's use of theory and research to construct a logical program with clear links between the distal outcome, intermediate SLOs, and programming components. In contrast, professionals in the high-low category were primarily concerned with the extent to which the supervisee factored in assessment considerations (e.g., specifying measurable SLOs) during the program development process. Thus, although these professionals indicated the use of theory and research would be a part of *their* program development process, they did not seem to expect their supervisees to do the same. Through the criteria they identified for evaluating programs, the high-low professionals expressed greater value for assessment results as a means of determining program quality than pre-existing research supporting the program's effectiveness. Finally, the low-low professional did not mention evaluating the supervisee's use of theory and research *or* the extent to which the supervisee factored in assessment considerations. Instead, they were more concerned with the logistical feasibility of the program and the amount of "passion" or effort put into the program by the supervisee. This latter consideration was unique to

the low-low professional and brought up an important point: student affairs professionals may feel an equal obligation to support the learning and development of their supervisees as they do to support the learning and development of the students participating in programming.

Positive and Negative EIP Perceptions. In terms of positive perceptions of EIP, professionals in all three categories acknowledged the potential benefits of EIP. However, the high-high professionals expressed the greatest enthusiasm for engaging in EIP. They were able to list many reasons for engaging in EIP, mostly intrinsic (e.g., EIP is a moral obligation, EIP is part of one's professional identity). Additionally, they viewed barriers to engaging in EIP (e.g., lack of relevant or applicable research) as challenges to be promptly addressed rather than justifications for not engaging in EIP. These professionals had very few negative perceptions toward EIP, but when prompted, they hypothesized that others may perceive EIP as unnecessary, not realistic, and not as important/pressing as other job responsibilities. In contrast, professionals in the high-low and low-low categories often spoke at length about the various contexts in which they personally believed EIP was either not feasible or not realistic. Unprompted, these professionals often discussed the barriers to their and others' engagement in EIP. These results suggest that even when some professionals report high value for EIP as a concept, they may still question its' applicability or feasibility in specific contexts. Thus, it may not be enough for professionals to believe EIP is useful and important; they must also believe EIP is feasible and appropriate in their context.

EIP Barriers and Strategies. Although professionals noted four distinct barriers to EIP engagement (i.e., lack of time, lack of EIP knowledge, lack of organizational value/support, and lack of clear expectations from leadership), they perceived these barriers as related. More specifically, professionals suggested a lack of time may stem from the presence of the other three barriers. These results resemble what was found in a qualitative study of nurses (Thompson et al., 2008), where the researchers noted that lack of time was often "a proxy" for value (p. 545).

With respect to addressing these barriers, professionals advocated for leadership to communicate clear value for and expectations regarding EIP. Additionally, the professionals believed leadership needed to support EIP by providing mandatory professional development opportunities and helping professionals make space for EIP within their positions. Only one professional (SA Pro #3, high-low) provided any individual-level, immediately actionable strategies for increasing engagement in EIP. More specifically, this professional noted that individuals could address a personal lack of EIP knowledge by consulting with the Center for Assessment and Research Studies or seeking mentors within their offices with greater EIP competency. From one perspective, the lack of individual-level strategies might simply reflect professionals' belief that only top-down strategies would be powerful enough to address the systemic barriers to EIP. However, it could also be that these top-down strategies appeal to professionals because they pass the responsibility for change to others. In support of the latter hypothesis, it is interesting to note that although both of the high-low professionals emphasized the need for clear EIP expectations from leadership, neither

professional described having clear EIP expectations for their own supervisees. Thus, it seems that even when individual-level actions could be taken to increase EIP engagement, these opportunities may be ignored or overlooked.

Integration of Quantitative and Qualitative Results

In previous sections, the quantitative and qualitative data were analyzed separately. In this section, I integrate these two sources of data to identify the most significant barriers to professionals' EIP engagement (see Table 26). In some instances, the barriers identified in the quantitative and qualitative strands of the study aligned. However, there were some instances in which the results were somewhat contradictory. Below, I explore these areas of agreement/disagreement in order to draw conclusions about the most substantial barriers to professionals' engagement in EIP. I then discuss strategies for addressing these barriers in Chapter Five to answer my final research question: Given the results of both the quantitative and qualitative strands of this study, what interventions should be implemented to increase professionals' engagement in EIP at JMU?

Time. Based on results from the quantitative survey, "insufficient time to read current research" and "insufficient time to implement EIP" were top barriers to professionals' engagement in EIP. The qualitative interviews supported this finding; four of the five professionals interviewed discussed time as a major barrier to EIP. However, the professionals interviewed did not consider "lack of time" to be the true issue. Instead, they believed that the perceived lack of time for EIP was a symptom of other issues, such as professionals' lack of EIP knowledge/skill and a lack of organizational

support for EIP. Notably, although the professionals interviewed believed a major reason their colleagues perceived EIP to be time-intensive was because they did not know how to engage in it, the quantitative survey results did not support this assertion. On average, professionals reported moderately high EIP self-efficacy and even higher research self-efficacy, suggesting that uncertainty about how to engage in EIP was not a major barrier to EIP behavior. In contrast, the quantitative results *did* align with professionals' belief that organizational culture impacts the time professionals' have available to engage in EIP.

Thus, through the integration of the quantitative and qualitative results, it is possible to conclude that "lack of time" is a complex barrier that is likely influenced by the existence of other barriers. Although it is unclear whether professionals' knowledge and self-efficacy relate to their perceptions of lack of time as a barrier, it does seem that organizational culture is intimately related to how much time professionals have to engage in EIP.

Value. Based on the results from the quantitative survey, professionals had high value for EIP. This finding was partially supported by the qualitative data; interview participants across value-behavior profiles acknowledged the importance and utility of EIP. However, professionals in the high-low and low-low categories also expressed negative perceptions of EIP, sometimes viewing EIP as unrealistic and infeasible.

Also indicative of professionals' value for EIP, on average, participants slightly disagreed that "Evidence-informed programming requires time and resources that would be better spent on more important aspects of my job" (M = 3.28, SD = 1.51).

When interviewed, however, professionals across value-behavior profiles indicated that EIP is often not prioritized over other job responsibilities such as attending meetings and responding to emails. At first glance, these results seem contradictory. Upon further review, however, the results highlight a crucial distinction between the concepts of "importance" and "prioritization". Although the interviewees noted repeatedly that EIP was not *prioritized*, they did not suggest that this lack of prioritization was due to a perceived lack of importance. In fact, one professional (SA Pro #2) explicitly noted that the prioritization of tasks within their office (with EIP toward the bottom) did not align with the importance of those tasks relative to the office's mission (i.e., EIP toward the top).

There were two areas in which the quantitative and qualitative results on EIP value contradicted one another. First, with respect to the relation between value and experience, several of the professionals interviewed expressed the belief that older, more experienced student affairs professionals may not value EIP as much as new professionals. The results from the quantitative survey, however, showed no significant differences with respect to EIP value based on position or years of experience in student affairs. Additionally, the professionals interviewed believed that their colleagues often valued attendance and student feedback over learning as indicators of program success. However, the quantitative results on this were mixed. Although professionals did highly value student feedback (37% ranked student feedback as most important source of information for evaluating program success), assessment results were valued even more (47% of professionals ranked assessment results as most important). Furthermore,

professionals, on average, were least likely to endorse attendance (M = 2.67, SD = 0.83) and students' level of fun (M = 2.93, SD = 0.93) as indicators of program success.

Thus, overall, based on the integrated quantitative and qualitative results on EIP value, it seems reasonable to conclude that all participants (regardless of position and experience) value EIP to some extent. Even those professionals with low reported value are able to recognize the benefits of EIP. Although EIP is not always considered realistic or feasible, professionals generally believe it should be engaged in. Thus, value does not appear to be a substantial barrier to professionals' engagement in EIP.

Self-Efficacy. Although professionals, on average, reported moderately high EIP self-efficacy and research self-efficacy when surveyed, three of the five professionals interviewed noted lack of knowledge/skill as a major barrier to EIP engagement. Although these results appear contradictory, they point to a possible Dunning-Kruger Effect (Dunning, 2011)—professionals may be too inexperienced with EIP to be able to accurately assess their EIP skills. In support of this hypothesis, previous researchers in healthcare (Hankemeier et al., 2013) have found EBP knowledge and self-efficacy to be only weakly related. Additionally, in a more general study of over 40,000 learners (mostly college students), the relation between cognitive learning and self-assessments of knowledge was found to be weak to moderate (r = .34) as well. Also in support of this hypothesis, when I examined the self-efficacy scores of the professionals I interviewed, the low-low and high-low professionals (who struggled to clearly describe the concepts of EIP) reported the same levels self-efficacy as the high-high professionals category

(who showed much greater comfort and familiarity with the concepts of EIP than their peers who reported low EIP engagement).

These results suggest that experience may, indeed, be linked to professionals' ability to accurately assess their EIP knowledge and skills. Thus, by integrating the qualitative and quantitative data, I was able to provide evidence of a potential Dunning-Kruger Effect. The presence of this effect would suggest that, despite the moderately high self-efficacy reported in the quantitative survey, lack of knowledge/skills may be a major barrier to professionals' engagement in EIP, as originally suggested by the qualitative data.

Research Quality and Applicability. Across both the qualitative and quantitative strands of this study, professionals perceived available theory and research as limited. More specifically, there was a perception that the theories and research often used to inform program development may be non-inclusive (i.e., may not account for the needs and experiences of marginalized/under-served populations). There was also a perception, across both strands of the study, that the theories and research used to inform program development may not be responsive enough to account for individual students' needs. However, even though these perceptions exist, the vast majority of professionals (72%) did not perceive the availability of relevant research as a substantial barrier to engaging in EIP. Similarly, although one of the high-high professionals in the qualitative study discussed difficulty finding high quality research to guide program development, most professionals (76%) did not perceive methodological inadequacies in research as even a slight barrier to engaging in EIP.

Thus, based on the integration of the quantitative and qualitative data, it seems professionals do perceive limitations with respect to research quality and applicability; however, their perceptions of these limitations do not prevent professionals from engaging in EIP. Indeed, the professionals who most readily discussed research limitations during the qualitative interviews were the professionals who reported high engagement in EIP.

Organizational Culture. The results from the quantitative survey were difficult to interpret with respect to organizational culture. On average, participants' responses to most of organizational culture items hovered between slightly disagree and slightly agree. Given the large amount of variability for these items, average scores were not very meaningful. For example, although, on average, participants neither agreed nor disagreed with the statement, "My direct supervisor asks me to use theory/research to justify my programming" (M = 3.86, SD = 1.90), 45% of participants disagreed with this statement to some extent. Thus, for these items, it was more fruitful to examine frequencies. Notably, 35% of participants disagreed to some extent with the statement "My direct supervisor encourages me to spend time consuming research pertaining to higher education and student affairs," and 32% of participants disagreed to some extent with the statement "My direct supervisor asks me to explain the logic of why a particular program should be effective." Based on these results, it appears many professionals do not believe their direct supervisors provide adequate leadership with respect to EIP.

Whereas the quantitative data on organizational culture were somewhat complex to interpret, in the interviews, organizational culture clearly emerged as the primary barrier to professionals' engagement in EIP. Supporting the quantitative findings above, the professionals I interviewed noted that those in leadership often express a superficial value for EIP that does not translate into tangible support. Furthermore, they noted that those in leadership often do not have clear expectations regarding EIP.

Overall, based on the integration of the qualitative and quantitative data, it appears the most prominent barriers to professionals' EIP engagement are lack of EIP knowledge/skill and lack of an EIP-positive organizational culture. Strategies for addressing these barriers are presented below.

CHAPTER 5

General

The current study arose from a simple curiosity: given the many calls for student affairs professionals to engage in evidence-informed programming (by professional organizations and leaders in the field), do they? If not, why and what can we do about it? To answer these questions, I designed a mixed methods study to explore professionals' EIP behavior, value, and self-efficacy at James Madison University. Additionally, I sought to identify variables that might be related to these outcomes, such as training, experience, and organizational culture. As noted in Chapter One, prior research on student affairs professionals' use of theory and research to inform program development was non-existent. Thus, this study paves the way for future scholar practitioners to both investigate and promote professionals' engagement in EIP.

In the following sections, I describe the implications of this study for the Division of Student Affairs at James Madison University. More specifically, I provide recommendations, based on previous literature and the results of this study, to overcome the major barriers to EIP identified in Chapter 4. Additionally, I provide broader implications for the field of student affairs. Finally, I note the limitations of this study and highlight opportunities for future research.

Implications for the Division of Student Affairs at JMU

My goal in conducting this study was not simply to understand the perspectives of student affair professionals at JMU, but to provide actionable strategies for moving the Division of Student Affairs closer to evidence-based practice. With that said, below I

provide specific recommendations for addressing the primary barriers to EIP identified in this study.

Addressing Organizational Culture as a Barrier to EIP. From both the quantitative and qualitative data, it is apparent that professionals in the division receive unclear messaging from upper administration about the importance of EIP and expectations for EIP engagement. Although leadership may express value for EIP, this value is perceived as superficial because it is not accompanied by the support needed to make EIP possible (in the form of time, resources, and training). To address these concerns, I echo three of the recommendations made by the professionals in my study:

First, leadership must *demonstrate* a strong commitment to EIP by helping offices make space for it. Instead of asking professionals to add one more thing to their already full plates, conversations must be had within each office about what programs, projects, and initiatives can either be eliminated or streamlined to free time for professionals to engage in EIP. To facilitate this process, I recommend that the division adopt a curricular approach to student learning and development (Kerr & Tweedy, 2006; Kerr, Tweedy, Edwards, & Kimmel, 2017). A curricular approach to student learning is defined by the following characteristics (Kerr et al., 2017):

- Clearly defined educational goals tied to the institutional/divisional mission and based on scholarly literature, national trends, and campus assessment data on student needs

- Collaborative, intentionally designed programs that are developmentally sequenced to best serve the learner with respect to content and pedagogy
- Assessment strategies that focus on the effectiveness of the program with respect to students' achievement of desired student learning outcomes (p. 24).

Although the curricular approach was initially developed for use within a single residence life and housing office, it is now promoted as a division-level strategy for organizing and streamlining all of the learning opportunities on college campuses that are provided outside of the classroom. With respect to using the curricular approach to guide division-level strategic planning, Kerr et al. (2017) note, "There is tremendous potential when synergistic efforts across departments support shared learning goals to benefit student learning" (p. 23). Indeed, one of the major benefits the authors discuss is the increased efficiency of the curricular approach as compared to more traditional approaches to programming:

> Instead of collaborations and partnerships being driven by unit and department needs, the CM approach shifts so that the student experience drives collaborations to achieve intended learning and to provide the best strategy, content, and timing for the student. This shift allows for the better integration of student affairs work while simultaneously scaffolding learning opportunities and eliminating redundancy." (Kerr et al. ,2017, p.29)

Thus, by adopting a curricular approach to programming in the division, it may be easier for offices to prioritize their work and identify what programs, projects, tasks, or initiatives are non-essential (i.e., redundant or not aligned with divisional and office-level goals). These non-essential tasks can then be cut to provide more time for professionals to engage in EIP. To begin this process, I recommend that division-level student learning and development outcomes be articulated.

In addition to adopting a curricular approach to make more space/time for EIP, expectations with regard to EIP must also be clearly communicated in position descriptions. Furthermore, administrators must have a realistic idea of how long EIP takes when determining what percentage of a professionals' time will be devoted to programming. Equally important, this time allotted to programming must be protected. Unlike some job tasks where the results of professionals' efforts are immediately seen, EIP is an exercise in delayed gratification. It requires a large time investment on the front end, and there may be very little to show for it initially. Because of this, it is easy for other tasks that provide more immediate gratification to be prioritized over EIP. To ensure EIP receives adequate time and attention, I recommend that leadership find public ways to recognize professionals for time spent consuming literature and engaging in other EIP-related tasks.

Finally, programs must be evaluated not only based on assessment results, but also based on their underlying logic (i.e., program theory) and the theory/research supporting them. This evaluation could be more or less formal. On the informal end of the spectrum, leadership could practice asking targeted questions about programs, such

as the following adapted from Pope et al. (2019): “What is the distal outcome (goal) of the program?”, “What are the intermediate student learning outcomes?”, “Why should achieving the intermediate SLOs result in achievement of the distal outcome?”, and “What evidence is there to support the effectiveness of the program?” On the more formal end of the spectrum, these questions could be incorporated into a formative screening process for all new programs, as is required for grant proposals. Before being approved for implementation, programs would need to be reviewed to determine whether their answers to these questions are coherent and evidence-based. During this process, feedback would be provided to help strengthen the programs. Alternatively (or, perhaps, additionally), student affairs programs or offices could be required to submit regular assessment reports, similar to the assessment reports all academic programs are required to submit annually. In alignment with the assessment cycle (Suskie, 2009) and the steps for developing evidence-informed programs (Pope et al., 2019), within these reports, offices might be asked to articulate the distal and intermediate SLOs of their programs, explain the logic of their programs (providing any previous theory/research supporting its effectiveness), describe their assessment methodology, present and interpret their results, and describe how they have used the assessment results to make informed changes to their programs. Meta-assessment (Fulcher & Orem, 2010) could then be used to provide feedback to aid offices in building higher quality programs and assessment processes.

Addressing Lack of EIP Knowledge/Skills as a Barrier to EIP. Although the survey results suggest professionals are confident in their research and EIP-related skills, there

is reason to believe professionals' self-evaluations of their knowledge and skills are inaccurate. Indeed, the professionals who were interviewed identified lack of knowledge as one of the primary barriers to student affairs professionals' engagement in EIP. Given these results, I provide two alternate approaches for addressing this knowledge gap in the division: 1) offer professional development opportunities to equip professionals with necessary EIP skills or 2) recruit EIP experts whose job it is to stay up-to-date on relevant research and support student affairs professionals in developing evidence-informed programs.

Professional development. Currently, the Center for Assessment and Research Studies offers an assessment workshop for student affairs professionals once a year. A half-day of this workshop is devoted to introducing professionals to the concept of evidence-informed programming. Based on the assessment results from this workshop, professionals leave with a greater understanding of 1) program theory and 2) why it is important to use theory/research to inform program development. This workshop does not, however, equip professionals to actually engage in EIP.

Additional professional development opportunities are needed to target specific EIP-related skills. Although there are many examples of such trainings in healthcare (e.g., Cabell et al., 2001; Fritsche et al., 2002; Melnyk, 2007; Ross & Verdieck, 2003), with respect to content, these trainings are highly specific to healthcare. For example, health-care professionals are taught how to formulate questions that arise from clinical scenarios using the "PICO" framework (i.e., patient, intervention, control, outcome; Coppus et al., 2007; Straus et al., 2004), there is often a heavy emphasis on teaching

professionals to interpret certain statistics (e.g., odds ratios) that are commonly found in the randomized clinical controlled trials (Coppus et al., 2007), and professionals are taught to evaluate research by considering concepts such as “prognosis’ and “harm” (Kunz et al., 2001).

Due to the limited applicability (content-wise) of EBP healthcare trainings for student affairs professionals, my recommendations for the content of professional development trainings are informed by the results of the current study. Given professionals believe they have insufficient time to consume current research, it would be beneficial to teach them how to most efficiently find and evaluate relevant research. This training would introduce professionals to the concept of evidence hierarchies (e.g., Evans, 2003). These hierarchies rank sources of evidence in terms of quality, with meta-analyses and systematic reviews being the highest quality, followed by experimental studies, non-experimental studies, and, lastly, expert opinions and narrative reviews. Along with these evidence hierarchies, it would also be beneficial to expose professionals to helpful tools for finding systematic reviews and meta-analyses, such as systematic review databases and targeted search strategies. As part of this training, it would be important to emphasize that relevant research can be found in a broad range journals and databases, including those not directly related to student affairs or higher education (e.g., Cochrane Library, What Works for Health). Additionally, it should be made clear that the goal is to find the best *available* evidence. For some programs or outcomes, there may not be much empirical research, or the existing research may be of poor quality. In these circumstances, professionals should be encouraged to 1) be

transparent about the amount and quality of evidence used to support programming, 2) engage in high-quality outcomes assessment to evaluate the effectiveness of their programs, given the lack of evidence, and 3) *publish the results* of any effectiveness studies conducted to help other student affairs professionals by contributing to the body of existing research. With respect to evaluating research, the training should focus on sampling and research design—introducing professionals to the concepts of internal and external validity, and distinguishing between experimental and quasi-experimental research designs (Shadish, Cook, & Campbell, 2002). Additionally, given results indicated professionals do not often engage in EIP, perhaps due to a lack of knowledge/skill, I believe it would be beneficial to teach professionals the steps of the EIP process (Pope et al., 2019).

Although the content of EBP trainings in healthcare may have limited relevance for student affairs professionals, these trainings may be useful for informing *how* professional development opportunities are designed. For example, Fritsche et al., (2002) noted that active learning techniques and small participant-to-tutor ratios were integral to the effectiveness of their intervention. Similarly, Coppus et al. (2007) emphasized the importance of active, problem-based learning in realistic contexts, using a variety of tools (including role-plays, online modules, one-on-one mentoring, and small group discussions) to engage students. This focus on active learning was echoed by the professionals I interviewed; they expressed a desire for “hands-on”, interactive approaches to professional development, practical applications of their skills, and personalized feedback.

Given the results of my study and previous research, I recommend any new professional development trainings take place over the course of several weeks to provide an opportunity for participants to practically apply the skills they learn and receive feedback, perhaps to the development or redesign of a real program. Several offices on campus that already offer such services and expertise (e.g., campus library, Center for Faculty Innovation, Center for Assessment) could be involved. Furthermore, these trainings could be logically ordered over the course of a semester (e.g., training offered via the library on finding credible evidence, training offered via teaching and learning centers on building programming from evidence). Additionally, to lessen the burden of facilitating this training on the division and any campus partners, parts of the training could be online module-based.

As for *who* should be trained, I recommend a top-down approach. In order for upper administration, and particularly directors, to provide more than superficial encouragement for EIP, they must be knowledgeable about what the EIP process entails, how much time the process requires, and what the benefits of engaging in EIP are. In particular, directors who are knowledgeable about EIP can direct new professionals to relevant research and other support resources to facilitate their engagement in EIP. Once directors are trained, professional development opportunities can be made available to the entire division. Given the high rate of turn-over amongst new student affairs professionals (Marshall, Gardner, Hughes, & Lowery, 2016), these training would need to be ongoing.

Expert EIP support. Although professional development opportunities are a natural solution when confronted with a gap in knowledge/skill, it is worth considering whether it is actually *necessary* or *desirable* for student affairs professionals to possess extensive EIP and research skills. According to the standards for the profession, the answer is "yes" (ACPA, 2006; ACPA & NASPA, 2015; CAS, 2015). However, the ACPA/NASPA Professional Competencies for Assessment, Evaluation, and Research (AER) and Student Learning and Development (SLD)—the competency areas most closely related to EIP—are extensive. AER and SLD are only two of the ten competency areas addressed by the standards (ACPA & NASPA, 2015). Given the large number of standards for student affairs professionals, it is debatable whether achieving intermediate (or even foundational) competency in all ten competency areas is realistic. Indeed, experts in K-12 education have made similar observations, noting that it is unreasonable to expect teachers to be able to take care of all of their day-to-day teaching responsibilities while also consuming current research and figuring out how to apply the research to practice (Cain, 2019; Landrum, 2015).

Fortunately, it is possible for professionals to engage in evidence-informed programming without being experts in research or programming. For example, in K-12 education, professional learning communities (PLCs) have emerged as a promising strategy for empowering teachers to engage in research-informed teaching practice (Brown & Flood, 2018). Within these PLCs, a topic is selected that relates to teacher practice and for which empirical research exists (e.g., providing teacher-student feedback). Once this topic is selected, an expert with extensive knowledge of the

relevant research facilitates several workgroup sessions with the teachers. During the first session, the facilitator provides teachers with a thorough, easily digestible review of the literature on the chosen topic. Then, with the facilitator's support, the teachers are given space to "combine these research findings with their understanding of their context in order to develop, trial and embed research informed interventions" into their practice (p. 148).

My second recommendation is heavily modeled after these PLCs in K-12 education: instead of trying to ensure all student affairs professionals have extensive skills in finding research, evaluating research, articulating program theory, and other EIP-related skills, it may be more expedient to recruit expert EIP support staff who can serve as a resource for professionals with programming responsibilities. It should be noted, however, that unlike K-12 education, the "topics" considered relevant to student affairs programming vary widely across the university (e.g., programming in the Health Center has a drastically different focus than programming in Career and Academic Planning). Thus, instead of establishing large PLCs that focus on narrow topics that may only be relevant to a subset of professionals, I recommend the division establish a formal partnership with the Center for Faculty Innovation (CFI). Through this partnership, student affairs professionals with extensive EIP experience would be hired to work in CFI part-time as "Student Affairs Associates", mimicking the model of "Faculty Associates" already in place in CFI. Each associate would have a broad area of research expertise (e.g., leadership, diversity, engagement), and would consult with student affairs professionals about finding, evaluating and implementing EIPs.

Alternatively, each office could hire its own full-time EIP specialist. The EIP specialist would be responsible for staying current regarding relevant research, sharing current research with office staff, and overseeing programming efforts within the office. They could also audit each program to ensure all educational/developmental programs are evidence informed and aligned with the mission of the office and division.

Implications for the Field of Student Affairs

Prioritizing EIP-related Standards. The findings of this study suggest that many of the student affairs professional standards related to EIP (e.g., CAS standards, AER and SLD professional competencies) are not being met. For example, many professionals are either unable or unwilling to "design programs and services to promote student learning and development that are based on current research on student learning and development theories" (ACPA & NASPA, 2015, p. 32). Although the standards are clear about expectation related to EIP, it may be that these standards are being overshadowed by the many other competencies professionals are expected to meet. Given that student affairs professionals are regarded as educators (AAHE et al., 1998; Nuss, 2003) and programs are one of the main mechanisms through which student affairs professionals interact with and educate students, the quality of these programs *must* be a priority. As such, standards related to EIP must be emphasized to a greater extent than they are currently—at professional conferences, in graduate programs, by journal editors, by leaders in the field, and by leaders on individual campuses.

Graduate Training and Professional Development in EIP. Who bears the responsibility for training student affairs professionals to engage in EIP? Student affairs

graduate programs or student affairs divisions? The answer is both. Given the central importance of EIP for even entry-level student affairs practice, graduate programs have a responsibility to 1) expose students to a variety of research bases that may be relevant to future practice (not just student development theory), 2) provide students with a tangible model for developing evidence-informed programs (see Pope et al., 2019), and 3) provide opportunities for students to practice building these programs and receive feedback. Although empirical research on the prevalence of EIP training in graduate programs is limited, the results of this study revealed that, on average, "building evidence-informed programs" only received slight coverage in higher education student affairs (HESA) programs. Additionally, for the majority of professionals, the "science of teaching and learning" received no coverage. This deficit is problematic. As noted by Finney and Horst (2019a):

> The student affairs professional is now perceived as an educator, providing potentially high-impact curricular programming. Thus, student affairs professionals have a responsibility to be familiar with research that is relevant to their students' learning and development (Hatfield & Wise, 2015), and must understand the basic forms of learning, such as experiential learning, integration and transfer of knowledge, and other foundational concepts related to learning (Barber, 2006). Put simply, to build programs to impact learning, professionals must be knowledgeable about student learning theory. (p. 17).

Even if all student affairs graduate programs did provide adequate EIP training, however, on-the-job professional development would still be needed. The EIP skills students begin to develop in graduate school must be honed and reinforced in the workplace. Additionally, for those student affairs professionals who do not have a HESA degree, there must be opportunities for them to develop and practice these crucial skills.

Limitations of Current Study and Directions for Future Research

Although a number of important findings arose from this study, there are limitations that should be noted. With respect to sampling, all relevant professionals in the division received an invitation to complete the quantitative survey. Unfortunately, however, the response rate was only 57%. Given the non-random nature of the samples used for analysis, there is a possibility that the participants who responded to the survey differed systematically from the participants who did not respond with respect to the outcomes of interest. If this is the case, the results may not accurately reflect the behaviors and attitudes of division. For example, if professionals who value EIP were more likely complete the survey, EIP value scores would be inflated. Given the paucity of research examining EIP in student affairs, the current study could serve as the initial work in the domain upon which others can compare future results. Forthcoming studies may focus more narrowly on specific research questions, allowing for a shorter survey and possible higher response rate.

In terms of the qualitative interviews, I did not reach saturation. Saturation occurs when redundancy is reached in data collection/analysis, thereby signaling that

the researcher has extracted all of the most relevant data from participants and data collection can end. For the low-low profile, in particular, only one interview was conducted; thus, saturation was not possible. Given I did not reach saturation, there may be important themes that were not identified.

With respect to instrumentation, limited validity information is provided about the new measure I developed. Although I was able to conduct cognitive interviews to provide some evidence related to content and response processes, I was unable to conduct factor analyses to provide validity evidence related to internal structure. Given the untested nature of this instrument, results should be interpreted cautiously. Future researchers should replicate this study with a larger sample of student affairs professionals, including professionals beyond JMU, so that factor analyses can be conducted to determine the appropriateness of the scale scores I reported. Also, a larger sample would allow researchers to conduct more complex analyses (e.g., structural equation models to account for measurement error; hierarchical linear modeling to account for nesting of individuals within offices and universities).

Finally, with respect to research design, this study was exploratory. Given the correlational design, it is impossible to determine the order of effects or establish causality. As such, although it is tempting to make statements such as “training had an impact on EIP behavior”, such conclusions are not supported by the data. Future studies should strive to empirically test the causal relations I hypothesized (where possible) using quasi-experimental designs with pre-post testing and a comparison group.

Conclusion

In the mid-1980s, there was a necessary call for universities to focus less on educational *outputs* (e.g., graduation and job placement rates), and more on student learning *outcomes* (Finney & Horst, 2019b; Klieme, Hartig, & Rauch, 2008). With this increased emphasis on learning came greater expectations for student affairs professionals. As educators, student affairs professionals were expected to provide evidence of their impact on students via student learning outcomes assessment. Since then, the focus on outcomes assessment in student affairs has continued to grow (Finney & Horst; 2019b). Although there still room for improvement, assessment has become a widely accepted practice in student affairs (Elkins, 2015; Jankowski et al, 2018).

Now is the time for the next call; a call for EIP. Just as educators of the past once eschewed outcomes assessment, today's educators appear similarly sluggish to adopt evidence-informed programming. In this study, I found that professionals rarely consumed research (indeed, over half of participants reported reading research less than one hour per month). Furthermore, on average, professionals only sometimes engaged in EIP (with 54% of participants indicating they rarely or never used research to inform program development). Although these results are troubling, not all is bleak. This study also revealed that nearly 40% of professionals reported often or always using theory to inform program development. Additionally, professionals generally recognized the importance and utility of EIP even if they did not engage in it. These findings provide hope that the field is moving (albeit slowly) in the right direction.

For student affairs professionals to live up to their titles as educators, EIP must become the standard of practice. For that to occur, the field must address the systemic and individual-level barriers to professionals' engagement in EIP. In this study, I highlighted two major barriers to EIP: organizational culture and lack of EIP knowledge/skills. Additionally, I outlined several strategies for addressing these barriers based on the results of my study and previous research. It is my hope that this study will inform policies and professional development opportunities at JMU and beyond. Furthermore, I hope it sparks conversations about the important role of EIP in student affairs and lays the foundation for future research on the topic.

Table 1
Definitions of Constructs Related to Evidence-Informed Programming

Term	Discipline	Definition	Source
Evidence-Based Practice (EBP)	Nursing	EBP is "a problem-solving approach to the delivery of care that incorporates the best evidence from well-designed studies in combination with a clinician's expertise and patients' preferences within a context of caring" (p. 208)	(Melnyk et al., 2008)
	Athletic Training	EBP is "the integration of the best available research evidence, patient values, and clinician expertise to make clinical decisions. EBP is conducted in a five-step process: (a) defining a clinical question; (b) conducting a search of the most current literature; (c) critically appraising the literature; (d) relating the research back to the initial clinical question; and finally (e) evaluating the effectiveness of the outcomes" (p. 6).	(Welch et al., 2011)
Evidence-Based Medicine (EBM)	Clinical Epidemiology	EBM is "the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research" (p. 71)	(Sackett et al., 1996)
Evidence-Informed Practice (EIPr)	Education (UK)	"a combination of practitioner expertise and knowledge of the best external research [i.e. high quality qualitative or quantitative research that has been peer reviewed and published by academic researchers] and/or evaluation-based evidence." (p. 1)	(Brown, 2017b)

Table 2
Measures of Constructs Related to Evidence-Informed Programming in Healthcare

Source	Discipline	Construct	Description	Reliability Evidence	Validity Evidence
Aarons, 2004 The Evidence-Based Practice Attitude Scale (EBPAS)	Mental Health Services	Attitudes related to the adoption of EBP - Appeal	4 Likert-type items that assess "the extent to which the provider would adopt a new practice if it is intuitively appealing, makes sense, could be used correctly, or is being used by colleagues who are happy with it" (p. 67) *"If you received training in a therapy or intervention that was new to you, how likely would you be to adopt it if…it 'made sense' to you?"*	Cronbach's α = .80 (*n=3*73 clinical, case management service providers and program managers)	CV: Consulted a panel of experts during development IS: Hypothesized four-factor structure supported ROV: None
		Attitudes related to the adoption of EBP - Requirements	3 Likert-type items that assess "the extent to which the provider would adopt a new practice if it is required by an agency, supervisor, or state" (p. 67) *"If you received training in a therapy or intervention that was new to you, how likely would you be to adopt it if…it was required by your supervisor?"*	Cronbach's α = .90 (*n=3*73 clinical, case management service providers and program managers)	See above
		Attitudes related to the	4 Likert-type items that assess "the extent to which the provider is generally open to trying new interventions and would be willing to	Cronbach's α = .78 (*n=3*73 clinical, case management	See above

	adoption of EBP - Openness	try or use new types of therapy" (p. 67) *"I would try a new therapy/intervention even if it were very different from what I am used to doing"*	service providers and program managers)	
	Attitudes related to the adoption of EBP - Divergence	4 Likert-type items that assess "the extent to which the provider perceives research-based interventions as not clinically useful and less important than clinical experience" (p. 67) *"Research based treatments/interventions are not clinically useful"* *"I know better than academic researchers how to care for my clients"*	Cronbach's α = .59 (*n=3*73 clinical, case management service providers and program managers)	See above
Chang & Crowe, 2011 The Self-Efficacy in EBP (SE-EBP) Scale	Self-efficacy related to EBP	26 Likert-type items that assess the level of confidence held by nurses about their ability to engage in the following EBP steps: identifying the clinical problem, finding the evidence, appraising the evidence, applying the evidence, and evaluating one's own practice *"How confident are you in your ability to identify a clinical problem needing evidence to guide nursing care?"*	Cronbach's α (total score) = .97 Cronbach's α (identifying problem subscale) = .91 Cronbach's α (searching for	CV: Informal review of items by a panel of experts IS: EFA revealed three factors instead of the hypothesized five

		"How confident are you in your ability to conduct a literature search of bibliographic databases, for example, Medline and CINAHL?"	evidence subscale) = .96 Cronbach's α (implementing evidence subscale) = .96 (*n*=174 nurses or midwives)	ROV: Significantly higher overall SE-EBP scores for nurses who reported prior exposure to EBP vs. those who reported receiving no EBP training
Chang & Crowe, 2011 The Outcome Expectancy for EBP (OE-EBP) Scale	Outcome expectancy related to EBP	8 Likert-type items that assess how confident respondents are that accomplishing each of the following EBP steps will lead to improved quality of patient care: identifying the clinical problem, finding the evidence, appraising the evidence, applying the evidence, and evaluating one's own practice *"Identifying and having a clear definition of the clinical problem requiring evidence will make it easier for me to search for evidence."* *"Understanding of the levels of evidence will improve my use of evidence in nursing/midwifery care."*	Cronbach's α (total score) = .97	CV: Informal review of items by a panel of experts IS: EFA revealed one factor instead of the hypothesized five ROV: No differences were found in overall OE-EBP for nurses who reported prior exposure to EBP vs. those

					who reported receiving no EBP training OE-EBP and SE-EBP correlation = .72
Fritsche, Greenhalgh, Falck-Ytter, Neumayer, & Kunz, 2002 The Berlin Questionnaire	Medicine (General)	Knowledge and skills related to EBM	Two sets of multiple choice items (15 items each) that assess "basic knowledge about interpreting evidence from healthcare research, skills to relate a clinical problem to a clinical question and the best design to answer it, and the ability to use quantitative information from published research to solve specific patient problems" (p. 1338). Both sets of items measure similar constructs; one set is designed to be administered before an EBM intervention and the other set after an EBM intervention.	Cronbach's α = .75 (Set 1); .82 (Set 2) (*n*=266 medical students, postgraduate doctors, and experts in EBM)	ROV: The instrument distinguished between groups with different expertise in evidence based medicine. The mean score of controls (4.2), course participants (6.3), and experts (11.9) were significantly different.
Funk, Champagne,	Nursing	Perceived EBP barriers related	8 Likert-type items that assess perceptions of nurses' research	Cronbach's α = .80	CV: Informal review of

Wiese, & Tornquist, 1991 The BARRIERS Scale	to characteristics of the adopter	values, skills and awareness as barriers to EBP *"The nurse feels the benefits of changing practice will be minimal"* *"The nurse is unaware of the research"*	(*n*=1,948 nurse practitioners)	items by a panel of experts IS: Four-factor structure revealed in two independent samples
	Perceived EBP barriers related to characteristics of the organization	8 Likert-type items that assess perceptions of organizational factors as barriers to EBP *"There is insufficient time on the job to implement new ideas"*	Cronbach's α = .80 (*n*=1,948 nurse practitioners)	See above
	Perceived EBP barriers related to the quality of research	6 Likert-type items that assess perceptions of the quality and availability of research as barriers to EBP *"The research has methodological inadequacies"* *"Research reports/articles are not published fast enough"*	Cronbach's α = .72 (*n*=1,948 nurse practitioners)	See above
	Perceived EBP barriers related to presentation and	6 Likert-type items that assess perceptions of the clarity, accessibility, and relevancy of research as barriers to EBP	Cronbach's α = .65 (*n*=1,948 nurse practitioners)	See above

		accessibility of the research	*"The relevant literature is not compiled in one place"* *"The research is not relevant to the nurse's practice"*		
Hankemeier et al., 2013 and **McCarty et al., 2013** The Evidence Based Concepts Assessment (EBCA)	Athletic Training	Knowledge related to EBP	6 multiple choice items that assess respondents' knowledge of various concepts related to EBP (i.e., steps of EBP, types of research designs, developing a clinical question, assessing treatments, searching the literature, role of personal expertise) *"Which type of research design is considered to have the highest quality of evidence? (Answer choices: randomized controlled trial; independent laboratory investigation; case study; single-subject design)"*	Test-retest reliability per item (percent agreement; 22 days apart) = 63 to 96% (*n*=27 athletic training clinicians, students, and educators)	CV: Formal review by a panel of experts
		Self-efficacy related to EBP knowledge	6 Likert-type items that assess respondents' confidence in their answers to each of the six knowledge questions *"How confident are you in your ability to select which type of research design is considered to have the highest quality of evidence?"*	Cronbach's α = .76 (*n*=1,209 athletic training clinicians, students, and educators)	CV: Formal review by a panel of experts
		Attitudes, beliefs, and	15 Likert-type items that assess respondents' perceptions of the various aspects of EBP, including	Cronbach's α (all items) = .76	CV: Formal review by a

	values related to EBP	negative perceptions (e.g., whether EBP promotes ‘‘cookbook’’ approach to clinical practice) and perceptions of the benefits of EBP for practice (e.g., importance to credibility of athletic training) *“Literature and research findings are useful in my day-to-day practice” (Benefits to Practice)* *“Using evidence-informed practice will reduce my professional independence in clinical decision-making” (Negative Perceptions)*	Cronbach’s α (negative perceptions) = .72 Cronbach’s α (benefits to practice) = .73 (*n*=1,209 athletic training clinicians, students, and educators)	panel of experts IS: PCA revealed two distinct factors, however, four items did not fit well within this factor structure
	Perceived importance of EBP	5 Likert-type items that assess perceived importance of EBP steps *“Rate the importance of using evidence to influence patient outcomes”* *“Rate the importance of developing a clinical question”*	Cronbach’s α = .69 (*n*=1,209 athletic training clinicians, students, and educators)	CV: Formal review by a panel of experts
	Accessibility of resources needed for EBP and EBP-related behavior	2 items that assess access to and use of the following resources: systematic reviews, peer-reviewed journals, clinical prediction rules, professional literature, online search databases, NATA think tanks and position statements, textbooks, Web sites	None Note: Responses analyzed separately for each item.	CV: Formal review by a panel of experts

			"How often do you use systematic reviews and/or meta-analyses?" *"To which of the [resources listed above] do you have direct access?"*		
		Perceived barriers to EBP implementation	16 Likert-type items that assess perceived barriers relating to personal skills/attributes and external resources (support and accessibility of resources). *"Familiarity with Internet databases and search engines" (personal skills and attributes)* *"Support from administration" (support and accessibility of resources)*	Cronbach's α (total) = .87 Cronbach's α (personal skills/attributes) = .83 Cronbach's α (support and accessibility of resources) = .71 (*n*=1,209 athletic training clinicians, students, and educators)	CV: Formal review by a panel of experts IS: PCA revealed two distinct factors; however, two items did not fit well within this factor structure
Ilic, Nordin, Glasziou, Tilson, & Villanueva, 2014 The Assessing Competency in EBM (ACE) Scale	Medicine (Trainees)	Knowledge and skills related to EBM	15 items based on a short clinical scenario that assess all four steps of the EBM process. Items 1-2 relate to step 1 (defining a clinical question), items 3-4 relate to step 2 (searching the literature), items 5–11 relate to step 3 (critical appraisal) and items 12–15 relate to step 4 (using the research in clinical decision-making).	Cronbach's α = .69 (*n*=342 medical trainees with novice, intermediate, and advanced EBM knowledge/skill)	CV: Informal review of items by a panel of experts ROV: Groups with different levels of EBM training had significantly

					different scores: novice (8.6), intermediate (9.5), and advanced (10.4).
Jette et al., 2003	Physical Therapy	Attitudes, beliefs, and values about EBP	9 Likert-type items that assess perceptions of the benefits, drawbacks, and limitations to engaging in EBP *"EBP improves the quality of patient care."* *"Literature and research findings are useful in my day-to-day practice"*	Note: Responses analyzed separately for each item. Test-retest reliability (ICC for Likert-type items; 2 weeks and 2 months apart) = .37 to .90, with 50% of the items having ICCs >.70 Test-retest reliability (percent agreement for dichotomous items; 2 weeks and 2 months apart) = 68-93% Test-retest reliability (percent agreement for	CV: Informal review of items by a panel of experts

			ranked items; 2 weeks and 2 months apart) = 69-80% (*n*=54 physical therapists)	
	Interest in EBP	2 Likert-type items that assess interest in and motivation to engage in EBP *"I am interested in learning or improving the skills necessary to incorporate EBP into my practice"*	See above	See above
	Education or training in EBP; self-efficacy related to EBP knowledge/skills	7 Likert-type items that assess formal educational preparation to engage in EBP and perceived knowledge/skills related to accessing and interpreting information *"I received formal training in critical appraisal of research literature as part of my academic preparation"* *"I am confident in my ability to critically review professional literature"*	See above	See above
	EBP-related behaviors	3 items that assess level of attention to and use of the research/literature	See above	See above

			"How often do you use professional literature and research findings in the process of clinical decision making?"		
		Access to and availability of resources needed for EBP	5 items (Y/N) that assess perceptions of the availability of EBP resources and perceived ability to access resources *"Practice guidelines are available for topics related to my practice."* *"I have the ability to access relevant databases and the Internet at my facility."*	See above	See above
		Perceived barriers to EBP implementation	1 ranking item that assesses perceived barriers to using evidence in practice *"Rank your 3 greatest barriers to the use of EBP in your clinical practice (e.g., insufficient time, lack of research skills, lack of interest, lack of understanding of statistical analysis)"*	See above	See above
Kitto et al., 2007	Medicine (Surgery)	Understanding of EBM (knowledge; attitudes, beliefs, and values)	14 Likert-type items that assess the extent to which knowledge and beliefs align with the key elements of the 'formal' definition of EBM provided by Sackett et al. (1996) *"EBM is the consistent use of current best evidence in clinical practice"*	None Note: Responses analyzed separately for each item.	None

			"EBM mainly concerns the control of surgeons' clinical behavior"		
		EBM-related behaviors	Assesses the use of primary research articles, systematic reviews, and/or clinical practice guidelines (CPGs) to aid respondents' decision-making No items reported in publication.	None Note: Responses analyzed separately for each item.	None
		Attitudes, beliefs, and values related to use of research	9 Likert-type items that assess attitudes regarding the use of primary research articles, systematic reviews, and clinical practice guidelines to aid in decision-making *"I do not have the time to read and appraise [resource] articles"* *"My patients have unrealistic expectations which affect my treatment choices regardless of research findings"*	None Note: Responses analyzed separately for each item.	None
		Confidence in sources of evidence	8 Likert-type items that assess confidence to obtain information from various sources of evidence (e.g., personal experience, colleagues, textbooks) to aid decision-making No items reported in publication	None Note: Responses analyzed separately for each item.	None
Leo, Peterson, Haas,	Chiropractic	Knowledge related to EBP	40 multiple choice items designed to assess knowledge related to the following areas: EBP overview and	KR-20 = .68	CV: Informal review of items by a

LeFebvre, & Bhalerao, 2012 The Evidence-Based Practice Grant Student Questionnaire		clinical application; asking answerable questions; finding evidence; overview of clinical biostatistics; research study design and validity overview; and critical evaluation of therapy articles, diagnostic studies, preventive studies, harm studies, prognosis studies, and systematic reviews/guidelines	(*n*=196 chiropractic students)	panel of experts
	Attitudes, beliefs, and values related to EBP	9 Likert-type items that assess attitudes likely to be present in clinicians who actively engage in EBP activities (e.g., the comparative weight of research evidence versus expert/clinical opinion, whether all types of evidence are equally important in making clinical decisions, the need to access/stay abreast of the most current information, the need to critically review research literature)	None	None
	Self-efficacy related to EBP knowledge/ skills	4 Likert-type items that assess perceptions of their understanding of basic statistical concepts and ability to find, critically appraise, and integrate clinical research into clinical practice	None	None
	EBP-related behaviors	3 items that assess time spent reading original research, accessing PubMed, applying EBP methods to patient care	None	None

Melnyk et al., 2008 The EBP Beliefs Scale	Nursing	Attitudes, beliefs, & values related to EBP; self-efficacy related to EBP knowledge & skills	16-item scale assesses endorsement of the premise that EBP "improves clinical outcomes and confidence in one's EBP knowledge/skills" (p. 210) *"I am sure that implementing EBP will improve the care that I deliver to my patients"*	Cronbach's α = .90	IS: Evidence to support a one-dimensional measure of EBP beliefs.
Melnyk et al., 2008 The EBP Implementation Scale	Nursing	EBP-related behaviors	18-item scale assesses engagement in following behaviors: seeking and appraising scientific evidence, sharing evidence or data with colleagues or patients, collecting and evaluating outcome data, and using evidence to change practice *"Read and critically appraised a clinical research study"*	Note: One total score reported for all EBP-related behaviors Cronbach's α = .96 (*n*=394 nurses attending continuing education workshops)	IS: Evidence supporting a one-factor measure of EBP implementation
Ramos et al., 2003 The Fresno Test	Medicine (Family Practice)	Knowledge and skills related to EBM	12 items (7 short answer, 2 questions that require a series of mathematical calculations, and three fill-in-the-blank questions) based on two clinical scenarios that assess ability to formulate a focused question, identify the most appropriate research design for answering the question, search through electronic databases, determine the relevance and validity of a research article, and discuss the	Cronbach's α = .88 Inter-rater correlation = .97 (total score); .72-.96 for individual items (*n*=115 family practice residents and faculty members,	CV: Informal review of items by teachers of EBM ROV: Experts scored significantly higher than novices (147.5

			magnitude and importance of research findings *"Write a focused clinical question for each of [the provided] patient encounters that will help you organize a search of the clinical literature…"* *"When you find a report of original research on [one of the clinical] questions, what characteristics of the study will you consider to determine if it is relevant? Include examples."*	volunteers self-identified as experts in EBM)	vs. 95.6 out of 212 points).
Salbach & Jaglal, 2011	Physical Therapy		11 items that assess confidence in ability to organize and execute the steps of EBP *"How confident are you in your ability to formulate a question to guide a literature search based on a gap in your knowledge?"* *"How confident are you in your ability to decide on an appropriate course of action based on integrating the research evidence, clinical judgment and patient or client preferences?"*	None	CV: Formal evaluation of "face and content validity" by a panel of experts RP: A small number of potential participants participated in cognitive interviewing
Wallin, Boström, & Gustavsson, 2012	Nursing	Self-efficacy related to EBP	6 items that assess perceived ability to engage in the following EBP-related steps: formulating questions about clinical practice, using databases to	None (*n*=545 nursing school graduates)	IS: Evidence supporting a one-factor

The Evidence-Based Practice Capability Beliefs Scale (EBPCBS)	search for knowledge, using other information sources (e.g. books, journals, asking colleagues), appraising research reports, implementing research knowledge, and evaluating whether clinical practice is based on research *"Rate your performance in the following task: Using databases to search for knowledge.* *"Rate your performance in the following task: Appraising research reports"*	measure of self-efficacy. ROV: Correlations between EBP capability beliefs and different kinds of self-reported research use were all statistically significant (<0.001) and ranged between 0.16 and 0.20. Correlations between EBP capability beliefs and self-reported EBP behaviors were all statistically significant (<0.001) and ranged

					between 0.31 and 0.46.
		EBP-related behaviors	6 items that assess self-reported participation in the following EBP-related behaviors: formulating questions about clinical practice, using databases to search for knowledge, using other information sources (e.g. books, journals, asking colleagues), appraising research reports, implementing research knowledge, and evaluating whether clinical practice is based on research	None Note: Responses analyzed separately for each item.	Correlations between self-reported EBP behaviors and EBP capability beliefs were all statistically significant (<0.001) and ranged between 0.31 and 0.46.
Welch et al., 2011 The Evidence-Based Concepts for Clinical Practice Assessment	Athletic Training	Knowledge related to EBP	20 items that assess knowledge (multiple choice) of 11 EBP concepts (e.g., definition of EBP, steps of EBP, reliability, validity, sensitivity, specificity) *"Which statistical concept assesses a diagnostic test to determine its reproducibility? (Answer choices: reliability; validity; sensitivity; specificity)"*	Test-retest reliability (percent agreement, 3 weeks apart) = 50-100% with mean of 76% across all 20 items (*n*=6 athletic training educators)	CV: Informal item review by panel of experts IS: No evidence supporting interpretation of total scores and subgroup scores (i.e., foundational vs. framing)
		Comfort with EBP	11 items that assess comfort with ability to implement 11 EBP concepts	None	See above

		(e.g., definition of EBP, steps of EBP, reliability, validity, sensitivity, specificity) within a didactic curriculum. No items reported in publications.		
	Perceived importance of EBP	11 items that assess perceived importance of implementing 11 EBP concepts (e.g., definition of EBP, steps of EBP, reliability, validity, sensitivity, specificity) within a didactic curriculum. No items reported in publications.	None	See above

Note. CV: Validity evidence related to content. RP: Validity evidence related to response processes. IS: Validity evidence related to internal structure. ROV: validity evidence related to relations to other variables.

Table 3
Demographic Information for All Samples of Participants

	Sample of 143	Sample of 130	Sample of 87
Office/Department (Percentage)			
CAP	11.19%	11.54%	13.8%
CSL	4.90%	5.38%	8.10%
ORL	15.38%	16.15%	13.8%
OSARP	4.90%	5.38%	6.90%
Health Center	10.49%	10.77%	8.10%
UREC	11.89%	13.08%	17.2%
University Unions	16.08%	16.92%	13.8%
Other	25.17%	20.78%	18.4%
Position (Percentage)			
Graduate Student	8.39%	7.69%	5.75%
Entry-Level	38.46%	39.23%	36.78%
Mid-Level	44.76%	45.38%	49.43%
Upper-Level	8.39%	7.69%	8.05%
Experience (Median/Mean)			
Years in Student Affairs	5.00/9.61	5.00/9.30	5.00/9.26
Years at JMU	3.00/6.18	3.00/6.21	3.00/6.17
Education (Percentage)			
Bachelor's	22.38%	21.54%	16.09%
Master’s	60.14%	63.85%	71.26%

Doctorate	8.39%	6.92%	8.05%
Other	9.09%	7.69%	4.60%
Student Affairs Degree? (Percentage)			
Yes/In Progress	49.65%	53.08%	56.32%
No	50.35%	46.92%	43.68%
Student Affairs Certificate? (Percentage)			
Yes/In Progress	8.39%	9.23%	8.05%
No	91.61%	90.77%	91.95%

Note. CAP = Career and Academic Planning, CSL = Community Service Learning, ORL = Office of Residence Life, OSARP = Office of Student Accountability and Restorative Practice, UREC = University Recreation.

Table 4

Hours Per Month Spent Consuming Empirical Research and Other Sources of Evidence

Behavior	Programmers (*N* = 130)				Non-Programmers (*N* = 13)			
	Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Reading peer-reviewed empirical research studies (for example, quantitative, qualitative, mixed methods studies) in journals (for example, JSARP, JCSD)	3.03	5.55	0.00	40.00	0.85	2.76	0.00	10.00
Reading thought or opinion pieces in academic publications, professional magazines, and/or newsletters (for example, About Campus, The Chronicle, Inside Higher Ed)	3.89	4.53	0.00	30.00	3.08	5.91	0.00	20.00
Reading educational books related to student learning and development	3.50	5.06	0.00	26.00	0.54	1.39	0.00	5.00
Consulting other web-based sources of information about student learning and development	3.16	5.20	0.00	38.00	0.46	1.39	0.00	5.00

Note. The “programmer” group consists of the 130 student affairs professionals who indicated they currently oversee or have previously overseen the development/facilitation of educational student affairs programs that are intended to impact student learning, development, or skills. The “non-programmer” group consists of the 13 individuals who indicated they have never overseen the development/facilitation of educational student affairs programs.

Table 5
Item-Level Results for EIP Value Items

Item	Mean	SD	Frequency (%)		
			Strongly Disagree	Neither Agree nor Disagree	Strongly Agree
Engaging in evidence-informed programming is important for the credibility of the student affairs profession	6.06	0.99	1 (0.77%)	10 (7.69%)	48 (36.92%)
Engaging in evidence-informed programming will limit my creativity and/or professional autonomy (Reverse-scored)	2.92	1.33	18 (13.85%)	22 (16.92%)	0 (0.00%)
Evidence-informed programming has a higher probability of being effective (i.e., improving student learning) than programming not informed by evidence	5.53	1.25	1 (0.77%)	20 (15.38%)	28 (21.54%)
Evidence-informed programming does not take into account individual student needs and/or preferences (Reverse-scored)	3.47	1.48	2 (1.54%)	28 (21.54%)	12 (9.23%)
Evidence-informed programming requires time and resources that would be better spent on more important aspects of my job (Reverse-scored)	3.28	1.51	13 (10.00%)	29 (22.31%)	2 (1.54%)
Evidence-informed programming is necessary for high-quality student affairs practice	5.68	1.13	0 (0.00%)	12 (9.23%)	30 (23.08%)
The adoption of evidence-informed programming places unreasonable demands on my day-to-day practice (Reverse-scored)	3.47	1.52	14 (10.77%)	31 (23.85%)	2 (1.54%)

Evidence-informed programming does not take into account the needs of marginalized or under-served student populations (Reverse-scored)	3.78	1.49	10 (7.69%)	43 (33.08%)	5 (3.85%)
Current research and theory is useful when specifying student learning outcomes/objectives for programs intended to impact student learning and development	5.78	0.87	0 (0.00%)	7 (5.38%)	24 (18.46%)
Current research and theory is useful when developing programming components (for example, activities, discussions, lectures) to impact student learning and development	5.71	0.93	0 (0.00%)	7 (5.38%)	23 (17.69%)
I do not see the value of using research to inform student affairs programming (Reverse-scored)	1.86	1.05	55 (42.31%)	5 (3.85%)	0 (0.00%)
Remaining current with research pertaining to higher education or student affairs is important to me	5.81	0.93	0 (0.00%)	8 (6.15%)	26 (20.00%)
It is important for student affairs professionals to spend at least one to two hours per week reading current research on student learning and development	4.99	1.44	1 (0.77%)	23 (17.69%)	21 (16.15%)
Before implementing a program, student affairs professionals should consult current research and theory regarding program effectiveness	5.33	1.34	1 (0.77%)	19 (14.62%)	24 (18.46%)
EIP Value Scale Total Score (α = .88)	5.29	0.79			

Note. N = 130. SD = Standard deviation. Item and total scores range from 1 (strongly disagree) to 7 (strongly agree).

Table 6
Item-Level Results for EIP Self-Efficacy and Research Self-Efficacy Items

			Frequency (%)		
	Mean	SD	Strongly Disagree	Neither Agree nor Disagree	Strongly Agree
EIP Self-Efficacy Items					
find peer-reviewed journal articles related to a broad student learning outcome of interest	5.32	1.51	1 (0.77%)	8 (6.15%)	25 (19.23%)
find systematic reviews and/or meta-analyses that synthesize the research on a broad student learning outcome of interest	4.51	1.60	2 (1.54%)	12 (9.23%)	9 (6.92%)
find research to answer the question, “What knowledge, attitudes, and skills do students need to achieve broad outcome X”	4.75	1.50	1 (0.77%)	17 (13.08%)	12 (9.23%)
find research to answer the question, “What types of programming will help students attain desired knowledge, attitudes, and skills”	4.91	1.41	1 (0.77%)	10 (7.69%)	10 (7.69%)
use existing research to determine if a broad student learning outcome is malleable	4.82	1.39	2 (1.54%)	22 (16.92%)	7 (5.38%)
use existing research to determine if a broad student learning outcome can be feasibly achieved	4.85	1.26	1 (0.77%)	22 (16.92%)	7 (5.38%)
use existing research to identify effective programming that could be implemented at JMU	5.18	1.21	1 (0.77%)	18 (13.85%)	12 (9.23%)
use existing research to evaluate if existing programming at JMU should help students gain desired knowledge, attitudes, and skills	5.14	1.24	1 (0.77%)	16 (12.31%)	14 (10.77%)

use existing research to build new programming designed to help students gain desired knowledge, attitudes, and/or skills	5.17	1.19	1 (0.77%)	16 (12.31%)	8 (6.15%)
EIP Self-Efficacy Subscale Total Score (α = .94)	4.96	1.12			
Research Self-Efficacy Items					
interpret the findings of a research study	5.49	1.08	0 (0.00%)	13 (10.00%)	19 (14.62%)
determine if a research study supports the use of a particular program or intervention	5.37	1.13	0 (0.00%)	16 (12.31%)	12 (9.23%)
evaluate if a research study is high-quality	5.14	1.27	0 (0.00%)	21 (16.15%)	16 (12.31%)
evaluate if the findings of a research study are applicable to my student population	5.42	1.10	0 (0.00%)	13 (10.00%)	16 (12.31%)
interpret the basic statistics commonly presented in research studies (for example, means, standard deviations, p-values, confidence intervals, effect sizes)	4.89	1.43	2 (1.54%)	15 (11.54%)	17 (13.08%)
Research Self-Efficacy Subscale Total Score (α = .90)	5.26	1.02			

Note. N = 130. SD = Standard deviation. Item and total scores range from 1 (strongly disagree) to 7 (strongly agree).

Table 7
Item-Level Results for EIP Behaviors Items

			Frequency (%)				
	Mean	SD	Never	Rarely	Sometimes	Often	Always
EIP Facilitation Behaviors Items							
Evaluated whether pre-existing programming reflected current theory	2.52	1.11	20 (22.99%)	22 (25.29%)	27 (31.03%)	16 (18.39%)	2 (2.30%)
Evaluated whether pre-existing programming reflected current empirical research	2.39	1.00	19 (21.84%)	28 (32.18%)	28 (32.18%)	11 (12.64%)	1 (1.15%)
Contributed to changing pre-existing programming by integrating current theory	2.49	1.00	17 (19.54%)	25 (28.74%)	30 (34.48%)	15 (17.24%)	0 (0.00%)
Contributed to changing pre-existing programming by integrating current empirical research	2.37	0.95	18 (20.69%)	29 (33.33%)	31 (35.63%)	8 (9.20%)	1 (1.15%)
EIP Facilitation Behaviors Subscale Total Score	2.44	0.89					
(α = .89)							
EIP Development Behaviors-R Items							
Created SLOs informed by current empirical research	2.80	0.99	7 (8.05%)	28 (32.18%)	30 (34.48%)	19 (21.84%)	3 (3.45%)
Developed program components informed by current empirical research	2.83	0.95	5 (5.75%)	30 (34.48%)	30 (34.48%)	19 (21.84%)	3 (3.45%)
EIP Development Behaviors-R Subscale Total Score	2.82	0.92					
(α = .89)							
EIP Development Behaviors-SDT Items							
Created SLOs informed by foundational student development theories	3.01	1.13	8 (9.20%)	23 (26.44%)	23 (26.44%)	26 (29.89%)	7 (8.05%)

Developed program components informed by foundational student development theories	2.94	1.08	9 (10.34%)	22 (25.29%)	25 (28.74%)	27 (31.03%)	4 (4.6%)
EIP Development Behaviors-SDT Subscale Total Score (α = .89)	2.98	1.05					
EIP Development Behaviors-Other Theories Items							
Created SLOs informed by other theoretical literature bases	3.29	1.00	3 (3.45%)	15 (17.24%)	33 (37.93%)	26 (29.89%)	10 (11.49%)
Developed program components informed by other theoretical literature bases	3.25	0.96	3 (3.45%)	15 (17.24%)	33 (37.93%)	29 (33.33%)	7 (8.05%)
EIP Development Behaviors-OT Subscale Total Score (α = .83)	3.27	0.90					

Note. N = 87. SD = Standard deviation. Item and total scores range from 1 (never) to 5 (always).

Table 8
Correlation Matrix for EIP Behaviors, Values, Self-Efficacy, and Organizational Culture Variables

Variables	Variables							
	EIP Facilitation Behaviors	EIP Development Behaviors-R	EIP Development Behaviors-SDT	EIP Development Behaviors-OT	EIP Value	EIP Self-Efficacy	Research Self-Efficacy	Org Culture
EIP Facilitation Behaviors	1.00***							
EIP Development Behaviors-R	0.46***	1.00***						
EIP Development Behaviors-SDT	0.36***	0.36***	1.00***					
EIP Development Behaviors-OT	0.59***	0.70***	0.44***	1.00***				
EIP Value	0.30***	0.30***	0.46***	0.37***	1.00***			
EIP Self-Efficacy	0.32***	0.31***	0.19***	0.26***	0.25***	1.00***		
Research Self-Efficacy	0.33***	0.25***	0.12***	0.23***	0.33***	0.71***	1.00***	
Org Culture	0.26***	0.22***	0.26***	0.23***	0.20***	0.31***	0.20***	1.00***

Note. $N = 87$.
*$p < .05$ level, **$p < .01$, ***$p < .001$.

Table 9

Regression Analyses Predicting EIP Behaviors from EIP Value, EIP Self-Efficacy, and Research Self-Efficacy

					95% CI of *b*		
Predictors	*b*	β	*t*	*p*	*LL*	*UL*	sr^2
DV: EIP Facilitation Behavior (R^2 = .16)							
Intercept	2.44	--	-0.07	0.945	-1.35	1.26	--
EIP Value	0.27	0.24	2.32	0.023	0.04	0.49	0.05
EIP Self-Efficacy	0.21	0.26	2.55	0.013	0.05	0.38	0.07
DV: EIP Development Behavior-R (R^2 = .15)							
Intercept	2.82	--	0.42	0.679	-1.08	1.65	--
EIP Value	0.27	0.24	2.27	0.026	0.03	0.51	0.05
EIP Self-Efficacy	0.22	0.26	2.46	0.016	0.04	0.39	0.06
DV: EIP Development Behavior-SDT (R^2 = .22)							
Intercept	2.98	--	-0.72	0.4744	-2.02	0.95	--
EIP Value	0.58	0.44	4.46	<.0001	0.32	0.84	0.18
EIP Self-Efficacy	0.08	0.08	0.86	0.3948	-0.11	0.27	0.01
DV: EIP Development Behavior-OT (R^2 = .17)							
Intercept	3.27	--	0.83	0.409	-0.77	1.88	--
EIP Value	0.37	0.33	3.19	0.002	0.14	0.60	0.10
EIP Self-Efficacy	0.15	0.18	1.72	0.089	-0.02	0.32	0.03
DV: EIP Facilitation Behavior (R^2 = .15)							
Intercept	2.44	--	0.02	0.986	-1.30	1.32	--

EIP Value	0.24	0.22	2.06	0.043	0.01	0.48	0.04
Research Self-Efficacy	0.21	0.25	2.38	0.020	0.03	0.39	0.06
DV: EIP Development Behavior-R (R^2 = .12)							
Intercept	2.82	--	0.76	0.451	-0.86	1.92	--
EIP Value	0.28	0.24	2.20	0.030	0.03	0.53	0.05
Research Self-Efficacy	0.15	0.17	1.60	0.113	-0.04	0.34	0.03
DV: EIP Development Behavior-SDT (R^2 = .22)							
Intercept	2.98	--	-0.22	0.830	-1.65	1.33	--
EIP Value	0.63	0.48	4.65	<.0001	0.36	0.90	0.20
Research Self-Efficacy	-0.04	-0.04	-0.39	0.699	-0.24	0.16	0.00
DV: EIP Development Behavior-OT (R^2 = .17)							
Intercept	3.27	--	1.05	0.295	-0.63	2.04	--
EIP Value	0.37	0.33	3.09	0.003	0.13	0.61	0.10
Research Self-Efficacy	0.11	0.12	1.17	0.246	-0.08	0.29	0.01

Note. N = 87. EIP Value and EIP Self-Efficacy mean centered. *LL* and *UL* represent lower and upper confidence interval limits, respectively, *b* = unstandardized coefficient, β = standardized coefficient, sr^2 = squared semi-partial correlation. EIP Value, EIP Self-Efficacy, and Research Self-Efficacy scores range from 1 (strongly disagree) to 7 (strongly agree). All behavior subscale scores range from 1 (never) to 5 (always).

Table 10

Item-Level Results for "Preferences for Sources of Information for Developing a Program" Items

Item	Mean	SD	Frequency (%)			Frequency Ranked (%)		
			Strongly Disagree	Neither Agree nor Disagree	Strongly Agree	1st	2nd	Not Ranked
Your professional experience	6.34	0.73	0 (0.00%)	2 (2.30%)	41 (47.13%)	5 (5.75%)	5 (5.75%)	77 (88.51%)
Advice/perspectives from on-campus colleagues you respect	6.38	0.69	0 (0.00%)	0 (0.00%)	43 (49.43%)	11 (12.64%)	10 (11.49%)	66 (75.86%)
Advice/perspectives from experts in the field	6.44	0.74	0 (0.00%)	2 (2.30%)	49 (56.32%)	24 (27.59%)	16 (18.39%)	47 (54.02%)
Books related to the outcome of the program	5.89	1.17	1 (1.15%)	2 (2.30%)	27 (31.03%)	13 (14.94%)	16 (18.39%)	58 (66.66%)
Resources from professional associations	6.06	1.16	0 (0.00%)	3 (3.45%)	37 (42.53%)	1 (0.01%)	3 (3.45%)	83 (95.40%)
Empirical research	5.23	1.55	2 (2.30%)	5 (5.75%)	17 (19.54%)	20 (22.99%)	11 (12.64%)	56 (64.37%)
Published evaluations of existing programs	5.49	1.52	2 (2.30%)	6 (6.90%)	26 (29.89%)	11 (12.64%)	14 (16.09%)	62 (71.26%)
Unpublished evaluations of existing programs	4.36	1.60	4 (4.60%)	11 (12.64%)	3 (3.45%)	0 (0.00%)	0 (0.00%)	87 (100.00%)
Conference sessions/materials	5.76	0.98	0 (0.00%)	3 (3.45%)	18 (20.69%)	1 (1.15%)	9 (10.34%)	77 (88.51%)
Online resources	5.72	0.91	0 (0.00%)	4 (4.60%)	14 (16.09%)	1 (1.15%)	3 (3.45%)	83 (95.40%)

Note. N = 87. SD = Standard deviation. Item scores range from 1 (extremely unlikely) to 7 (extremely likely).

Table 11

Differences in EIP Behaviors, Values, and Self-Efficacy by Preference for Using Empirical Evidence to Develop Programs

Scale	Ranked Empirical Evidence #1 (*N* = 31)		Did Not Rank Empirical Evidence #1 (*N* = 56)		
	Mean	SD	Mean	SD	Mean Diff
EIP Facilitation Behaviors	2.46	0.94	2.43	0.86	0.03***
EIP Development Behaviors-R	3.06	1.00	2.68	0.86	0.39***
EIP Development Behaviors-SDT	3.06	1.01	2.93	1.08	0.14***
EIP Development Behaviors-OT	3.42	0.88	3.19	0.92	0.23***
EIP Value	5.79	0.68	5.09	0.75	0.70***
EIP Self-Efficacy	5.01	1.26	4.97	1.00	0.04***
Research Self-Efficacy	5.37	1.15	5.26	1.01	0.12***

Note. N = 87. SD = Standard deviation. Empirical evidence includes “empirical research” and “published evaluations of existing programs”. EIP Value, EIP Self-Efficacy, and Research Self-Efficacy scores range from 1 (strongly disagree) to 7 (strongly agree). All behavior subscale scores range from 1 (never) to 5 (always).

*p < .05 level, **p < .01, ***p < .001.

Table 12

Item-Level Results for "Preferences for Sources of Information for Evaluating Program Success" Items

Item	Mean	SD	Frequency (%)			Frequency Ranked (%)		
			Not at All	Moderately	Extremely	1st	2nd	Not Ranked
a large number of participants attend the program	2.67	0.83	8 (9.20%)	42 (48.28%)	0 (0.00%)	0 (0.00%)	4 (4.60%)	83 (95.40%)
a diverse group of students attend the program, including students from under-served populations	3.63	0.88	3 (3.45%)	28 (32.18%)	11 (12.64%)	14 (16.09%)	12 (13.79%)	61 (70.11%)
the program is considered fun by participants	2.93	0.93	4 (4.60%)	37 (42.53%)	4 (4.60%)	1 (1.15%)	4 (4.60%)	82 (94.25%)
assessment results show, on average, students learn or develop	4.23	0.83	2 (2.30%)	16 (18.39%)	40 (45.98%)	41 (47.13%)	24 (27.59%)	22 (25.29%)
colleagues and/or upper administration provide positive feedback	3.13	0.90	3 (3.45%)	37 (42.53%)	4 (4.60%)	1 (1.15%)	1 (1.15%)	85 (97.70%)
one or more students share that the program had a significant impact on them	4.24	0.70	1 (1.15%)	10 (11.49%)	33 (37.93%)	29 (33.33%)	35 (40.23%)	23 (26.44%)
program facilitators develop meaningful, lasting relationships with participants	2.98	1.26	11 (12.64%)	23 (26.44%)	13 (14.94%)	1 (1.15%)	7 (8.05%)	79 (90.80%)

Note. N = 87. SD = Standard deviation. Items range from 1 (not at all important) to 7 (extremely important).

Table 13

Differences in EIP Behaviors, Value, and Self-Efficacy by Preference for Using Assessment Results to Evaluate Program Success

Scale	Ranked Assessment Results #1 (*N* = 41)		Did Not Rank Assessment Results #1 (*N* = 46)		
	Mean	SD	Mean	SD	Mean Diff
EIP Facilitation Behaviors	2.58	0.82	2.32	0.93	0.26*
EIP Development Behaviors-R	2.94	0.87	2.71	0.96	0.23*
EIP Development Behaviors-SDT	3.22	1.02	2.76	1.03	0.46*
EIP Development Behaviors-OT	3.43	0.83	3.13	0.96	0.30*
EIP Value	5.57	0.73	5.13	0.80	0.44*
EIP Self-Efficacy	4.95	1.23	5.01	0.96	-0.06*
Research Self-Efficacy	5.30	1.10	5.30	1.03	0.01*

Note. N = 87. SD = Standard deviation. EIP Value, EIP Self-Efficacy, and Research Self-Efficacy scores range from 1 (strongly disagree) to 7 (strongly agree). All behavior subscale scores range from 1 (never) to 5 (always).

*$p < .05$ level

Table 14

Differences in EIP Behaviors, Value, and Self-Efficacy by Preference for Using Research to Decide Whether to Implement a Program

Scale	Ranked Research #1 (*N* = 18)		Did Not Rank Research #1 (*N* = 69)		
	Mean	SD	Mean	SD	Mean Diff
EIP Facilitation Behaviors	2.81	0.80	2.35	0.89	0.46**
EIP Development Behaviors-R	3.33	0.95	2.68	0.87	0.65**
EIP Development Behaviors-SDT	3.33	0.99	2.88	1.05	0.45**
EIP Development Behaviors-OT	3.69	0.88	3.16	0.88	0.54**
EIP Value	5.81	0.82	5.21	0.75	0.60**
EIP Self-Efficacy	5.25	1.18	4.91	1.06	0.33**
Research Self-Efficacy	5.78	0.89	5.17	1.06	0.60**

Note. N = 87. SD = Standard deviation. EIP Value, EIP Self-Efficacy, and Research Self-Efficacy scores range from 1 (strongly disagree) to 7 (strongly agree). All behavior subscale scores range from 1 (never) to 5 (always).
*$p < .05$ level, **$p < .01$.

Table 15
Item-Level Results for Organizational Culture Items

Item	Mean	SD	Frequency (%)		
			Strongly Disagree	Neither Agree nor Disagree	Strongly Agree
My direct supervisor asks me to explain the logic of why a particular program should be effective	4.54	1.90	4 (4.60%)	8 (9.20%)	13 (14.94%)
My direct supervisor asks me to use theory/research to justify my programming (or the programming I oversee)	3.86	1.77	6 (6.90%)	14 (16.09%)	8 (9.20%)
My direct supervisor expresses interest in whether students who participate in my programs (or programs I oversee) attain desired student learning outcomes	5.25	1.58	2 (2.30%)	10 (11.49%)	21 (24.14%)
My direct supervisor encourages me to spend time consuming research pertaining to higher education and student affairs	4.13	1.82	8 (9.20%)	15 (17.24%)	7 (8.05%)
Remaining current with research pertaining to student learning/development in higher education is an expectation of my job.	4.59	1.63	3 (3.45%)	12 (13.79%)	11 (12.64%)
My colleagues value the use of current research and theory to inform program development	4.92	1.42	0 (0.00%)	15 (17.24%)	9 (10.34%)
If I asked my colleagues to explain why a particular program should result in stated student learning and development outcomes, most could justify the programming using current research and theory.	4.38	1.56	4 (4.60%)	20 (22.99%)	4 (4.60%)
People in my office are eager to share current research and theory related to their work	3.95	1.72	7 (8.05%)	15 (17.24%)	4 (4.60%)

In the last year, I have discussed relevant research findings with my colleagues	4.59	1.75	6 (6.90%)	10 (11.49%)	9 (10.34%)
My office has forums/mediums for sharing current research and theory among staff	3.56	1.87	13 (14.94%)	12 (13.79%)	5 (5.75%)
JMU does not encourage me to use research findings to improve my practice*	2.33	1.65	3 (3.45%)	25 (28.74%)	13 (14.94%)
In my office, time is made available for reading current research and theory	3.40	1.71	16 (18.39%)	17 (19.54%)	1(1.15%)
Research is used to inform staff about strategies or programming that may be effective	4.01	1.69	8 (9.20%)	18 (20.69%)	3 (3.45%)
EIP Organizational Culture Scale Total Score (α = .92)	4.19	1.12			

Note. N = 87. SD = Standard deviation. Item and total scores range from 1 (strongly disagree) to 7 (strongly agree).
*This item was reverse scored before being included in the Organizational Culture Scale total score.

Table 16

EIP Behavior, Value, and Self-Efficacy by Levels of Personal Characteristics (Office, Position, and Education)

	EIP Facilitation Behavior	EIP Development Behavior-R	EIP Development Behavior-SDT	EIP Development Behavior-OT	EIP Value	EIP Self-Efficacy	Research Self-Efficacy
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Office							
UREC (*N* =15)	2.58 (0.86)	2.47 (0.85)	3.33 (0.82)	3.00 (0.78)	5.10 (0.69)	5.08 (0.97)	5.44 (0.89)
CAP (*N* =12)	2.33 (0.79)	2.42 (0.70)	3.13 (0.86)	3.04 (0.72)	5.58 (0.56)	4.84 (0.83)	4.98 (1.10)
ORL (*N* =12)	2.63 (0.90)	2.75 (0.78)	3.33 (1.15)	3.25 (0.92)	5.12 (0.96)	5.49 (0.61)	5.50 (0.70)
Unions (*N* =12)	2.42 (1.07)	2.54 (1.16)	2.08 (1.02)	3.21 (1.21)	5.45 (0.84)	4.80 (0.92)	5.55 (0.76)
Position							
Grad Student (*N* =5)	2.65 (0.86)	3.10 (0.74)	2.80 (0.84)	3.10 (0.74)	5.74 (0.60)	5.36 (1.24)	5.92 (0.82)
Entry-Level (*N* =32)	2.33 (0.88)	2.69 (0.90)	2.72 (1.05)	3.06 (0.90)	5.24 (0.81)	4.77 (0.94)	5.09 (1.04)
Mid-Level (*N* =43)	2.49 (0.96)	2.81 (0.93)	3.08 (1.03)	3.43 (0.93)	5.29 (0.82)	5.08 (1.06)	5.38 (1.08)
Upper-Level (*N* =7)	2.50 (0.46)	3.21 (1.11)	3.64 (1.03)	3.36 (0.80)	5.77 (0.52)	5.08 (1.79)	5.29 (1.12)
Education							
Bachelor's (*N* =14)	2.18 (0.86)	2.68 (0.95)	2.57 (1.04)	2.82 (1.05)	5.37 (0.63)	4.54 (0.93)	5.03 (0.94)
Master's (*N* =62)	2.50 (0.89)	2.79 (0.87)	3.01 (0.97)	3.34 (0.84)	5.29 (0.79)	4.98 (1.13)	5.27 (1.09)
Doctorate (*N* =7)	2.89 (0.59)	3.79 (0.81)	4.21 (0.39)	4.00 (0.65)	6.21 (0.51)	6.08 (0.38)	6.26 (0.47)

Note. SD = Standard deviation. UREC = University Recreation, CAP = Career and Academic Planning, ORL = Office of Residence Life, Unions = University Unions. EIP Value, EIP Self-Efficacy, and Research Self-Efficacy scores range from 1 (strongly disagree) to 7 (strongly agree). All behavior subscale scores range from 1 (never) to 5 (always).

Table 17
Frequency (%) Training in Content Area During Student Affairs Graduate Programs

Content Area	Mean	SD	No Coverage	Slight Coverage	Moderate Coverage	Major Coverage
Student development theory	3.48	0.80	2 (3.85%)	4 (7.69%)	14 (26.92%)	32 (61.54%)
Science of teaching and learning (SoTL)	1.60	0.73	29 (55.77%)	19 (36.54%)	3 (5.77%)	1 (1.92%)
Applying theory to practice	3.25	0.85	2 (3.85%)	10 (19.23%)	19 (36.54%)	21 (40.38%)
Building evidence-informed programs	2.36	0.99	9 (17.31%)	23 (44.23%)	14 (26.92%)	6 (11.54%)
Finding relevant research literature	2.95	0.94	6 (11.54%)	13 (25.00%)	16 (30.77%)	17 (32.69%)
Evaluating the quality of research literature	2.78	0.90	4 (7.69%)	16 (30.77%)	22 (42.31%)	10 (19.23%)

Note. N = 52. Item scores range from 1 (no coverage) to 4 (major coverage).

Table 18

Differences in EIP Behaviors Based on Professional Development Training

Content Area	EIP Facilitation Behavior			EIP Development Behavior-R			EIP Development Behavior-SDT			EIP Development Behavior-OT		
	Yes Mean (SD)	No Mean (SD)	Mean Diff	Yes Mean (SD)	No Mean (SD)	Mean Diff	Yes Mean (SD)	No Mean (SD)	Mean Diff	Yes Mean (SD)	No Mean (SD)	Mean Diff
Student Development Theory N_{Yes} = 58, N_{No} = 29	2.54 (0.80)	2.25 (1.03)	0.29***	2.91 (0.86)	2.64 (1.03)	0.27** *	3.24 (1.00)	2.45 (1.08)	0.79***	3.34 (0.79)	3.12 (1.10)	0.22***
Science of Teaching and Learning N_{Yes} = 28, N_{No} = 59	2.78 (0.76)	2.28 (0.90)	0.49***	3.21 (0.94)	2.63 (0.86)	0.59** *	3.27 (1.00)	2.84 (1.05)	0.43***	3.67 (0.83)	3.07 (0.88)	0.60***
Applying Theory to Practice N_{Yes} = 55, N_{No} = 32	2.64 (0.83)	2.11 (0.90)	0.53***	2.97 (0.88)	2.55 (0.94)	0.43** *	3.21 (1.00)	2.58 (1.02)	0.63***	3.43 (0.81)	3.00 (1.00)	0.43***
Building Evidence-Informed Programs N_{Yes} = 48, N_{No} = 39	2.76 (0.91)	2.05 (0.88)	0.71***	3.05 (0.92)	2.53 (0.84)	0.53** *	3.15 (1.03)	2.77 (1.05)	0.38***	3.56 (0.80)	2.91 (0.91)	0.65***
Finding Relevant Research Literature N_{Yes} = 2, N_{No} = 58	2.49 (0.90)	2.41 (0.88)	0.07***	2.99 (0.87)	2.70 (0.95)	0.28** *	3.14 (0.90)	2.87 (1.05)	0.28***	3.30 (0.78)	3.25 (0.99)	0.05***
Evaluating the Quality of Research Literature N_{Yes} = 58, N_{No} = 29	2.47 (0.91)	2.43 (0.88)	0.03***	3.07 (0.84)	2.69 (0.89)	0.38** *	3.00 (1.00)	2.97 (1.08)	0.03***	3.45 (0.89)	3.18 (0.90)	0.27***

Note. Means and standard deviations (SD) presented separately for professionals who indicated "Yes" they have participated in professional development for a given content area, and those who indicated "No" they have not participated in professional development for a given content area. All behavior subscale scores range from 1 (never) to 5 (always).
*p < .05 level, **p < .01, ***p < .001.

Table 19

Differences in EIP Value, EIP Self-Efficacy, and Research Self-Efficacy Based on Professional Development Training

	EIP Value			EIP Self-Efficacy			Research Self-Efficacy		
Content Area	Yes Mean (SD)	No Mean (SD)	Mean Diff	Yes Mean (SD)	No Mean (SD)	Mean Diff	Yes Mean (SD)	No Mean (SD)	Mean Diff
Student Development Theory N_{Yes} = 58, N_{No} = 29	5.47 (0.71)	5.06 (0.89)	0.41***	5.00 (1.09)	4.95 (1.11)	0.05***	5.29 (0.92)	5.32 (1.30)	-0.03***
Science of Teaching and Learning N_{Yes} = 28, N_{No} = 59	5.56 (0.69)	5.23 (0.83)	0.33***	5.31 (1.01)	4.82 (1.10)	0.49***	5.55 (0.90)	5.18 (1.11)	0.37***
Applying Theory to Practice N_{Yes} = 55, N_{No} = 32	5.52 (0.80)	5.02 (0.71)	0.50***	5.13 (1.12)	4.73 (1.00)	0.41***	5.42 (0.96)	5.09 (1.18)	0.33***
Building Evidence-Informed Programs N_{Yes} = 48, N_{No} = 39	5.59 (0.66)	5.03 (0.85)	0.56***	5.25 (1.14)	4.65 (0.94)	0.60***	5.48 (1.03)	5.07 (1.05)	0.41***
Finding Relevant Research Literature N_{Yes} = 29, N_{No} = 58	5.51 (0.72)	5.22 (0.83)	0.29***	5.27 (1.08)	4.79 (1.06)	0.49***	5.49 (1.04)	5.17 (1.05)	0.32***
Evaluating the Quality of Research Literature N_{Yes} = 58, N_{No} = 29	5.47 (0.71)	5.27 (0.84)	0.20***	5.31 (1.14)	4.82 (1.04)	0.49***	5.74 (0.95)	5.08 (1.04)	0.67***

Note. Means and standard deviations (SD) presented separately for professionals who indicated "Yes" they have participated in professional development for a given content area, and those who indicated "No" they have not participated in professional development for a given content area. All scales range from 1 (strongly disagree) to 7 (strongly agree).
*p < .05 level, **p < .01, ***p < .001.

Table 20

Perceived Barriers to Engaging in EIP (Frequencies and Rankings)

			Frequency (%)				Frequency Ranked (%)		
Item	Mean	SD	Not a Barrier	Slight Barrier	Moderate Barrier	Major Barrier	1st	2nd	Not Ranked
There is insufficient time on the job to read current research	3.16	0.88	5 (4.20%)	23 (19.33%)	39 (32.77%)	52 (43.70%)	35 (29.41%)	7 (5.88%)	77 (64.71%)
I do not have enough authority to change programming to reflect theory and research	2.26	1.15	44 (36.97%)	23 (19.33%)	29 (24.37%)	23 (19.33%)	15 (12.61%)	14 (11.76%)	90 (75.63%)
I do not know how to search effectively for relevant research	1.74	0.82	54 (45.38%)	47 (39.50%)	13 (10.92%)	5 (4.20%)	7 (5.88%)	6 (5.04%)	106 (89.08%)
The applicability of research is limited due to sampling	2.33	0.86	18 (15.13%)	57 (47.90%)	31 (26.05%)	13 (10.92%)	11 (9.24%)	11 (9.24%)	97 (81.51%)
I am not interested in engaging in evidence-informed programming	1.29	0.62	92 (77.31%)	21 (17.65%)	4 (3.36%)	2 (1.68%)	4 (3.36%)	2 (1.68%)	113 (94.96%)
I believe evidence-informed programming requires time and resources that would be better spent on more important aspects of my job	1.89	0.89	47 (39.50%)	45 (37.82%)	20 (16.81%)	7 (5.88%)	2 (1.68%)	7 (5.88%)	110 (92.44%)
The research literature often reports conflicting results	1.88	0.74	37 (31.09%)	62 (52.10%)	17 (14.29%)	3 (2.52%)	1 (0.84%)	5 (4.20%)	113 (94.96%)
I have difficulty evaluating the quality of the research I encounter	1.84	0.77	43 (36.13%)	55 (46.22%)	18 (15.13%)	3 (2.52%)	6 (5.04%)	6 (5.04%)	107 (89.92%)

There is not enough available research related to my practice	2.08	0.96	38 (31.93%)	46 (38.66%)	23 (19.33%)	12 (10.08%)	4 (3.36%)	16 (13.45%)	99 (83.19%)
There is insufficient time on the job to implement evidence-informed programming	2.78	0.99	14 (11.76%)	32 (26.89%)	39 (32.77%)	34 (28.57%)	23 (19.33%)	17 (14.29%)	79 (66.39%)
I do not think evidence-informed programming is necessary for high-quality student affairs work	1.38	0.78	91 (76.47%)	16 (13.45%)	7 (5.88%)	5 (4.20%)	2 (1.68%)	0 (0.00%)	117 (98.32%)
My direct supervisor is not supportive of evidence-informed programming	1.33	0.68	93 (78.15%)	14 (11.76%)	11 (9.24%)	1 (0.84%)	0 (0.00%)	1 (0.84%)	118 (99.16%)
I do not know how to apply research to the development of a program	2.03	1.00	45 (37.82%)	38 (31.93%)	24 (20.17%)	12 (10.08%)	1 (0.84%)	1 (0.84%)	117 (98.32%)
The research has methodological inadequacies	1.33	0.64	90 (75.63%)	20 (16.81%)	8 (6.72%)	1 (0.84%)	0 (0.00%)	2 (1.68%)	117 (98.32%)
Insufficient resources (other than time) are provided for engaging in EIP	1.65	0.78	62 (52.10%)	39 (32.77%)	16 (13.45%)	2 (1.68%)	1 (0.84%)	11 (9.24%)	107 (89.92%)
I have received insufficient training in how to implement evidence-informed programming	1.90	0.71	34 (28.57%)	65 (54.62%)	18 (15.13%)	2 (1.68%)	6 (5.04%)	10 (8.40%)	103 (86.55%)
My colleagues are not supportive of evidence-informed programming	1.98	0.82	36 (30.25%)	54 (45.38%)	24 (20.17%)	5 (4.20%)	1 (0.84%)	2 (1.68%)	116 (97.48%)

The conclusions drawn by researchers are not sufficiently justified	1.63	0.73	58 (48.74%)	51 (42.86%)	6 (5.04%)	4 (3.36%)	0 (0.00%)	1 (0.84%)	118 (99.16%)

Note. N = 119. SD = Standard deviation. Item scores range from 1 (not a barrier) to 4 (major barrier).

Table 21
Steps for Developing Programs by Value-Behavior Profile

	High Value High Behavior SA Pro #1, SA Pro #2	**High Value Low Behavior** SA Pro #3, SA Pro #4	**Low Value Low Behavior** SA Pro #5
Clarifying Distal Outcome/Specifying Intermediate SLOs	• Use research or theoretical frameworks to clarify the distal outcome and identify intermediate SLOs	• Rely on leadership to clarify the distal outcome • Rely on collaboration with others (potentially those with more expertise) to identify intermediate SLOs	• Clarify the distal outcome by identifying perceived student needs (must balance leadership's perceptions of student needs with one's personal perceptions of need)
		• Research not discussed as part of the SLO development process	• Research not discussed as part of the SLO development process
		• Uses personal experience to specify potential SLOs (SA Pro #3)	• Uses personal experience to specify potential SLOs
		• Describes specifying SLOs after program development (SA Pro #3)	
	• Emphasis on specifying SLOs that are logically connected to broader goals	• Emphasis on specifying SLOs that are clear and measurable	• Emphasis on specifying SLOs (no mention of SLO quality)
Building Programming	• Use one or more theories to develop specific programming	• Perspectives varied: ○ Does not describe mapping programming to	• Does not describe mapping programming to intermediate outcomes at all

	mapped to intermediate outcomes	intermediate outcomes at all (SA Pro #3) ○ Describes mapping intermediate outcomes to theory-based interventions (SA Pro #4)	
	• Use research to identify "best practices" or programs that have worked at other institutions	• Uses research to identify "best practices" or programs that have worked at other institutions (SA Pro #4)	• Does not describe using research during the program development process at all
		• Consults listservs to find out what other institutions are doing (SA Pro #4)	• Consults with other student affairs professionals in the division (with more knowledge/experience) for assistance with program development
		• Uses personal experience to describe potential programming components (SA Pro #3)	• Uses personal experience to describe potential programming components
		• Prioritizes student engagement considerations in the program development process (SA Pro #3)	• Prioritizes attendance/student engagement considerations in the program development process

			• Prioritizes logistical feasibility considerations in the program development process
	• Specifically use the language of "logic models"	• Do not use the language of "logic models"	• Does not use the language of "logic models"
Assessment Considerations	• Consider how program will be assessed during program development	• Consider how program will be assessed during program development.	• Assessment not a major consideration during program development (assessment considered after program implementation)
	• Assessment considerations secondary to evidence-informed programming considerations	• Perspectives varied: ○ Assessment considerations primary during program development (SA Pro #3). ○ Assessment considerations equal to evidence-informed programming considerations (SA Pro #4)	
EIP Fluency and Familiarity	• Can clearly describe (in their own words) how to use theory and research to construct a logic model and build an evidence-informed program	• Have difficulty clearly articulating how to use theory and research during program development; often borrow/parrot the interviewer's words to describe the EIP process.	

• Readily identify challenges to engaging in EIP during program development ○ Identify the challenge of finding high-quality, applicable, relevant, and inclusive theories/research ○ Identify the challenge of balancing EIP ideals with logistical realities (SA Pro #2)	• No identification of challenges to engaging in EIP while discussing program development

Table 22
Criteria for Evaluating Programs by Value-Behavior Profile

	High Value High Behavior	**High Value Low Behavior**	**Low Value Low Behavior**
Need for Program	• Describes using theory/research to demonstrate need for program (SA Pro #2)	• Must demonstrate program meets a need that aligns with institutional/office mission and vision (SA Pro #4) • Consider how program should be prioritized given other programming initiatives on campus (SA Pro #4)	• Primary emphasis on demonstrating a need for the program (anecdotes sufficient)
Program Logic	• Primary emphasis on unpacking the theory or research supporting how the program is designed	• No mention of investigating the theory or research supporting the program	• No mention of investigating the theory or research supporting the program
	• Would ask to see logic model	• No mention of program logic	• No mention of program logic
Assessment	• Primary emphasis on evaluating *how* learning outcomes developed	• Primary emphasis on ensuring learning outcomes exist and evaluating their quality	• Primary emphasis on ensuring learning outcomes exist (no discussion of their quality)
	• Assessment considerations secondary to program theory considerations	• Primary emphasis on ensuring assessment has been considered during program development (e.g., measurable outcomes, instrument identified, etc.)	• No discussion of assessment considerations during the program development process

	• Believe programs can be justified based on how they are built (before collecting data)	• Believes assessment results are the only way to provide justification for a program (SA Pro #3)	
Supervisee Support			• Would consider how much time and energy the student affairs professional has devoted to creating the program • Emphasis on giving student affairs professionals the opportunity to express their passions via programming • Considers it a part of their job to support supervisees by advocating for their programming ideas • Likely to support the development of any program as long as it is feasible and the supervisee can justify a need for the program (even anecdotally) • Once program is developed, would find the “most appropriate audience” to receive it

Table 23

Positive Perceptions Toward EIP

EIP is a Professional/Moral Obligation	EIP is Central to SA Pros' Professional Identity	EIP Results in Stronger Programs and Assessment	EIP is a Valued Personal and Organizational Goal
• EIP is the "right thing to do" • EIP has become the standard; it is an expectation • EIP required for accountability and reporting • SA Pros obligated to be responsible stewards of students' (and taxpayers') money by engaging in EIP • SA Pros obligated to develop intentional programs that will meaningfully impact students	• SA Pros are more than event planners or customer service representatives—they are educators • SA Pros are responsible for student learning, not just the student experience • The SA professional standards are a credible source and outline what SA Pros should strive for with respect to EIP • Knowledge and application of theory (particularly student development theory) is integral to SA practice	• Programs built based on research perceived as higher quality than programs built without research • Research can help with establishing a direction for programming/clarifying distal and intermediate outcomes • Research can help SA Pros evaluate the effectiveness of existing interventions (i.e., identify programs that have been shown to be effective and avoid programs that have been shown to be ineffective) • Engaging in EIP can make it easier to assess programs	• SA Pros strive to engage in EIP; view EIP as an important professional goal • SA Pros view EIP as an important office/division-level goal • Barriers to EIP regarded as nuisances that must be promptly addressed

Table 24
Negative Perceptions Toward EIP

EIP is Unnecessary	EIP is Not Prioritized	EIP is Not Valued	EIP is Not Realistic
• Programs are already considered to be "working" using non-learning metrics such as attendance and participant feedback; SA Pros collect selective data to tell program "success" stories • There is a collective belief that JMU programs are already good • External validation contributes to belief that programs are good (e.g., receiving praise and accolades at conferences) • SA Pros may believe a program is good or working based on personal experience • There is a perception that SA Pros' experience is sufficient to guide program development • The value added of engaging in EIP (in terms of	• Leadership expresses superficial value for EIP, but does not provide the support needed to make EIP possible (e.g., time, resources, training, shift in responsibilities, personnel) • Administrative and logistical tasks prioritized over EIP; SA Pros spend more time event planning than orchestrating meaningful learning experiences • Providing a good experience for students/parents (customer service) prioritized over EIP • A discrepancy exists between the espoused importance of programming and time/attention allocated to it.	• Attendance and student feedback valued over student learning as program outcomes (programs judged on their "look and feel") • Busyness and output highly valued for SA Pros, not engagement in EIP (i.e., quantity over quality) • Performance not evaluated based on knowledge of theory or engagement in EIP • Belief that EIP conflicts with or undermines professional experience • SA Pros prefer the "status quo"; EIP represents an undesired change to practice • EIP may be discouraging if provides evidence against a desired course of action • Knowledge of theory becomes less important	• EIP is extremely labor intensive; avoiding EIP conserves resources for other necessary tasks • SA Pros do not have the time to consume research • For some offices and programs, it may not be feasible to stop operations long enough to make time for EIP • For some offices and programs, EIP is not applicable • Theory/research is not responsive enough to account for individual students' (or groups of students') needs • Theories may be biased, non-inclusive, or in some other way inappropriate for today's students • In some cases, limited high quality research exists to

program impact) is perceived as small and does not justify the additional resources needed to engage in EIP; EIP seen as "overengineering"		after graduate school; limited application of theory to practice	guide program development • SA Pros lack the training/skills to engage in EIP

Table 25
Barriers and Strategies Related to EIP

Major Barriers to Engaging in EIP	Strategies for Addressing Barriers
Lack of Time • SA Pros have a lot of responsibilities, and a limited amount of time to consume research and engage in EIP • Adequate time not devoted to programming because other responsibilities are prioritized more highly • SA Pros perceive EIP will take a lot time because EIP process is foreign to them • SA Pros lack the skills to engage in EIP efficiently	• Target knowledge (see below) • Target organizational values/expectations (see below)
Lack of EIP Knowledge • SA Pros—particularly older, more experienced professionals—may lack the skills to engage in EIP • EIP can be intimidating for professionals not trained in how to engage in it • SA Pros may experience fear or apprehension about learning a new skill	• On-the-job mentorship from colleagues who have knowledge about EIP and/or assessment • Begin with assessment and take small steps • Make training mandatory • Add hands-on component to current trainings • Encourage SA Pros to work with assessment liaisons
Lack of Organizational Support/Value for EIP • Some older SA Pros in leadership positions may not value EIP as much as new professionals • Leadership often expresses superficial value for EIP, but does not provide the support needed to make EIP possible (e.g., time, resources, training, shift in responsibilities, personnel) **Lack of Clear Expectations from Leadership** • EIP is often encouraged, but not required	• Wait for leadership to be replaced • Leadership must communicate a strong commitment to EIP • Leadership must be willing to sacrifice other office/divisional efforts to create space for EIP • Leadership must pair encouragement with accountability • Leadership must create a realistic plan and clear timeline for unrolling EIP in the office/division • Leadership must create frameworks to evaluate programs and professionals based on EIP standards • SA Pros should be rewarded for engaging in EIP

• Professionals are not evaluated on their knowledge of theory/consumption of research • Professionals are not evaluated on the extent to which their programs are evidence-informed	• Mandatory training should accompany new expectations/requirements around EIP • EIP should be clearly written into SA Pros' position descriptions • Leadership must protect the time allocated to programming in SA Pros' position descriptions

Table 26

Joint Display Comparing Barriers to EIP Identified in Qualitative and Quantitative Strands

Potential Barriers	Quantitative Results	Qualitative Results	Conclusion
Time	• Nearly 30% of professionals ranked "insufficient time to read current research" as the top barrier impacting their engagement in EIP, and 19% of professionals ranked "insufficient time to implement EIP" as their top barrier.	• SA Pros do not have the time to consume research.	Qualitative results **complement** quantitative results
	• On average, professionals reported moderately high EIP self-efficacy (*M* = 4.96, *SD* = 1.12) and even higher research self-efficacy (*M* = 5.26, *SD* = 1.02). • Between 35% and 45% of professionals indicated their abilities to find, evaluate, and use research were *not* barriers to engaging in EIP	• SA Pros perceive EIP will take a large amount of time because the EIP process is foreign to them	Qualitative results **contradict** quantitative results
	• On average, participants slightly disagreed with the statement, "In my office, time is made available for reading current research and theory" (*M* = 3.40, SD = 1.71). In fact,	• Leadership expresses superficial value for EIP, but does not provide the support needed to make EIP possible (e.g., time, resources,	Qualitative results **support** quantitative results

	18% of participants strongly disagreed with this statement.	training, shift in responsibilities, personnel) • A discrepancy exists between the espoused importance of programming and time/attention allocated to it.	
Value	• On average, student affairs professionals reported valuing evidence-informed programming ($M_{EIPValue}$ = 5.29; *SD* = 0.79)	• Across value-behavior profiles, professionals acknowledged the potential benefits of EIP. • High-high professionals had very few negative perceptions toward EIP • Professionals in the high-low and low-low categories often spoke at length about the various contexts in which they personally believed EIP was either not feasible or not realistic	Qualitative results **partially support** quantitative results
	• On average, participants slightly disagreed that "Evidence-informed programming requires time and resources that would be better spent on more important aspects of my job" (*M* = 3.28, *SD* = 1.51).	• EIP is extremely labor intensive; avoiding EIP conserves resources for other necessary tasks • Adequate time not devoted to programming because other responsibilities are prioritized more highly	Qualitative results **complement** quantitative results

	• There were no significant differences based on position with respect to EIP value, $F(3, 83) = 1.33$, $p = .27$. Additionally, years of experience in the student affairs profession did not relate to EIP value, $r(85) = .10$, $p = .33$.	• Some older SA Pros in leadership positions may not value EIP as much as new professionals	Qualitative results **contradict** quantitative results
	• Professionals, on average, were least likely to endorse attendance (M = 2.67, SD = 0.83) or students' level of fun (M = 2.93, SD = 0.93) as indicators of program success. • When asked to rank sources of evidence for evaluating program success, 47% of professionals ranked assessment results as most important, whereas 37% ranked student feedback as most important.	Attendance and student feedback valued over student learning as program outcomes (programs judged on their "look and feel")	Qualitative results **contradict** quantitative results
Self-Efficacy	• On average, professionals reported moderately high EIP self-efficacy ($M = 4.96$, $SD = 1.12$) and even higher	• SA Pros may lack the skills to engage in EIP efficiently.	Qualitative results **contradict** quantitative results

	research self-efficacy (*M* = 5.26, *SD* = 1.02). • Between 35% and 45% of professionals indicated their abilities to find, evaluate, and use research were *not* barriers to engaging in EIP	• EIP can be intimidating for professionals not trained in how to engage in it. • Whereas professionals in the high-high group were able to clearly describe how to engage in EIP, professionals in the high-low group provided descriptions that tended to be vague or unclear.	
Research Quality & Applicability	• The vast majority of professionals (76%) did not perceive methodological inadequacies in research as a barrier to engaging in EIP.	• In some cases, limited high quality research exists to guide program development.	Qualitative results **contradict** quantitative results
	• Nearly three-fourths of professionals (72%) indicated that the availability of relevant research was either not a barrier or only a slight barrier to engaging in EIP. • Nearly one-fourth of participants (30%) agreed to some extent that EIP does *not* take into account the needs of marginalized/under-served populations.	• Theories may be biased, non-inclusive, or in some other way inappropriate for today's students. • High-High professionals readily identify challenges to engaging in EIP during program development, High-Low and Low-Low professionals do not	Qualitative results **partially support** quantitative results

	• Over one-fourth of participants (28%) agreed to some extent that EIP does *not* take into account individual students' needs.	• Theory/research is not responsive enough to account for individual students' (or groups of students') needs.	Qualitative results **support** quantitative results
Organizational Culture	• On average, participants slightly disagreed with the statement, "In my office, time is made available for reading current research and theory" (*M* = 3.40, SD = 1.71). • Over half of participants (52%) indicated that they did *not* perceive lack of resources (other than time) as a barrier to engaging in EIP.	• Leadership expresses superficial value for EIP, but does not provide the support needed to make EIP possible (e.g., time, resources, training, shift in responsibilities, personnel).	Qualitative results **partially support** quantitative results
	• On average, participants slightly agreed with the statement "My direct supervisor asks me to explain the logic of why a particular program should be effective" (*M* = 4.54, *SD* = 1.90). However, nearly one-third of participants (32%) disagreed with this statement to some extent.	• Professionals are not evaluated on the extent to which their programs are evidence-informed.	Qualitative results **partially support** quantitative results

• On average, participants neither agreed nor disagreed with the statement, "My direct supervisor asks me to use theory/research to justify my programming" (*M* = 3.86, *SD* = 1.90). Furthermore, 45% of participants disagreed with this statement to some extent.		
• On average, participants neither agreed nor disagreed with the statement, "My direct supervisor encourages me to spend time consuming research pertaining to higher education and student affairs" (*M* = 4.13, *SD* = 1.90). Furthermore, over one-third of participants (35%) disagreed with this statement to some extent.	• Professionals are not evaluated on their knowledge of theory/consumption of research.	Qualitative results **support** quantitative results

Note. Given the explanatory sequential nature of my study, I examined the extent to which the qualitative results aligned with the quantitative results. Where it is indicated that the qualitative results "**support**" the quantitative results, interview participants shared perceptions that fully aligned with what was found in the quantitative survey. Where it is indicated that the qualitative results "**partially support**" the quantitative results, interview participants shared perceptions that aligned with some but not all of the quantitative results. Where it is indicated that the qualitative results "**complement**" the quantitative results, interview participants shared perceptions that clarified, elaborated upon, or added nuance to the quantitative results. Where it is indicated that the qualitative results "**contradict**" the quantitative results, interview participants shared perceptions that directly opposed what was found in the quantitative survey.

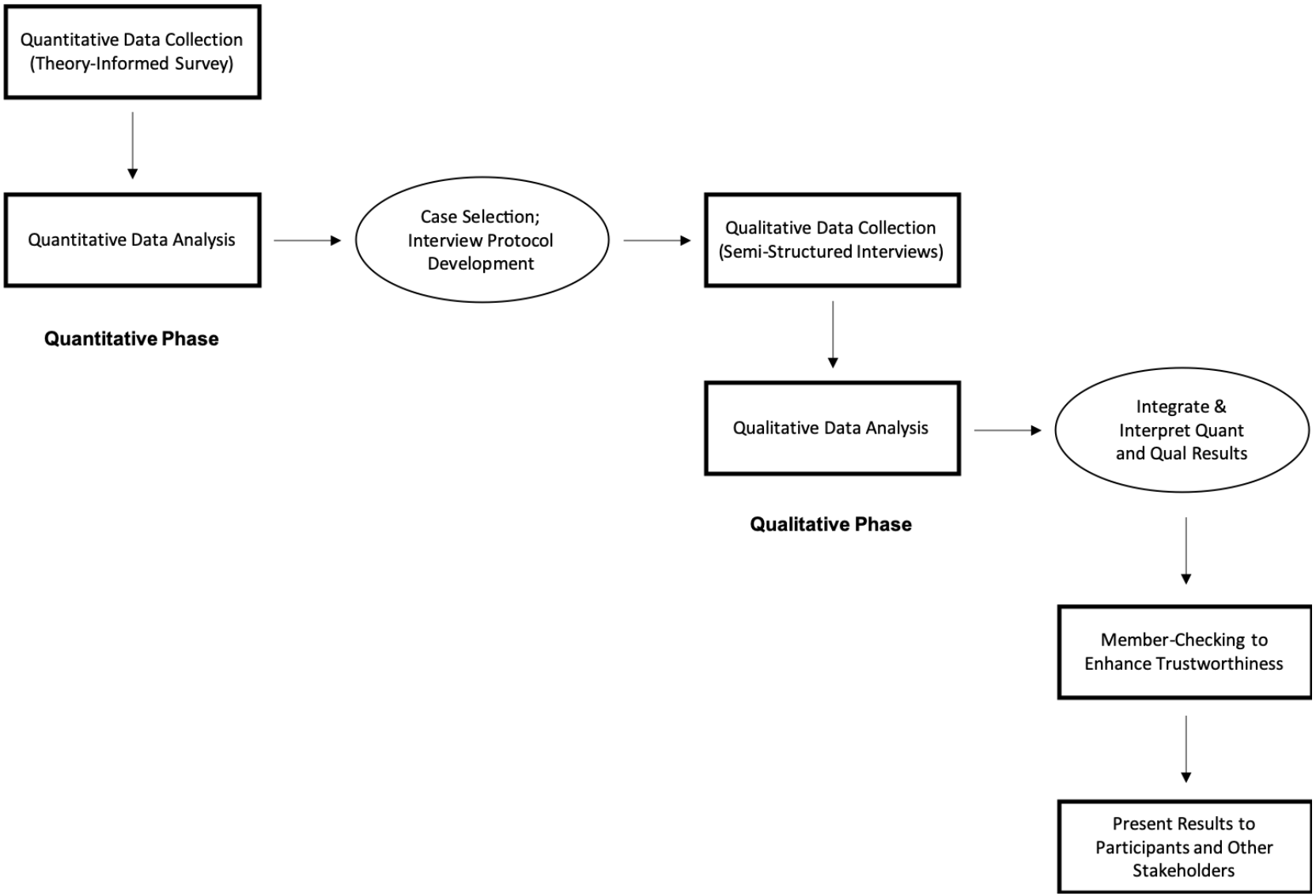

Figure 1. Two-Phase Mixed Methods Study Design

Appendix A

On-line Survey Items Mapped to Research Questions and Original Source

Question	Research Question	Source
FILTERING QUESTIONS		
The Division of Student Affairs offers a variety of programs believed to influence what students know, value, feel, and can do. Some examples of these outcomes include, • **knowledge** such as that related to healthy behaviors, career opportunities, campus resources, study strategies, etc.; • **attitudes or feelings** such as sense of belonging, self-efficacy/confidence, anxiety, appreciation of differences, psychological well-being, etc.; • **skills** such as leadership, advocacy, oral communication, group facilitation, bystander intervention, creation of career-related products, etc.; and • **behaviors** such as civic engagement, responsible drinking, time-management, sustainability actions, persistence in college, ethical behavior, etc. Do you currently oversee or have you ever overseen (either directly or indirectly) the development or facilitation of educational student affairs programs that are intended to impact student learning, development, or skills (i.e., what students know, value, feel, and can do)? (Y/N)	Filtering	Newly developed
In the past 3 years, have you developed/revised or facilitated educational programs intended to impact student learning or development? (Developed/Revised Programming, Facilitated Programming, Both, Neither)	Filtering	Newly developed
RESEARCH CONSUMPTION		
Student affairs professionals have a limited amount of time each month to accomplish a large number of tasks. In **a typical month**, how many **<u>hours</u>** do you typically spend engaging in each of the following behaviors? (It may be helpful to reflect on the last 30 days to inform your estimate.) (Sliding scale, 0 to 40 hours) • Reading peer-reviewed empirical research studies (e.g., quantitative, qualitative, mixed methods studies) in journals (e.g., JSARP, JCSD)	RQ 1	Sriram & Oster, 2012

Question	Research Question	Source
• Reading thought or opinion pieces in academic publications, professional magazines, and/or newsletters (e.g., About Campus, The Chronicle, Inside Higher Ed)		Newly developed
• Reading educational books related to student learning and development		McCarty et al., 2013 (Adapted)
• Consulting other web-based sources of information about student learning and development (please describe):		McCarty et al., 2013 (Adapted)
EIP BEHAVIORS		
Reflect on the educational student affairs programs (i.e., programs intended to impact student learning or development) that you have either developed or revised in the last 3 years.	RQs 4-9	
When **creating student learning/development outcomes** (SLOs) for these programs, please indicate how often you consulted the following types of literature/research. (1=Never, 2=Rarely, 3=Sometimes, 4=Often, 5=Always)		
• Created SLOs informed by <u>foundational student development theories</u> (e.g., Chickering, Baxter-Magolda, Perry)		Newly developed
• Created SLOs informed by <u>other theoretical literature bases</u> (e.g., motivation theory, health behavior models, leadership literature)		Newly developed
•		Newly developed
Reflect on the educational student affairs programs (i.e., programs intended to impact student learning or development) that you have either developed or revised in the last 3 years.	RQs 4-9	
When **developing program components (e.g., activities, discussions, lectures) to impact stated student learning outcomes** (SLOs), please indicate how often you consulted the following types of literature/research. (1=Never, 2=Rarely, 3=Sometimes, 4=Often, 5=Always)		
• Developed program components informed by <u>foundational student development theories</u> (e.g., Chickering, Baxter-Magolda, Perry)		Newly developed
• Developed program components informed by <u>other theoretical literature bases</u> (e.g., motivation theory, health behavior models, leadership literature)		Newly developed

Question	Research Question	Source
• Developed program components informed by current empirical research (e.g., quantitative, qualitative, mixed methods studies)		Newly developed
Reflect on the educational student affairs programs (i.e., programs intended to impact student learning or development) that **you have facilitated in the last 3 years**.	RQs 4-9	
When facilitating these pre-existing programs, please indicate how often you engaged in the following behaviors. (1=Never, 2=Rarely, 3=Sometimes, 4=Often, 5=Always)		
• Evaluated whether pre-existing programming reflected current theory		Newly developed
• Evaluated whether pre-existing programming reflected current empirical research		Newly developed
• Contributed to changing pre-existing programming by integrating current theory		Newly developed
• Contributed to changing pre-existing programming by integrating current empirical research		Newly developed
EIP VALUE		
Please indicate the extent to which you agree or disagree with each of the following statements. (1=Strongly Disagree, 2=Disagree, 3=Slightly Disagree, 4=Neither Agree nor Disagree, 5=Slightly Agree, 6=Agree, 7=Strongly Agree)	RQs 2, 5-9	
• Engaging in evidence-informed programming is important for the credibility of the student affairs profession		McCarty et al., 2013 (Adapted)
• Engaging in evidence-informed programming will limit my creativity and/or professional autonomy (Reverse Scored)		McCarty et al., 2013 (Adapted)
• Evidence-informed programming does not take into account individual student needs and/or preferences (Reverse Scored)		McCarty et al., 2013 (Adapted)
• Evidence-informed programming has a higher probability of being effective (i.e., improving student learning) than programming not informed by evidence		Newly developed
• Evidence-informed programming requires time and resources that would be better spent on more important aspects of my job (Reverse Scored)		Newly Developed
• Evidence-informed programming is necessary for high-quality student affairs practice		Newly developed
• I do *not* see the value of using research to inform student affairs programming (Reverse Scored)		Newly developed

Question	Research Question	Source
• Current research and theory is useful when **specifying student learning outcomes** for programs intended to impact student learning and development		Newly developed
• Current research and theory is useful when **developing programming components** (e.g., activities, discussions, lectures) to impact student learning and development		Newly developed
• The adoption of evidence-informed programming places unreasonable demands on my day-to-day practice (Reverse Scored)		McCarty et al., 2013 (Adapted)
• It is important for student affairs professionals to spend at least one to two hours per week reading current research on student learning and development		Leo et al., 2012 (Adapted)
• Evidence-informed programming does not take into account the needs of marginalized or under-served student populations (Reverse Scored)		Newly developed
• Before implementing a program, student affairs professionals should consult current research and theory regarding program effectiveness		Leo et al., 2012 (Adapted)
• Remaining current with research pertaining to higher education or student affairs is important to me		Sriram & Oster, 2012 (Exact)
EIP SELF-EFFICACY		
Please indicate the extent to which you agree or disagree with each of the following statements about ***finding*** research. (1 = Strongly Disagree, 2=Disagree, 3=Slightly Disagree,, 4=Neither Agree nor Disagree, 5=Slightly Agree, 6=Agree, 7=Strongly Agree)	RQs 3, 5-9	
I feel confident in my ability to…		
• find **peer-reviewed journal articles** related to a broad student learning outcome of interest (e.g., civic engagement, multicultural competence, sense of belonging)		Newly developed
• find **systematic reviews and/or meta-analyses** that synthesize the research on a broad student learning outcome of interest (e.g., civic engagement, multicultural competence, sense of belonging)		Newly developed
• find research to answer the question, “What types of programming will help students attain desired knowledge, attitudes, and skills?”		Newly developed
• find research to answer the question, “What knowledge, attitudes, and skills do students need to achieve broad outcome X (e.g., civic engagement, multicultural competence, sense of belonging)?”		Newly developed

Question	Research Question	Source
Please indicate the extent to which you agree or disagree with each of the following statements about ***using*** research. (1 = Strongly Disagree, 2=Disagree, 3=Slightly Disagree, 4=Neither Agree nor Disagree, 5=Slightly Agree, 6=Agree, 7=Strongly Agree)	RQs 3, 5-9	
I feel confident in my ability to…		
• use existing research to determine if a broad student learning outcome (e.g., civic engagement, multicultural competence, sense of belonging) **is malleable** (i.e., can be impacted through programming).		Newly developed
• use existing research to determine if a broad student learning outcome (e.g., civic engagement, multicultural competence, sense of belonging) **can be feasibly achieved** given time and resource constraints		Newly developed
• use existing research to **identify effective programming** that could be implemented at JMU		Newly developed
• use existing research to **evaluate if existing programming** at JMU should help students gain desired knowledge, attitudes, and skills		Newly developed
• use existing research to **build new programming** designed to help students gain desired knowledge, attitudes, and/or skills		Newly developed
Please indicate the extent to which you agree or disagree with each of the following statements about ***evaluating*** research. (1 = Strongly Disagree, 2=Disagree, 3=Slightly Disagree, 4=Neither Agree nor Disagree, 5=Slightly Agree, 6=Agree, 7=Strongly Agree)	RQs 3, 5-9	
I feel confident in my ability to…		
• interpret the findings of a research study		?
• determine if a research study supports the use of a particular program or intervention		Newly developed
• evaluate if or not a research study is high-quality		Leo et al., 2012 (Adapted)
• evaluate if the findings of a research study are applicable to my student population		Newly developed
• interpret the basic statistics commonly presented in research studies (e.g., means, standard deviations, *p*-values, confidence intervals, effect sizes)		Leo et al., 2012 (Adapted)

PREFERENCES FOR SOURCES OF INFORMATION FOR EVALUATING PROGRAM SUCCESS

Question	Research Question	Source
How important are each of the following to you when determining the success of an educational student affairs program (i.e., **a program intended to impact student learning or development**)? (1=Not at all Important, 2=Slightly Important, 3=Moderately Important, 4=Very Important, 5=Extremely Important)	RQ 6	
• a large number of participants attend the program		Newly developed
• a diverse group of students attend the program, including students from underserved populations		Newly developed
• the program is considered fun by participants		Newly developed
• assessment results show, on average, students learn or develop		Newly developed
• colleagues and/or upper administration provide positive feedback		Newly developed
• one or more students share that the program had a significant impact on them		Newly developed
• program facilitators develop meaningful, lasting relationships with participants		Newly developed
Please rank what you believe to be **the two most important indicators of success** for an educational student affairs program (i.e., a program designed to impact student learning or development)? (Response options are the items from the previous questions, e.g., "a large number of participants attend the program")	RQ 6	Newly developed
Imagine you have been tasked with deciding whether to retire a long-standing program in your office or continue implementing it. To help you make this difficult decision, you are presented with three pieces of information: • Research has been released that suggests the current approach is outdated and a new, drastically different approach may be more effective. • Consistent feedback from student participants indicates they "love" the program and think it is a "transformational experience". • Assessment results for the program show negligible gains with respect to stated student learning outcomes. How would you rank the importance of these three pieces of information in making your decision about whether to continue implementing the program? (Research, Student Feedback, Assessment Results)	RQ 6	Newly developed
PREFERENCES FOR SOURCES OF INFORMATION FOR DEVELOPING A PROGRAM		

Question	Research Question	Source
Imagine you are tasked with **developing a program** to target an important student learning/development outcome (e.g., sexual assault prevention, diversity & inclusion, retention).	RQ 6	
How likely would you be to refer to each of the following sources of information when developing the program? (1=Extremely Unlikely, 2=Moderately Unlikely, 3=Slightly Unlikely, 4=Neither Likely nor Unlikely, 5=Slightly Likely, 6=Moderately Likely, 7=Extremely Likely)		
• Your professional experience		Kitto et al., 2007 (Adapted)
• Advice/perspectives from on-campus colleagues you respect		Kitto et al., 2007 (Adapted)
• Advice/perspectives from experts in the field		Newly developed
• Online resources (e.g., educational blogs, news articles)		Kitto et al., 2007 (Adapted)
• Books related to the outcome of the program		Kitto et al., 2007 (Adapted)
• Empirical research (e.g., quantitative, qualitative, mixed methods studies) published in scholarly journals		Kitto et al., 2007 (Adapted)
• Published evaluations of existing programs (e.g., an article published in JSARP about the effectiveness of a program)		Newly developed
• Unpublished evaluations of existing programs (e.g., an assessment report posted on an institution's website)		Newly developed
• Conference sessions/materials		Newly developed
• Resources from professional associations (e.g., ACPA, NASPA, ACUHO-I)		Newly developed
Please rank **which <u>two</u> sources of information** you believe would be **most useful** for developing a program to target an important student learning/development outcome (e.g., sexual assault prevention, diversity & inclusion, retention). (Response options are all of the items from the previous questions, e.g., "your professional experience")	RQ 6	Newly developed
EIP ORGANIZATIONAL CULTURE		

Question	Research Question	Source
Please indicate the extent to which you agree (or disagree) with the following statements. (1 = Strongly Disagree, 2=Disagree, 3=Slightly Disagree, 4=Neither Agree nor Disagree, 5=Slightly Agree, 6=Agree, 7=Strongly Agree)	RQ 7	
• My direct supervisor (e.g., Associate Director, Director, AVP, VP, President) asks me to explain the logic of why a particular program should be effective		Newly developed
• My direct supervisor (e.g., Associate Director, Director, AVP, VP, President) asks me to use theory/research to justify my programming (or the programming I oversee)		Newly developed
• My direct supervisor (e.g., Associate Director, Director, AVP, VP, President) expresses interest in whether students who participate in my programs attain desired student learning outcomes		Newly developed
• My direct supervisor (e.g., Associate Director, Director, AVP, VP, President) encourages me to spend time consuming research pertaining to higher education and student affairs		Sriram & Oster, 2012 (Adapted)
• If I asked my colleagues to explain why a particular program should result in stated student learning and development outcomes, most could justify the programming using current research and theory.		Newly developed
• My colleagues value the use of current research and theory to inform program development		Newly developed
• JMU does *not* encourage me to use research findings to improve my practice (Reverse Scored)		Brown & Zhang, 2016 (Adapted)
• Research is used to inform staff about strategies or programming that may be effective		Brown & Zhang, 2016 (Adapted)
• People in my office are eager to share current research and theory related to their work		Brown & Zhang, 2016 (Adapted)
• In the last year, I have discussed relevant research findings with my colleagues		Brown & Zhang, 2016 (Exact)
• My office has forums/mediums for sharing current research and theory among staff		Brown & Zhang, 2016 (Adapted)
• In my office, time is made available for reading current research and theory		Brown & Zhang, 2016 (Adapted)
• Remaining current with research pertaining to student learning/development in higher education is an expectation of my job.		Sriram & Oster, 2012 (Adapted

Question	Research Question	Source
PERCEIVED BARRIERS TO EIP		
It is common for student affairs professionals to experience barriers that limit their engagement in evidence-informed programming.	RQ 10	
Please indicate the extent to which you believe each of the following statements reflects a barrier to **<u>your</u> current (or future) engagement in evidence-informed programming**. (1=Not a Barrier, 2=Slight Barrier, 3=Moderate Barrier, 4=Substantial Barrier)		
• I believe evidence-informed programming requires time and resources that would be better spent on more important aspects of my job (Value)		Newly developed
• I do not know how to search effectively for relevant research (Self-Efficacy)		Newly developed
• The applicability of research is limited due to sampling (e.g., data often collected on white, socioeconomically advantaged, traditional aged students) (Research Quality)		Funk, et al., 1991 (Adapted)
• There is insufficient time on the job to read current research (Org Culture/Training)		Funk, et al., 1991 (Adapted)
• I do not have enough authority to change programming to reflect theory and research (Org Culture/Training)		Funk, et al., 1991 (Adapted)
• I am not interested in engaging in EIP (Value)		Funk, et al., 1991 (Adapted)
• The research literature often reports conflicting results (Research Quality)		Funk, et al., 1991 (Adapted)
• I have difficulty evaluating the quality of the research I encounter (Self-Efficacy)		Funk, et al., 1991 (Adapted)
• There is not enough available research related to my practice (Research Quality)		Funk, et al., 1991 (Adapted)
• There is insufficient time on the job to implement EIP (Org Culture/Training)		Funk, et al., 1991 (Adapted)
• I do not think EIP is necessary for high-quality student affairs work (Value)		Newly developed
• My direct supervisor is not supportive of EIP (Org Culture/Training)		Funk, et al., 1991 (Adapted)
• I do not know how to apply research to the development of a program (Self-Efficacy)		Newly developed

Question	Research Question	Source
• The research has methodological inadequacies (Research Quality)		Funk, et al., 1991 (Exact)
• Insufficient resources (other than time) are provided for engaging in EIP (Org Culture/Training)		Funk, et al., 1991 (Adapted)
• I have received insufficient training in how to implement EIP (Org Culture/Training)		Newly developed
• My colleagues are not supportive of EIP (Org/T)		Funk, et al., 1991 (Adapted)
• The conclusions drawn by researchers in scholarly articles are not sufficiently justified (Research Quality)		Funk, et al., 1991 (Adapted)
Of the barriers you deemed significant, please **rank the top 3 barriers** that impact your engagement in EIP. (Response options are all of the items from the previous question that were identified as a slight, moderate, or major barrier)	RQ 10	Jette et al., 2003 (Adapted)
DEMOGRAPHIC QUESTIONS & TRAINING		
In what office/department do you work? (Career and Academic Planning, Center for Multicultural Student Services, Community Service-Learning, Counseling Center, Dean of Students Office, Disability Services, Office of Residence Life, Office of Student Accountability and Restorative Practices, Orientation, Student Life & Involvement Office, University Health Center, University Recreation, University Unions, Wellness, Orientation, & Multicultural Engagement Office, Other [please specify below])	RQ 8	Newly developed
What is your position? (Graduate Student, Entry-Level Professional [e.g., Coordinator, Hall Director], Mid-Level Professional [e.g., Associate Director, Area Director], Upper-Level Professional [e.g., Director, AVP, VP])	RQ 8	Newly developed
How many years have you worked in student affairs? (Sliding scale; 0 to 30+)	RQ 8	Newly developed
How many years have you worked in your current office? (Sliding scale; 0 to 30+)	RQ 8	Newly developed
What is your highest level of degree attainment? (High School, Associate's Degree, Bachelor's Degree, Master's Degree, Professional Degree [e.g., D.D.S., J.D.], Doctorate Degree)	RQ 8	Newly developed

Question	Research Question	Source
Have you earned a degree or certificate from a student affairs (or related) program? (Yes, No, In Progress)	RQ 9	Newly developed
(If yes to previous question) To what extent were the following topics covered in your graduate or certificate program? (0=No Coverage, 1=Slight Coverage, 3=Moderate Coverage, 4=Major Coverage)	RQ 9	
• Student development theory		Newly developed
• Science of teaching and learning (SoTL)		Newly developed
• Applying theory to practice		Newly developed
• Building evidence-informed programs		Newly developed
• Finding relevant research literature		Salbach & Jaglal, 2011 (Adapted)
• Evaluating the quality of research literature		Salbach & Jaglal, 2011 (Adapted)
Have you participated in formal training/professional development related to any of the following? (Y/N)	RQ 9	
• Student development theory		Newly developed
• Science of teaching and learning (SoTL)		Newly developed
• Applying theory to practice		Newly developed
• Building evidence-informed programs		Newly developed
• Finding relevant research literature		Salbach & Jaglal, 2011 (Adapted)
• Evaluating the quality of research literature		Salbach & Jaglal, 2011 (Adapted)

Appendix B

Interview Protocol

Researcher Introduction

My name is Andrea Pope. I am a doctoral student in the graduate psychology department and I currently work in the Center for Assessment and Research Studies. My background is in student affairs. I completed the CSPA master's program in 2016, had assistantships in ORL and CAP, and completed a practicum in CMSS. I identify as a student affairs professional.

Explain Study

Thank the participant. *The primary purpose of my study is to gain a better understanding of how student affairs professionals at JMU engage in program development. My goal in gathering this information is to help the Center for Assessment and Research Studies provide training and support that addresses needs in the Division.* Discuss my role as an advocate and voice for professionals in the division. Discuss confidentiality. Provide informed consent to sign. Ask for permission to record.

Introduction Question

Before we get started, can you tell me a little bit about your role as _____? What are your major responsibilities?

Key Question 1 (RQ 11: How do student affairs professionals design programs intended to impact student learning and/or development, and how does the design process differ for professionals with high and low EIP value and engagement?**)**

Imagine you have been tasked by the VP of Student Affairs (or some other supervisor) to develop a program to build students' _____ (e.g., openness to diversity—select a construct the participant will be somewhat, but not intimately familiar with). The VP is willing to fund any program you come up with. Talk me through the steps you would take to develop this program.

Key Question 2 (RQ 12: How do student affairs professionals decide whether a newly developed or unassessed educational program should be implemented, and how does the decision-making process differ for professionals with high and low EIP value and engagement?**)**

Imagine you must determine if a newly developed program intended to impact student learning and development (one that hasn't been implemented or assessed) is worth the time and resources to implement. How would you make this decision?

Definition of EIP

Given the next question is going to be related to the concept of "evidence-informed programming", I wanted to start by providing a definition for this term to make sure we're on the same page.

For the purposes of this interview, I'm defining **evidence-informed programming** as student affairs programming that is 1) designed to impact student learning and/or development, and 2) informed directly by theoretical literature and/or research evidence.

- Does that definition make sense or would you like for me to provide an example of what evidence-informed programming might look like?
- If the answer to this question does not align with responses to Key Questions 1 and/or 2, ask about the discrepancy between values and intended behavior.

Key Question 3 (RQ 13: How does evidence-informed programming fit into JMU student affairs professionals' notions of what it means to engage in high-quality student affairs practice?**)**

The standards for student affairs practice note that theory and research must be used in the development of programs that target student learning and development (have a copy of these standards summarized in case professional is not familiar with standards). How do you feel about these standards related to this expectation regarding programming? Do they resonate with you?

- Potential Probing Questions: Are this expectations/standards realistic? Feasible? How do you feel about the use of the word "must"?

Key Question 4 (RQ 13: How does evidence-informed programming fit into JMU student affairs professionals' notions of what it means to engage in high-quality student affairs practice?**)**

These standards related to programming do not resonate with everyone. Can you imagine why some people, including well-respected student affairs professionals, may ignore or dismiss these standards?

- Follow-Up Question: To what extent do you agree with the sentiments you just expressed?

Key Question 5 (RQ 13: How does evidence-informed programming fit into JMU student affairs professionals' notions of what it means to engage in high-quality student affairs practice?**)**

Imagine you were mentoring a new student affairs professional and they asked you how important is it that they build programs based on theory/research if they want to be successful in the field and have an impact on students. What would you say?

Key Question 6 (RQ 14: What strategies do participants recommend for increasing student affairs professionals' engagement in evidence-informed programming at JMU?**)**

What do you believe is the most significant barrier to student affairs professionals' engagement in evidence-informed programming?

- Follow-Up Question: Can you elaborate on why you believe it is the most significant barrier to student affairs professionals' engagement in EIP?

Key Question 7 (RQ 14: What strategies do participants recommend for increasing student affairs professionals' engagement in evidence-informed programming at JMU?**)**

Given the barrier you just described, what needs to happen for student affairs professionals in the division to engage in EIP?

- Follow-Up Question: What strategies could be employed to make that happen? What are the first steps towards making that happen?

Present Quantitative Results

Last semester, I administered a survey to all student affairs professionals about their engagement in assessment, and in particular, their engagement in evidence-informed programming. You may remember taking it. One section of the survey asked about perceived barriers to engaging in EIP. This is what participants had to say. (Provide handout with list of top barriers; give participant time to review).

- Do you have any questions about the results?

Key Question 7, cont. (RQ 14: What strategies do participants recommend for increasing student affairs professionals' engagement in evidence-informed programming at JMU?**)**

Now, given these barriers, I want to ask you the same question. What needs to happen for student affairs professionals in the division to engage in EIP?

- Follow-Up Question: What strategies could be employed to make that happen? What are the first steps towards making that happen?

Closing

Would you be willing to provide me with documentation from the last program you developed (e.g., SLOs, program outline, program materials)? *or* Would you be willing to provide me with documentation from the last evidence-informed program you developed (e.g., SLOs, program outline, program materials)?

Thank you again for your participation. I will be reaching out to you within the next few weeks with a summary of the results of the study. At that time, I would love for you to review the summary and provide feedback.

Appendix C

Positionality Statement

Research Orientation

As a researcher, my ontological and epistemological perspectives are largely influenced by the post-positivist research tradition. I tend to believe that there are objective realities in the world that can be discovered or captured (with more or less precision) through direct or indirect observation. For example, in the context of higher education, I believe it is possible to determine whether a training on evidence-informed programming (EIP) increases participants' EIP knowledge and skills. Furthermore, the research questions my mind naturally generates typically involve finding averages, exploring relationships, and generalizing results from samples to larger populations.

I am also influenced, to a lesser extent, by constructivist philosophies. Although I believe some objective realities do exist, I also believe other "realities" are socially constructed. For example, the concept of "EIP knowledge" is socially constructed. As a researcher, I decide how EIP knowledge is defined and measured—a process which involves a large amount of subjectivity. Once conceptualized, however, EIP knowledge becomes "real" for all intents and purposes, and capturing an individual's level of EIP knowledge (albeit indirectly and imperfectly) becomes possible.

Given these beliefs, I entered this study with a desire to uncover a number of "objective realities" (e.g., Does EIP value relate to EIP behavior? What is the top barrier to EIP engagement in the division?). However, I also recognized that my perspectives as a researcher would undoubtedly influence how I collected and interpreted my data. As

such, it was important that I provided an opportunity for my participants to share their perspectives and

Background

I am currently a doctoral student study in the Assessment and Measurement program at James Madison University where I study assessment, statistics, psychometrics, and education policy. I am also an assessment consultant in the Center for Assessment and Research Studies (CARS). In this role, I help programs (both academic and student affairs) engage in meaningful assessment to improve student learning. I also devote substantial resources to educating faculty and staff on a wide range of assessment topics including: writing measurable student learning outcomes; developing intentional, theory-based programs; selecting and designing high-quality instruments; and interpreting, communicating, and using assessment results. Notably, many of the professionals in this study have interacted with me in my capacity as an assessment educator or are at least aware of my role within CARS.

Prior to entering my current Ph.D. program, I earned my master's degree in College Student Personnel Administration at JMU. Through this program, I was trained in college student development theory, counseling theory and techniques, and a number of other areas related to student affairs practice. During this time, I also worked in the Office of Residence Life, the Center for Multicultural Student Services, and Career and Academic Planning. Through these experiences, I was able to get a sense of the culture within the Division of Student Affairs with respect to programming and assessment. I was often frustrated by the lack of intentionality I perceived with respect

to program development. Additionally, I experienced, first-hand, the challenges of attempting to build and assess evidence-informed programs with limited training and support.

With respect to this study, in some ways, my background was a liability. For example, given my association with CARS, and my role as an assessment educator within the division, I knew participants may be inclined to engage in socially desirable responding (i.e., they might respond in ways they believed would align with my views of assessment and programming). In other ways, however, my background was an asset. For example, my experiences as a burgeoning student affairs professional greatly influenced the development of the quantitative survey. To address the former concern, in the quantitative phase of the study, I emphasized how the results of the study would be used to inform divisional policy and professional development, thus underscoring the importance of honesty. In the qualitative phase of the study, I emphasized my connections to student affairs and my desire to be a voice for student affairs professionals—not an extension of CARS.

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