Abstract

Despite persistent calls by professional organizations and leaders in the field for theory-based programs, it is often difficult for student affairs professionals to articulate why and how their programs should work (i.e., program theory). This lack of program theory influences professionals' ability to use assessment results for program improvement. We, therefore, address two barriers to the articulation of program theory: knowledge of relevant theory and the ability to apply theory to practice. For the latter, we provide a four-step process to assist professionals in developing theory-based programs and assessing their effectiveness. To increase efficiency in assessment practice, we recommend program theory be well-articulated before outcomes assessment data are collected. Importantly, the articulation of program theory should facilitate the realization of the ultimate goal of outcomes assessment: learning improvement.

LEARNING **IMPROVEMENT**

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The Essential Role of Program Theory: Fostering Theory-Driven Practice and High-Quality Outcomes Assessment in Student Affairs

"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" (Bresciani, 2010, p.86)

There are many approaches to program development. One manner of characterizing the different approaches is the extent to which programming is theory driven. At one end of the continuum are programs intentionally designed, using theory and research, to address certain problems or achieve particular student learning outcomes (e.g., increase civic engagement, improve grade point average, develop leadership skills). At the other end are programs designed more haphazardly, with little explanation as to why they should "work" or if they are necessary. Most student affairs programs likely fall somewhere in the middle. For these programs, the need for programming may be evident, but why programming should achieve desired student outcomes is unclear. In other words, these programs lack program theory.

Program theory is defined as "the construction of a plausible and sensible model of how a program is supposed to work" (Bickman, 1987, p. 5). Furthermore, it "clarifies the set of cause-and-effect relationships" believed to connect the things students do (i.e., programming) to the outcomes they are expected to achieve (Bickman, 1987, p. 5). Consider

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The need for programming may be evident, but why programming should achieve desired student outcomes is unclear.

a purposefully simple and didactic example: two programs designed to reduce binge drinking on campus. Program A requires all first-year students to read the campus alcohol policy and sign an agreement stating they will abstain from any illegal or irresponsible drinking behavior. This program is depicted as a logic model in Figure 1. The arrows in this logic model represent hypothesized causal relationships. Thus, it appears that developers of Program A believe if students read and sign the alcohol policy, then they will drink less. There is no articulation, however, of why this would be the case. Now consider Program B, a seminar where students are informed about the risks of binge drinking via a lecture. Unlike Program A, the logic model for Program B makes it clear how the program is expected to work: developers believe the lecture will increase knowledge of risks, thereby reducing alcohol consumption.

At this point, it is necessary to distinguish between weak and strong program theory. Weak program theory is often based on hunches, assumptions, or limited personal experiences. Strong program theory, on the other hand, is theory- and/or evidence-based and provides a coherent, theory-based link between program activities and student learning outcomes. For example, imagine if the developers of Program B were asked, "Why should this program result in the intended outcome?" They could state, "We believe the lecture should increase students' knowledge of alcohol-related risks, and their increased knowledge of risks will reduce alcohol consumption." This statement would reflect their program theory. However, without established theory or empirical evidence to support the link between knowledge of risks and alcohol consumption, the program theory would be weak. In practice, we (unfortunately) observe weak program theory daily, which (aligning with the opening quote from Bresciani) prohibits the use of assessment results to improve ineffective programs. In fact, we have witnessed professional workshops that encouraged rapid program development based on hunches/beliefs even when established theory and empirical evidence existed that could guide program development and, in some cases, would be evidence against those hunches/beliefs.

Now assume Program C is based on literature linking alcohol consumption to students' perceptions of how much their peers drink (Prentice, 2008; U.S. Department of Health and Human Services, 2002). The developers could easily explain "why" the program should result in the intended outcomes and, importantly, they could cite theory and research supporting these statements. We say 'importantly', because what student, client, or patient would choose a program that was based on hunches, assumptions, or beliefs when they could engage in a program intentionally designed using research and theory? From this point forward, our use of the term *program theory* refers to strong program theory only. In doing so, we emphasize that program theory is more than a logic model or flow chart that simply lays out program processes without explaining why they work. Program theory involves undergirding each arrow in the model with theory that supports the links (Baldwin, Hutchinson, & Magnuson, 2004).

With program theory defined, we now call back to the decades-old discussion of the importance of theory-based programming found in student affairs literature and professional standards. We then provide a step-by-step process for creating theory-based programs. We close by noting a major barrier to theory-based programming—knowledge of relevant theory—and call on Higher Education Student Affairs (HESA) graduate programs to acknowledge and address this gap. Notably, we intentionally situate outcomes assessment throughout these sections, as it is via assessment that theory-based programs can be evaluated and improved.

Historical and Current Calls for Program Theory

Our call for better articulation of program theory is not novel. We find great comfort in knowing a number of seminal student affairs documents, as well as the most recent professional standards in the field, have articulated the importance of theory and research when creating and assessing program effectiveness. Unfortunately, in our experience, many professionals are unaware of the existence of these documents and standards, much less their actual content. Hence, it is worth revisiting the historical and current emphasis on theory and research when creating and assessing programming in student affairs.

Seminal Historical Documents

In 1949, with the publication of *The Student Personnel Point of View*, the interplay of research and practice was highlighted as "a dominant characteristic of modern [student] personnel work" (Williamson, 1949, p. 12). Nearly fifty years later, the American College Personnel Association (ACPA) codified this sentiment in its seminal document, *The Student Learning Imperative: Implications for Student Affairs*, stating that any student affairs division committed to student learning and personal development should base policies and programs on "promising practices from the research on student learning and institution-specific assessment data" (1994, p. 4). Two years later, ACPA would partner with NASPA and the American Association for Higher Education (AAHE) to release *Powerful Partnerships: A Shared Responsibility for Student Learning*, another publication underscoring the role of theory and research in higher education. More specifically, *Powerful Partnerships* focused on the development of co-curricular programs and shared ten "insights gained through the scholarly study of learning and their implications for pedagogy, curricula, learning environments, and assessment" (AAHE, ACPA, & NASPA, 1998, p.1). In 2004, ACPA and NASPA published *Learning Reconsidered*, which called for professionals to not only be familiar with a wide range of theories and research related to student affairs practice but to develop interventions informed by this research (Keeling, 2004).

Current Professional Standards

Three sets of professional standards also call for theory-based programming (see Table 1). The Council for the Advancement of Standards in Higher Education created the CAS standards to support the development, assessment, and improvement of programming to enhance student learning and development (Council for the Advancement of Standards in Higher Education, 2015). The standards state that a program "must" be intentionally designed using theories of learning and development and that professionals "must" remain current regarding theories that affect their programming.

Two sets of professional standards specifically target the skills of student affairs professionals: *The Assessment Skills and Knowledge (ASK) Content Standards for Student Affairs Practitioners and Scholars* and *The Professional Competency Areas for Student Affairs Educators* (Finney & Horst, 2019). The ASK standards "seek to articulate the areas of content knowledge, skill and dispositions that student affairs professionals need in order to perform as practitioner-scholars to assess the degree to which students are mastering the learning and development outcomes we intend as professionals" (ACPA, 2006, p. 3). *Standard 2: Articulating Learning and Development Outcomes* specifies that professionals must have the ability to employ theory when beginning the assessment process.

A number of seminal student affairs documents, as well as the most recent professional standards in the field, have articulated the importance of theory and research when creating and assessing program effectiveness.

Whereas the ASK Standards focus on professional competency in the domain of assessment, the Professional Competency Areas for Student Affairs Educators are a broader set of ten competencies (American College Personnel Association & National Association of Student Personnel Administrators, 2015). The ability to build theory-based programs is emphasized at multiple points throughout the document. For example, the *Student Learning and Development (SLD) Competency* explicitly calls for professionals to know and use theory to create and improve programs. *The Assessment, Evaluation and Research (AER) Competency* stresses the need for program theory to engage in high-quality outcomes assessment.

The emphasis on theory within the seminal documents is expected given program theory's importance for the development of effective programs. Building programs supported by theory and evidence results in greater confidence that programs should affect students in desired ways. Subsequent outcomes assessment is needed, of course, to formally evaluate program effectiveness. However, program theory allows professionals to intentionally build programs that theoretically should "work" and then use assessment in a confirmatory way to test this hypothesis. This approach can be contrasted with the (often-encountered) conceptualization of program development as a rushed, unsystematic process of cobbling together materials. The theory-based approach is ultimately more efficient with regard to time and resources because the programs generated are more likely to be effective in improving

Table 1
Professional standards and competencies related to knowledge and use of theories

CAS Standards		ACPA-NASPA Professional Competencies		ASK Professional Standards
Program	HESA Graduate Training	Student Learning & Development (SLD) Competency	Assessment, Evaluation & Research (AER) Competency	Standard 2: Articulating Learning & Development Outcomes
• "Programs and services must be guided by theories and knowledge of learning and development." • "Personnel must engage in continuing professional development activities to keep abreast of the research, theories, legislation, policies, and developments that affect their programs and services."	• "The curriculum must include studies of student development theories and research relevant to student learning and personal development." • "Graduates must be able to demonstrate knowledge of how student learning and learning opportunities are influenced by student characteristics and by collegiate environments so that graduates can design and evaluate learning experiences for students."	Foundational Level: • "Articulate theories and models that describe the development of college students and the conditions and practices that facilitate holistic development." • "Identify one's own informal theories of student development ('theories in use') and how they can be informed by formal theories to enhance work with students." • "Assess learning outcomes from programs and services and use theory to improve practice." Intermediate Level: • "Design programs and services to promote student learning and development that are based on current research on student learning and development theories." • "Utilize theory-to-practice models to inform individual or unit practice." • "Justify using learning theory to create learning opportunities." Advanced Level: • "Utilize theory to inform divisional and institutional policy and practice." • "Translate theory to diverse audiences (e.g., colleagues, faculty, students, parents, policy-makers) and use it effectively to enhance understanding of the work of student affairs." • "Analyze and critique prevailing theory for improved unit, division, or campus practice." • "Identify staff members' level of competency regarding the ability to apply learning and development theory to practice, and create professional development opportunities utilizing various learning concepts."	Foundational Level: • "Design program and learning outcomes that are appropriately clear, specific, and measurable, that are informed by theoretical frameworks and that align with organizational outcomes, goals, and values." Intermediate Level: • "Utilize formal student learning and development theories as well as scholarly literature to inform the content and design of individual and program level outcomes as well as assessment tools such as rubrics."	• "Ability to articulate intentional student learning and development goals and their related outcomes. In establishing those goals, the ability to use cognitive and psychosocial development theories germane to the student populations (e.g., traditional age, cultural background, adult education, and so on) as well as an awareness that different subpopulations may have different patterns of development (Love and Guthrie, 1999)." • "Ability to identify the appropriate philosophical or research underpinnings (such as positivist, constructivist, critical theory, and so on) for the articulation of outcomes, dependent on the outcomes themselves."

student learning than theory-less programs. Thus, fewer iterations of the assessment cycle are required to inform changes to the program in order to evidence the desired impact.

Building a Theory-Based Program

Building programs supported by theory and evidence results in greater confidence that programs should affect students in desired ways.

We have attempted to make a strong argument for the articulation of program theory. However, to actually build theory-based programs professionals must (a) know the relevant theories for the student learning and development outcomes (SLOs) they seek to impact, and (b) know how to apply these theories to practice. Given the general nature of theories and the specific nature of programming, the latter can be difficult without proper training. Additionally, the few theory-to-practice models that exist are often too vague to be useful (Reason & Kimball, 2012). As noted by Bloland, Stamatakos, and Rogers (1994), "very little of a practical, nuts-and-bolts nature, is presented for translating theory into campus programs" (p.11). To address this gap in the professional development literature, we articulate a four-step process for building theory-based programming: articulate a feasible and malleable distal outcome; articulate theory-based intermediate (proximal) outcomes; create intentional, theory-based programming; and assess program effectiveness (see Table 2). For each step,

Table 2
Four-step process for building and evaluating a theory-based program

General Model	Most Important Question to Ask	Binge Drinking Example
1. Articulate the Distal Outcome	• What is the problem or distal outcome that needs attention?	• The distal outcome of the program is to significantly reduce the frequency of binge drinking on campus.
2. Articulate Theory-Based Intermediate (Proximal) Student Learning Outcomes (SLOs)	• What is the etiology (i.e., what are the causes) of the distal outcome based on current theory and research?	• Students drink excessively, in large part, due to flawed perceptions of how much their peers drink, coupled with a desire to "fit in" (Prentice, 2008; U.S. Department of Health and Human Services, 2002). • Given this research, the following intermediate SLO was specified: *As a result of participating in the binge drinking program, participants will be able to accurately describe student drinking norms at University X.*
3. Develop Theory-Based Programming to Impact Intermediate SLOs	• What programming affects the intermediate SLOs based on current theory and research?	• Program consists of content and activities that provide students with a realistic perception of their peers' drinking behaviors (e.g., interactive infographic and discussion), as articulated by theory and research in the social normative domain (Prentice, 2008). • Program also consists of content and activities that foster the encoding, integration, and retention of information (e.g., highlighting a small number of important facts, presenting information in multiple formats, engaging students in active discussions), as articulated by theory and research in the domain of cognition and learning (Halpern & Hakel, 2003).
4. Evaluate Outcomes Data to Inform Inferences about Program Effectiveness and Guide Changes in Program for Improvement	• Do assessment results suggest the programming impacts the intermediate SLOs?	• Outcome data were collected for the intermediate SLO to assess students' knowledge of drinking norms (i.e., a multiple choice test was administered before the program, immediately after the program, and 8 weeks post program). • Outcome data were collected for the distal outcome of binge drinking (i.e., number of students who binge drink once or more per week was recorded before the program, immediately after the program, and 8 weeks post program).

Note. Program theory incorporates educational and psychosocial theories that link the proximal intermediate outcomes to the distal outcome (Step 2). Program theory also explicates how program components affect the proximal intermediate outcomes (Step 3).

we highlight several questions to guide professionals through the process. By providing brief examples, we hope to elucidate the process and assist professionals who are committed to building and assessing theory-based programs but may be unsure how to begin.

Step 1: Articulate the Problem or Distal Outcome

Building a theory-based program begins by clearly articulating the problem one is trying to address or, alternatively, the goal one hopes to achieve through programming. Often, this distal outcome (e.g., reduction in binge drinking) will be tied to the mission of the office, department, or institution within which the program is housed. It may also stem from demonstrated student need, staff consensus, or relevant professional standards (e.g., CAS Student Learning and Development Outcomes domains). It is achievement of the distal outcomes that program developers truly care about. However, given the complex nature of these outcomes, they may not be realized due to a single program; hence, the need to specify more proximal intermediate outcomes (see Step 2).

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Two important questions must be asked when articulating distal outcomes. First, "Is it theoretically possible to impact the targeted outcome in a college student population?" In other words, is the outcome a malleable skill or a stable trait? For example, there has been considerable debate about whether creativity can be learned or if it is determined by "inherent neurological and personality traits rather than methodology or practice" (Delistraty, 2014). If creativity is a stable trait, attempting to develop programming to increase creativity would be a waste of resources. Thus, the malleability of the targeted construct must be researched before distal outcomes are specified.

Second, "Is it feasible to impact the distal outcome given time, resources, and other practical constraints often present within college settings?" For example, research may suggest it is theoretically possible to increase empathy in college students. However, if the research also suggests changes in empathy would require expensive programming that spans several years, it may be practically infeasible for an institution to target this outcome.

Relevant Questions:

- What is the desired distal outcome of the program? What problem are you trying to solve?
- Why is the distal outcome important? Is it aligned with department/institution priorities?
- Based on theory and research, is the distal outcome malleable and, if so, is it practically feasible to influence this outcome at your institution?

Step 2: Specify Theory-Based Intermediate Outcomes

Attempting to specify intermediate SLOs without a thorough understanding of the distal outcome (informed by theory and research) is likely to result in SLOs that are misguided.

Once the distal outcome (i.e., the problem/goal) has been articulated, the next step is to consult relevant theory and empirical research to articulate the underlying causes of the problem. In other words, one must understand the etiology of the distal outcome before proceeding (West & Aiken, 1997). With this knowledge, practitioners can specify *intermediate* student learning outcomes. Programming can then be developed (in Step 3) to influence these more *proximal* SLOs (Timm, Davis Barham, McKinney, & Knerr, 2013).

Attempting to specify intermediate SLOs without a thorough understanding of the distal outcome (informed by theory and research) is likely to result in SLOs that are misguided. Specifically, there may be a disconnect between achievement of the more proximal, intermediate outcomes of a program and achievement of the distal outcome. For example, consider again Program B from the binge drinking example in Figure 1. The desired distal outcome is to reduce binge drinking and programmers have specified the following intermediate SLO: *As a result of participating in Program B, students will report increased knowledge of alcohol-related risks*. Thus, the program is hypothesized to work (i.e., reduce alcohol consumption) via the intermediate process of increasing students' knowledge of risks. However, if the consensus among researchers is that knowledge of alcohol-related risks actually has no impact on drinking behavior (U.S. Department of Health and Human Services, 2002), then even if Program B does an excellent job of teaching the risks, the desired distal outcome is not likely to be achieved. Had developers researched the causes of binge drinking they would have discovered that college students binge drink in large part due to flawed perceptions of how much their peers drink, coupled with a desire to fit in (Prentice, 2008; U.S. Department of Health and Human Services, 2002). Thus, more appropriate SLOs might focus on accurate perceptions or managing the desire to fit in. In sum, theory and research helps determine what specific knowledge, skills, behaviors, and/or attitudes (i.e., intermediate SLOs) should be cultivated through programming to achieve desired distal outcomes.

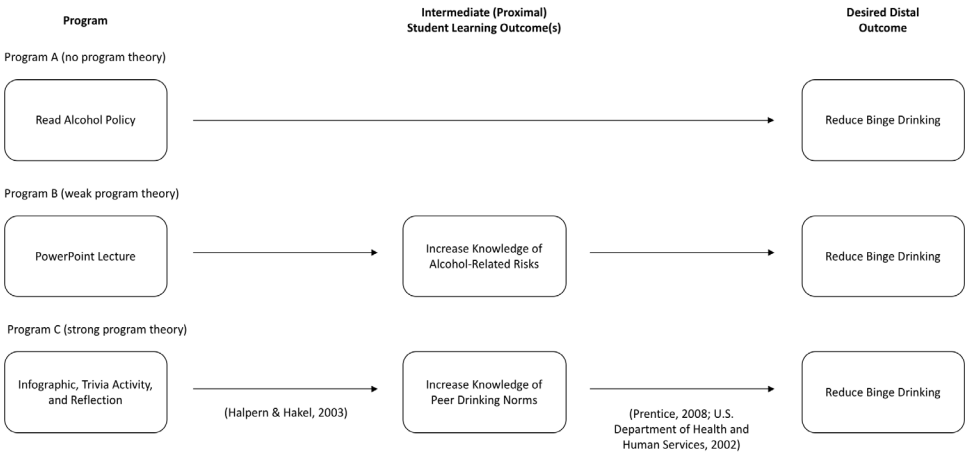

Figure 1. Three logic models depicting the difference between a program with no program theory (links between programming and desired distal outcome not specified), a program with weak program theory (links between programming and desired distal outcome specified, but not theory-based), and a program with strong program theory (links between programming and desired distal outcome specified and theory-based).

Relevant Questions:

- What is the etiology of the distal outcome? What are the underlying causes of the problem the program is designed to address?
- What knowledge, skills, attitudes, or behaviors influence the desired distal outcome? What are the intermediate SLOs?
- For each arrow linking an intermediate SLO to the distal outcome, what theories or research support the link?

Step 3: Develop Theory-Based Programming

Once the distal outcome and intermediate SLOs are specified the next step is to determine how to achieve the intermediate SLOs through programming. Programming encompasses content (e.g., specific activities) and delivery (e.g., pedagogical techniques).

Just as theory was used to articulate intermediate SLOs and link them to the distal outcome, theory should also inform the programming and the link between programming and intermediate SLOs. Thus, there are two types of theories that underlie the two sets of arrows in a logic model (Baldwin, et al., 2004). One type of theory articulates the etiology of the distal outcome and justifies the link between the distal outcome and intermediate SLOs (Step 2). The other type of theory justifies the link between programming and intermediate SLOs (Step 3). The articulation of both types of theories results in strong program theory (i.e., an explicit, theory-based explanation of how programming affects intermediate outcomes and how intermediate outcomes affect the distal outcome) as illustrated in Figure 2.

A good starting point for building theory-based program components/activities is to look for intervention studies or empirical research that evaluates the effectiveness of theory-based programs. It can also be helpful to consult research review articles on how students learn (e.g., Halpern & Hakel, 2003) and/or how attitudes and behaviors are changed (e.g., Funnell & Rogers, 2011; Yeager & Walton, 2011) when building program content, structure, and delivery. Additionally, there is extensive literature on evidence-based pedagogical techniques (e.g., Fink, 2013).

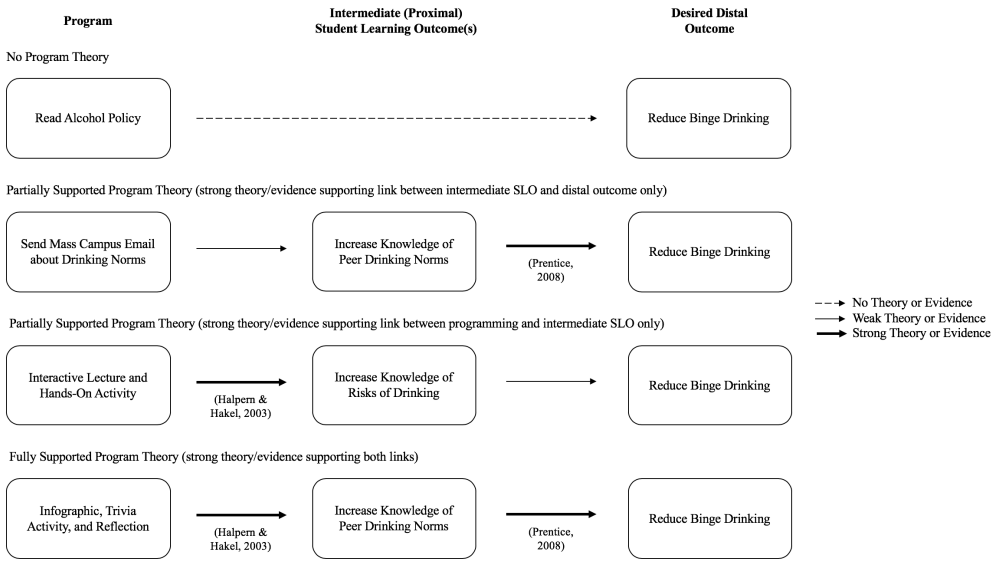

Figure 2. A visual representation of the two types of theories/research needed to articulate strong program theory. The logic models illustrate the difference between a program with no program theory, a program with weak theory/evidence supporting the link between programming and intermediate SLOs, a program with weak theory/evidence supporting the link between intermediate SLOs and the distal outcome, and a program with strong theory/evidence supporting both links.

Although program theory allows one to state that a program should work, success is not guaranteed.

To illustrate this step, consider Program C in Figure 1. This program has specified the following theory-based intermediate SLO: *As a result of participating in Program C, participants will be able to accurately describe student drinking norms at University X*. Given the knowledge focus of this SLO (students must know campus drinking norms to describe them), program developers consult research on cognition and learning to build a program that facilitates long-term retention of information. From this research, program developers focus on three learning principles: active learning is more effective for long-term retention than passive learning; the more information students are given in a short period of time, the less information they are likely to remember; and presenting information in multiple formats (e.g., visually and verbally) can improve retention (Halpern & Hakel, 2013). Using these theory-based principles as a guide, the developers decide that each student will be given an interactive, electronic infographic containing three statistics and corresponding narratives about their peers' normative alcohol consumption behaviors. Then, for each statistic, a trivia-style question will be posed and the correct answer will be revealed after the student responds. Afterwards, a facilitator will lead an interactive lecture about drinking norms at University X. During this activity, students will recall and explain the information to check their knowledge and receive immediate feedback, resulting in more accurate and stronger encoding of the information. Finally, the facilitator will ask students for their reactions to the information and lead a discussion about any discrepancies between their perceptions and reality.

Relevant Questions:

- How will your program achieve the intermediate SLOs? What specific strategies, activities, and approaches will be employed?
- What theory or evidence is there to support the arrows linking these strategies, activities, and approaches to the intermediate SLOs?
- Is the theory-based programming feasible from a resource perspective?

Step 4:
Assess Program Effectiveness and Use Results to Improve Programming

Although program theory allows one to state that a program should work, success is not guaranteed. Once a theory-based program has been built and implemented the final step is to assess its effectiveness. Knowledge of theory facilitates the collection of outcomes data, interpretation of assessment results, and use of results for improvement (Bresciani, 2010).

To understand why this may be the case, imagine that you implement a program, assess it, and find the SLOs were not achieved. How should you use this information? Should you scrap the entire program or modify parts of it? If you decide to modify the program, what parts should you change? Alternatively, what if the program was effective and student learning did improve? Could you determine which parts of the program were crucial to its success? Under what conditions could you replicate the program and still be relatively confident in its efficacy? Without program theory, it would be difficult to answer these questions. However, by clearly articulating how the different components of the program should (theoretically) result in achievement of intermediate SLOs and progress toward the distal outcome you would be able to collect the more nuanced outcomes data needed to make correct inferences about program effectiveness. This is echoed by Rogers (2000), who notes:

We have observed a serious barrier when professionals work through the steps of articulating program theory: lack of knowledge of relevant theories.

> "If a program achieves its intended outcomes, program theory can help to identify the elements of a program which are understood to be essential for its widespread replication and can then analyze whether these elements are plausibly and empirically associated with success. It should also be able to identify whether program success has been achieved despite (or perhaps because of) failure to implement the program as designed. If a program does not achieve its intended outcomes, a program theory evaluation may be able to identify whether this is due to implementation failure (the program wasn't implemented as intended, which might, in itself, explain the lack of outcomes); unsuitable context (the program was implemented in a context in which the necessary mechanisms did not operate); or theory failure (the program was implemented as intended, in a suitable context and evaluated with a powerful design and measures which would probably have detected important effects if they had been present)." (pp. 210-211)

To illustrate how program theory can be used to generate and test several hypotheses about why a program did not work, consider the following examples. Imagine an alcohol intervention program implemented at a women's college was based on research showing that students' binge drinking (i.e., distal outcome) was due to social pressure (i.e., intermediate outcome). Upon further investigation, however, it is discovered that this research was conducted on male students only, and that for female students, social pressure is not a major cause of alcohol consumption. In this case of *inappropriate theory selection*, even if the intermediate SLO of resisting peer pressure was achieved, the distal outcome of reducing binge drinking would not be achieved. This result is understandable because the link between the intermediate SLO and the distal outcome was not theoretically/empirically supported in the target population. Thus, the assessment results would indicate the need to change the programming to align with a more appropriate intermediate SLO based on a more applicable theory. More important, if the developers only collected data on the distal outcome (i.e., rate of binge drinking) it would have been impossible to know why the programming was ineffective. Instead, the clearly articulated program theory in this example led the program developers to collect data on the intermediate SLO as well. This additional data was then used to identify the broken link between the intermediate SLO and distal outcome.

Alternatively, it could be that the intermediate SLOs were appropriate for the population but the theory-based programming used to achieve them was insufficient or ineffective due to *inappropriate theory application*. That is, the way in which the underlying theories/research were translated into actual program features may have been faulty. For example, imagine assessment results showed that students in Program C (from Figure 1) did not meet the intermediate SLO of increased knowledge of campus drinking norms. Although

research might support the use of active learning strategies to increase long-term knowledge retention (see Step 3), it may be that the specific activities described in Step 3 did not actively engage students. For instance, it could be that the facilitator-to-student ratio was too small, enabling many students to complete the program without actively participating or engaging with the material. This result would indicate the program needs to be tweaked rather than completely overhauled.

Finally, it could be that one or more of the theories on which the program is based is simply wrong. In other words, the assumptions made (causal relations specified in the logic model) by the selected theories are untenable. This is most likely to occur with new theories that have not been thoroughly tested. In this case of *theory failure*, the results would indicate a need to redesign the entire program based on more strongly supported theory and research.

Relevant Questions:

- Did student learning/development improve as a function of the program? Were the intermediate SLOs and distal outcome achieved?
- If the intermediate SLOs and/or distal outcome was not met, where did the breakdown occur? Was the theory underlying the program wrong or inappropriate? Alternatively, was the theory implemented poorly?

Need for Additional Training in Relevant Theories and their Application

We provided the four-step process above to support the creation and assessment of theory-based programs. With that said, we have observed a serious barrier when professionals work through the steps of articulating program theory: lack of knowledge of relevant theories. Recall, theory is necessary to specify the link between intermediate SLOs and distal outcomes. Additionally, theory is needed to specify the link between program components and intermediate SLOs. Although professionals agree that application of student learning and development theories is essential to intentionally plan, assess, and improve programs (Bresciani, 2010; Blimling &Whitt, 1999; Kuh, Kinzie, Schuh, & Whitt, 2005; Love & Estanek, 2004; Mentkowski, 2000; Pascarella, 2006), we have observed a tendency in the field to overlook other relevant bodies of literature.

Consider the textbooks frequently used to train student affairs professionals on theory (e.g., Evans, Forney, Guido, Patton, & Renn, 2010; Schuh, Jones, & Torres, 2017). These texts tend to focus on a small cannon of broad student development theories considered foundational to student affairs practice (e.g., Chickering's Theory of Identity Development, Baxter-Magolda's Model of Epistemological Reflection, Perry's Theory of Intellectual and Ethical Development). Although these student development theories can be helpful for describing where students are (and where they should be) developmentally, they are much less useful for prescribing how to create programming to move students from one developmental stage to another. Additionally, these theories describe only a fraction of the outcomes of interest in higher education. Theories related to noncognitive outcomes such as civic engagement, inter-cultural competence, and self-regulation (e.g., self-efficacy, goal orientation, growth mindset) are largely overlooked, even though these constructs are often the focus of programming and rich bodies of research articulate their associated intermediate outcomes and interventions. Likewise, with respect to outcomes related to knowledge acquisition, there is little to no mention of current research on how students learn (i.e., information transfer and long-term retention) or best practices for instruction (however, see Bresciani, 2016).

If professionals embrace the responsibility to keep abreast of relevant research, theory-based programs will be less difficult to create, assess, and improve.

As a result, burgeoning professionals may believe knowledge of a handful of student development theories is sufficient to guide practice. Evans et al. (2010) speak to this danger:

> "…many student affairs educators have inappropriately elevated student development theory to something resembling icon status. If this has happened or is happening in the student affairs profession, the act deserves to be challenged. No single resource stands alone as the foundation for professional practices. Student development theory, for example, is one of several knowledge bases that can inform student affairs practice." (p.39)

In sum, given student affairs professionals are perceived as educators providing high-impact curricular programming (Keeling, 2004, 2006), they have a responsibility to be familiar with research relevant to students' learning and development (Barber, 2006; Hatfield & Wise, 2015). Likewise, according to the CAS Standards for Master's-Level Student Affairs Preparation Programs (2013), HESA programs have a responsibility to "foster an appreciation of intellectual inquiry in faculty members and students, as evidenced by active involvement in producing and using research, evaluation, and assessment information" (p. 8). If professionals embrace the responsibility to keep abreast of relevant research, theory-based programs will be less difficult to create, assess, and improve.

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