


# Ramp It Up: A Call for More Research in Introductory Psychology

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## Abstract

The introductory psychology (Intro Psych) course is the bedrock of the psychology major and the front face of our discipline. The class not only provides a foundation for students in the major but also provides a comprehensive portrait of the discipline for nonmajors. Despite a sizable body of research focused on pedagogy related to the introductory class, there are many questions that remain unanswered. We provide a comprehensive review of scholarship related to the Intro Psych course and discuss current practices and concerns related to textbook options, as well as teaching methods, course design, assignments to help students learn, and students' learning outcomes. Finally, we provide five major suggestions for future work. We charge researchers to identify major bottlenecks to learning, design multisite studies, measure moderators of learning, assess long-term retention, and design/assess different models of teaching Intro Psych.

## Keywords

introductory psychology, undergraduate education, pedagogy, SoTL

Introductory psychology (hereafter Intro Psych) is arguably psychology's most prolific and consequential course for the major. Nearly all undergraduate psychology programs (99%) offer an Intro Psych course (Norcross et al., 2016). Between 1.2 and 1.6 million students annually enroll in Intro Psych, as it is commonly called (Gurung et al., 2016). Intro Psych is well researched both in North America (e.g., Weiten & Houska, 2015) and abroad (e.g., Ashitaka & Shimada, 2014). However, many questions and issues remain. In this article, we have two main goals. First, we review Scholarship of Teaching and Learning (SoTL) surrounding common pedagogical questions in the context of Intro Psych, highlighting unresolved issues in need of attention. Next, we embolden researchers to address four broad, underresearched areas, providing recommendations to advance research on Intro Psych.

It is important to note that many of the questions we raise apply to other courses in psychology (as well as to other disciplines). This consideration notwithstanding the number of students enrolled in Intro Psych makes this course a priority for pedagogical research. It is also important to note that for students taking the course to satisfy a general education requirement, the class may be their only exposure to the field. Furthermore, given how difficult it is to do robust SoTL in classrooms versus the lab (Wilson-Doenges & Gurung, 2013), the larger sample sizes provided by Intro Psych classes facilitate the testing of pedagogical questions. Given Intro Psych-based research can inform teaching and learning in upper-level courses, we unabashedly base our discussion on this course.

## Common Pedagogical Questions

### *What Are Students Learning in Intro Psych?*

Do we really know what our students are learning in Intro Psych? Most assessments to date do not extend beyond the end of the semester. For example, in a study of retention during the span of the course, Intro Psych students remembered “vivid anecdotes and demonstrations” (VanderStoep, Fagerlin, & Feenstra, 2000, p. 92). When comparing precourse to post-course scores, student performance increased for 9 of the 11 topics presented in the course (McNamara, Williamson, & Jorgensen, 2011). Students tend to make the greatest improvements in the areas of memory, physiological psychology, sensation and perception, content areas presented for longer periods in Intro Psych, and those areas most represented in textbooks (Peck, Ali, Levine, & Matchock, 2006).

Studies of what Intro Psych students remember after the course are rare. In one study, Intro Psych students voluntarily retook their class cumulative final exam 2 years after completing the course (Landrum & Gurung, 2013). Compared to the students' original scores (from when they took the class) and to

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senior-level psychology majors enrolled in a capstone course, student's retention of information dropped from an 80.6% correct score during the course to 56.0% 2 years later. The capstone/senior-level psychology majors only scored modestly better than Intro Psych students 2 years later with 62.7% accuracy.

Long-term retention may be better for some material and influenced by how we test. For example, students' beliefs in psychological myths dispelled by Intro Psych remained dispelled a year later (McCarthy & Frantz, 2016). Long-term retention increases when instructors use cumulative exams consistently throughout the course (Lawrence, 2013). These findings may provide more evidence for what is referred to as the testing effect, assuming students experience similar questions on multiple exams over the semester. The finding also suggests that how we assess can directly interact with how accessible the information is in the memory (McDaniel, Anderson, Derbish, & Morrisette, 2007). Research examining the best way to assess learning and tapping into long-term retention of Intro Psych is clearly needed. Perhaps departments can institute yearly assessments of basic concepts in psychology taken by all majors. Alternatively, if upper-level courses explicitly test material from course prerequisites, instructors will have a better sense of what students are retaining. If a research methods course requires students to have first taken statistics, we suggest taking a statistics exam in the first few weeks of the methods course. If methods are required for an upper-level course, we suggest instructors build in assignments in the upper-level course that require students to use their methods skills (e.g., designing research to test questions from upper-level course content).

### *Does Class Size Matter?*

Intuitively students should learn better in smaller classes. Early scientist educators explored the very practical question of which (large or small classes) is more effective (McKeachie, 1990). Some studies favored large classes (Hudelson, 1928), whereas others favored small classes (G. V. Glass & Smith, 1979). Still others showed no difference in class size on retention measured 1–2 years after the completion of class (Siegel, Adams, & Macomber, 1960). Decreased institutional funding and the fact that students often take Intro Psych as part of general studies requirements have gradually increased class size (Goldstein, 2010). In general (across disciplines), class size may appear to have a small effect on learning (Hattie & Yates, 2014). Although budgetary pressures (and relatedly, staffing issues) ensure many large universities have large Intro Psych courses, it is important to know whether class size is a factor how students learn in Intro Psych.

Key questions for future research include examining the course designs and instructor strategies that aid learning in large classes. Does having online discussion with course management systems help? What is the best format for sections run by teaching assistants (TAs) or the professor? Do students in courses with TA-run sections learn better? What are the major

moderators of better learning in large classes? Would increasing the number of smaller assessments within the classes (e.g., daily quizzes) help boost performance?

### *What Is the Best Format to Teach Intro Psych?*

Intro Psych is taught face-to-face, as well as online or in a hybrid or blended format. A hybrid or blended course typically refers to a course that has some type of online component integrated with face-to-face components (McKenzie et al., 2013). In one study, tests of a blended format Intro Psych class indicated early resistance to changes, but after five semesters of the new format, learning outcomes, student perceptions, and course completion rates improved as compared to the traditional format (Hudson et al., 2015).

Hybrid and face-to-face classes are also “flipping,” in which students learn content (e.g., via video lectures) outside scheduled class time and then practice skills during the actual class time (see O’Flaherty & Phillips, 2015, for a review). There is indirect evidence of the effectiveness of flipped classrooms but little conclusive evidence of long-term learning (O’Flaherty & Phillips, 2015). New research also examining the effects of integrating massive open online courses (MOOCs) and synchronous massive online courses into face-to-face classes, into online courses with more typical online content, and into unique courses built around MOOC content (see Israel, 2015, for a review).

Online learning is referred to in various ways including, but not limited to, e-learning, distance education, and Web learning (Lou, Bernard, & Abrami, 2006). Online courses are now common (Mandernach, Mason, Forrest, & Hackathorn, 2012) and similar to the face-to-face versions on fairly important outcomes such as retention, pass rates, instructor evaluations, and grades (Lou et al., 2006; Waschull, 2001). Some studies show online classes to be even more effective compared to face-to-face Intro Psych courses (Maki & Maki, 2007; U.S. Department of Education, Office of Planning, Evaluation, and Policy Development, 2010). In community college samples, online enrollments in general have increased by over one third since 2010 (Allen & Seaman, 2013).

Whether a hybrid, online, or a flipped face-to-face class, few studies examine moderators of learning or systematically modify course elements (e.g., comparing assignment types or synchronous vs. asynchronous discussion). There is currently significant debate over how to define “flipped,” and research needs to intentionally compare different ways to have students learn content (vs. classroom lecture or textbook reading) simultaneously.

### *Does Integrating Research Experiences in Intro Psych Enhance Learning?*

Despite the fact that psychology is Science, Technology, Engineering, and Math (STEM), only between 5% and 10% of Intro Psych courses offer a laboratory component (Norcross et al., 2016; Peterson & Sesma, 2017). Considering that one of the American Psychological Association’s (APA; 2013, 2014)

major goals expresses the idea that psychology needs to be recognized and taught as a science, the need for guidelines regarding how to incorporate research exposure into the Intro Psych class is imperative.

Few studies have explicitly addressed how to best approach this goal (e.g., Conn, Stafiniak, DiPasquale, & Harper, 1988) or have examined the effectiveness of integrating research via a laboratory component at the Intro Psych level. One notable study (Thieman, Clary, Olson, Dauner, & Ring, 2009) found that including a laboratory component in the Intro Psych course improved students' knowledge, comfort, interest, and critical thinking skills. However, the authors also acknowledged that without significant resources for lab instructors, the lab component could not have been successfully accomplished. Thus, the question remains as to how to best provide this research exposure and whether it enhances learning at all.

Possible research questions include how to incorporate online resources best, such as the Online Psych Lab and how to measure the utility of having students participate in research themselves versus just reading about it. Do students need to collect their own data to learn how to conduct research or can they adequately learn the skills if they are given a data set to explore? Do students adequately learn about psychology as a science by participating in research? Will mandating students to watch videos showing research or even design research based on chapter content lead to a greater understanding of psychology as a science and better retention of material?

### *How Can We Improve Our Textbooks?*

A substantial proportion of SoTL research on Intro Psych focuses on textbooks (Griggs, 2014; Griggs & Jackson, 2013). For example, a review of textbooks shows many previously highly cited articles and books had decreased in citation frequency (Griggs & Christopher, 2016). Objective comparisons of various Intro Psych textbooks suggest books are similar at conceptual levels (e.g., similar chapters and topics covered) but can also differ greatly (e.g., different terms covered). In one study, while the number of bolded terms ranged from 500 to more than 1,000, only about 200 were in all of the books (Zechmeister & Zechmeister, 2000). Additionally, textbooks are disparate in content organization, writing style, graphs, number and usefulness of pedagogical aids used, applied or research focus, tone, career opportunity coverage, or comprehensiveness (Landrum, Gurung, & Spann, 2012). Students differentiate between books in terms of quality of writing, examples, figures, and pedagogical aids (Gurung & Landrum, 2012; see Gurung & Martin, 2011, for an exception), but differential textbook ratings do not relate to differential learning outcomes (Gurung, Daniel, & Landrum, 2012).

It is time for research on textbooks to go beyond comparisons of content. Researchers need to examine how textbooks are used. Are modular approaches, or brief books, as effective for learning as comprehensive books? What are successful strategies to get students to read the book? How can textbook technology supplements be leveraged to help students learn?

Are there different ways to present content? Will a textbook written to facilitate cognitive principles such as interleaving and repeat practice help students learn better?

One of the newest areas of research on textbooks pertains to the growth of open educational resources (OER; Jhangiani & Biswas-Diener, 2017). Faculty and students now have free alternatives to expensive textbooks via sources such as the Open Textbook Library and Noba ([www.nobaproject.com](http://www.nobaproject.com)). Research testing OER and publisher books is still in its infancy, mostly because of the many factors to control for in multisite studies, and has many confounds (Griggs & Jackson, 2017). One large multisite national study found students using standard textbooks performed better on questions taken from an AP exam than students using an OER (Gurung, 2017). Other studies (not in psychology) using standardized or similar exams show no differences in exam scores between OER and publisher book users (Allen, Guzman-Alvarez, Molinaro, & Larsen, 2015). Further and better examinations of how students can best use OERs (which tend to be primarily electronic) versus publisher books are needed.

### *What Are Optimal Teaching Techniques for Intro Psych?*

A large body of research describes model teaching (see Richmond, Boysen, & Gurung, 2016, for a review) and provides advice regarding the Intro Psych class (e.g., Goss Lucas & Bernstein, 2015). Although an Intro Psych compendium of assessments and activities for promoting student engagement is available (Afful, Good, Keeley, Leder, & Stiegler-Balfour, 2013; Miller et al., 2011), not all the tips have been empirically tested in the Intro Psych classroom. How effective are these tips? It might be surprising to know that some of the things we, as teachers, take for granted may not actually work at facilitating desirable student outcomes. For example, many professors use study guides or provide students with outlines and concept lists for studying (under great demand from students). However, a new study showed that teacher-prepared study guides were actually detrimental to Intro Psych exam grades, especially when compared to student-created study guides (Hackathorn, Joyce, & Bordieri, 2017).

A large portion of the SoTL literature is dedicated to finding ways to increase interactivity in the classroom. Lecturing is a commonsense and manageable approach, especially in larger classes where experiential activities or discussions may be infeasible (Hackathorn, Solomon, Blankmeyer, Tennial, & Garczynski, 2011). However, traditional lecturing is considered a passive approach to learning, allowing for very little interactive opportunities if not done in a purposeful way (Hackathorn et al., 2011; Stewart-Wingfield & Black, 2005). Whereas some research focuses on the use of tools such as classroom response systems to enhance lectures (e.g., clickers; Landrum, 2015), research is needed to find effective ways to teach Intro Psych.

Opportunities to increase activity in the classroom are virtually limitless. One popular alternative is to include more discussion. Discussion allows students to explore issues, and

students are attentive, engaged, and motivated (see Bligh, 2000, for a review). Additionally, discussion leads to deeper levels of learning because students must actively listen, comprehend the information, and then build on each other's ideas (Hadjoannou, 2007). But, what are the best ways to foster discussion?

A number of strategic structured changes to facilitate active learning also relate to greater learning. For example, students in team-based learning sections perform significantly better on related test items (Travis, Hudson, Henricks-Lepp, Street, & Weidenbenner, 2016). Similarly, when instructors take on a facilitator role in a problem-based learning-based Intro Psych course, students showed significant improvements on critical thinking and engagement from the beginning to the end of the course (Dochy, Segers, Van Den Bossche, & Gijbels, 2003; Muehlenkamp, Weiss, & Hansen, 2015).

Other helpful aids for increasing learning include, but are not limited to, using peer mentors (Asgari & Carter, 2016), having students complete brief, ungraded writing assignments and quizzes (Khanna, 2015), generating keyword-mnemonics (McCabe, 2015), including well-constructed exam reviews (Hackathorn et al., 2012), having students make confidence judgments of their learning (Nevid, Cheney, & Thompson, 2015), integrating service learning (Bringle, Reeb, Brown, & Ruiz, 2016), encouraging students to create their own study guides, as opposed to teachers providing them with one (Hackathorn et al., 2017), using capstone experiences (e.g., using a movie that incorporates psychological themes to help students integrate the concepts from the whole semester, Blessing & Blessing, 2015), recording attendance (Shimoff & Catania, 2001), and using peer assessment activities (Jhangiani, 2016). Unfortunately, few of the myriad aids reviewed above have actually been tested side by side. Future research on optimal teaching styles should include more than one strategy in a class or test a few simultaneously in different sections.

*What Are the Best Ways to Study for Intro Psych?*

SoTL has provided evidence on myriad strategies of what aids learning including, but not limited to, demonstrations, activities, journaling, discussions, quizzes, videos, humor, field trips, games, interactive lecturing, and even assessment. For example, a number of studies demonstrate a positive relationship between taking online quizzes and exam scores (Becker-Blease, & Bostwick, 2016; see Bell, Simone, & Whitfield, 2015, for an exception). Quizzing appears to produce a large benefit in the content-focused courses such as Intro Psych than skills-focused (e.g., research methods, statistics) courses (Khanna & Cortese, 2016). Even a brief review of other study aids is outside the purpose of the current article, but there are key summaries available (e.g., Gurung & McCann, 2012).

There are generally good ways to study (Dunlosky, Rawson, Marsh, Nathan, & Willingham, 2013; Weiten & Houska, 2015), but what are the best ways to study in Intro Psych? Study

**Table 1.** Eleven Questions for Scholarship of Teaching and Learning on Intro Psych and Beyond.

1. What are students learning in Intro Psych?
2. Is Intro Psych better taught in one semester or two?
3. Does class size influence learning?
4. What is the best format to deliver content?
5. Does incorporating research experience enhance learning?
6. Are some textbooks better than others?
7. What are optimal teaching techniques to enhance learning?
8. What are the best ways to study?
9. What are the bottlenecks to learning/most difficult topics for students?
10. What are key moderators influencing learning?
11. Do different models of teaching Intro Psych differentially influence learning?

behaviors are broadly defined as behaviors functioning to acquire, organize, synthesize, evaluate, remember, and use information (Crede & Kuncel, 2008)—specific examples include time management, goal setting, selecting what to study (how and where), taking good notes, reading, and self-testing. As Intro Psych can cover many different topics, what is the most efficient means of studying? There is little empirical work to help teachers determine the best ways for students to study Intro Psych material. One notable exception is a recent study that examined the effectiveness of restructured flash cards to help students study at deeper and more application-based levels of learning (Senzaki, Hackathorn, Gurung, & Appleby, 2017).

Pedagogical scholars need to test the efficacy of different study techniques for the different ways Intro Psych is taught. Many of the students who attend Intro Psych courses are freshman and thus are new to studying in college (Gurung et al., 2016) Thus, some of those students may be ill-prepared for varying types of assessment. How should students' study strategies vary if exams are multiple-choice versus essay? Should students' study strategies vary if the exams are application based, as opposed to rote memorization?

Importantly, instructors need better and more efficient ways to help students who are struggling. Students often intend to use face-to-face help-seeking sources more than technologically mediated sources, but they seek help most often before or after class, via e-mail, or during class, and seek help least through discussion boards and during online office hours (Reeves & Sperling, 2015). How can we best use course management systems to provide students with resources that they will actually use (Clump, Doherty, & Kinworthy., 2012)? A few studies aside, SoTL on the best way to help students in Intro Psych courses is needed.

**Key Pedagogical Needs and Challenges**

Although a sizable body of SoTL on Intro Psych exists, there are still many specific questions that exist. Part of the challenge is taking research that may be course agnostic and bringing it to focus specifically on the Intro Psych class. Table 1 lists 11 questions to catalyze future research on Intro Psych based on

our preceding review. In addition to these questions, we present five major challenges for future research.

### Identify Bottlenecks to Learning in Intro Psych

Although researchers have used textbooks to identify difficult concepts in psychology (Balch, 2005), we suggest that instructors need to direct their attention to ideas in psychology that impede further learning. In an Intro Psych class, students are exposed to a large breadth of content. Textbooks and classes tend to build on foundational concepts (e.g., research methods and biological bases) moving to various specific content (e.g., intelligence, development). But what is the knowledge in psychology that needs to be mastered before successfully moving on to others?

Threshold concepts are "... akin to a portal, opening up a new previously inaccessible way of thinking about something" (Meyer & Land, 2003, p. 1), "*transformative, irreversible, integrative, bounded and troublesome*" (Coughlan & Graham, 2009, p. 190; italics in original). Correspondingly, Middendorf and Pace (2004) defined *bottleneck concepts* as points of a course where the learning of a significant number of students is disrupted. Does the field of psychology have bottlenecks and threshold concepts? In two studies, Gurung and Landrum (2013) identified potential psychological bottleneck and threshold concepts. Faculty and students ranked terms such as "empirical" and "correlation coefficient" as highly problematic for learning (Study 1) and the "scales of measurement" emerged as a threshold concept in the context of research methods (Study 2).

If research can identify bottleneck and threshold concepts in Intro Psych, instructors can allocate more class time to clarifying those specific terms and ideas. Fewer bottlenecks should lead to more learning and longer term learning. Furthermore, different students may have different bottlenecks. Are there specific predictors for which students will experience more bottlenecks? This is an entire line of research that, while thriving in other disciplines, has barely begun in psychology, especially in Intro Psych.

### Conduct Multisite Studies on Intro Psych

Gold standards of SoTL include designs that extend beyond a single sample and are longitudinal in nature (Wilson-Doenges, Troisi, & Bartsch, 2016). The current state of pedagogical research on Intro Psych shows few exemplars of these standards. Whereas a handful of studies have included more than one institution (e.g., Gurung, 2017) or are longitudinal in nature (McCarthy & Frantz, 2016), most existing research does not employ such methodologies.

Although most universities and high schools offer Intro Psych, how it is formatted can vary dramatically (Homa et al., 2013). It is difficult to ascertain whether one structure, size, or format is the most pedagogically suitable to facilitate student learning, as few researchers compare more than one of these variables in a single study. Research results necessarily

vary depending on the instructor, the student demographics, course instruction variants, and assessment choices. In short, the answer depends on the (specific) question asked and the methodology used to measure the outcome variables. This caveat underlies the bulk of research reviewed and can be partially rectified by multisite studies.

There are now ways to go beyond a single classroom. The Hub for Introductory Psychology and Pedagogical Research (HIPPR, [hippr.uwgb.org](http://hippr.uwgb.org)) facilitates collaboration between pedagogical researchers. Individuals can sign up to collaborate on SoTL with others or volunteer their own classes to allow for the testing of research questions. We suggest researchers use HIPPR to conduct research across sites to allow for better external validity of research findings. Doing this form of research will also caution instructors against settling for a certain result. Just because one study at one institution shows that a certain assignment or intervention works, that is not the end of the story. Does that finding carry over to a different context or setting? Having data from different locations will allow teachers to make more informed pedagogical decisions suited for their specific students.

### Better Assessment of Student Learning in Intro Psych

Learning is the critical measure of successful teaching. Learning in Intro Psych is often measured using formative quizzes (McKenzie et al., 2013), cumulative final exams (Lawrence, 2013), and in rare cases, long-term retention of course topics via tests given after a class is complete (McCarthy & Frantz, 2016). Not surprisingly, assessment of learning is an important topic in Intro Psych SoTL.

Creating and implementing quality assessments are markers of quality of education and a required trait for teachers engaging in SoTL (Richmond et al., 2016). Psychology instructors use a variety of assessments ranging from multiple-choice exams and papers to verbal role-playing (Halonen et al., 2002). Instructors of Intro Psych tend to gravitate toward multiple-choice tests in classes with higher enrollment because these items offer ease of grading, perceived objectivity, and quicker assessment of more material (Haladyna, Downing, & Rodriguez, 2002).

Currently, psychology lacks a well-established universal assessment of students' knowledge of course content (Hake, 2015). How can our discipline measure increases in student learning and compare across delivery methods if there is no consistent means of assessing knowledge gained in the Intro Psych course? Aside from sections within the very comprehensive Educational Testing Service's Major Field Test (ETS, 2014a), the entirety of the GRE Psychology Subject Test (ETS, 2015b), or a newly published measure of basic knowledge in psychology (Peter, Lechner, Mayer, & Krampen, 2015) that can be modified for Intro Psych, a national assessment of Intro Psych is lacking. Project Assessment ([pass.opa.org](http://pass.opa.org)), a beta site featuring exemplar assessments from the 2016 Summit of National Assessment of Psychology contains some examples of potential tests. A national standardized assessment that can

be administered during the Intro Psych course can greatly benefit educators, their students, and their institutions (Recommendation 5, APA, 2014).

### **Develop and Test Different Models to Teaching the Course**

Intro Psych courses tend to be comprehensive views of the field of psychology (Bernstein, 2017). Consequently, the potential content that one could cover is vast and has the potential to vary dramatically from one course to the next. Topics such as development and abnormal are covered more than topics such as emotion and perception (Bates, 2004). Many courses spend more time on physiology and cognitive-based content and less time on history and research methods relative to the other areas (Homa et al., 2013). Additionally, instructors tend to spend a disproportionate amount of time on their own specialty area. Not all instructors spend time presenting industrial/organizational psychology, law psychology, or psychology of women in the Intro Psych course (Homa et al., 2013).

It is prudent to consider new and different models to covering content (Bernstein, 2017) while simultaneously developing skills (Jhangiani, & Hardin, 2015; Strohmets et al., 2015) and considering subsequent coursework when building the foundation for majors (Hyers & Shivde, 2013). One way is simply to cut down on how many topics are covered while ensuring students are exposed to the breadth of psychology as recommended by APA's task force on strengthening the Intro Psych course (Gurung et al., 2016). Another way is by structuring the course around students' common concerns about their own life (Buskist & Wylie, 1998) or around common misconceptions in psychology (McCarthy & Frantz, 2016). Focusing on misconceptions also dovetails with significant research on misconceptions in Intro Psych course (Bensley, Rainey, Lilienfeld, & Kuehne, 2015; Furnham & Hughes, 2014; Taylor & Kowalski, 2014). Even course format may influence learning (e.g., students in an 8-week format performed better than those in 16-week format, Deichert, Maxwell, & Klotz, 2016).

### **Identify Major Moderators of Learning**

Numerous factors are associated with students' academic performance (Hattie & Yates, 2014), yet the majority of SoTL does not look for moderators. Studies test whether an intervention (e.g., quizzing) or classroom feature (e.g., lecture capture) is associated with more learning but rarely test how student characteristics may influence the findings. Factors such as effort, ability, study skills, habits, self-efficacy, motivation, academic goals, contextual influences, social involvement, and perceived social support all have a powerful influence on learning (Credé & Kuncel, 2008; Komarraju & Nadler, 2013).

It is important for SoTL to measure as many potential moderators as possible. Some key candidates include current college grade point average (GPA), ACT scores, and high school GPA that all predict learning in a university setting

(Komarraju, Ramsey, & Rinella, 2013). Other usual suspects predicting learning include what the student does (i.e., study techniques, Bartoszewski & Gurung, 2015), instructor behaviors (Keeley, Smith, & Buskist, 2006), and the extent to which students take a deep approach to learning may be important as well (Tait, Entwistle, McCune, & Rust, 1998). Finally, a host of nonacademic factors such as perceptions of support networks, rapport with instructors, effort, ability, habits, and self-efficacy may be worthy of inclusion as well (Gallup Inc., 2016; Komarraju & Nadler, 2013; Rogers, 2015).

### **Conclusion**

Teachers in the psychological discipline are motivated, excited, and care about students as evidenced by the sizable amount of pedagogical literature in psychology. However, even in the face of myriad SoTL resources, it is clear that more focused research on Intro Psych, specifically, is needed. It is imperative that future gold standard scholarship regarding Intro Psych addresses the areas that could help us to better teach and assess this course. It is imperative for our psychology students, but also for our nonpsychology students where Intro Psych may be their only interaction with our discipline, that we leave lasting impressions that are associated with long-term learning. We just need to identify what those are.

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