

Abstract

Identifying evidence-informed programming (e.g., strategies, activities, pedagogies) facilitates both the intentional offering of programming that should “work” and the use of the outcomes assessment process to evaluate program effectiveness. Evidence-informed programming is more efficient than unsupported programming because the programming is more likely to improve learning and development. Thus, faculty and student affairs professionals require fewer iterations of the assessment cycle to inform programming changes in order to achieve desired outcomes. To help locate evidence-informed programming, we describe systematic review repositories (e.g., *Campbell Collaboration*, *What Works Clearinghouse*) that synthesize high-quality research to identify “what works”.

We share a tool we created that organizes relevant systematic review repositories and other collections of evidence of effectiveness, providing numerous examples of evidence-informed programming pertinent to higher education. These resources aid faculty and student affairs professionals in achieving their ethical obligation to engage students in effective learning and development experiences.

AUTHORS

Sara J. Finney, Ph.D.
James Madison University

Holly A. Buchanan,
DNP, ANP-BC
James Madison University

A More Efficient Path to Learning Improvement: Using Repositories of Effectiveness Studies to Guide Evidence-Informed Programming

Institutions of higher education are expected to gather and use outcomes data to improve student learning and development (Jankowski et al., 2018; U.S. Department of Education, 2006). It is hoped that learning improvement will be evidenced by employing an iterative process of building educational programming, implementing programming, assessing outcomes, and using results to make changes to programming (Fulcher et al., 2014). Changes to pedagogy, activities, or educational content are common strategies employed in the hope of creating more effective programming and in turn improving student learning and development (Jankowski et al., 2018).

We endorse this improvement science (Bryk et al., 2015; Lewis, 2015) approach promoted in higher education (Fulcher et al., 2014). However, echoing others, we call for a process of improvement that begins with programming that *should* be effective based on research (Kerr et al., 2020; Pope et al., 2019; Pope et al., in press; Slavin, 2020; Smith & Finney, 2020; Wight et al., 2016). Our recommendation is informed by concerns of inefficiency, engagement, and ethics.

CORRESPONDENCE

Email
finneysj@jmu.edu

There is great *inefficiency* in the outcomes assessment process when programming is either built from “scratch” based on good intentions, assumptions, and hunches, or programming is based on ineffective strategies. Depending on the initial quality of programming, major changes may be required for programming to be effective. Although outcomes data can indicate that students did not achieve expectations, outcomes data do not suggest changes to programming. Moreover, faculty and student affairs professionals may not know what programming is necessary to achieve intended outcomes (e.g., Brownell & Tanner, 2012; Hutchings, 2010; Jones, 2008). Thus, changes to programming may be exploratory in nature (e.g., “Let’s try this approach”), based on tradition (e.g., “This is what I experienced as a student”), or avoided. Moreover, changes may be minor. Thus, it may take years to implement effective programming that results in intended outcomes. An analogy offered by Eubanks (2017) makes this point clearly: “Imagine if each town and village were required to research and produce its own drugs, and ignore large-scale science-based medical research. That is our current situation with respect to assessment” (p. 11). Instead, we recommend offering evidence-informed programming that is supported by research and instills greater confidence that students’ knowledge, attitudes, and skills will be impacted in desired ways. Subsequent outcomes assessment is still needed to formally examine the effectiveness of the programming. In this context, the outcomes assessment process is used in a confirmatory way to assess if the research-informed (thus, should-be-effective) programming is actually effective in the specific institutional context. This confirmatory approach should be much more efficient than the exploratory approach. Less time and resources are needed to improve the programming because it is evidence informed and more likely to be effective. In turn, fewer iterations of the assessment cycle are required to inform changes to programming to obtain the desired impact on student learning and development.

Implementing programming with no prior effectiveness information requires consistent *engagement* by faculty and staff to assess outcomes and use results for improvement. Yet, many student affairs professionals and faculty do not consistently engage in outcomes assessment (e.g., Bresciani, 2010; Hutchings, 2010). If assessment data are gathered, there are few examples of iterative, continued improvement efforts until intended outcomes are achieved (Jankowski et al., 2018). Adopting new or unsupported programming requires a great deal of active, thoughtful engagement in assessment and improvement activities that may be perceived as demanding, unrealistic, and unsustainable by faculty and staff. There are tremendous challenges to building and improving new interventions, programming, or pedagogy (Gitlin, 2013) and faculty and staff may not be interested in these innovation activities or able to assume the trajectory of this work (e.g., Brownell & Tanner, 2012). Engaging in empirical study of the effectiveness of new programming versus the use of pre-existing research to inform programming is much like the distinction between the Scholarship of Teaching and Learning (SoTL) and Scholarly Teaching in higher education. SoTL is the systematic study (i.e., intentional, planned, occurring over time) of teaching and learning using an established scholarly process to understand what maximizes learning, resulting in findings publicly shared for use (Potter & Kustra, 2011). Scholarly Teaching is consuming evidence on what effectively fosters learning (often drawn from SoTL literature) and using that evidence to inform practice. We recommend an approach similar to Scholarly Teaching. We recommend faculty and staff identify and offer existing evidence-informed programming to reduce the burden associated with building novel programming or continuously improving less effective approaches to learning and development.

Student affairs professionals and faculty have an *ethical* responsibility to offer effective learning and development experiences to students (Finney & Horst, 2019b; Svinicki & McKeachie, 2013). The implementation of unassessed programming that is ineffective or harmful to students is unacceptable. Although we hope our colleagues in higher education are continuously assessing and improving their programming, we are realistic that many are not. Thus, the implementation of unsupported programming under the assumption that it will be improved until effective is unethical if programming is rarely or never assessed and improved. Fortunately, three sets of professional standards in higher education (Assessment Skills and Knowledge Standards, ACPA-NASPA Professional Competencies, CAS Standards) call for programming to be intentionally built using current research that indicates what

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effectively impacts particular outcomes (Finney & Horst, 2019a).¹ Moreover, Horst and Prendergast's (2020) *Assessment Skills Framework* outlined the knowledge, skills, and attitudes necessary for assessment work. The ability to articulate program theory, create a logic model, and identify literature domains to inform program development were considered necessary for high-quality assessment practice.

These standards and frameworks echo previous statements regarding the ethics and expectations of implementing research-informed programming in higher education.

Any student affairs professional not reading the literature, not becoming knowledgeable of research and theory, is not acting ethically. Students have a right to expect that student affairs professionals are knowledgeable of appropriate theories, current research, and proven best practices. (Carpenter, 2001, p. 311)

There is an expectation that student affairs professionals and faculty can answer a basic question: "What evidence suggests the intended programming should be effective?"

Likewise, for faculty the "ethical principle of competence" emphasizes that "both departments and instructors have the obligation to place competent teachers in classrooms and hold them accountable for providing undergraduates with a quality educational experience" (Komarraju & Handelsman, 2012, p. 192). Meeting the ethical obligation to provide high-quality, impactful opportunities to learn requires understanding what is effective. "An effective curriculum uses research-informed strategies to help students learn and succeed" (Suskie, 2018, p. 69). Thus, when Banta and Blaich (2011) described the outcomes assessment process, they noted the importance of understanding what programming should be effective when trying to "close the loop" (bold emphasis added):

An internally driven, formative approach to assessment is based on the belief that a key factor inhibiting improvements in student learning or allowing students to graduate without learning enough is that faculty and staff who deal with students **lack high-quality information about the experiences and conditions that help students learn**. If they had information about how much their students were or were not learning and **the practices and conditions that helped them learn**, practitioners would put this knowledge to work, and improvement would naturally follow. (p. 27)

In short, there is an expectation that student affairs professionals and faculty can answer a basic question: "What evidence suggests the intended programming should be effective?" (Finney, et.al., 2021). However, many student affairs professionals and faculty have not been trained in cognition, learning, or pedagogy (e.g., Bresciani, 2010; Brownell & Tanner, 2012; Jones, 2008). Given the lack of training, Kerr and colleagues (2020) noted the need to build this knowledge base:

If the learning goals focus on identity development, scholarship in this area will require significant exploration and expert consultation. If the learning goals are specified in self-advocacy or self-efficacy, the relevant literature must be mined to identify the right content and develop effective techniques intended to stimulate student learning. This is true for any learning goal selected. Those trained as generalists will need to connect with topic and discipline experts and literature to move beyond surface-level understandings of student learning concepts and practices to achieve the learning. (p. 27)

Where can faculty and student affairs professionals find "high-quality information about the experiences and conditions that help students learn", as Banta and Blaich (2011) noted? How can faculty and staff determine what scholarship is providing credible evidence

¹ Expectations are found at other levels of education. For K-12, the primary source of federal aid is the Elementary and Secondary Education Act, as amended by the Every Student Succeeds Act, which calls on states, districts, and schools to use evidence-based programming. Section 8101(21) defines "evidence-based." For a strategy, intervention, or activity, the definition establishes three tiers of evidence that demonstrate a significant effect on improving student outcomes: (1) strong, (2) moderate, and (3) promising. The definition also includes an activity, strategy, or intervention supported by a rationale based on high-quality research or positive evaluation that such activity, strategy, or intervention has a high likelihood of improving student outcomes (Skinner, 2019; Slavin, 2020).

of effectiveness versus (mis)information that should be ignored? How should faculty and staff summarize the existing credible evidence to inform their programming decisions? We describe the use of systematic review repositories to support the selection, implementation, and assessment of “should-be-effective” programming. Implementing evidence-informed programming is ethical and should result in more efficient engagement in learning improvement efforts.

Systematic Review Repositories

Faculty and student affairs professionals hope to impact a wide variety of student learning and development outcomes. Often faculty target what we consider academic outcomes, such as written communication, critical thinking, quantitative reasoning, oral communication, among other outcomes. Thus, faculty search for programming, pedagogy, and strategies shown to facilitate students achieving these outcomes. Student affairs professionals are often tasked with targeting these same outcomes in addition to outcomes related to health, civic engagement, diversity, leadership, among other outcomes. *The CAS Standards* (2019) provide the breadth of outcomes that student affairs professionals hope to impact via effective programming. Of course, faculty and student affairs professionals often work together to offer effective co-curricular programming that impacts a variety of desired and shared outcomes.

Knowing where and how to find credible evidence regarding program effectiveness can empower faculty and student affairs professionals to make evidence-based programming decisions. Conducting a search for research on a particular topic (e.g., effective leadership development programming) can be daunting if one is not trained to conduct such a search. An internet search using Google Scholar (which we often observe in practice) often yields an immense number of articles and chapters. The articles providing empirical study of programming need to be read to evaluate the type and quality of evidence, which impact the credibility of effectiveness statements. Faculty and student affairs professionals may not have the time or skill to sort studies into evidence categories, rank them based on a set of evidence standards, and then synthesize the evidence in a meaningful way (Bambra, 2009). Thus, the search for and synthesis of credible evidence of effectiveness may be characterized as time consuming, tedious, demanding, and, for some, overwhelming.

Partly as a consequence of this overwhelming challenge, but also in response to a call for evidence-based programming, organizations have developed evidence grading schemes and repositories of systematic reviews (Boruch & Rui, 2008). These grading schemes and systematic review repositories are forward-facing so the public can easily access already conducted reviews of credible evidence to guide decision making.

The *systematic review*, which has been associated with healthcare evidence and evidence-based medicine for over two decades (Bearman et al., 2012), is becoming an established research method in public health and education, as well as the social sciences (Methods Group of the Campbell Collaboration, 2017). The goal of a systematic review is to describe the effectiveness of programming based on the most credible research evidence available. This goal is accomplished by applying transparent, standardized, and reproducible methods to find and evaluate the quality of evidence from effectiveness studies.

A high-quality systematic review follows a formal procedure that begins with the formulation of a precise question, including the definition of the population, the intervention, any comparison group, and outcomes to be measured. A question relevant for faculty overseeing general education may be: Do first-year experience courses for college students positively impact credit accumulation, degree attainment, and academic achievement relative to no first-year course? (for answer, see review by *What Works Clearinghouse*). A question relevant for university health center professionals may be: Does mindfulness-based stress reduction programming improve health, quality of life, and social functioning for students relative to no programming? (for answer, see systematic review by *Campbell Collaboration*).

After the question is delineated, the search for studies to include in the systematic review can begin. After the search has been conducted, the evidence produced by each study is appraised for quality. Increasingly, decision-makers recognize the importance of standards

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when finding and sorting evidence (Boruch & Rui, 2008). Evidence from individual studies can be equivocal or biased, even if the authors claim otherwise. At their best, systematic reviews produced using evidence grading schemes can reduce the possibility of bias and screen out studies producing ambiguous results. Evidence grading schemes take the design of the study into consideration when screening individual studies of effectiveness. Evidence from each study is sorted within a hierarchy of evidence, with randomized controlled trials (RCTs) at the top of the pyramid and professional opinion articles at the bottom (see Figure 1).

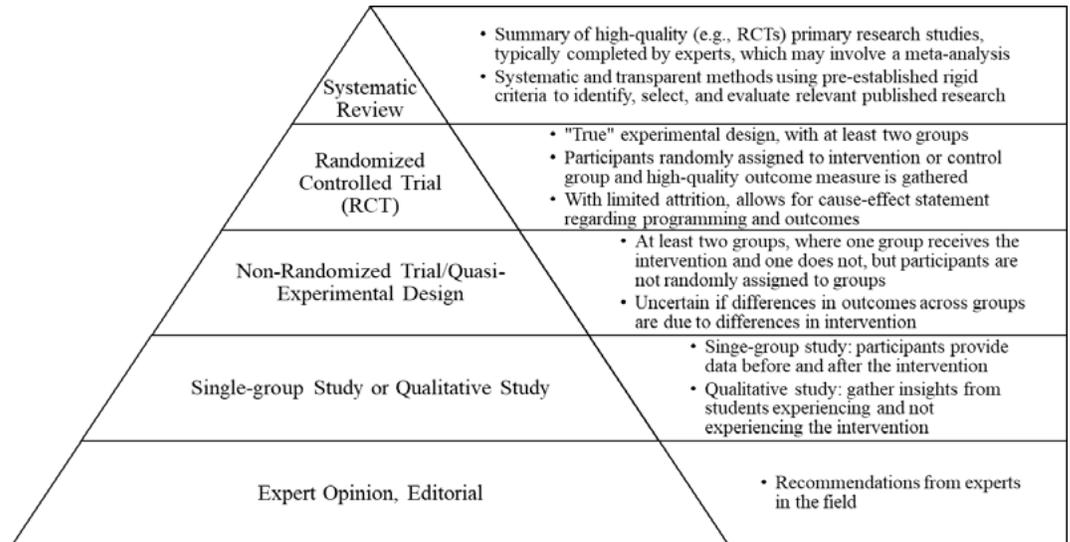


Figure 1. Pyramid of Evidence for Program Effectiveness Inferences. The research design producing the evidence should be appropriate to the question being asked (e.g., Slavin, 2020). In the case of effectiveness studies, the question being asked is whether students receiving programming will be more likely to achieve outcomes than students not receiving programming. Answering this question necessitates at least two groups of students who differ in the experience of receiving programming. Other data (e.g., implementation fidelity) and approaches (e.g., qualitative methods) provide other valuable insights; yet, when the question centers on “what works”, experimental designs are optimal.

Evidence grading schemes and repositories are incredibly helpful to identify the best available evidence given the intended inference (e.g., program effectiveness) and the variety of designs employed in a domain.

Although RCTs remain the “gold standard” for effectiveness claims, numerous studies in education and the social sciences may not employ this design. Thus, evidence grading schemes are incredibly helpful to identify the best available evidence given the intended inference (e.g., program effectiveness) and the variety of designs employed in a domain. After high-quality evidence is identified, it is concatenated across studies (meta-analysis may be used) to understand the size of the effect of programming on an outcome.

Since the early 1990’s, a number of organizations created evidence grading schemes and repositories for systematic reviews. These organizations differ in the specific discipline(s) they target (see Table 1). Yet, all apply strict grading schemes when reviewing each study’s methods and results, all follow a rigorous peer-review process, and all reviews are conducted by qualified researchers. Three well-known organizations are the *Campbell Collaboration* (education, crime, welfare), *Cochrane Collaboration* (health), and *What Works Clearinghouse* (WWC) of the U.S. Department of Education. Below we provide an example of a systematic review provided by The *Campbell Collaboration* and WWC to showcase the utility of these repositories. We recommend exploring each repository, as there are many reviews relevant to outcomes in higher education.

The Campbell Collaboration

The *Campbell Collaboration* “promotes positive social and economic change through the production and use of systematic reviews and other evidence synthesis for evidence-based policy and practice” (Campbell Collaboration, n.d.). The repository provides a user-friendly keyword search by program or outcome. Moreover, each detailed systematic review (i.e., “full report”) is coupled with a short (i.e., one to two page) plain language summary.

Table 1
Description and examples from systematic review repositories

Repository	Description	Examples Relevant to Higher Education
Campbell Collaboration	Exists to help people make well-informed decisions about social & behavioral interventions . Provides systematic reviews of programs or interventions using rigorous review & synthesis processes of high-quality (RCTs or quasi-experimental designs) primary research. Some research designs have such weak internal validity that they are unacceptable in reviews to inform effective claims (e.g., simple before-after programming studies without comparison groups).	<ul style="list-style-type: none"> • Bystander Intervention • Mindfulness-based Stress Reduction • Motivational Interviewing for Substance Abuse • Exercise to Improve Self-Esteem in Young People • Advocacy Interventions to Reduce Violence & Promote Well-Being of Women who Experience Partner Abuse
What Works Clearinghouse	A trusted source of scientific evidence on education programs, practices, & policies . WWC reviews research, determines which studies meet rigorous standards (RCTs, quasi-experimental designs), summarizes findings, and provides practice guides.	<ul style="list-style-type: none"> • Using Technology To Support Postsecondary Learning • Linked Learning Communities • Organizing Instruction & Study to Improve Learning • First Year Experience Courses • Strategies for Postsecondary Students in Developmental Education
Cochrane Library	Provides short plain language summaries of their longer systematic reviews of empirical research that focus on interventions for health outcomes (e.g., alcohol, STIs). Indicates the quality of the studies that informed their conclusions.	<ul style="list-style-type: none"> • Social norms interventions are not effective enough on their own to reduce alcohol misuse among college students • Self-help & Guided Self-help for Eating Disorders • Prevention of Suicide in University Settings

Note. RCTs = Randomized Controlled Trials.

The systematic review *Effects of Bystander Programs on the Prevention of Sexual Assault among Adolescents and College Students: A Systematic Review* (Kettrey et al., 2019) is (unfortunately) quite relevant to higher education. The full report of the program's effectiveness begins with a description of the purpose for the review, including background information on the problem, research question of interest, and current state-of-the-evidence. In this example, the review "examines the effects bystander programs have on knowledge and attitudes concerning sexual assault and bystander behavior, bystander intervention when witnessing sexual assault or its warning signs, and participants' rates of perpetration of sexual assault" (p. 1).

Next, the review includes a description of the studies included in the review. Of note are details regarding the types of interventions and various outcomes. This information is particularly helpful for faculty and student affairs professionals seeking to align their desired outcomes with evidence-informed programming. For example, this review summarizes research on the effects of bystander programs on the following outcomes: knowledge concerning sexual assault and intervening, attitudes concerning sexual assault and intervening, behavior when witnessing a sexual assault or its warning signs, and perpetration of sexual assault. Thus, if professionals were interested in influencing these outcomes, this review would provide insight into what programming was and was not effective for which outcome. Evidence from 27 high-quality studies was summarized, including 21 RCTs. Inclusion criteria required that eligible studies have an experimental or controlled quasi-experimental research design, comparing an intervention group (i.e., students assigned to a bystander program) to a comparison group (i.e., students not assigned to a bystander program). Reviewers limited the types of studies

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included to RCTs and quasi-experimental designs because these typically have lower risk of bias relative to other research designs (e.g., single-group designs).

Reading this review replaces years of creating novel programming, collecting assessment data produced by rigorous designs, and using results to improve programming in order to uncover effective programming.

Lastly, the authors include an interpretation of the findings (including what outcomes were and were not impacted) with implications for real-life application and acknowledgment of any remaining gaps in the literature. For example, bystander programs were found to have an effect on some but not all outcomes reflecting knowledge and attitudes concerning sexual assault and intervening. Bystander programs had the most pronounced beneficial effect on rape myth acceptance. The effect on bystander efficacy (i.e., respondents' confidence in their ability to intervene) was also fairly pronounced. There were significant delayed effects (i.e., 1 to 4 months after the intervention) on taking responsibility for intervening/acting, knowing strategies for intervening, and intentions to intervene. Additionally, the effects of bystander programs on intervention behavior outcomes diminished 6-months post-intervention; thus, reviewers concluded that booster sessions may be needed to yield sustained intervention effects. Little or no evidence of effects were found for gender attitudes, victim empathy, date rape attitudes, or noticing sexual assault.

This review provides credible evidence to faculty and student affairs professionals seeking to engage students in effective programming to impact the following outcomes: rape myth acceptance, bystander self-efficacy, increased knowledge and attitudes toward taking responsibility for intervening/acting, knowing strategies for intervening, and intentions to intervene. This review would also suggest to faculty and staff that this programming may not be effective for changing the behavior of potential perpetrators. Reading this review replaces years of creating novel programming, collecting assessment data produced by rigorous designs, and using results to improve programming in order to uncover effective programming.

What Works Clearinghouse

The WWC of the U.S. Department of Education reviews the existing research on different programs, products, practices, and policies in education (WWC, n.d.). The WWC offers a number of resources for researchers, practitioners, and policymakers, including the following:

- systematic reviews, which provide a synthesis and analysis of all available research on a particular program or intervention in order to assess its effectiveness;
- intervention reports, which provide a brief summary or snapshot of the evidence on a practice, program, or curriculum;
- practice guides for educators, which are based on reviews of research, experiences of practitioners, and expert opinions;
- resources for researchers, which include methodological guidelines and training to further the field of education research.

For example, the WWC educator's practice guide *Using Technology to Support Postsecondary Student Learning* provides five evidence-based recommendations on the effective uses of technologies associated with improving postsecondary student learning outcomes (Dabbagh et al., 2019). Each recommendation has a summary of the evidence for that specific recommendation, along with a level of evidence rating (i.e., minimal, moderate, or strong). This rating is informed by the number of studies supporting the recommended practice, the types of study designs included (e.g., RCT, quasi-experimental), and whether the study was conducted in different contexts and with different populations. Due to these strict criteria, it is common for a recommendation to get a minimum level of evidence rating.

Also included in each recommendation are the outcome measure domains impacted. Once again, this information is particularly useful for faculty and student affairs professionals seeking to align their intended outcomes with evidence-based strategies. In this particular practice guide, three of the recommendations (e.g., the use of varied, personalized and readily available digital content; the incorporation of technology that models self-regulated learning; the use of technology to provide targeted feedback) received a moderate level of evidence rating.

The outcome domains associated with the recommendation for the use of varied, personalized, and readily available digital content include student achievement and credit accumulation. The same outcomes were associated with the use of technology to provide targeted feedback. The outcome of student achievement was associated with the recommendation of incorporating technology that models self-regulated learning. Two strategies (e.g., the use of communication and collaboration tools to increase interaction; the use of simulation technologies that help students engage in problem-solving) received a minimal level of evidence rating because only one study met the WWC design standards without reservations. This systematic review provides an efficient mechanism to inform faculty and staff's pedagogy and programming decisions, which can be assessed for effectiveness in their specific context with their students.

Additional Resources

Clearly, systematic reviews and their derivative products (e.g., practice guides) have utility. They serve as an efficient way to find effective programming, particularly if individuals do not feel qualified to rate the quality of evidence, keep pace with new studies, or wade through large amounts of research (Hempenstall, 2006). Because they bring together a whole body of evidence, systematic reviews can also reduce confusion stemming from individual studies having conflicting results (Cochrane Training, n.d.). They also identify contexts or individuals' characteristics that moderate effectiveness (e.g., program is more effective for one group of students than another). Finally, systematic reviews spotlight areas where there is insufficient evidence to guide programming decisions. That is, for some programs or outcomes, there is no research using adequate methodology to make trustworthy effectiveness claims. A review may be undertaken to formally demonstrate the absence of evidence for common programming.

With that said, there are limitations of systematic reviews. As with any research, a systematic review is time sensitive in that new studies are continually produced and not included in the review. A systematic review is time-consuming and effortful and may take years before available to inform practice. Moreover, a high-quality systematic review requires particular research designs for studies to be included. Thus, systematic reviews may not exist for many programs. We created a [resource](#) that provides numerous examples of systematic reviews relevant for higher education. Notice, there are approximately half-a-dozen to a dozen reviews for each repository, not hundreds of reviews within each repository due to the limitations noted above. Given these limitations, we offer three additional resources that may be useful to create evidence-informed programming when a systematic review is not available: collections of research on a topic, the pyramid of evidence, and the Wise Interventions database.

Collections of Research on a Topic

Not all collections of empirical research on a topic meet the criteria of systematic review repositories (e.g., WWC). Yet, these other collections can provide useful information. In the resource we created, we included these other collections of research and information. For each collection, we provide a description, a brief summary of how research is identified, selected, and synthesized, and numerous examples relevant to higher education.

For example, *Culture of Respect*, a NASPA initiative, is a curated list of theory-driven and evidence-informed sexual violence prevention programs. Programming included on the list may be deemed “supported by evidence” (one peer-reviewed publication using a RCT or quasi-experimental design), “promising” (report or peer-reviewed publication using non-experimental design) or “emerging” (program based on theory but no empirical evidence). There are no systematic reviews and evidence of effectiveness may be weak. Likewise, *CollegeAIM*, a resource developed to address harmful drinking on campuses, does not engage in systematic reviews of effectiveness studies. Instead, this collection lists potential interventions and rates their cost, implementation, and amount of research evaluating their effectiveness. Collections of this sort may be helpful to guide program creation if formal systematic reviews do not exist.

Clearly, systematic reviews and their derivative products (e.g., practice guides) have utility.

Pyramid of Credible Evidence

If no systematic reviews or collections of evidence exist, faculty and staff should begin their search for evidence of program effectiveness by identifying individual studies employing RCTs. Recall, high-quality systematic reviews synthesize findings from RCTs to make credible claims regarding program effectiveness. A few well-conducted RCTs may provide necessary evidence to support claims of program effectiveness. If RCTs do not exist, quasi-experimental studies that involve the intervention group and a comparison group should be located. If RCTs or quasi-experimental studies do not exist, studies involving a single group assessed before and after experiencing the programming may be available. Likewise, qualitative studies of data gathered from students who did and did not experience the programming may exist. As one moves down the pyramid, the effectiveness statement becomes less credible. Beginning the search for credible evidence at the top of the pyramid supports efficiency in that less credible evidence may not need to be gathered or evaluated. Expert opinion and testimonials are seductive and we have found they often distract from finding credible evidence of effectiveness.

Using pre-existing evidence of effectiveness to inform programming forces a focus on student outcomes because evidence-informed strategies are intentionally selected to achieve these outcomes.

The pyramid of evidence serves as a guide and reminder of how to find the most credible evidence and how to adjust effectiveness claims given the level of evidence. Working with a librarian to identify RCTs before wading through the other types of studies can save a tremendous amount of time. In fact, we have found this pyramid coupled with a few consultations with a librarian not only results in efficient searches for the most credible evidence of effectiveness but also efficacy in future searches.

“Wise Interventions”

In addition to using the common search engines (e.g., ERIC, PsycNet, PubMed) to find primary research, we recommend a curated resource by Greg Walton and colleagues. This useful [website](#) summarizes short yet powerful interventions to impact behavior, self-control, health, belonging, achievement, among other outcomes. Although this database of “wise” interventions is not a concatenation of several RCTs (as found in systematic reviews), there tends to be a body of research regarding intervention impact (Walton & Wilson, 2018).

These Wise Interventions showcase that interventions do not need to be long, complex, or difficult to implement (Walton, 2014). They can be short activities that are not marketed or perceived as interventions by the students engaged in the activity. They are “wise” because they target the underlying psychological process influencing the outcome of interest. For example, a one-hour intervention where students learned and then explained to others that social adversities are normal to college buffered the impact of negative experiences on sense of belonging, which resulted in improvement in grades and health outcomes for minoritized students (Walton & Cohen, 2011). The database includes several interventions relevant for Offices of Student Success that focus on academic achievement outcomes, Offices of Health and Wellness that focus on wellbeing and physical health outcomes, Offices of Civic Engagement that focus on voting and other civic behavior outcomes, Offices of Orientation and Residence Life that focus on sense of belonging outcomes, STEM degree programs with the intended outcomes of retaining and supporting underserved populations, among other short interventions to impact outcomes relevant to higher education (Walton & Wilson, 2018).

Conclusion

Improving student learning and development involves answering “What works?” Answering this question involves two fundamental steps: 1) identifying proven effective evidence-informed strategies; 2) assessing if the strategies are effective in the current setting (Bryk et al., 2015). We focused on the first step given it addresses our concerns regarding efficiency and engagement in outcomes assessment and ethical practice in higher education. More specifically, using pre-existing evidence of effectiveness to inform programming forces a focus on student outcomes because evidence-informed strategies are intentionally selected to achieve these outcomes. Faculty and staff need to evaluate the credibility of the pre-existing evidence, with the most credible evidence for effectiveness coming from RCTs. Each RCT provides insight into program effectiveness under narrow conditions with a specific population. Accumulation of several RCTs across different contexts and populations provides insight into

context or student characteristics that may moderate program effectiveness. This body of research has potential to create more equitable programming given demonstrated impact on outcomes across diverse student populations.

Yet, not all higher education professionals feel comfortable reading studies of RCTs. Not all campuses have a Center for Teaching and Learning that offers training in evidence-informed practices. Moreover, colleagues who engage in evidence-informed programming should not be relied upon to support the development of other colleagues, as research shows those engaging with evidence-informed, innovative practices tend to talk to each other (Lane et al., 2020). Thus, we introduced systematic review repositories to counter the deluge of misinformation and encourage the use of evidence-informed programming. Our goal was to support faculty and student affairs professionals who yearn for resources to help them do their jobs well.

We embrace outcomes assessment as a mechanism for assessing should-be-effective programming. However, we urge the higher education community to acknowledge its inefficiency and dependency on consistent engagement by faculty and staff, which hinders its impact on learning improvement when applied to unsubstantiated programming. We recognize that some decision-makers lack a scientific framework and are inclined to accept programming proposals based on opinions, testimonials, intuition, and good intentions, not empirically linked to intended outcomes (Hempenstall, 2006). Thus, to ensure students have the opportunity to learn and develop as promised by higher education institutions, we call on colleagues, administrators, and students to consistently ask those creating and improving programming to share their process of using credible evidence to inform decision making.

References

- Bambra, C. (2009). Real world reviews: a beginner's guide to undertaking systematic reviews of public health policy interventions. *Journal of Epidemiology and Community Health*, 65, 14-19. [10.1136/jech.2009.088740](https://doi.org/10.1136/jech.2009.088740)
- Banta, T.W., & Blaich, C. (2011). Closing the assessment loop. *Change: The Magazine of Higher Learning*, 43, 22-27. <https://doi.org/10.1080/00091383.2011.538642>
- Bearman, M., Smith, C., Carbone, A., Slade, S., Baik, C., Hughes-Warrington, M., & Neumann, D. (2012). Systematic review methodology in higher education. *Higher Education Research & Development*, 31, 625-640. <https://doi.org/10.1080/07294360.2012.702735>
- Boruch, R., & Rui, N. (2008). From randomized controlled trials to evidence grading schemes: current state of evidence-based practice in social sciences. *Journal of Evidence-Based Medicine*, 1, 41-49. [10.1111/j.1756-5391.2008.00004.x](https://doi.org/10.1111/j.1756-5391.2008.00004.x)
- Bresciani, M.J. (2010). Understanding barriers to student affairs professionals' engagement in outcomes-based assessment of student learning and development. *Journal of Student Affairs*, 14, 81-90.
- Brownell, S., & Tanner, K. (2012). Barriers to faculty pedagogical change: Lack of training, time, incentives, and... tensions with professional identity? *CBE—Life Sciences Education*, 11, 339 – 346. [10.1187/cbe.12-09-0163](https://doi.org/10.1187/cbe.12-09-0163)
- Bryk, A., Gomez, L., Grunow, A. & LeMahieu, P. (2015). *Learning to improve: How America's schools can get better at getting better*. Cambridge, MA: Harvard Education Press. <https://eric.ed.gov/?id=ED568744>
- Campbell Collaboration (n.d.). *Campbell's vision, mission and key principles*. <https://campbellcollaboration.org/about-campbell/vision-mission-and-principle.html>
- Carpenter, D. (2001). Student affairs scholarship (re?)considered: Toward a scholarship of practice. *Journal of College Student Development*, 42, 301-318.
- Cochrane Training (n.d.). *Module 3: Introduction to systematic reviews*. Cochrane Evidence Essentials. <https://training.cochrane.org/essentials>
- Council for the Advancement of Standards in Higher Education. (2019). *CAS professional standards for higher education* (10th ed.). Washington, DC: Author.
- Dabbagh, N., Bass, R., Bishop, M., Costelloe, S., Cummings, K., Freeman, B., Frye, M., Picciano, A. G., Porowski, A., Sparrow, J., & Wilson, S. J. (2019). *Using technology to support postsecondary student learning: A practice guide for college and university administrators, advisors, and faculty*. Institute of Education Sciences, What Works Clearinghouse. <https://ies.ed.gov/ncee/wwc/Docs/PracticeGuide/wwc-using-tech-postsecondary.pdf>
- Eubanks, D. (2017). A guide for the perplexed. *Intersection: A Publication of the Association for the Assessment of Learning in Higher Education*, 4-13. Retrieved from https://www.aalhe.org/assets/docs/AAHLE_Fall_2017_Intersection.pdf
- Finney, S.J., & Horst, S.J. (2019a). Standards, standards, standards: Mapping professional standards for outcomes assessment to assessment practice. *Journal of Student Affairs Research and Practice*, 56, 310-325. <https://doi.org/10.1080/19496591.2018.1559171>
- Finney, S.J., & Horst, S.J. (2019b). The status of assessment, evaluation, and research in student affairs. In V. L. Wise & Z. Davenport (Eds.), *Student affairs assessment, evaluation, and research: A guidebook for graduate students and new professionals* (pp. 3 – 19). Charles Thomas Publisher. <https://eric.ed.gov/?id=ED593398>
- Finney, S.J., Wells, J.B., & Henning, G.W. (2021). *The need for program theory and implementation fidelity in assessment practice and standards* (Occasional Paper No. 51). Urbana, IL: University of Illinois and Indiana University, National Institute for Learning Outcomes Assessment (NILOA). https://www.learningoutcomesassessment.org/wp-content/uploads/2021/03/Occ_Paper_51-1.pdf
- Fulcher, K.H., Good, M.R., Coleman, C.M., & Smith, K.L. (2014). *A simple model for learning improvement: Weigh pig, feed pig, weigh pig*. (Occasional Paper No. 23). University of Illinois and Indiana University, National Institute for Learning Outcomes Assessment.
- Hempenstall, K. (2006). What does evidence-based practice in education mean? *Australian Journal of Learning Disabilities*, 11, 83 – 92. <https://doi.org/10.1080/19404150609546811>

- Horst, S.J. & Prendergast, C. (2020). The assessment skills framework: A taxonomy of assessment knowledge, skills and attitudes. *Research & Practice in Assessment*, 15, 1-25. <https://www.rpajournal.com/dev/wp-content/uploads/2020/05/The-Assessment-Skills-Framework-RPA.pdf>
- Hutchings, P. (2010). *Opening doors to faculty involvement in assessment*. (Occasional Paper No. 4). University of Illinois and Indiana University, National Institute for Learning Outcomes Assessment. <https://www.learningoutcomesassessment.org/wp-content/uploads/2019/02/OccasionalPaper4.pdf>
- Jankowski, N., Timmer, J., Kinzie, J., & Kuh, G. (2018). *Assessment that matters: Trending toward practices that document authentic student learning*. University of Illinois and Indiana University, National Institute for Learning Outcomes Assessment. <https://files.eric.ed.gov/fulltext/ED590514.pdf>
- Jones, A. (2008). Preparing new faculty members for their teaching role. *New Directions For Higher Education*, 143, 93-100. <https://doi.org/10.1002/he.317>
- Kerr, K.G., Edwards, K.E., Tweedy, J., Lichterman, H.L., & Knerr, A.R. (2020). *The curricular approach to student affairs: A revolutionary shift for learning beyond the classroom*. Stylus.
- Kettrey, H. H., Marx, R. A., & Tanner-Smith, E. E. (2019). Effects of bystander programs on the prevention of sexual assault among adolescents and college students: A systematic review. *Campbell Collaboration*, 15, e1013. <https://doi.org/10.4073/csr.2019.1>
- Komaraju, M., & Handelsman, M. (2012). *Preparing to teach: Becoming part of an ethical culture*. In R. Landrum & M. McCarthy (Eds.), *Teaching ethically: Challenges and opportunities* (p. 191–201). American Psychological Association. <https://doi.org/10.1037/13496-017>
- Lane, A., McAlpin, J., Earl, B., Feola, S., Lewis, J., Mertens, K., Shadle, S., Skvoretz, J., Ziker, J., Couch, B., Prevost, L., & Stains, M. (2020). Innovative teaching knowledge stays with users. *Proceedings of the National Academy of Sciences*, 117, 22665-22667. <https://doi.org/10.1073/pnas.2012372117>
- Lewis, C. (2015). What is improvement science? Do we need it in education? *Educational Researcher*, 44, 54-61. <https://doi.org/10.3102/0013189X15570388>
- Methods Group of the Campbell Collaboration (2017). *Methodological expectations of Campbell Collaboration intervention reviews: Conduct standards* (Campbell Policies and Guidelines Series No. 3). Campbell Collaboration. [10.4073/cpg.2016.3](https://doi.org/10.4073/cpg.2016.3)
- Pope, A., Finney, S.J., & Bare, A. (2019). The essential role of program theory: Fostering theory-driven practice and high quality outcomes assessment in student affairs. *Research & Practice in Assessment*, 14, 5–17. <https://www.rpajournal.com/dev/wp-content/uploads/2019/07/L1.pdf>
- Pope, A., Finney, S.J., & Crewe, M. (in press). Evaluating the effectiveness of an academic success program: Showcasing the importance of theory to practice. *Journal of Student Affairs Inquiry*.
- Potter, M. & Kustra, E. (2011). The relationship between scholarly teaching and SoTL: Models, distinctions, and clarifications. *International Journal for the Scholarship of Teaching and Learning*, 5(1). <https://doi.org/10.20429/ijstl.2011.050123>
- Skinner, R.R. (2019). *The Elementary and Secondary Education Act (ESEA), as amended by the Every Student Succeeds Act (ESSA): A primer*. Congressional Research Service. R45977. <https://fas.org/sgp/crs/misc/R45977.pdf>
- Slavin, R.E. (2020). How evidence-based reform will transform research and practice in education. *Educational Psychologist*, 55, 21-31. <https://doi.org/10.1080/00461520.2019.1611432>
- Smith, K.L., & Finney, S.J. (2020). Elevating program theory and implementation fidelity in higher education: Modeling the process via an ethical reasoning curriculum. *Research and Practice in Assessment*, 15, 1-13. <https://www.rpajournal.com/dev/wp-content/uploads/2020/09/Elevating-Program-Theory-and-Implementation-Fidelity-in-Higher-Education.pdf>
- Suskie, L. (2018). *Assessing student learning: A common sense guide*. Jossey-Bass.
- Svinicki, M.D., & McKeachie, W.J. (2013) *McKeachie's teaching tips: Strategies, research, and theory for college and university teachers* (14th ed.). Wadsworth Cengage Learning.
- U.S. Department of Education (2006). *A test of leadership: Charting the future of US higher Education*. U.S. Department of Education. <https://www2.ed.gov/about/bdscomm/list/hiedfuture/reports/final-report.pdf>
- Walton, G.M. (2014). The new science of wise psychological interventions. *Current Directions in Psychological Science*, 23, 73–82. <https://doi.org/10.1177/0963721413512856>

- Walton, G.M., & Cohen, G.L. (2011). A brief social-belonging intervention improves academic and health outcomes among minority students. *Science*, *331*, 1447–1451. [10.1126/science.1198364](https://doi.org/10.1126/science.1198364)
- Walton, G.M., & Wilson, T.D. (2018). Wise interventions: Psychological remedies for social and personal problems. *Psychological Review*, *125*, 617 – 655. <https://doi.org/10.1037/rev0000115>
- What Works Clearinghouse (n.d.). *What we do*. <https://ies.ed.gov/ncee/wwc/>
- Wight, D., Winbush, E., Jepson, R., & Doi, L. (2016). Six steps in quality intervention development (6SQuID). *Journal of Epidemiology and Community Health*, *70*, 520-525. [10.1136/jech-2015-205952](https://doi.org/10.1136/jech-2015-205952)