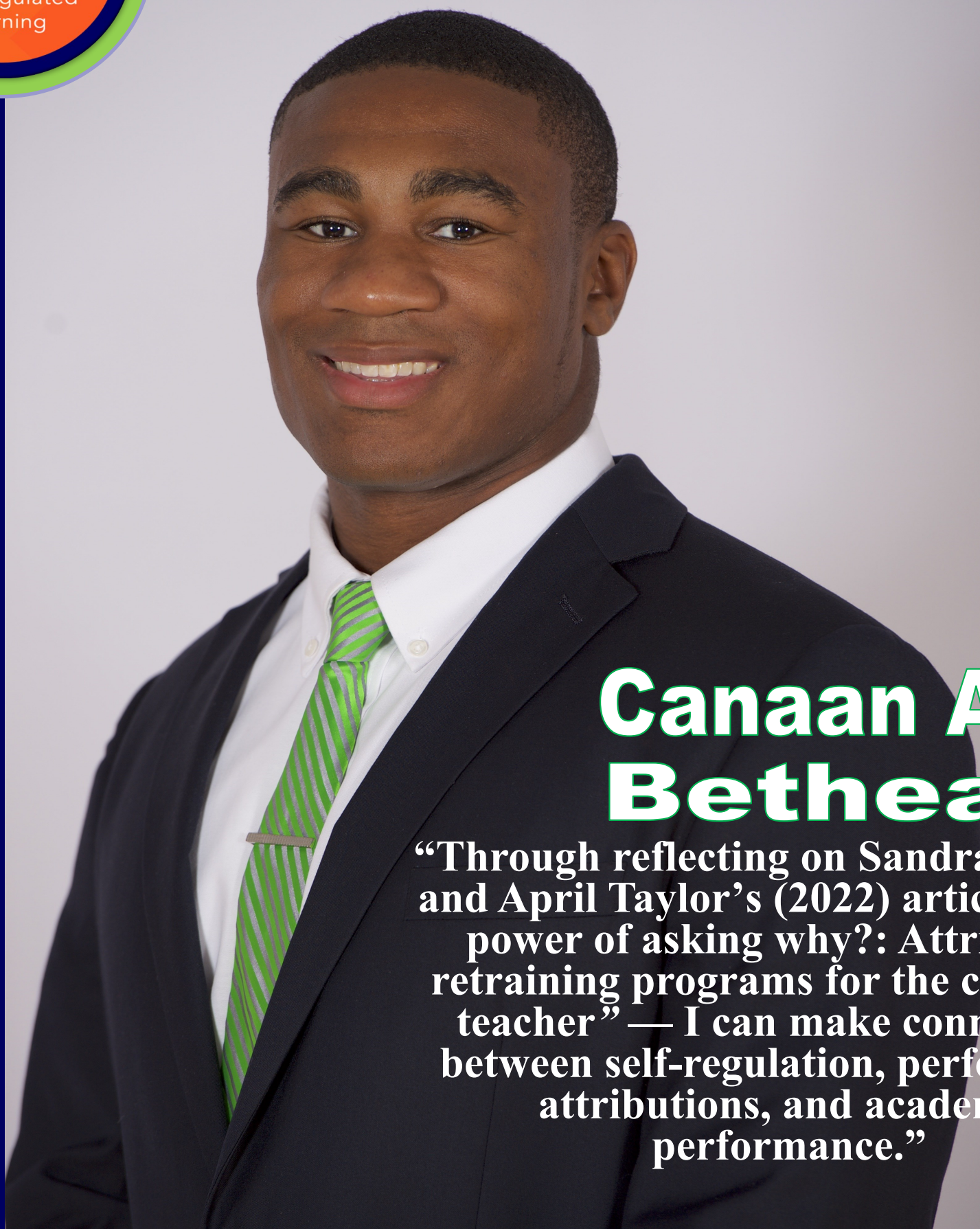
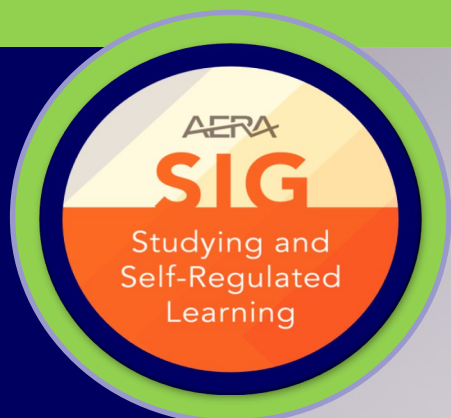


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Times Magazine



Canaan A. Bethea

“Through reflecting on Sandra Graham and April Taylor’s (2022) article—“The power of asking why?: Attribution retraining programs for the classroom teacher” — I can make connections between self-regulation, performance attributions, and academic performance.”

Contributors to this issue reflect on articles published in the journal *Theory Into Practice* (2022)

[Theory Into Practice: Vol 61, No 1 \(tandfonline.com\)](https://tandfonline.com)

HÉFER BEMBENUTTY
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Editorial

Falsifiability of Motivation and Self-Regulated Learning Theories

Héfer Bembenutty

One of the most critical inquiries in understanding what motivates individuals to learn is whether motivation theories produce reliable and valid applications for successful learning practice. Teachers often wonder whether theories developed in Ivory Towers can help them to sustain their students' motivation.

Teachers also ask what they can do to raise their students' interests, willingness to delay gratification, self-regulation, mindset, self-efficacy beliefs, adaptive attributions, achievement goals, control of beliefs, and expectancy-value to spark student motivation.

The journal *Theory Into Practice* (TIP) dedicated a Special Issue focused on applying motivation research to practice to respond to those educators. It aimed to fill the gap between practice and motivational theories. The editors of that issue were Dale H. Schunk, Maria K. DiBenedetto, and Héfer Bembenutty, under the editorial guidance of Eric Anderman and his team.

After passing through a rigorous blind peer review process, TIP published ten conceptual articles based on data-driven findings that offered solutions translating current motivational research trends into practical learning and contextual environments.

In this issue of the *Times Magazine*, a publication of the American Educational Research Association (AERA) Studying and Self-Regulated Learning (SSRL) Special Interest Group (SIG), contributors reflect on applications of motivation theory to self-regulated learning practice after reading articles included in TIP. This topic is especially timely today because teachers need knowledge about motivation theories and their practical application to self-regulated learning.

In this issue, Kendal Askins shares her thoughts on Jeessoo Lee, Hyun Jee Li, and Mimi Bong's (2022) contributions to

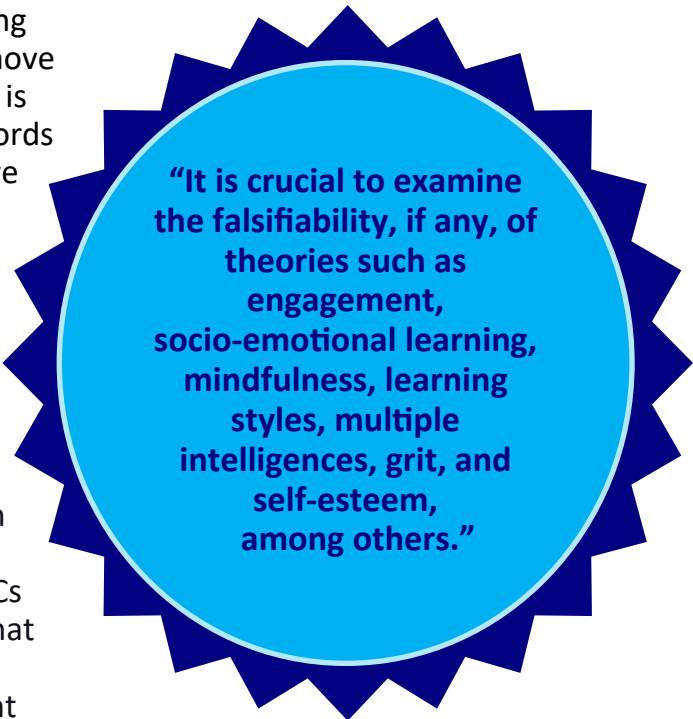
mindset and self-efficacy, "When thinking about how teachers and students can move towards self-regulating their learning, it is crucial to bring close attention to the words used. When something is a challenge, we often say, 'I cannot do that or 'I am not good at this.' These words feed our thoughts and dictate how we view our ability and our students' abilities to grow."

Bradley Bergey, after reading Amerah Archer, Revathy Kumar, and Eric Pilcher's (2022) article, reflects in this way "The article lays the foundation for many pressing questions to identify further and lower cultural costs for PSTCs (Preservice Teachers of Colors). Some that come to my mind are: How do cultural costs impact persons of color at different points in the teacher preparation pipeline? How do cultural costs manifest at intersections with other identities?"

Continued concerns that some theories do not provide practical answers to their problems opens the doors to a broad discussion about why some theories cannot translate to practice. Those concerns call for theorists to consider a long-term issue associated with theory falsifiability, which proposes that for a theory to be considered scientific, it needs to have ingrained the possibility of being shown to be false (Popper, 1959).

Theories based on observations must consider that there could be events and situations to which the theory will not be generalized or applied. A classic example is claiming that all swans are white while some are black. Concluding that all swans are white when all the observations are not done is a wrong claim. To falsify that claim, the only requirement is the observation of a black swan, which makes the theory falsifiable. Theories cannot be based on an inductive method.

As scientists, theorists are called to test theories and check them for falsification. Theory falsifiability is vital since that is how science is produced. Rejection of those theories will bring light to new ones that will explain the invalid inferences of the previous ones. In these terms, theories that appear to produce outstanding outcomes and to which



schoolteachers are often attracted need to be falsifiable.

It is crucial to examine the falsifiability, if any, of theories such as engagement, socio-emotional learning, mindfulness, learning styles, multiple intelligences, grit, and self-esteem, among others. Theories that are not falsifiable are not science, and therefore, they can be categorized as dogma based on infallibility beliefs.


The SSRL SIG applauds the dedication of TIP and Eric Anderman and his team to present diverse perspectives critical to motivational research with direct applications to practice and self-regulated learning. Dale H. Schunk and Maria DiBenedetto did laudable work as coeditors.

The contributors to the TIP special issue and the TM's reflective educators, some of whom are schoolteachers and graduate students, have done a commendable job by providing a myriad of practical applications that educators and learners can have at their disposal while pursuing important personal, educational, and professional goals.

In an educational system where educators seek motivation theories that could guarantee effective learning with practical applications, the TIP special issue and reflections in the TM contain theories with powerful practical applications. Learners and educators deserve to have at their disposal theoretical and practical methods that make significant differences in their lives.

If motivation and self-regulated learning theorists agree that falsified theories need to be replaced with new ones, courageous actions are needed to advance current and new theories with practical applications to effective learning.

Héfer Bembenutty, PhD, is an associate professor of Educational Psychology at Queens College. His research focuses on academic delay of gratification and cyclical and self-regulated culturally proactive pedagogy.



Sarah Young, generously and efficiently, served as the copyeditor of this issue of the *Times Magazine*. Thanks, Sarah. Thanks to Jenny Mischel for their editorial assistance. Upon request, references are available by contacting Héfer Bembenutty (hefer.bembenutty@qc.cuny.edu).

Theory Into Practice
Volume 61, Issue 1 (2022)
Applications of Motivation Research to Practice

Applications of motivation research to practice
Héfer Bembenutty, Dale H. Schunk &
Maria K. DiBenedetto
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Research Articles

The power of asking *why?*: Attribution retraining
programs for the classroom teacher
Sandra Graham & April Z. Taylor [First Page](#)
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Interest development, self-related information
processing, and practice
K. Ann Renninger & Suzanne E. Hidi [Abstract](#) | [Full](#)
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Strategies for alleviating students’ math anxiety:
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Enhancing motivation by developing cyclical self-
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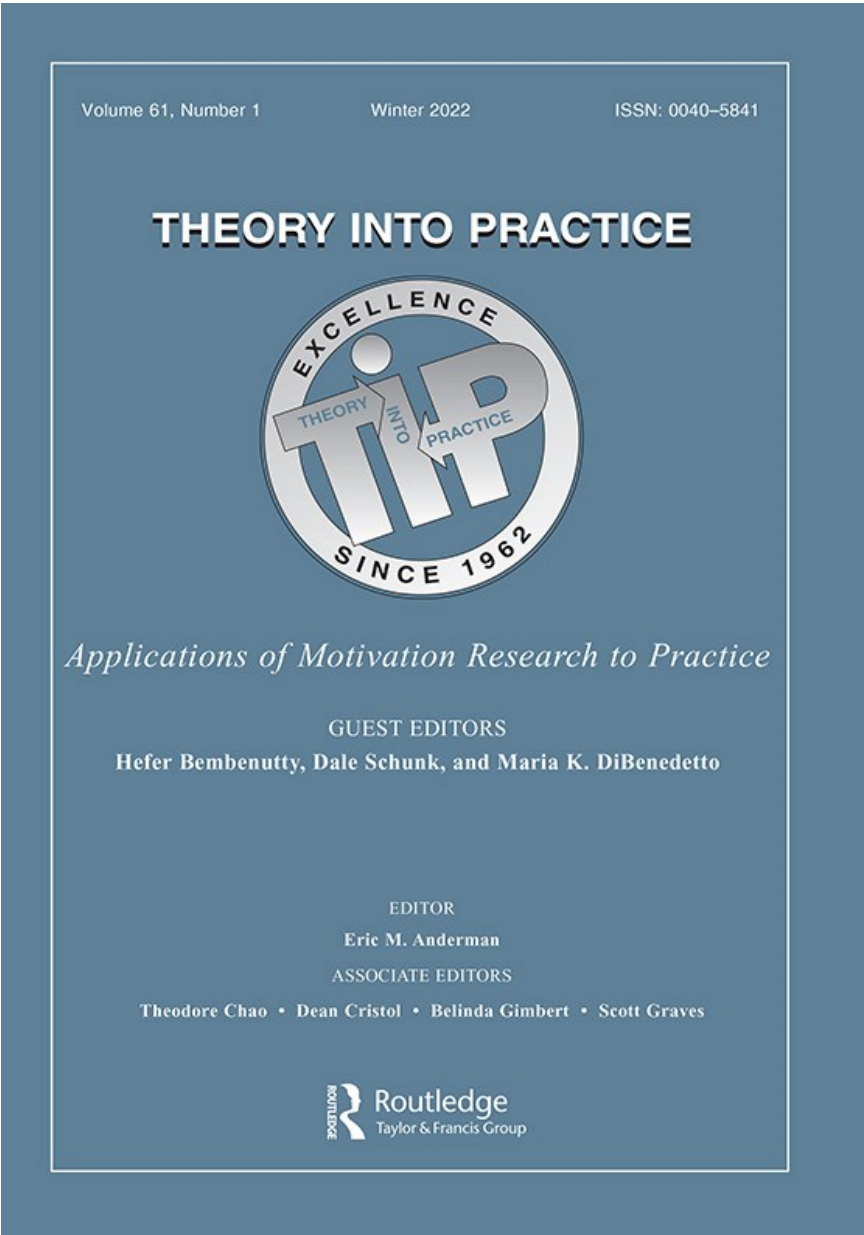
Sustaining motivation and academic delay of gratification: Analysis and applications
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Is the value worth the costs?: Examining the experiences of preservice teachers of color in predominantly
White colleges of education
Amerah Archer, Revathy Kumar & Eric Pilcher
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Leveraging motivation theory for research and practice with students with learning disabilities
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Lessons from a co-design team on supporting student motivation in middle school science classrooms
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Addressing student motivation and learning experiences when taking teaching online
Judi Randi & Lyn Corno [Abstract](#) | [Full Text](#) | [PDF \(352 KB\)](#) |



Connections Between Self-Regulation, Performance Attributions, and Academic Performance

Canaan Bethea

Through reflecting on Graham and Taylor’s (2022, in *Theory Into Practice*, 61(1), 5-22) article—“The power of asking why?: Attribution retraining programs for the classroom teacher”—I can make connections between self-regulation, performance attributions, and academic performance.

The purpose of Graham and Taylor’s (2022) article is to explain a motivational framework and intervention strategies that can improve students’ motivation. As explained in Graham and Taylor’s article, Attribution Theory outlines processes individuals use to explain their performance.

Attribution Theory posits three dimensions that impact performance attributions: locus, stability, and controllability. The locality of an attribution refers to one’s attributing performance to internal or external causes. The stability of an attribution considers the permanence or fluctuation of the attribution with time—such as the attributions stability and instability. The controllability of an attribution refers to an individual’s agency in impacting an outcome—an individual’s perspective of their controllability and uncontrollability of their performance are considered for this dimension of performance attribution.

Common performance attributions of students are ability and effort. Students with internal, stable, and uncontrollable attributions often attribute their performance to their ability. Students with internal, unstable, and controllable attributions often attribute their performance to their effort. A focus on effort—instead of ability—is ideal for students’ academic performance (Graham & Taylor, 2022).

Attribution Theory highlights the role that performance attributions play in impacting one’s future performance. Internal, unstable, controllable attributions lead to increases in the effort, which helps students maximize their performance.



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External, stable, and uncontrollable attributions lead to a focus on ability, resulting in a lack of maximum effort and decreases in performance (Graham & Taylor, 2022).

Attribution Reframing

Graham and Taylor (2022) explain that *attribution reframing* can help someone create more accurate and helpful performance attributions. Based on the components of Attribution Theory, researchers provide suggestions for students and educators. Strategies such as clear communication and instrumental help are discussed. Graham and Taylor also recommend teaching students to focus on effort and strategies.

An attribution reframing program can help students reframe their attributions, resulting in more productive approaches to performance reflection. Thoughts impact feelings, and feelings impact behavior. Changes to a student’s attributions can lead to positive behavior changes. For example, a shift in focus to strategy and effort as attributions increases motivation. Students that were encouraged to improve effort by a researcher saying, “you should have tried harder” improved their effort and performance on an academic task (Graham & Taylor, 2022). Also, students who were encouraged to attribute their failure to their poor strategy were more likely to improve their strategy and performance (Graham & Taylor, 2021).

Connecting Attribution Theory to Self-Regulated Learning

Teachers can use the findings from Attribution Theory research to promote students’ self-regulated learning and academic performance. Attribution Theory can be utilized to inform self-regulated learning practices. Self-regulated learners manage their learning through motivational, metacognitive, and behavioral processes (Zimmerman, 1989). Strategy, effort, and accurate self-evaluation are central to Attribution Theory and self-regulated learning.

One way that teachers can promote students’ self-regulated learning is by encouraging students to focus on strategies. Focusing on strategies is highlighted as an essential step to excellent performance attributions. Developing strategies and strategic enactment are essential steps to students’ self-regulation. Additionally, teachers might teach in the form of strategies. For example, math teachers can emphasize and incentivize techniques for solving math problems rather than focusing on students’ outcomes.

A second way teachers can promote

students’ positive performance attributions and self-regulation is by encouraging students to focus on their effort. Performance attribution literature and self-regulation literature both highlight the impact of students’ effort on their performance. To elicit students’ effort, teachers are encouraged to praise students’ effort when it is adequate, even if the student does not complete the task successfully. Adequate effort can contribute to improvements in future performance.

Self-evaluation is offered as a third strategy for educators. From a self-regulatory perspective, self-evaluation can lead to goals, planning, and strategic enactment (Zimmerman, 2000). In-depth self-judgment can lead students to see where they have room for improvement. From an Attribution Theory perspective, the deeper reflection would also help students make accurate performance attributions. For example, some students who attribute their academic performance to their ability would likely have a chance to see the role their effort plays in their academic performance with the right conversations and self-reflection.

In conclusion, performance attributions impact students’ thoughts, feelings, and performance. Graham and Taylor’s (2022) article helps explain strategies teachers can use to increase students’ motivation. Why develop your best strategy or give your best effort if you do not think it will impact your performance? Students that cannot see how their thoughts and behaviors impact their performance are less likely to display their best effort in their academic work and are, therefore, less likely to achieve the best performance in their academic work.

Students that have an adequate understanding of the role that their effort, strategy, self-evaluation play in their performance are better equipped to self-regulate and create helpful performance attributions, leading to successful completion of academic work. Teaching in ways that emphasize effort, strategy, and self-evaluation can lead to students emulating teachers’ strategies, resulting in students self-regulating and improving their academic performance (Kitsantas & Zimmerman, 2000). When addressing students’ motivation, performance attributions and self-regulatory skills play a crucial role in making sense of their performance and improving future performance.

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Developing Interest in Learning: The Role of Instructors and Its Potential for Self-Regulation Michelle Bahena-Olivares



Michelle Bahena-Olivares holds a master's degree in Neuropsychology and is currently an MA candidate in Educational Psychology at the University of Victoria. Her research and applied interests include academic challenges and strategy use in postsecondary education.

active search of information and meaningful processing. Following this assumption, instructors' role in the early phases of interest is critical in assisting students transition to more developed interest that fuels attention, memory,

goal setting, and sustained engagement.

Renninger and Hidi's use of self-related information is a central recommendation to trigger interest among students who might initially perceive instructional content as meaningless and further promote interest among students with an initial value perception. Specifically, instructors can apply this framework by:

1. encouraging students to reflect and identify personal links to the instructional content;
2. designing activities to relate the information to their circumstance;
3. encouraging the use of self-reference strategies (e.g., I can statements);
4. promoting metacognitive thinking by asking to explain their thought process and its application (e.g., "why is it important?"); and
5. personalizing content whenever possible.

In sum, creating meaningful connections between the self and course content is posited to trigger interest and increase engagement.

Using self-related information to influence students' interest is closely related to self-regulated learning (SRL) main premises (see Panadero, 2017 for a review). For instance, SRL assumes students are active agents in their learning process and triggering interest through self-related information recognizes students' active role to harness their personal experience as a tool to engage with course content and influence academic outcomes.

The four-phase model of interest development by Hidi and Renninger (2006) presumes that interest is constructed over time and is sensitive to internal and external feedback, which is closely related to the cyclical nature of SRL theory. However, at any stage of interest development, students might also require additional support to regulate other areas influencing or challenging their learning and engagement (i.e., factors related to their cognition, environment, time, and goal management).

Teachers could further promote self-regulation by encouraging students to:

1. consider the purpose of the task and its relationship to the course and its discipline (Hadwin & Winne, 2012);
2. break down their task into specific and manageable goals (Zimmerman, 2008);
3. use deep learning strategies while studying (Dunlosky et al., 2014); and
4. reflect on their study session and identify what can be done differently in the subsequent attempts.

Encouraging students to self-regulate their learning process can contribute to approaching course content strategically and developing their interest in learning as a self-rewarding activity.

Reading the article by Renninger and Hidi (2021) reminded me that learning is an effortful process that requires the initiation and maintenance of engagement through long periods. The level of interest in course content and the tasks meant to deepen students' knowledge is critical for them to engage in a lifelong learning process that progressively becomes personally rewarding.

Assisting students in developing their interest with course content can further support engagement towards self-regulation when difficulties in searching for information arise by approaching them strategically and advancing their academic goals. This article is a refreshing reminder to consider learning from a student-centered approach that is highly sensitive to contextual feedback where teachers and educators can have a positive and lasting influence on students' learning experience.

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Students' disposition to engage with information in a meaningful way is necessary to advance their learning and academic performance.

Indeed, theorists suggest that motivation is an antecedent for academic outcomes such as engagement, persistence, and deep cognitive processing (see Bakhtiar & Hadwin, 2021 for a review).

The article by Renninger and Hidi (2022, in *Theory Into Practice*, 61(1), 23-34) focuses on the relationship between the development of students' interests and deep cognitive processing by making explicit connections to the self. Specifically, the authors highlight instructors' critical role in scaffolding interest and the consecutive outcomes in students' cognitive processes, motivation, and overall learning.

The theoretical approach used by Renninger and Hidi (2022) brings together motivation literature and empirical support from neuroscience to explain the process of interest development and its potential learning outcomes.

Renninger and Hidi use a comprehensive four-phase model of interest development that conceptualizes interest as a cognitive, motivational, and affective variable that is prone to be developed regardless of learners' current knowledge or value beliefs (Hidi & Renninger, 2006).

This model suggests that interest is a universal and malleable construct that triggers an underlying reward system promoting students' engagement in an

Increasing the Motivation, Challenge, and Utility of Online Courses

Raymond D. González



Raymond Dario Gonzalez, EdD, was raised in The Bronx, NY, and graduated from Manhattanville College with a doctorate in Educational Leadership (2019). He is the coordinator of the ISTEAM (Ignatian, Science, Technology, Engineering, Arts, and Mathematics) program at the Fordham Preparatory School and teaches biology and aeronautical science. His research interests include studying factors that develop the science proclivity of students.

The pandemic of 2020 created the immediate need to utilize online coursework to accommodate the remote learning needs of students at all education levels. At the postsecondary level, the shift to remote learning has necessitated a redesign of courses that require faculty to “update course content in ways that incorporate principles of effective instructional design, including practices that encourage students to self-regulate as they work remotely” (Randi & Corno, 2022, p. 137; in *Theory Into Practice*, 61(1), 129-139). If online instruction fosters student motivation while equipping students with successful self-regulation strategies, students will be more resolute in transferring effective learning strategies to subsequent courses and even the future workplace. This research aimed to discuss the role of student motivation and learning experiences in online course environments at the postsecondary level. Randi and Corno (2022) also discussed design

strategies that allow instructors to create opportunities for active learning within the construct of online courses. The specific questions addressed in this study included the following:

1. What factors motivate postsecondary students to persist at academic goals?
2. What online learning experiences promote student motivation and persistence?

Modern motivation theory posits that individuals pursue goals for a myriad of reasons, including personal interests or situational opportunities. Persistence in the achievement of goals requires an *implementation mindset*. **Mindset** is defined as an active focus on goals that include strategic behaviors to overcome obstacles. Such a mindset may overcome the behavior of goal abandonment in response to a particular difficulty. The implementation mindset serves to remind students of the successful steps already accomplished in fulfilling a goal. By viewing the stepwise progression of goal completion, students press on towards the attainment of the goal. The notion to retreat is thwarted by the analysis of substantial progress already completed. Achievement motivation is another useful modern theory for understanding student persistence in online coursework. **Achievement motivation** is defined as behavior motivated by a desire to achieve a standard of excellence and pursue goals due to the desire to personally achieve the goal (Randi & Corno, 2022). **Goal orientation** is another construct related to motivation theory. Students that possess a mastery orientation engage in tasks to increase their understanding and garner the most out of material. However, students with a performance orientation are concerned primarily with public understanding displays. Mastery goals were better linked to persistence and profound learning. Moreover, students with mastery orientations are often categorized as intrinsically motivated and find profound personal meaning or reward in completing the task. Mastery orientations are often encountered in entertainment-based gaming environments. Thus, it became important for Randi and Corno (2022) to explore the relevant motivational principles inherent within video games and exploit them in creating postsecondary online

courses. Students are motivated to enroll in higher education by the potential for a future career. To nurture and sustain motivation, instructors might create increased opportunities for interaction within online courses. Considering diminished opportunities for in-class, campus-like experiences, online courses require ample opportunities for authentic communication. Consistent instructor feedback and the utilization of breakout discussion groups provide essential opportunities for interaction and problem-based learning activities. This models the workplace where individuals must collaborate, schedule and accomplish goals without constant supervision. The use of personal messages by the instructor, relevant real-world examples, and personal reflection prompts contribute dramatically to student motivation in online courses. However, an online instructional design must also balance the cognitive load demand imposed on a student. It may be beneficial to transform extensive assessments into smaller ones and use scaffolded measures to complete each assessment phase. The development of productive habits along with a robust work ethic may help students demonstrate success in an online course and could plausibly affect future career prospects. Online course instructors are encouraged to build efficient scaffolding scripts within their respective courses. These scripts may include online diary journals, planning/organizational prompts, and graphical progress tracking components which facilitate positive self-regulation in postsecondary students along with increased student motivation. The appropriate amount of challenge and cognitive load management increases the long-term benefit of a thoughtfully designed online course. The shift to remote learning has created both a challenge and an opportunity. The challenge is to create online learning environments that sustain the motivation to learn. The opportunity is to embed online courses with self-regulation and gaming strategies that contribute to a lifelong work ethic. Randi and Corno (2022) have created a roadmap to achieve both goals.

Growing Lifelong Learners Kendal Askins



“When thinking about how teachers and students can move towards self-regulating their learning, it is crucial to bring close attention to the words used. When something is a challenge, we often say, ‘I cannot do that’ or ‘I am not good at this.’ These words feed our thoughts and dictate how we view our ability and our students’ abilities to grow.”

Growing Lifelong Learners

Kendal Askins

“Boosting children’s math self-efficacy by enriching their growth mindsets and gender-fair beliefs”

written by Jeessoo Lee, Hyun Jee Li, and Mimi Bong (2022, in *Theory Into Practice*, 61(1), 35-48) addresses how students view math and view themselves in the learning process affect what they believe their ability to be. The authors discuss different interventions that can be used to help build students' belief for them to be successful in mathematics despite how hard they must work.

Throughout the article, different interventions are discussed to help build the self-efficacy of math students by breaking down stereotypes and beliefs that you are born with particular math ability. The authors discuss several interventions that can be tried, including:

- **The Incremental Nature of Math Ability:** the idea that you can grow your intelligence and ability just by working at it.
- **The Concept of Neural Plasticity:** the idea that the brain is a muscle and just needs to be worked to get stronger.
- **Importance of Making Effort and Using the Right Strategies:** the idea that improvement can come with hard work.
- **Meaning of Overcoming Difficulty:** the idea that difficulty builds experience and getting through the difficulty will help gain the experience needed to get better.
- **Facing the Math-Male Stereotype and Pitfalls of Holding Stereotypes:** the idea that women are just as good as men at math and that your gender does not determine you.

These crucial concepts approach building students’ self-efficacy from a growth mindset perspective. The idea is that if students can begin to see their math ability as not pre-determined but rather as something they can grow into, they will increase self-efficacy.

Self-efficacy is the belief that you can accomplish a particular task. Often in my career, I have heard people refer to themselves as being good at math or bad at math. I have even heard people refer to their math ability as something they have

or have not inherited. Students often formulate these viewpoints very early on in their school careers. One educator's words and teaching methods can make a difference in whether or not a student believes that they can be successful in math.

Through the interventions this article discusses, teachers can teach students how to grow their math abilities without restricting them. If students can learn that they can get better at anything that they try through practicing, overcoming difficulty and defying stereotypes, all of a sudden, the impossible becomes possible. Students and teachers have to view themselves as being able to learn and grow. This thought process comes with how learning is viewed.

From my experience, math is often viewed as a topic you either understand or do not. Many teachers assume that the students will either understand or they will not. I have heard comments such as, “these students are just not capable,” or “they cannot do it” when referencing struggling learners. When teachers feel this way about students, it lowers the expectation set, and in turn, students begin to lower the expectation for themselves. Building a growth mindset helps students understand that they will be lifelong learners. Being a lifelong learner means that there is no maximum to how much you can grow and learn.

When thinking about how teachers and students can move towards self-regulating their learning, it is crucial to bring close attention to the words used. When something is a challenge, we often say, “I cannot do that” or “I am not good at this.” These words feed our thoughts and dictate how we view our ability and our students’ abilities to grow.

Being comfortable being uncomfortable is also important. We are uncomfortable when we learn because we are sitting in a space that we have not mastered. We must not run from this discomfort as lifelong learners. Feeling uncomfortable is a sign that we are learning something new. Lastly, knowing when to ask for help is essential. Learning does not happen in silos. We have to hear other ideas, challenge our ideas, and ask

questions. This cannot happen if we do not work with others and experience the learning in collaboration with other people.

This article was helpful because it reminds me of the difference that one educator can make and can understand that a growth mindset can be developed. It is not something that you either have or do not have. In addition, teaching students how to view math through a lens of lifelong learning and something that can continuously grow can help open up different possibilities for students. The words that we use as teachers can send messages to students about what they can do. One educator can make a difference, and a lifetime of students can be affected by that difference.



Kendal Askins is a principal at Pleasant Valley Intermediate School in Pennsylvania. She attended Queens College, where she received her bachelor’s (in the prestigious TIME 2000 program) and her master’s degrees in Mathematics Education. She is also the founder and CEO of STEMulating Minds LLC. Askins has wanted to teach since she could speak and her love for education grows every day. She believes that one person can make a difference, and students must believe that too!

Addressing the Gap Between Motivation Research and Self-Regulated Learning Practice

Joseph C. Tise

The article “Enhancing motivation by developing cyclical self-regulated learning skills,” written by Gregory Callan, Lisa Rubenstein, Tyler Barton, and Aliya Halterman, in *Theory Into Practice*, 61(1), 62-74), is a perfect example of how scholars can help translate self-regulated learning (SRL) research into practice.

Given the breadth and depth of the SRL literature, it can be challenging to synthesize concise, practical recommendations that practitioners can readily implement. To this end, the two primary purposes of the article were to

1. examine empirical links between key SRL processes and motivation and
2. translate those links into practical actions that educators can use in their classrooms.

The authors aptly leverage Zimmerman’s model of SRL, which they view as a streamlined model of SRL accessible to practitioners. Zimmerman’s model conceptualizes SRL as proceeding through three loosely sequenced phases: Forethought, Performance, and Self-reflection. Learners engage several SRL sub-processes as they progress through each phase—those emphasized in Callan and colleagues’ article include goal setting, self-efficacy, interest, and value judgments: (**Forethought**); use of strategies and self-monitoring/recording (**Performance**); and causal attributions (**Self-reflection**).

Of particular emphasis in this article was how motivational processes (e.g., self-

“Callan and colleagues’ article is an excellent example of how the SRL field can continue pushing research findings into real-world classrooms.”

efficacy, interest, and causal attributions) can influence other SRL sub-processes and vice versa. The authors offered several practical recommendations related to this reciprocal relationship.

First, the authors recommend that teachers help promote effective goal setting by helping students break broader distal goals into specific proximal goals. Specific proximal goals are clearer to pursue and, upon achievement, promote self-efficacy for achieving future goals.

After students set effective goals, Callan and colleagues recommend that teachers help students self-monitor their progress toward those goals. This help could come in several forms, but charting behaviors concurrently with academic performance can be incredibly effective. While engaging in an academic task, teachers can also help scaffold students’ strategy use.

Callan and colleagues recommend that teachers support students’ task-specific (e.g., drawing a diagram) and general strategy use (e.g., elaborative strategies). Teachers can support students through explicit instruction (for unknown strategies) and prompt students to use known strategies at appropriate times.

Modeling strategy use and providing feedback on students’ strategy use are also essential components that can help foster effective strategic learning. Finally, when a student succeeds or fails at a learning task, teachers can help promote adaptive causal attributions to maintain motivation.

Outcomes attributed to effort and strategy use are more adaptive than attributions like luck and task difficulty because effort and strategy use are both malleable and controlled by the learner. Thus, teachers should promote these types of attributions in the wake of successes and failures.

Callan and colleagues provided numerous helpful recommendations for teachers to incorporate SRL into their classrooms. To piggyback on their work, I provide three additional recommendations:

1. Teachers can help bridge the research-practice gap (as Callan et al. are doing) by reading articles that focus on practical recommendations and implications from the SRL literature. Most SRL articles have at least one or two practical implications included in their Discussions, but articles like Callan and colleagues devote additional space, attention, and detail to discussing how exactly teachers may incorporate SRL.
2. Once teachers have read about SRL and recommended SRL practices, they can structure their teaching to implement this practice (something beside SRL once again. SRL requires the learner's agency, so teachers should allow sufficient autonomy among their students and provide appropriate opportunities for self-regulation. Appropriate autonomy will allow students to engage the many impactful SRL sub-processes discussed in Callan and colleagues’ article.
3. Teachers can model their SRL to their students. As a teacher completes a problem on the board, for example, modeling their cognition (e.g., goal setting/ planning for the problem, thoughts about classifying the problem type, considerations about relevant strategies, evaluations of progress and strategies used) would help their students see how an expert self-regulates during an academic task. Students could then compare these modeling events to their SRL processes and adjust as needed.

SRL research is often compelling with many practical implications to real-world classrooms but unfortunately, it is still rare for those applications to come to fruition. Callan and colleagues’ article is an excellent example of how the SRL field can continue pushing research findings into real-world classrooms.

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Less Math Anxiety in Practice by Reflecting Control-Value Theory

Lars Jenßen & Julia Klug

It was a pleasure to read the article *Strategies for alleviating students' math anxiety: Control-value theory in practice* by Holly Klee, Michelle Buehl, and Angela Miller (2022, in *Theory Into Practice*, 61(1), 49-61) from George Mason University.

Many people struggle with mathematics, and not everybody likes the subject. However, it can be assumed that it is not the subject of mathematics per se that causes emotions. In Pekrun's control-value theory (2006), anxiety about mathematical learning and achievement situations arises when students perceive their control as low and the value of mathematics as high.

Many individuals rate their control in mathematics as low, primarily when mathematics is taught as a collection of formulas and algorithms that must be followed. The potential for students to fail when applying strict rules in mathematics is high. At the same time, mathematics has enormous importance for our society. Mathematical skills are the basis of the so-called 21st-century skills, and even beyond that, everyday life is hardly thinkable without mathematical knowledge.

Klee, Buehl, and Miller do an outstanding job of demonstrating how teachers can design their mathematics instruction based on control-value theory in a way that students do not experience as frightening. The authors elaborate strategies that increase students' control appraisals, such as focusing on understanding, emphasizing mastery goals over performance goals, using formative assessment and feedback and talking about emotions, thus increasing students' sense of autonomy and self-efficacy. This may be especially crucial for mathematics, and thus mathematics anxiety, since mathematics is often taught with a high error orientation. In traditional math classes, often only the result as a part of the task is of interest. Teachers should also consider the solution path or the acquisition of skills.

Contextualizing tasks and relating them to students' interests can increase their feeling of autonomy, promoting control and value appraisals. We would like to note that Pekrun (2006) distinguishes different types of value appraisals. Students in school, for example, may consider the domain of mathematics to be valuable (domain value) or, in particular, good achievement in the subject of

mathematics (achievement value). In our reflection, we would like to refer to social values, which indicate that mathematics can be essential to a peer group and thus becomes individually meaningful to students.

The article's authors also refer to the importance of mistakes and adequate handling, such as seeing mistakes as a learning opportunity. Fear of failure, in particular, may be associated with shame, which is also a highly activating unpleasant emotion in learning and achievement situations and is primarily based on social values. We would like to explicitly take up and emphasize this social dimension of learning mathematics, which the authors also address.

Math anxiety is a challenge for many students. The regulation of this emotion is essential for successful learning and successful teaching. Emotions, such as anxiety, are a crucial part of self-regulated learning. In some models (e.g., by Schmitz & Wiese, 2006), emotions are explicitly integrated into the forethought and reflection phase, and they are, of course, linked to motivation.

There is even the same construct, being value, in the expectancy-value theory of motivation (Eccles & Wigfield, 2002) and the control-value theory. Furthermore, we can use similar strategies, such as promoting self-efficacy, giving feedback that promotes a beneficial attributional style or increasing the sense of autonomy

to promote both control and expectancy.

We want to explicitly emphasize the link to SRL and motivation in our reflection on the valuable contribution of Klee, Buehl, and Miller (2022). From this perspective, we would like to add the following recommendations to those in the article:

- Give students autonomy, let them feel self-efficient with meaningful tasks of various difficulties they can choose, and create a positive error climate where students do not need to fear failure to support control—and expectancy—in the forethought phase.
- Give constructive attributional feedback using an individual frame of reference to support their feeling of control—and expectancy—in the reflection phase.
- Distinguish between domain, achievement, and social value when thinking about dealing with value appraisals.

We highly recommend the article by Klee, Buehl, and Miller (2022) for teacher education and persons teaching mathematics as it gives a variety of practical strategies based on sound theoretical assumptions made by Pekrun's control-value theory (2006).

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Lars Jenßen, PhD, is a researcher at the Department of Educational Research at the Humboldt-Universität zu Berlin and works in primary school teacher education in mathematics. His research interests are pre-service teachers' achievement emotions in mathematics, such as enjoyment, anxiety, shame, and pride.

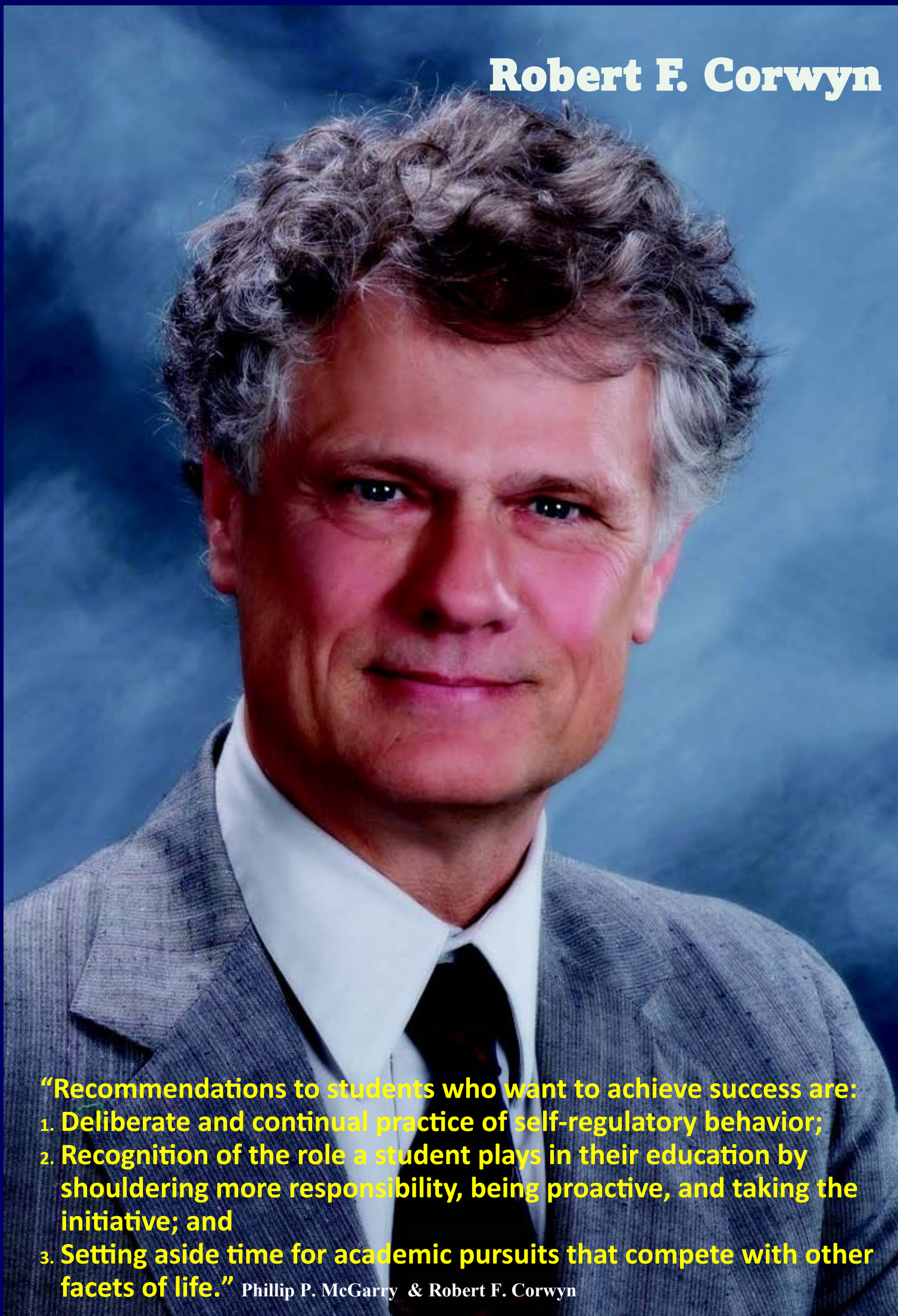
Julia Klug, PhD, is a professor for Educational Psychology at PH Salzburg, Austria, and co-founder of the self-regulated learning collective (www.attheheartoflearning.com). She received her Master's and PhD at TU Darmstadt, Germany, at Bernhard Schmitz's lab, where she fell in love with the idea of researching and promoting self-regulated learning.



Reflection on the Role of Student's Willingness to Delay Gratification, Attitudes, and Self-Regulation in US Education

Phillip P. McGarry & Robert F. Corwyn

Robert F. Corwyn



“Recommendations to students who want to achieve success are:

- 1. Deliberate and continual practice of self-regulatory behavior;**
- 2. Recognition of the role a student plays in their education by shouldering more responsibility, being proactive, and taking the initiative; and**
- 3. Setting aside time for academic pursuits that compete with other facets of life.”**

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In his article, Bembenutty (2022, in *Theory Into Practice*, 61(1), 75-88) provides teachers with specific strategies to help students persist academically using Mischel and Shoda's (1998) five-component cognitive-affective personality system (CAPS; e.g., encoding, expectancies, affect, values, and self-regulatory plans). These five components are mirrored by constructs within Expectancy-Value Theory (EVT; Eccles, 1983; Wigfield & Eccles, 2000; e.g., expectancies, affect, and value), which, like CAPS, focuses on motivational and cognitive factors that lead to achievement.

A major focus of the article, and Bembenutty's scholarship in general, is the role that academic delay of gratification (ADOG) plays in student success. Delay of gratification was first studied in developmental psychology by Mischel (1981), being later applied to academic pursuits by Bembenutty and Karabenick (1998).

The ability to delay gratification is associated with cognitive strategies and self-regulatory behaviors learned over time and to genetic factors (Metcalf & Mischel, 1999). Mischel (2014) and Bembenutty (2008) view delayed behavior as intricately linked to motivation, self-regulation, and action and involved in maintaining motivation.

In our research (studying success in undergraduate statistics), EVT previously failed to provide empirical support for the link between placing value on an enterprise and greater efforts towards that enterprise (Hood et al., 2012; Sorge & Schau, 2002). However, we found that academic delay of gratification was the key mediator linking value and effort (Corwyn & McGarry, 2020).

Delay of gratification is integral to the self-regulation process, which involves being proactive, strategic planning, acting on a plan, and self-reflection (Bembenutty & Karabenick, 1998; Zimmerman, 1998). Based on this literature and decades of teaching experience, we propose that students adopt self-regulatory and delayed behaviors that should help them succeed in academic settings.

"Research suggests that a key component of student achievement is the ability to self-regulate and direct greater efforts toward academic pursuits..."

Since 2012, student mathematics scores have been declining in the US (Camilli, 2021; US Department of Education, 2021), and ACT math scores have declined during this same period (American College Testing, 2015, 2020). This decline coincides with a national focus on greater teacher accountability within education reform (Cochran-Smith et al., 2013; Lewis & Young, 2013).

While greater teacher accountability paradigms have been shown to increase teacher stress (von der Embse et al., 2016), increasing efforts to eliminate homework (Buell, 2008) and to relax consequences for student misbehavior (Kang-Brown et al., 2013) indicate an asymmetry in expectations for teachers and students. Research suggests that a key component of student achievement is the ability to self-regulate and direct greater efforts toward academic pursuits (Bembenutty & Karabenick, 2004; Corwyn & McGarry, 2020).

Students who can self-regulate can monitor their actions, take initiative, and act on plans pursuant to their goals. Based on our understanding of EVT and self-regulation (such as academic delay of gratification), our recommendations to students who want to achieve success are:

1. Deliberate and continual practice of self-regulatory behavior;
2. Recognition of the role a student plays in their education by shouldering more responsibility, being proactive, and taking the initiative; and
3. Setting aside time for academic pursuits that compete with other facets of life.

Bembenutty's (2022) article is an excellent resource for teaching strategies, which weaves self-regulation throughout the five cognitive-affective units in the CAPS paradigm, and we plan to incorporate these ideas into our teaching. Though we emphasize the role of students in our recommendations, we acknowledge that teachers can still have a positive impact on student responsibility. Bembenutty's (2022) article reminds us that helping students learn self-regulatory and delayed behaviors requires a significant time commitment.

Teachers need to reflect on their motivations and self-efficacy, serving as important role models by sharing strategies and experiences with students. There is a significant amount of overlap between advice for teachers and strategies that students need to adopt to achieve

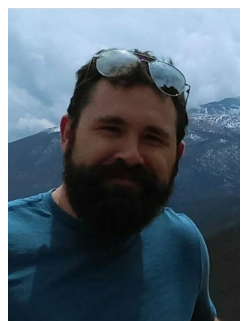
academic goals. One of the most important aims for teachers is to encourage lifelong learning, which is not likely to happen if students fall into the trap of being passive learners.

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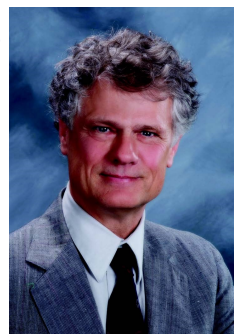
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Currently, McGarry teaches Research Methods in the Department of Psychology.

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A RELEVANT PUBLICATION

"We tested a model that integrates academic delay of gratification with Expectancy Value Theory to predict achievement in an undergraduate psychology and nursing statistics class at a metropolitan university in the southeastern United States. We analyzed measurements ($n = 163$: 80.4% female) of past performance, academic delay of gratification, effort, value, affect, and cognitive competence with students' final exam score. The path model analyzed explained 14.9% of the variance in scores.

Past performance in mathematics and student effort had direct effects on grades and all expectancy value theory constructs, as well as academic delay of gratification, were indirectly related to grades. We present details of our analysis and discuss theoretical and pedagogical implications of this study."

Corwyn, R. F., & McGarry, P. P. (2020).

An expectancy value theory predicts achievement in undergraduate statistics through academic delay of gratification. *Statistics Education Research Journal*, 19(2), 42-56.

<https://doi.org/10.52041/serj.v19i2.109>

Processes and Outcomes of an Interdisciplinary Team Supporting Teacher Learning of Motivational Design Principles

Erin E. Peters-Burton

Research on motivation is vast, and for practitioners, using educational research to find ways to motivate students may be daunting. The article, “Lessons from a co-design team on supporting student motivation in middle school science classrooms,” written by Marchand, Schmidt, Linnenbrink-Garcia, Harris, McKinney, and Liu (2022, in *Theory Into Practice*, 61(1), 113-128), synthesizes research from motivation and science education research, translates the findings for implementation of professional learning for educators. It offers a variety of practical ways to implement research-based motivational supports in middle school science classrooms.

The authors are a team of motivation researchers, science education researchers, and middle school science teachers. The integration of their expertise results in practical suggestions for supporting teachers based on motivation.

Marchand et al. take a theoretical approach that categorizes major classes of motivational variables from decades of research into Motivational Design Principles (Linnenbrink-Garcia et al., 2016). They identify five core principles from various theoretical backgrounds: competence, autonomy, relevance, mastery orientation, and belonging. The authors keep their eye on the translation of motivation theory into practice because they coordinate the ways teachers view motivation with the ways researchers view motivation.

The authors consolidate motivation research to help teachers implement support, but they also explain three decision points to consider when operationalizing the Motivational Design Principles (MDP). The purpose of the decision points is to support teacher implementation of the principles flexibly because one size does not fit all.

The first decision point recommendation is to decide if the professional learning for teachers should focus on broad principles or concrete strategies. Based on the authors’ experiences, they found that teaching broad principles was necessary to have the foundational knowledge of the concepts, but broad strategies were insufficient to support classroom implementation. Over time, they found they needed to incorporate specific, concrete strategies so that teachers could see the application of the principle in action.

The second decision point focuses on the level of motivational support the classroom, lesson or task. The team began with supporting task- and lesson-specific supports but realized that a supportive classroom environment was needed for the other supports to succeed. The third decision point to consider is how to support teacher self-assessment and reflexivity. To build sustainability in the program, the team created a peer mentoring program and guide to help other teachers apply the MDPs. They also developed a brief observational checklist that helped teachers assess behavioral, emotional, and cognitive engagement and social participation. The peer mentoring and assessment tools supported continued professional learning.

The article helped illustrate how to support teachers’ self-regulated learning (SRL). Organizing a plethora of research on motivation into five design principles helped teachers set goals for incorporating motivational supports into their science classrooms. In the professional learning setting, teachers selected one of the motivational design principles to develop specific practices. Focusing teachers on design principles helped them create well-bound, attainable, and measurable goals. Creating and implementing the specific motivational support was an outcome of the teachers’ goals.

The authors also used tools to help teachers self-reflect on their performance, such as the REACT checklist and peer mentoring guide. The information from these tools can help teachers evaluate their instruction, consider new adaptations, and set new goals in a future cycle of SRL.

As a former middle school science teacher and a current educational researcher, I appreciate the flexible approach of developing materials and the back-and-forth nature of researchers and teachers working together to translate theory into practice. The authors took a complex area and clearly explained how they synthesized the research, found ways to translate it into instructional practice, and explained their process.

When I work with science teachers in professional development settings, I often find that we ask teachers to take broad ideas and do the heavy lifting to operationalize and contextualize the ideas into classroom implementation. Teachers have many duties and do not often have time to take a broad idea and narrow it for their context. However, providing only concrete strategies to teachers does not allow them to make instructional decisions if the strategies are not meeting expectations.

The authors’ collaborative team not only took findings from decades of research and transformed them into practical instructional decisions, but they also considered a variety of contexts and individual learning situations. This article can serve as a model for researchers to work with teachers to help them consume educational research in a meaningful way.

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Great Value in Identifying Cultural Costs for Preservice Teachers of Color

Bradley W. Bergey

Amerah Archer, Revathy Kumar, and Eric Pilcher (2022, in *Theory Into Practice*, 61(1), 89-101) deepen our understanding of the persistent and formidable challenge of racially diversifying the US teaching corps in their excellent article: “Is the value worth the costs?: Examining the experiences of preservice teachers of color in predominantly White colleges of education.”

The authors apply a Situated Expectancy Value Theory (SEVT) lens to identify socio-cultural costs that preservice teachers of color (PSTC) may face in their early professional training. In doing so, the article provides much-needed theorizing around the types of costs that may operate for students of color in colleges of education, as well as actionable steps for what educators and institutions can do to lower cultural costs.

The article focuses on three costs that can arise for preservice teachers of color:

- One cost is the experience of cultural dissonance caused by discrepancies between students’ culture and the learning environments.
- A second potential cost is belonging uncertainty. PSTCs may experience a lack of belongingness in educational programs and the field of teaching more broadly.
- A third cost that preservice teachers of color may experience is stereotype threat, in which students contend with fear and anxiety about confirming negative stereotypes.

Drawing on Gray et al.’s (2019) opportunity structures, the authors outline various implications at interpersonal, instructional, and institutional levels. At the interpersonal level, the authors stress the need for awareness and training of teacher educators around their own cultural experience and biases and the barriers PSTCs may experience. At the instructional level, the authors emphasize the need for diversity, equity, and inclusion to be deeply integrated into teacher education curriculum and instruction. At the institutional level, the authors call for engaging in equity audits and emphasize the importance of centering PSTC’s experiences and suggestions for identifying policies and practices that create cultural dissonance and threaten a sense of

belonging. While the article focuses on predominantly White colleges of education, educators and researchers at more racially diverse institutions will find the article extremely relevant. City University of New York (CUNY), where I work, is involved in the same struggle to recruit and retain teachers of color, and many PSTCs experience the cultural costs outlined by the authors. Calls for prioritizing students’ cultural knowledge, encouraging critical self-reflection, centering equity issues in curricula, and weeding out inequitable policies apply broadly.

Adding to the many valuable suggestions in the article, one way CUNY supports PSTCs is through a partnership with the city that funds the NYC Men Teach program (<https://nycmenteach.org/>). This program supports male teachers of color through a dedicated counselor, extracurricular workshops that focus on race and teaching, transportation funds, and to help secure a job upon graduation. Anecdotally, PSTCs derive a sense of belonging and validation from the relationships and knowledge they build in the program.

Beyond practical guidance, the article makes significant theoretical contributions. The article integrates prior literature on preservice teachers of color with SEVT at a point when research with this and related frameworks (e.g., FIT-Choice, Watt & Richardson, 2007) and the conceptualization of costs in teacher career motivation is burgeoning (Bergey et al., 2019; Bergey & Ranellucci, 2022; Beymer et al., 2022). I expect researchers to build on the authors’ theorizing around cultural

costs, which have straightforward applications well beyond PSTCs.

The article lays the foundation for many pressing questions to identify further and lower cultural costs for PSTCs. Some that come to my mind are: How do cultural costs impact persons of color at different points in the teacher preparation pipeline? How do cultural costs manifest at intersections with other identities? How salient are cultural costs among PSTCs, within different racial/ethnic groups, or different academic domains? What additional cultural costs serve as barriers to PSTCs?

As an example of the nuance researchers are likely to uncover, my recent research (Bergey, 2021) on Asian American male preservice teachers revealed discouragement from family and community was among the most salient cultural costs of becoming a teacher.

I strongly encourage readers to learn from Archer et al.’s recent article, which makes a valuable contribution to researchers and practitioners alike. I am excited to follow the sizable impact the article will likely have on research and practice both within teacher education and in the broader SSRL research community.

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A RELEVANT PUBLICATION

“Few Asian American men choose to become teachers in the United States, and the career paths of those who do are not well understood. Guided by Situated Expectancy-Value Theory, analyses of interviews with 12 Asian American male preservice teachers revealed three themes. First, men navigated social discouragement and variable parental support for a teaching career. Second, their career decisions were grounded in commitments to personal agency, non-conformity, and making a social contribution. Third, career exploration, including early teaching experiences and exploring non-teaching career possibilities, clarified strengths and values. Theoretical and practical implications are discussed.”

Bergey, B. W. (2021). “The stereotype does not define us”: The social influences and life experiences that led Asian American men to pursue a teaching career. *Teaching and Teacher Education*, 103, 103352. <https://doi.org/10.1016/j.tate.2021.103352>

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Reflections on the Practical Applications for Promoting Motivation and Academic Delay of Gratification among College Students Rajib Chakraborty & Vijay Kumar Chechi

In this essay, we reflect on Héfer Bembenutty's latest publication (2022, in *Theory Into Practice*, 61(1), 75-88), in which he extended and applied motivational theory to the Mischel's hot/cool cognitive-affective theoretical model. Bembenutty maintains that self-regulated learning is vital to college students' willingness to delay gratification.

Theoretical Approach

Bembenutty's article discusses the theoretical underpinning, the hot/cool cognitive-affective system. First introduced by Walter Mischel in the late 1960s through his famous marshmallow experiments, which explains the important self-regulatory motivational component competencies of academic delay of gratification.

While the cool system was cognitive and associated with delay of gratification, the hot system was emotional in nature and responsible for instant gratification (Metcalf & Mischel, 1999). The subjective value of the reward is critical for delaying gratification (Mischel, 2014).

Applications to Practice

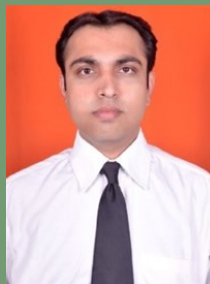
The individual differences displayed by students in their academic delay of gratification originate from the interactions among the five components of the hot/cool cognitive-affective system, as proposed by Mischel and Shoda (1998). The first component, encoding, involves how a student perceives the self, others, and the student's environment. It couples awareness about the inherent capabilities and the coping mechanisms to deal with undesirable circumstances.

Delay of gratification is also directly related to self-efficacy, and expectancies students have of success and its subsequent outcomes. Chronic stress as a detrimental factor significantly affects students' ability to display delay of gratification. By helping students realize the positive relationship between delay of gratification and their goals and values, teachers can promote the former trait. In this way, the hot/cool systems underplay can also be managed well. The ability to complete pre-marked tasks through self-regulatory strategic planning is also critical for delay of gratification.

Relationship of Theory and Applications to Student's Self-Regulated Learning

The teachers can promote motivation in

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students by adopting the six phased Self-Regulated Strategy Development (SRS) Stages of Instruction by Harris and Graham (2009, 2017). The practice of such an approach can promote the activation of a cognition-based cool system and curb the activation of the emotive hot system.

Connection to Our Research

Chakraborty and Prabhakaram (2015) applied the hot/cool system to discuss the interrelationship between academic delay of gratification and emotional intelligence in secondary school students in India. Later, Chakraborty and Chechi (2021) developed an integrative empirical model of self-regulated learning. In this model, they empirically established volition (comprised of academic delay of gratification, future time perspective, and academic procrastination) to be a sub-component of the motivation component of self-regulated learning along with another sub-component, motivational belief (comprised of intrinsic motivation, self-efficacy, and goal orientation), in Indian engineering undergraduates.

Our research findings were in line with the previous work of Dorrenbacher and Perels (2015) with German Psychology undergraduates. Also, the researchers included two vital variables, namely, reappraisal and suppression, to better represent the affective or emotional component of self-regulated learning, based on the previous work of Buric et al. (2016). It remains to be seen how the hot/cool system theory would explain the role

of reappraisal and suppression in representing the emotional strategies of self-regulated learning.

Recommendations to Teachers to Promote Self Regulated Learning / Students to Engage in SRL

College students can be instructed to practice Yoga as an effective Indian system of controlling the hot system and strengthening the cool system through breath control. The teachers can be trained to identify and design germane content well to inspire students to be self-regulated and construct knowledge on their own.

Considering the direct relationship self-regulated learning has with lifelong learning, the scientific promotion of the former in the students by the teachers must be at the core of every educational institution's policy. This can be made feasible by conducting empirical research on the measurement of self-regulated learning and profiling the students from multiple disciplines accordingly by administering the comprehensive tool available for this purpose (Chakraborty & Chechi, 2021).

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A RELEVANT PUBLICATION

"The present study tried to find the best estimation of the reliability of the academic delay of gratification scale, originally prepared by Hefer Bembenutty and Stuart Karabenick, as per the nature of the data obtained on the administration of this scale on the selected sample. 479 professional courses students from engineering, law, education and pharmacy of Sultan Ul Uloom Education Society, Hyderabad, were part of the study. The scale was found to be congeneric, with unidimensionality and unequal factor loadings of the items on the factor ADOG through confirmatory factor analysis using SPSS AMOS ver.23. Komolgorov-Smirnov test and Shapiro-Wilk test using SPSS Statistics Ver.23 found the data not to be normal. Under the violation of tau equivalence, congeneric model and asymmetrical circumstances, R Studio and R software were used to find the point estimate of Greatest Lower Bound reliability, as the best estimation of this scale's reliability, which was found to be 0.75. Cronbach's alpha, Omega coefficient, Guttman's Lambda 2, and Composite Reliability, were found to be nearly equal, in and around the magnitude of 0.7 and underestimated the scale's true reliability in these realistic conditions. Educational implications are discussed."

Chakraborty, R. (2017). Estimation of greatest lower bound reliability of academic delay of gratification scale. *IOSR Journal of Research & Method in Education*, 7(2), 75-79. <https://doi.org/10.9790/7388-0702017579>

Motivating Students in an Academic Environment

Thomas Amoroso

Students from a broad spectrum of competency levels are in our classrooms. As an educator, a constant challenge is discovering strategies and methods to address their needs in a classroom. One question I have found myself asking is, “How exactly do students learn?” To properly educate our students, educators must find a way to reach the students beforehand.

The most effective approach to reach a student's needs is by discovering how to motivate students to perform above and beyond their academic expectations. As an educator, I have been challenged to motivate students to perform beyond their standards. My students find themselves set on performing “as best as they want to” rather than levels of success that they can perform academically.

To facilitate these students' needs, I have uncovered incredible strategies from the article “Leveraging motivation theory for research and practice with students with learning disabilities” by Rebecca Louick and Katherine Muenks (2022, in *Theory Into Practice*, 61(1), 102-112).

The three theories discussed in their article are viable to facilitate learning strategies for students with special educational needs. The three theories explained in the article are: the Expectancy-Value Theory, Goal Orientation Theory, and Self-Determination Theory.

My preferred theory from the three is the **Goal Orientation Theory**. A crucial task for a teacher is to understand students’ motivations and facilitate students towards recognizing their goals

and performance orientations. One struggle I have faced as a teacher is understanding the students’ performance goals.

Several students of mine perform above and beyond the expectations I have set for them; however, others seem to struggle with tasks for different reasons. Some have claimed the work is too challenging or fear that they cannot complete the task. I have taken feedback from students to formulate new strategies for facilitating material for students. One area to focus on is assisting students with their goals.

I have encouraged students to include their feedback on assignments in the form of self-reflection. This method allows students to perform tasks at their competencies and address their comprehension or other struggles throughout the assessment. Students who address their weaknesses have discovered areas to target for further growth. I have seen a marginal improvement in their academic output because they have simply faced their fears. I have encouraged students to be more vocal with me in the classroom because their efficacy grows when they feel comfortable in a classroom environment.

Furthering the importance of a comfortable learning environment ties into another theory explained in the article: **Self-Determination Theory**. According to the theory, students have three basic psychological needs: relatedness, competence, and autonomy. All students face these academic challenges that force them to balance the three core needs. A constant challenge for me as a teacher is to promote a comfortable learning environment that is equally engaging and welcoming to the needs of students.

The third theory from the article is the least advantageous. The **Expectancy-Value Theory** details that students’ motivation towards engagement is influenced by their own beliefs about their capabilities to complete tasks and the value they believe completing the task holds. In my classroom, I have always found it a struggle to encourage students of all levels of capability. I have had several classes where the higher functioning students have negative preconceived notions about their efficacy! I have found myself encouraging students of all levels above and beyond their competency by pulling them aside for one-on-one encouraging pep talks.

Whenever I have a classroom of students that hold negative beliefs of their capabilities, I stop the lesson and encourage them with positive reinforcement. While I have seen a slight increase in their academic output, I cannot guarantee that students will never fall back on their self-doubt, so constant positive reinforcement is needed.

I have found this article extremely helpful as it explained strategies I have used in the classroom and discussed other theories to be used as a backup strategy for other targeted students’ needs. As an educator, I encourage other teachers to use these principles in their classrooms as efficient and proactive tools to address the needs of students.

I also strongly suggest that teachers build a rapport with their students as efficiently and effectively as possible. The relationships we build with our students always provide a lens into students' minds. This key unlocks their true potential in a classroom environment and builds their efficacy at levels beyond their preconceived aspirations.

A RELEVANT PUBLICATION

“Given that the majority of students with learning disabilities (LD) are currently educated alongside general education peers for the majority of the school day in inclusive classrooms, it behooves motivation scholars to consider the practical implications of their research for all teachers working with students with LD. The purpose of this article is to discuss how three theoretical perspectives on motivation can be leveraged to support classroom teachers’ work with this student population. Following an overview of our three focus theories of motivation (goal orientation theory, self-determination theory, and expectancy-value theory), we discuss research about students with LD that employs each perspective, as well as any related interventions for students with LD. Afterwards, we provide practical implications for teachers working with students with LD. Finally, we offer recommendations for research on motivation using these and other theories that are sensitive to the specific strengths and challenges of students with LD.”

Louick, R., & Muenks, K. (2022). Leveraging motivation theory for research and practice with students with learning disabilities. *Theory Into Practice*, 61(1), 102-112. <https://doi.org/10.1080/00405841.2021.1932154>



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