Times Magazine

Vol 6, Issue 1 - February 2023

Aubrey Whitehead (SSRL SIG Senior Chair)
Héfer Bembenutty (Editor-in-Chief, Content & Graphic Editor)
Pamela F. Murphy (Executive Editor)

AERA SIG Studying and Self-Regulated Learning

Paul R. Pintrich

(1953-2003)

Motivation, Self-Regulation, Epistemology, Culture, Emotions, Goal Achievement and Impact Today

PAUL R. PINTRICH OBITUARY

Pintrich (1953–2003) was an educational psychologist who made significant contributions to the fields of motivation, epistemological beliefs, and self-regulated learning. He was a professor of education and psychology at the University of Michigan where he also completed his PhD and MA. Pintrich published over 140 articles, book chapters, and books on topics related to educational psychology.

ANN ARBOR, Michigan - Paul R. Pintrich, PhD, 49, a renowned scholar, longtime professor at the University of Michigan, and a native of Wilmington, Mass., died suddenly Saturday, July 12 of a stroke while on a bike tour. He was the husband of Elisabeth "Liz" DeGroot, whom he married on Oct. 15, 1988.

He was born in Wilmington, the son of Paul and Teresa (Prescott) Pintrich, both of Wilmington. He graduated from Wilmington High School in 1971, and received a bachelor's degree in psychology from Clark University in Worcester. He later received a PhD in education and psychology from the University of Michigan.

Dr. Pintrich was a Professor of Education and Psychology and the Chair of the Combined Program in Education and Psychology at the University of Michigan in Ann Arbor, Mich. He also served as the Associate Dean for Research for the School of Education at Michigan.

Dr. Pintrich served as president of Division 15-Education Psychology for the American Psychology Association. He won the 1999 Best Research Review Article Award from the American Educational Research Association, the Class of 1923 Award from the College of Literature, Science, and Arts, and the School of Education for excellence in undergraduate teaching. In 2002, Dr. Pintrich was a visiting scholar at Oxford University.

He enjoyed traveling to Maine and Cape Cod and presenting papers at conferences worldwide. He was also an avid bicyclist and participated in 50-75 mile bike tours.

Besides his wife and parents, he is survived by a stepson, Bill and his wife Elizabeth DeGroot of Ypsilanti, Mich.; four sisters, Patty Sugrue of Hampstead, N.H., Dianne Herther of Nashua, N.H., Lynda Pintrich of Nashua, N.H., and Kathleen Grover of Wilmington; also five nieces and nephews.

https://obits.mlive.com/us/obituaries/annarbor/name/paul-pintrich-obituary?id=15016335

Education

Bachelor of Arts degree in psychology, Clark University, Worcester, Massachusetts

Master of Arts degree in developmental psychology, University of Michigan, Ann Arbor, Michigan

Doctor of Philosophy degree in developmental psychology, University of Michigan, Ann Arbor, Michigan

EDITORIAL

Paul R. Pintrich: Henosis of Self-Regulated Learning Theory and Research

Héfer Bembenutty

Paul R. Pintrich was exceptional at unifying fields and diverse disciplines. He was one of the most influential motivational and self-regulated learning scientists of the 21st century. His impact continues to be momentous and overwhelming with wonder and surprise. Paul's theoretical insights and empirical contributions continue to impress us, both on their own and in the work of his former students and grandstudents.

This *Times Magazine*'s special issue of the Studying and Self-Regulated Learning Special Interest Group (SIG) of the American Educational Research Association offers a well-deserved tribute to Paul 20 years after he passed away in 2003. Paul remains a world-class force in the field owing to the high-caliber legacy he left, which continues to guide the field in so many ways.

We also offer tribute to his wife, Elizabeth De Groot, for sharing him with us and the world and caring for him with so much love and dedication. We are grateful and honor Liz for her own merits, values, ethics, scientific contributions, and caring disposition.

We invited Paul's best friend, Allan Wigfield, to share a lagniappe about his experiences with Paul and current perspectives 20 years after his death. Allan and Paul were best men at each other's weddings.

We invited some of his former students to share their professional biographies and a representative abstract of their scholarly work to highlight where some of Paul's former students are today.

We also invited some of Paul's grandstudents, the students of Paul's students, to share how Paul has impacted their careers. Paul's grandstudents were not privileged to meet him, but they received a rich gift and inherited valuable theoretical treasures. They have honored the worth of that endowment. In their work, they continue impacting the fields of education and psychology in our pluralistic classrooms and communities.

The successful career of Shirley L. Yu is an example of Paul's legacy to his students. Shirley is an Associate Professor of educational psychology at The Ohio State University. She is an expert on the relations of motivation and self-regulated learning (SRL) to achievement and retention in science, technology, engineering, and mathematics (STEM).

Shirley's student and Paul's grandstudent, Yeo-eun Kim, is a Postdoctoral Research Fellow in the Department of Education at Washington University in St. Louis. Her research focuses on understanding and improving students' motivation and self-regulated learning in diverse personal and social settings. She will join Florida State University as an Assistant Professor in Fall 2023.

Paul's former students are doing well in their diverse appointments. For instance, Barbara Hofer is a Professor of Psychology Emerita at Middlebury College and is an educational, developmental, and cultural psychologist. Lisa Linnenbrink-Garcia is a Professor of Educational Psychology in the Department of Counseling, Educational Psychology, and Special Education at Michigan State University. Her research focuses on developing achievement motivation in school settings.

Teresa Garcia-Duncan has 30 years of postdoctoral research experience in applied research and evaluation and has principal roles in multiple research grants. Akane Zusho is a Professor at the Graduate School of Education at Fordham University. She has written extensively on the intersection of culture, achievement motivation and self-regulated learning.

Brian C. Sims is the Executive Director of Jomoworks, LLC, a National Advisory Committee Member of Health Policy Research Scholars, Robert Wood Johnson Foundation and Senior Advisor for Alumni Affairs of Interdisciplinary Research Leaders at the University of Minnesota.

Paul's work on self-regulated learning was one of his hallmark contributions. It is important to remember that he always thought of self-regulated learning in connection to his other groundbreaking contributions in motivation, cultural beliefs, emotions, cognitive processes, resource management, help-seeking, goal orientation, and epistemological beliefs; they are all tightly banded together to self-regulation. He saw them as part of a whole: effective teaching and learning. Paul's professional vision makes him a champion of self-regulated learning research.

Paul was a great unification leader in the field of self-regulated learning. In Plato's classical Greek, *henosis* refers to oneness and union. Paul's contribution to the *Handbook of Self-Regulation* (Boekaerts, Pintrich, & Zeidner, 2000), the Motivated Strategies for Learning Questionnaire (MSLQ), and his theoretical model (Pintrich, 2004; Zusho, 2017) reflect that for him self-regulation was a fundamental and unifying construct for all aspects of teaching and learning, a view strongly influenced by one of his most significant mentors, Wilbert (Bill) J. McKeachie.

Paul's self-regulated learning model includes four phases: Phase 1: Forethought, planning, and activation; Phase 2: Monitoring; Phase 3: Control; and Phase 4: Reaction and reflection. All involve the regulation of cognition, regulation of motivation and affect, regulation of behavior, and regulation of context.

Paul continues impacting all of us and invites us to endorse henosis in our respective disciplines. He continues advocating for integral models that create theoretical and empirical oneness. Paul invites us to integrate the regulation of cognition, motivation and affect, behavior, and the context in our research.

As we honor Paul's dedication to creating unity at the conceptual level, we need to see ourselves as part of a whole in our quest to provide teachers and learners with theoretical, practical, and effective tools to teach and learn.

We hope future theories and research will feature more interactions and unification among diverse constructs and research approaches. Paul advocated for henosis. He did his part. We are now called to do the same.

Héfer Bembenutty, PhD, is an associate professor of Educational Psychology at Queens College. His research focuses on academic delay of gratification and the Cyclical and Self-Regulated Culturally Proactive Pedagogy (CSCPP) model.

Many thanks go to Sarah Young and Amanda Ferrara (copyeditors), Barbara Hofer, Jenny Mischel, Allan Wigfield, and Phil Winne for their highly valuable editorial assistance.

Remembering Paul R. Pintrich
My Best Friend and Close Colleague
Allan Wigfield

It is with both sadness and (continuing) incredulity that I realize it has been 20 years since Paul left us. He was a close colleague, and (more importantly) my best friend. I will never forget the Saturday night in July of 2003 when I got the phone call from Liz DeGroot's son Bill that he had passed away doing one of his favorite activities, biking in the countryside around Ann Arbor.

I could say so many things about Paul, but I will focus on three here: his contributions to the field, his zest and spirit for life, and our friendship. I will start with his contributions to the field. There have been special issues of journals and various articles devoted to this topic (including the present one), so I will note just a few of his many contributions in his all— too— short career rather than describe them in detail. To quote the introduction to the 2005 special issue of Educational Psychologist devoted to Paul's contributions that Akane Zusho, Liz De Groot, and I organized:

"Paul Robert Pintrich made seminal and lasting contributions to the field of educational psychology through his research and theorizing on topics such as children's and adults' motivation, regulation of achievement behavior, epistemological beliefs, and conceptual change, among other things. He made important theoretical connections among these different areas that have too often been studied separately in the field..... His legacy will endure because of both the strength of his own contributions and the continuing contributions of his former students and collaborators" (Wigfield et al., 2005, p. 67).

Eighteen years after we wrote this , it is clear that his legacy has endured, given that his work is cited regularly and often. This is the case in all of the areas noted in the quote.

More broadly, Paul's work was so impressive because he: 1) integrated different areas of the field that few had made connections across; 2) emphasized the importance of conceptual clarity in whatever area one was working; 3) championed empirical, scientific approaches to the study of motivation and self -regulation; indeed, to all areas of educational psychology. One wonders what his reaction would be to some current authors expressing skepticism at scientific approaches to those and other topics. Actually, I am pretty sure I know how he would react— with continuing strong support that scientific approaches are what will carry the field forward; 4) the collaborative nature of his work and efforts to connect research communities in the U. S. and internationally; he was one of the pioneers in doing so.

Part of his collaborative approach was his dedicated mentorship of his and other students in the Combined Program at Michigan. I learned a great deal about mentoring from talking to him about how to be a good mentor.

Paul's level of productivity was amazing; his vita in 2003 already had 120 journal articles and chapter publications on it. One again wonders what it would look like now, what awards he would have won, and what further integrative breakthroughs he would have made. I am sure the publications would have been exceptionally prolific, the awards numerous, and the intellectual integrative breakthroughs astounding. The field would be much stronger had he been allowed the time to continue to contribute to it.

I turn next to Paul's spirit and zest for life. As noted earlier, he was an avid biker and took great pleasure in riding 75— and 100— mile biking events in Michigan. The first one we did together, we both were so sore afterward that we could hardly get to our cars; Paul became very determined not to let that happen again. He loved baseball, various social activities with friends and family, travel both within the U.S. and internationally, and good food and drink.

One year when AERA was in New Orleans, I headed to Felix's Oyster Bar in the French Quarter to get my first dozen oysters; Paul was already there enjoying his. Starting in the 1990s, we had "Beer Night" at AERA. Our friend Bob Stevens was the beer maker, and the group (Paul, Stuart Karabenick, Richard Newman, Bob, and me as the regulars, with others, sometimes joining us) would sample Bob's new beer creations and then take Bob to dinner afterward. No Division or SIG business meeting could interfere with Beer Night; we always were sure to get it on our calendars first.

Paul loved social activities of all sorts; I know from talking to former Combined Program in Education and Psychology (CPEP) students that Paul would stay late at CPEP parties, often being the last faculty member to leave, because of his great enjoyment of the camaraderie and conversation occurring on those evenings. I have so many great memories of the activities we did together— the laughter, the gossip, the complaining, the celebration of accomplishments— so many stories to tell, but I will leave it at that.

Here are some reflections on our friendship. We met in 1982 when I was a postdoc in developmental psychology, and Paul was a Research Associate at the Center for Research on Learning and Teaching at Michigan. We quickly hit it off, and often would get together on weekends (most often at the Del Rio bar in Ann Arbor) to talk about how things were going, complain about being on soft money, and wonder if we ever were going to get tenure— line jobs. Sometimes we thought of going in different directions than the academic career that seemed elusive. However, then Paul was hired on a tenure— line position at the School of Education at Michigan in 1987, and I was hired at Maryland in 1988; Paul listened to and gave feedback on my job talk before I headed out for my interview.

We kept in close touch after I moved to Maryland. One of my favorite examples— Paul only sometimes enjoyed attending faculty meetings at the School of Education at Michigan. When the building finally was wired so that people could connect to the Internet wirelessly (yes, there was a time when one could not do that), he was delighted, and I would receive emails from the faculty meetings in which he would complain about what was going on in the meeting or talk about baseball or other topics of greater interest to him!

We shared so many things, both professionally and personally. Paul and I were promoted to associate professor in 1993 and full professor in 1998. We were best men at each other's weddings in 1986 and 1988. These experiences and many others created an incredibly deep and unshakeable bond between us. In July of 2003, Paul had a meeting in DC, and we met for dinner one of the nights he was in town. We had a wonderful conversation, and I truly felt at the end of the evening that some of the frustrations he had begun to feel at Michigan had abated, and he was in a good place.

Then the Saturday night after he was in our area, I got the call from Bill that Paul had passed away. The shock of his early death was great and deep, and I still think about him nearly every day. Since July 12, 2003, there have been so many times that I wish Paul had been there to advise me about different aspects of my career and life— I would have made some better decisions with his guidance and advice. He truly was my best friend, and I am so thankful for our relationship— and still incredibly sad it ended far too soon. **Continued on next page.**

Remembering Paul Pintrich
Allan Wigfield
(Continued from previous page)

In the photos are Allan Wigfield and his wife Marguerite Tom-Wigfield, Wayne Osgood and his wife the late Janis Jacobs, and Paul Pintrich and his wife, Elizabeth D Groot.

Allan Wigfield is Professor Emeritus in the Department of Human Development and Quantitative Methodology, Distinguished Scholar-Teacher, and University Honors Faculty Fellow at the University of Maryland. He was appointed in 2015 as an Honorary Professor of Psychology at the University of Heidelberg. His research focuses on how children's motivation develops across the school years in different areas, and also on developing interventions to improve children's motivation.

In his intervention work he has focused primarily on children's reading motivation and comprehension. Wigfield has authored more than 170 peer-reviewed journal articles and book chapters on children's motivation and other topics, including the chapter on the development of motivation in the *Handbook of Child Psychology* (6th and 7th editions). He was Associate Editor of the *Journal of Educational Psychology* from 2000 to 2002 and Associate Editor of *Child Development* from 2001 to 2005. He was editor of the teaching, learning, and human development section of the *American Educational Research Journal* from 2007-2010. Wigfield has won numerous awards for his research and also for his teaching, including in 2019 the Sylvia Scribner Award from Division C of the American Educational Research Association. His work has been cited over 90,000 times.

Abstract

Paul Pintrich's many contributions to educational psychology are discussed. This article describes Paul's academic career at the University of Michigan and discusses Paul's contributions to the understanding of students' achievement goal orientations, self-regulated learning, epistemological beliefs, and conceptual change and Paul's work on developing measures of motivation and self-regulation. These areas are the topics of the articles in this special issue. The authors note several important themes in Paul's work: its integrative nature, conceptual clarity, empirical focus, and emphasis on collaboration with scholars around the world. Overviews for the 6 articles in the special issue are provided.

Wigfield, A., Zusho. A., & De Groot, E. V. (2005). Introduction: Paul R. Pintrich's contributions to Educational Psychology: An enduring legacy, *Educational Psychologist, 40,*2, 67-74. https://doi.org/10.1207/s15326985ep4002_1

Times Magazine

Eric Anderman, Helen Patrick, Shirley Yu, Anastasia Elder, Robert Roeser, Lynley Anderman, Carol Wong , Barbara Hofer, Allison Ryan, **Paul Pintrich** (Center), Karen Strobel; Lisa Linnenbrink-Garcia, Christopher Wolters, Teresa Garcia, Timothy Urdan, & Avi Kaplan

(This group photo is from the tenure party his students threw for him at AERA in 1998, in San Diego, California)

An Interview with Paul Pintrich (An imaginary question with an actual answer)

Bembenutty: ***What do you think about the current conversations about self-report instruments and trace data to assess self-regulated learning?***

Pintrich: "Self-report instruments can be developed that are valid and reliable, but there are limitations in their use. One of the most important concerns the grain size or resolution of the instrument. There seems to be an emerging consensus (e.g., Pintrich et al., 2000; Winne et al., 2001; Winne and Perry, 2000) that self-report questionnaires can assess aptitudes or propensities to use self-regulatory strategies in SRL models or different approaches to learning in the SAL models. However, it is clear that self-report questionnaires are not very good at capturing the actual events or on-going dynamic processes of self-regulation. Other more process-oriented measures are required such as stimulated recall, on-line measures, traces, observations, reaction times, and other experimental methods to actually measure self-regulatory events (Pintrich et al., 2000; Winne et al., 2001; Winne and Perry, 2000). Of course, some of these measures have less practical utility than self-report questionnaires, so questionnaires still have a role to play in research on self-regulated learning (Pintrich et al., 2000)" (2004, p. 401).

Pintrich, P. R. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students. *Educational Psychology Review*, *16*, 385-407. https://doi.org/10.1007/s10648-004-0006-x

PAUL R. PINTRICH

Paul R. Pintrich: Scholar and Teacher

Shirley L. Yu

(Pintrich's Former Student)

Shirley L. Yu is an associate professor of educational psychology at The Ohio State University in the Department of Educational Studies, College of Education and Human Ecology. Shirley earned her PhD in education and psychology under the mentorship of Paul R. Pintrich from the University of Michigan, where she also earned an MA in developmental psychology. Her BA was in psychology from the University of California, Los Angeles.

Shirley is an expert on the relations of motivation and self-regulated learning (SRL) to achievement and retention in science, technology, engineering, and mathematics (STEM). Her interdisciplinary work (often with STEM faculty) contributes to solving long-standing equity issues for women and ethnic minority students, who are underrepresented in both STEM majors and careers.

Through her dual focus on 1) Understanding motivation, SRL, and course contexts in STEM, and 2) Implementing theory-driven interventions in STEM, Shirley's work has significantly contributed to understanding the psychological and contextual factors associated with student success. Her research on SRL strategy use, metacognition, and motivation in STEM courses examines the interplay of these factors with instructional practices and course contexts, which supports STEM students' engagement, achievement, and persistence.

Shirley has collaborated on theoretically based interventions that contribute to increased innovation and social justice, such as her current work with a mentoring program for women majoring in engineering and sciences on the cusp of beginning their careers. She has also investigated the impact of learning to Learn courses designed to teach students to be self-regulated learners.

An important component of Shirley's work is her focus on training graduate students and faculty to be effective instructors. As the current director of the interdisciplinary Graduate Certificate in College and University Teaching at Ohio State, she guides graduate students from across the university in developing skills and knowledge needed to effectively teach in higher education and promotes reflective and scholarly approaches to that practice. During her first faculty position at the University of Houston, she was the director of the Center for the Integration of Research, Teaching, and Learning (CIRTL). CIRTL is a network of 43 research universities whose mission is to enhance excellence in undergraduate STEM education through the professional development of graduate students in effective teaching practices. Her commitment to training and mentoring is evident in the multiple teaching awards she has received at both institutions.

Shirley has also made significant contributions to undergraduate education. At the University of Houston, she was affiliated with the university's Center for Teaching Excellence and directed the undergraduate program in Human Development and Family Studies. She co-led a team that redesigned the program curriculum, earning recognition through a university award for longitudinal excellence in undergraduate teaching.

Shirley has an extensive record of service to the profession. She has held positions with Division 15: Educational Psychology of the American Psychological Association, Division C: Learning and Instruction of the American Educational Research Association, and editorial board memberships for the *Journal of Experimental Education* and the *Journal of Educational Psychology*.

"Overall, findings from moderated moderation analyses indicated that perceived costs were negatively related to different components of engagement (i.e., effort, persistence, procrastination, and choice) and achievement (i.e., physics course grades)."

Abstract

"Students' cost perceptions have been associated with lower retention and academic performance in science, technology, engineering, and mathematics (STEM). Guided by expectancy-value theory, we examined whether relations between perceived costs and physics outcomes (i.e., engagement and achievement) varied as a function of self-efficacy or task values among undergraduate physics students (N = 1,124). We also examined whether the interactive relations were further moderated by course level in the curricular sequence. Overall, findings from moderated moderation analyses indicated that perceived costs were negatively related to different components of engagement (i.e., effort, persistence, procrastination, and choice) and achievement (i.e., physics course grades). However, the magnitude of relations often depended on levels of self-efficacy or task value. Some of the interactive relations between these variables also differed between introductory- and upper-level physics courses. Taken together, results indicated that higher self-efficacy or task values do not compensate for the negative effects of perceiving high cost on engagement. Moreover, cost perceptions were in some cases more negatively related to engagement when students reported higher self-efficacy or task values. Finally, mitigating cost perceptions may be particularly important in introductory undergraduate physics courses. Implications and directions for future research are discussed."

"Recent studies provide evidence for the multiplicative function of EVT and suggest that high levels of competence beliefs and task values cannot compensate for one another in predicting academic outcomes (e.g., Nagengast et al., 2011; Trautwein et al., 2012). Our findings provide more fine-grained insights on the differential consequences of each dimension of cost and whether their negative consequences can be buffered with competence beliefs or task values. Overall, and consistent with prior work (e.g., Guo et al., 2015, 2017; Marsh et al., 2005; Trautwein et al., 2012), we found that having high self-efficacy and task values is predictive of engagement and achievement in physics. However, strong endorsements of these motivational beliefs were not sufficient to combat the negative consequences of perceived costs, particularly in introductory courses" (Kim et al. 2022, p. 16).

Kim, Y., Yu, S. L., Koenka, A. C., Lee, H. & Heckler, A. F. (2022). Can self-efficacy and task values buffer perceived costs? Exploring introductory- and upper-level physics courses. *The Journal of Experimental Education, 90*(4), 839-861. https://doi.org/10.1080/00220973.2021.1878992

Paul R. Pintrich: Mentor, Teacher, and Scholar

Allison M. Ryan

(Pintrich's Former Student)

Allison M. Ryan is a Full Professor in the Combined Program in Education and Psychology at the University of Michigan, Ann Arbor. Allison earned her doctorate from the University of Michigan in the Combined Program in Education and Psychology in 1998. Her primary advisor and Dissertation Chair was Paul Pintrich. She returned to the University of Michigan in 2011 after 13 years as a faculty member in the Department of Educational Psychology at the University of Illinois, Urbana-Champaign. Her research interests and projects focus on developing achievement beliefs and behaviors during early adolescence. Her research examines how children's personal characteristics and the interplay with classroom and peer group contexts influence motivation, engagement, and achievement in school. A recurring theme throughout her work is the intersection of social and academic concerns of young adolescents at school. She has been the lead investigator on several large-scale, longitudinal school-based investigations of these issues. Allison received the American Psychological Association's Outstanding Dissertation Award, Division 15, in 2000 and the association's Richard E. Snow Award for Early Contributions to Research, Division 15, in 2008. She was an Associate Editor of the *Journal of Educational Psychology* (2009-2012). Allison has co-authored 18 chapters and over 65 peer-reviewed articles, many in the top journals in the field, such as *the Journal of Educational Psychology* and *Developmental Psychology*. She is the first author of *Peer Relationships and Adjustment at School*, an edited volume published in 2012 by Information Age Publishing. Allison is the first author of *Adolescence for Educators,* a textbook published in 2016 by Pearson Merrill Prentice Hall. She is currently the Chair of the Combined Program in Education & Psychology at Michigan (2018-present).

Abstract

"The present study investigated motivational influences on help-seeking behavior in math classrooms, focusing on early adolescents' perceptions of the benefits and threats associated with such behavior. Seventh and 8th graders (*N* = 203) responded to a questionnaire on perceptions of social and cognitive competence, achievement goals, attitudes, and avoidance of and adaptive help-seeking behavior in math class. Both threats and benefits were important influences on avoidance of help-seeking behavior, whereas only benefits predicted adaptive help seeking. Findings indicated that perceived threats and benefits partially mediated the effects of relative ability goals, task-focused goals, extrinsic goals, and perceptions of cognitive competence on avoidance of help seeking. Perceived benefits partially mediated the effects of task-focused goals on adaptive help seeking. Social competence had an indirect effect on avoidance of help seeking. Results illustrate the importance of linking cognitive, motivational, and social characteristics of students to provide a fuller understanding of adolescent help seeking in math."

Ryan, A. M., & Pintrich, P. R. (1997). "Should I ask for help?" The role of motivation and attitudes in adolescents' help seeking in math class. *Journal of Educational Psychology, 89*(2), 329–341. https://doi.org/10.1037/0022-0663.89.2.329

Abstract

"We investigated whether there were gender differences in associations between males' and females' mastery and extrinsic goal orientations and measures of self-regulated learning (self-efficacy, cognitive, and regulatory strategies) and performance. Survey data from 445 seventh- and eighth-grade students at both the beginning and end of the year indicated that males were more extrinsically oriented than females, whereas females reported greater use of cognitive strategies than males. Regression analyses indicated that for males an extrinsic goal orientation at the beginning of the year was related to decreased self-efficacy, less use of regulatory and cognitive strategies, and decreased performance at the end of the year. Females' extrinsic orientation did not affect any of those outcomes. Females' mastery orientation at the beginning of the year predicted increased self-efficacy, and increased use of regulatory and cognitive strategies at the end of the year. There were no positive effects over time for males holding a mastery orientation."

Patrick, H., Ryan, A. M., & Pintrich, P. R. (1999). The differential impact of extrinsic and mastery goal orientations on males' and females' self-regulated learning. *Learning and Individual differences*, *11*(2), 153-171. https://doi.org/10.1016/S1041-6080(00)80003-5

Abstract

"The goal of our article is to consider the intersection of the peer ecology and teacher practices for students' academic motivation. We begin by reviewing two perspectives that explain why and how peers matter for students' motivation. First, the quality of peer relationships and interactions provide affordances for *social support*. Second, peers are *socializing* agents, so the content of peer interactions matters for the development of students' achievement beliefs, values, and goals. Within each of these theoretical frameworks, we discuss three kinds of peer relationships: friendship, social status, as well as the culture of support and norms that characterize the classroom peer group. Throughout, we consider classroom contextual factors that explain why peer relationships matter for students' motivation and school adjustment. This sets the stage for the key goal of our article, which is to review evidence from the last ten years linking teacher practices to aspects of the classroom peer ecology that are important for students' motivation in school. We conclude with a discussion of implications for educators and important directions for future research."

Kilday, J. E., & Ryan, A. M. (2022). The intersection of the peer ecology and teacher practices for student motivation in the classroom. *Educational Psychology Review*, 34, 2095–2127 https://doi.org/10.1007/s10648-022-09712-2

Paul R. Pintrich's Conceptual Framework on Self-Regulated Learning and Overlapping Streams of Research in Higher Education

Akane Zusho

Pintrich's Former Student

Akane Zusho is currently a Professor in the Graduate School of Education at Fordham University, where she has also formerly served as interim dean. She received her BA, MA, and PhD in education and psychology from the University of Michigan, Ann Arbor. Her research focuses primarily on empowering students and teachers to transform the learning environment from where only *some* students feel competent, think, and learn to where *all* students feel competent, think, and build deep and flexible understandings and know that they belong. To that end, she has written extensively on the intersection of culture, achievement motivation and self-regulated learning (SRL), and has conducted numerous studies exploring the relation of cultural, cognitive, and motivational processes to learning. In 2012, she received the Richard E. Snow Award for early contributions to educational psychology from Division 15 of the American Psychological Association. She co-authors the textbook *Differentiated Learning Made Practical: Engaging the Extremes Through Classroom Routines.* She has served as associate editor of the American Educational Research Journal and currently serves on the editorial boards of *Educational Psychologist* and *Contemporary Educational Psychology*.

ABSTRACT

"In the last special issue devoted to this topic, Pintrich (Educ Psychol Rev 16:385–407, 2004) provided an in-depth critique of his conceptual framework on self-regulated learning (SRL), comparing and contrasting it to Biggs' student approaches to learning (SAL) perspective. Since then, there have been a number of advances in the study of learning in higher education. To that end, the purpose of this article is to provide a critical analysis of three distinct yet overlapping streams of research in higher education, namely SRL, patterns of learning (including SAL), and student engagement. The theoretical bases of each of these approaches are outlined followed by a review of recent trends. Finally, an integrative model of student learning is proposed, which draws on the strengths of each of these traditions."

Zusho, A. (2017). Toward an Integrated Model of Student Learning in the College Classroom. *Educational Psychology Review, 29*, 301–324. https://doi.org/10.1007/s10648-017-9408-4

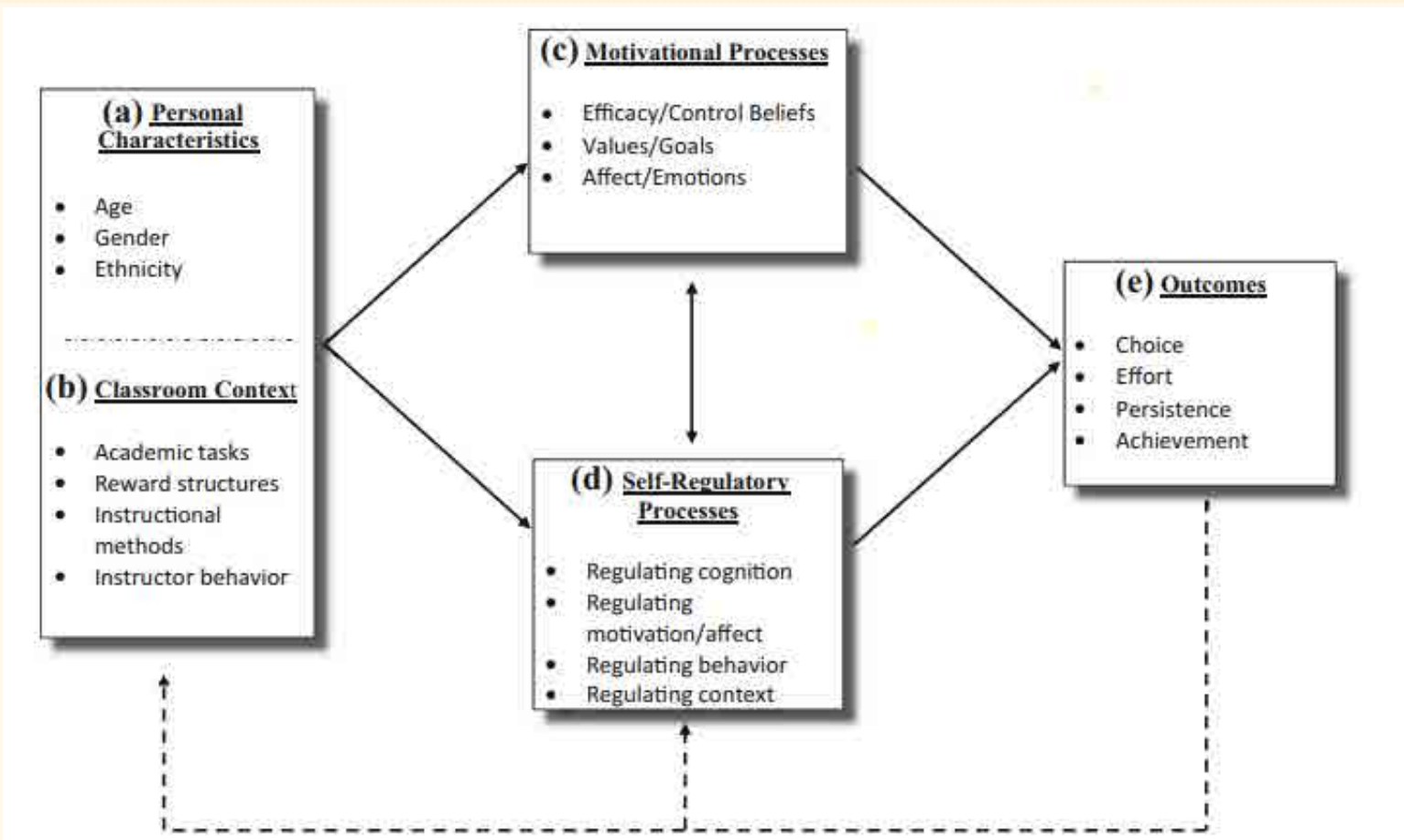


Fig. 1 Pintrich and Zusho's (2007) Model of Student Motivation and Self-Regulated Learning in the College Classroom

Paul R. Pintrich: The Interplay Between Motivation and Cognition

Teresa Garcia Duncan

(Pintrich's Former Student)

Teresa Garcia Duncan has 30 years of post-doctoral research experience in applied research and evaluation. Her methodological expertise includes experimental and quasi-experimental designs, program evaluation, survey development, and applied educational and psychological measurement. As an educational psychologist, Duncan is interested in teaching and learning from pre-K to 16; her content area expertise is in the areas of teacher professional development and student learning, cognition, and achievement, including interventions for at-risk students.

Duncan currently serves as a co-principal investigator on two Education Innovation Research grants:

- The first is a mid-phase grant that examines the expansion of *Math for All* (MFA, a professional development program in mathematics) across the state of Illinois. For this project, she leads a large, multi-cohort cluster randomized controlled trial (RCT) to examine the impact of MFA on the instructional practices and pedagogical content knowledge of elementary school teachers (regular classroom and special education) and on the mathematics achievement of their students.
- The second is an early phase grant that seeks to expand the computer science pipeline from high school to middle school (grades 5-8). For this project, she serves as the evaluation lead and will conduct an initial formative evaluation, then an impact evaluation consisting of an interrupted time series and a cluster RCT.

Other recently completed projects include a technical assistance (TA) project for the Virginia Office of Volunteerism & Community Service, the *Math for All* efficacy trial in Chicago, serving on several National Science Foundation (NSF) grants as the external evaluator, and serving as a content expert for the *WWC OREGANO* contract. She is also an accomplished administrator: from 2012-2017, she successfully led the Regional Educational Laboratory for the Mid-Atlantic Region (REL MA), a five-year federal contract valued at $27,182,241.

Prior to establishing Deacon Hill Research Associates LLC, Dr. Duncan was a Senior Fellow (2010-2015), then an Expert Consultant at ICF International (2015-present). She was a Principal Research Analyst at the American Institutes for Research (1999-2010) and an Assistant Professor at the University of Texas at Austin (1993-1999), where she held a joint appointment between the Quantitative Methods and the Learning, Cognition, and Instruction domains in the Department of Educational Psychology.

Duncan is the author or co-author of publications appearing in peer-reviewed journals such as *Educational and Psychological Measurement*, *Applied Measurement in Education*, and *Educational Psychologist.*

Extending the CS Pipeline Abstract

Extending the Computer Science Pipeline is a 5-year research grant awarded to The Rutgers University Center for Effective School Practices in December 2020. This Education Innovation and Research grant is funded through the U.S. Department of Education's the Office of Elementary & Secondary Education.

This project aims to broaden the participation of high-need students through access to and engagement with rigorous and relevant middle school computer science (MS CS) content. In collaboration with more than 30 middle schools in New Jersey, the team will refine and implement a comprehensive Technical Assistance Framework (TAF) that can be replicated and scaled in for other subject areas and in other settings that (a) creates a blueprint for school partnerships and supports and (b) works to broaden participation of underserved student populations.

Deacon Hill Research Associates (subgrantee) will lead the external evaluation of the grant. Objectives and expected outcomes are as follows:

1. Collaboratively refine a TAF to increase rigor and relevance in MS CS education (CSE),
2. Implement the CSE TAF to build the capacity of MS educators to integrate and rigorously implement CSE by delivering embedded, targeted, and sustained TA inclusive of PD,
3. Enhance educator engagement and collaboration in MS CSE through an RPP involving a randomly selected group of schools,
4. Determine the degree to which the TA and TA+RPP conditions improve girls' and historically underrepresented MS students' attitudes, self-esteem, and academic achievement in CS,
5. Assess the degree to which the TA and TA+RPP conditions increase the number of girls and underserved students who take CS in MS and HS, and
6. Measure the added value of combining TA with an RPP using a cluster RCT design that meets What Works Clearinghouse (WWC) evidence standards.

"The interplay between motivation and cognition is a central theme of Paul Pintrich's work. Among his many contributions to the field of educational psychology was to make a contextualized, social-cognitive model of learning the dominant paradigm. Paul published widely and prolifically on the interface between "cold" cognition and "hot" motivation, stressing the importance of the motivation–cognition dynamic in student performance and in lifelong learning… Paul Pintrich's work has genuinely advanced motivation theory and research."

Duncan, T. G., & McKeachie, W. J. (2005). The making of the motivated strategies for learning questionnaire. *Educational Pychologist*, *40*(2), 117-128. https://doi.org/10.1207/s15326985ep4002_6

Paul R. Pintrich: Mentor Extraordinaire to Us All

Barbara K. Hofer
(Pintrich's Former Student)

Abstract

"In academic learning, when searching for information, and in encounters with competing truth claims, individuals engage their epistemic cognition. This chapter provides an introduction to this psychological construct and discusses research about how instructional practice can promote epistemological understanding for the development of an educated citizenry."

Hofer, B. K. (2020). Epistemic cognition: Why it matters for an educated citizenry and what instructors can do. In K. C. Culver & T. L. Trolian (Eds.). Effective instruction in college classrooms: Research-based approaches to college and university teaching. *New Directions for Teaching and Learning*, 164, 85-94.

Barbara Hofer is a Professor of Psychology Emerita at Middlebury College, and is an educational, developmental, and cultural psychologist. She received her PhD from the Combined Program in Education and Psychology at the University of Michigan, with a certificate in Culture and Cognition, and an EdM in Human Development from the Harvard Graduate School of Education.

Barbara's research focuses on learning and psychosocial development, particularly in adolescence and the college years, and on the psychological aspects of the public understanding of science. This work includes

1. The development of epistemic cognition (beliefs about knowledge and knowing) and its relation to learning, research funded by the National Science Foundation;
2. The development of self-regulation and autonomy during the college years and how this is related to contact with parents through emerging technology; and
3. Psychological explanations for science denial, doubt, and resistance.

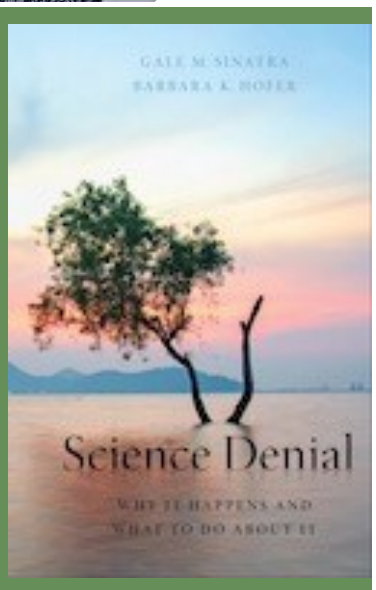
She has also worked on cross-national achievement studies and the interrelationship of mind and culture. She spent two sabbaticals as a faculty fellow at Doshisha University in Kyoto and two as a visiting faculty fellow at DIS Abroad in Copenhagen. Her research is done in collaboration with undergraduates, who have also been involved in presenting results at conferences and co-authoring papers.

Barbara is a Fellow of the American Psychological Association, and the recipient of the Review of Research Award from the American Educational Research Association (with Paul Pintrich) and the McKeachie Early Career Teaching Award from the American Psychological Association.

Barbara has published several dozen articles and book chapters, as well as books: *Personal Epistemology: The Psychology of Beliefs about Knowledge and Knowing* (Hofer & Pintrich), *The iConnected Parent: Staying Close to Your Kids in College (and Beyond) while Letting Them Grow Up* (Hofer & Moore), and most recently, *Science Denial: Why It Happens and What To Do About It* (Sinatra & Hofer).

"Teaching an undergraduate course in educational psychology generally involves two central goals: assisting students in becoming better learners and preparing them to apply the science of learning as teachers. Two additional goals can benefit student learning: teaching students to privilege empirical research as the basis of knowledge about learning and teaching, and tactically challenging the deep misconceptions students hold about educational psychology (from learning styles to various claims about brain-based education), actively applying educational psychology research to do so. Instructors can employ knowledge from both conceptual change and epistemic cognition to address such misconceptions. In order to teach in ways that are congruent with educational psychology research and theory, instructors can actively model and apply the basic knowledge of the field, building a repertoire of techniques. Such practices might include supporting student autonomy to foster intrinsic motivation by offering choices on assignments and due dates, using low-stakes and high return retrieval practice to enhance learning, and using criterion-referenced rather than norm-referenced grading to promote mastery goals rather than performance goals. This will be further enhanced by teaching transparently, making instructional choices evident to students, and modeling desirable intellectual values."

Hofer, B. K. (2022). *Teaching Educational Psychology to Undergraduates.* Routledge. https://doi.org/10.4324/9781138609877-REE100-1



"How do individuals decide whether to accept human causes of climate change, vaccinate their children against childhood diseases, or practice social distancing during a pandemic? Democracies depend on educated citizens who can make informed decisions for the benefit of their health and well-being, as well as their communities, nations, and planet. Understanding key psychological explanations for science denial and doubt can help provide a means for improving scientific literacy and understanding—critically important at a time when denial has become deadly. In *Science Denial: Why It Happens and What to Do About It, the authors identify the problem and why it matters and offer tools for addressing it. This book explains both the importance of science education and its limitations, shows how science communicators may inadvertently contribute to the problem, and explains how the internet and social media foster misinformation and disinformation. The authors focus on key psychological constructs such as reasoning biases, social identity, epistemic cognition, and emotions and attitudes that limit or facilitate public understanding of science, and describe solutions for individuals, educators, science communicators, and policy makers. If you have ever wondered why science denial exists, want to know how to understand your own biases and those of others, and would like to address the problem, this book will provide the insights you are seeking."*

Sinatra, G. M., & Hofer, B. K. (2021). *Science denial: Why it happens and what to do about it*. Oxford University Press.

I Thank Paul R. Pintrich for His Direct and Indirect Influences on Me

BRIAN CAREY SIMS
(Pintrich's Former Student)

In this essay, I will summarize an article I was fortunate to have co-authored with colleagues in graduate school. The article was written by Akane Zusho, Stuart Karabenick, Christina Bonney, and me, titled, *Contextual determinants of motivation and help seeking in the college classroom* (2007) (E:\New\2-Pagination\SpringerDordrechtNon-ERC\PERRY\ApplicationFiles\0perry14.dvi (researchgate.net)).

I will also reflect on how the ideas and general perspectives depicted therein are connected to my current work. Paul's immediate influence (on both) is unmistakable.

The chapter opens with a single guiding question: *What are the characteristics of a good college student?* This question provided the impetus for our review of ideas and explorations into the inner-workings of students' minds, studies of classroom contexts and environmental features, and interactions between the two as part of a "new science of learning" in which motivation and self-regulated learning took center stage in the college classroom.

If this chapter were made into a plot for a film or a novel, the twist would be this: Motivation and self-regulation are not as "self" as was once thought. Part of our research group's framework was based on the assumption that motivation and self-regulated learning are not, as is commonly perceived, traits of the learner. Instead, we assumed that the instructor could influence these processes. As it turns out, multiple features of classroom and learning environments influence (and are influenced by) college students' ability, cognitive, and motivational strategies for learning.

Our view was that the data spoke to the clear importance of creating a mastery-oriented learning environment in college classrooms: situations and settings that prioritize and value learning and understanding; as opposed to demonstrating competence and distinction. For those familiar with the general history of achievement goal theory, one of this chapter's main contributions was its careful, deliberate focus on connecting the nuances of the 2×2 achievement goal framework and students' pursuit of multiple goals to classroom dynamics through self-regulated learning (help-seeking in particular).

The other was its intense methodological and statistical inquiry and rigor. Re-reading the chapter to prepare this reflection totally took me back to the days of poring over statistics coursework and routine debates about the advantages of Hierarchical Linear Modeling over Structural Equation Modeling over Brown-Bag lunches in the basement at the Combined Program in Education and Psychology (CPEP).

Both of these contributions, for me, symbolize Paul's enduring influence on my work in education and psychology. Paul (along with colleagues Bill McKeachie, Marty Maehr, Phyllis Blumenfeld, Stuart Karabenick) and several others crafted a student learning environment within the University of Michigan's Combined Program in Education and Psychology that almost perfectly personified the thesis of this chapter: environment matters.

This chapter took me back to a million project meetings with the motivation group. Christina and I started in 2001. Paul was our advisor, and Akane and AnnMarie (Conley), Toni (Rogat) and Lisa (Linnenbrink-Garcia) were ahead of us by a couple of years. I remember my first conversation with Paul. It was a Friday night in early March 2000. I was at a college party thrown in my undergrad apartment. Someone told me there was a (landline) phone call for me, which I took in my bedroom to avoid the loud music and shenanigans afoot in the living room. *Hello? Yo can you speak up?* I blurted into the phone; the door to my room opened – the music and revelry reverberating through my Tallahassee apartment spilling into my room. *I'm sorry, hold on a second*.

I simply could not hear. So I closed the door and went into the bathroom and closed that door too. *I'm sorry*, I said. *Who is this? Hi, Brian Sims? This is Paul Pintrich from the Combined Program in Education and Psychology. I was calling to see if you had a moment to discuss your application.* I burst out of the bathroom and back into my living room, making the universal hand gesture for *Silence or we are all going to die*.

Even in that initial awkward conversation, Paul made me feel like I was important. He sounded familiar, almost like a friend. He seemed trustworthy, experienced, and genuinely interested in what I said. He gave me confidence.

When I got to the Ann Arbor campus later that Fall, I appreciated Paul's effect on me and on others evidenced throughout the program. For example, I remember meeting Akane and AnnMarie and immediately recognizing Paul's positive energy and inspiration in them. Paul understood mentoring; it was so awesome (even back then) watching and learning from him through Akane. She showed leadership, brilliance, honesty, vulnerability, and curiosity, all at the same time.

For me, Paul's approach and lessons in mentorship were displayed daily in Akane Zusho's model of academic leadership and discipline. Now, after years of faculty and administrative experiences, I can appreciate how intentional he was in having me and Christina shadow her, and I give thanks for her kind and generous spirit.

I also remember when I tried to cut corners on a paper assigned in a course that Paul was teaching. I used entire excerpts from my master's thesis (my 619!) in the paper assignment, reasoning that I already developed an answer to the prompt for the assignment in the literature review for my t thesis – so why re-invent the wheel, right? Wrong.

Paul met with me in his office and, in the presence of his massive bookshelf and dirty mountain bike, gave me the sternest lecture and reprimand I have had as an adult. He calmly but forcefully explained how I had made the gravest mistake of them all; I had underestimated myself. He explained that although I was technically right about the alignment between the paper's writing prompt and the focus of my thesis (not difficult to imagine since he was both my course instructor and thesis advisor); I was wrong to try to take the easy way out. In his view, this should have been an opportunity for me to shine; instead, through his eyes, all I saw was disappointment. I should have used the paper prompt as an ally-oop to go even further than I had on my thesis topic – to extend, challenge, strive for more, and demonstrate that I was interested in more than a good grade on a paper.

Nevertheless, rather than rise to the challenge, I played it safe and inadvertently disrespected one of the most respected minds in the world. Worse, I had disappointed a mentor. His ability to communicate my error and the nature of his disappointment (over and above the ethical infractions involved in my actions) enabled me to learn a valuable lesson that I have passed down to my students throughout the years.

Continued on next page.

I Thank Paul Pintrich

BRIAN CAREY SIMS

(Continued from previous page)

Above all else, Paul R. Pintrich was a genius. I have so many memories of conversations about motivation and learning he and I had that ended in my literal awe at his command of the literature. “How did he do it?”

I often asked Paul how he understood advanced and sophisticated concepts with such fluidity and precision? Where I was clunky and disjointed, Paul was graceful. He seemed, somehow, to know *everything*. His simple, humble answer was he had a lot of experience. He explained that to the beginner, information looks like a bunch of trees, but to the veteran, information looks like a forest.

Today I am a recovering academic. For the past 16 years, I have worked with some of the most amazing and talented colleagues and students across the nation's two largest public Historically Black Colleges and Universities (HBCUs). On this journey, I served as Department Chairperson and Chair of the Faculty Senate. I published a textbook on African Psychology, led study-abroad trips to Africa, Haiti, and South America, and presented my work worldwide. I founded the Dialogue on Progressive Enlightenment (DOPE) Conference and helped bring Fight Club to college campuses and community organizations coast-to-coast, reaching more than 10,000 students, faculty, and community members.

As executive director at an education management consulting firm specializing in University/K-12 partnership development, I now work with a portfolio that includes evidence-based programs, funded research and evaluation projects, strategic partnerships in community violence prevention and engagement and research dissemination science. My research focuses on school mental health, agricultural life and sustainability, and human justice and healing, with a particular emphasis on the implications of media for individuals, families, and communities of African descent. I am also honored to serve on the National Advisory Committee for the Health Policy Research Scholars program, a Robert Wood Johnson Foundation leadership development program for doctoral students.

This chapter has resonated in each of these roles. For me, the context for learning extends beyond the classroom walls, beyond the university’s gates and out into the community. I thank Paul for his direct and indirect influences on me as a graduate student and his enduring legacy in our field.

Abstract

“This chapter reviews the extant literature on college students’ help-seeking and motivation to learn. Specific attention is paid to how classroom contextual factors (e.g., instructional climate, teacher support and caring) are believed to influence college students’ patterns of motivation and willingness to seek help. In terms of help-seeking, a distinction is made between proactive (e.g., instrumental) and generally maladaptive forms of help seeking (e.g., executive). Emphasis is placed on the importance of developing learners who learn to seek help when needed. Motivation in this chapter is defined primarily in terms of achievement goal theory. To this end, discussions focus on college students’ endorsement of multiple achievement goals and which goals (i.e., mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance) have been found to be related to course achievement. The chapter concludes with implications for practice and a discussion of future research in the areas of motivation and self-regulated learning.”

Zusho, A., Karabenick, S. A., Bonney, C. R., & Sims, B. R. (2007). Contextual determinants of motivation and help seeking in the college classroom. In R. Perry & J. Smart (Eds.), *The scholarship of teaching and learning in higher education: An evidence-based perspective* (pp. 611–659). Springer. E:\New\2-Pagination\SpringerDordrechtNon-ERC\PERRY\ApplicationFiles\0perry14.dvi (researchgate.net)

Brian Carey Sims has over 15 years of faculty and administrative experience across the nation's two largest public HBCUs as a tenured faculty member, department, and faculty senate chair. He is founder and Executive Director at Jomoworks, an education management consulting firm specializing in University / K-12 partnership development with a portfolio that includes evidence-based programs, funded research and evaluation projects, strategic partnerships in community violence prevention and engagement and research dissemination science. His research focuses on school mental health, agricultural life & sustainability, and human justice & healing, with a particular emphasis on the implications of media for individuals, families, and communities of African descent. Sims is a strong advocate for international education and has led study abroad programs for undergraduates to Senegal, Malawi, Ghana and Haiti. He holds a PhD in Education and Psychology from the University of Michigan and is a proud alum of the Interdisciplinary Research Leaders’ (mighty) Cohort 2, where he currently serves as Senior Advisor for Alumni Affairs. He is also a member of the National Advisory Committee for the Health Policy Research Scholars program, a Robert Wood Johnson Foundation leadership development program for doctoral students at Johns Hopkins University. Sims has recently written for the Stanford Social Innovation Review and the University of Cincinnati Press, and his forthcoming book, *College Thug Syndrome* offers an explosive Afrikan-Centered analysis of higher education.

Paul R. Pintrich: A Champion of Motivation as an Enabler for Academic Success

Lisa Linnenbrink-Garcia

(Pintrich's Former Student)

Lisa Linnenbrink-Garcia is a Professor of Educational Psychology in the Department of Counseling, Educational Psychology, and Special Education at Michigan State University. She obtained her BA in Psychology and Music (1996), MA in Cognitive Psychology (1998), and PhD in Education and Psychology (2002) from the University of Michigan, Ann Arbor. Lisa Linnenbrink-Garcia's research focuses on developing achievement motivation in school settings and the interplay among motivation, emotions, and learning, especially in science, engineering, and mathematics. She is especially interested in how educational contexts can be shaped to effectively support students' motivation and engagement in secondary and post-secondary school settings, aiming to inform educational policy and support the persistence of historically underrepresented students in STEM fields. Linnenbrink-Garcia has received more than $10 million in federal grants as PI/co-PI, and her research appears in top journals in the field such as *Journal of Educational Psychology, Educational Psychologist, Contemporary Educational Psychology,* and *Cognition & Instruction.* She is currently the co-editor of *Educational Psychologist* and sits on the editorial boards for *the Journal of Educational Psychology* and *Contemporary Educational Psychology*. She has received numerous awards for her work, including the Paul R. Pintrich Dissertation Award and the Richard E. Snow Award for Early Contributions in Educational Psychology from the American Psychological Association, Division 15. Linnenbrink-Garcia is a Fellow of the American Psychological Association. More information about her work can be found on her website.

Abstract

"Student motivation as an academic enabler for school success is discussed. Contrary to many views, however, the authors conceive of student motivation as a multifaceted construct with different components. Accordingly, the article includes a discussion of four key components of student motivation including academic self-efficacy, attributions, intrinsic motivation, and achievement goals. Research on each of these four components is described, research relating these four components to academic achievement and other academic enablers is reviewed, and suggestions are offered for instruction and assessment."

Linnenbrink, E. A., & Pintrich, P. R. (2002). Motivation as an enabler for academic success. *School Psychology Review*, *31*(3), 313-327. https://doi.org/10.1080/02796015.2002.12086158

"Teachers and school psychologists are urged to focus on changes that can be made to the school or classroom environments to help all students, rather than citing lack of motivation for a particular student as a reason for lower than expected academic performance" (p. 325).

Abstract

"Two studies were conducted with distinct samples to investigate how motivational beliefs cohere and function together (i.e., motivational profiles) and predict academic adjustment. Integrating across motivational theories, participants (N, Study 1 = 160 upper elementary students; N, Study 2 = 325 college students) reported on multiple types of motivation (achievement goals, task value, perceived competence) for schooling more generally (Study 1) and in science (Study 2). Three profiles characterized by Moderate-High All, Intrinsic and Confident, and Average All motivation were identified in both studies. Profiles characterized by Very High All motivation (Study 1) and Moderate Intrinsic and Confident (Study 2) were also present. Across studies, the Moderate-High All and Intrinsic and Confident profiles were associated with the highest academic engagement and achievement. Findings highlight the benefit of integrating across motivational theories when creating motivational profiles, provide initial evidence regarding similarities and differences in integrative motivational profiles across distinct samples, and identify which motivational combinations are associated with beneficial academic outcomes in two educational contexts."

Linnenbrink-Garcia, L., Wormington, S. V., Snyder, K. E., Riggsbee, J., Perez, T., Ben-Eliyahu, A., & Hill, N. E., (2018). Multiple pathways to success: An examination of integrative motivational profiles among upper elementary and college students. *Journal of Educational Psychology, 110*, 1026-1048. https://doi.org/10.1037/edu0000245

Paul R. Pintrich: Students' Active Management and Motivational Processes

Christopher A. Wolters
(Pintrich's Former Student)

Christopher A. Wolters, under the supervision of Paul R. Pintrich, earned his PhD in the Combined Program in Educational and Psychology (1996) at the University of Michigan in Ann Arbor. He then joined the faculty at the University of Houston, where he served for 17 years, including terms as Program Director for the PhD program in Educational Psychology and Individual Differences, and as Associate Chair for the Department of Educational Psychology.

In 2013, Chris moved to The Ohio State University where he was appointed Director of the Walter E. Dennis Learning Center and Professor of Educational Psychology within the College of Education and Human Ecology.

Chris has an extensive professional service history including positions on the Executive Committees for Division 15 (Educational Psychology) of the American Psychological Association and Division C (Learning and Instruction) of the American Educational Research Association. He has served as an Associate Editor for the *Journal of Educational Psychology* and is a long-time member of the editorial boards for *Educational Psychologist* and *Metacognition and Learning*.

Chris has a substantial record of scholarship centered on advancing the understanding of students' self-regulation of learning. Across several published studies, his work has contributed key evidence helping to establish foundational links between adolescents' personal motivational beliefs and their reported use of various self-regulation strategies, procrastination, and broader psychosocial functioning. His work has also examined how instructional and contextual factors may influence these relationships.

Initiated as part of his dissertation, one major line of research has advanced the understanding and importance of students' active management of their motivational processes. His efforts in this area have identified the types of strategies students use to manage their motivation and highlighted motivational regulation as a key facet of the self-regulation of learning. More recently, Chris has worked to investigate the critical role of time management in students' self-regulated learning, well-being, and academic success.

As part of his work in many areas, Chris has strived to improve the measurement and validity of the tools used to examine students' motivation and self-regulated learning. His research has spanned from middle school through college populations, and examined subject areas that include mathematics, reading, social studies, and biology. Chris has also contributed to advancing theoretical models and investigated instructional contexts, practices, and interventions designed to support students' academic success.

Consistent with his early experiences as a teaching assistant at Michigan, Chris' work lately has focused on evaluating the effectiveness of a college learning to learn course overall, and for groups of students thought to be at-risk for college success.

Abstract

"Despite its recognized importance for academic success, much of the research investigating time management has proceeded without regard to a comprehensive theoretical model for understanding its connections to students' engagement, learning, or achievement. Our central argument is that self-regulated learning provides the rich conceptual framework necessary for understanding college students' time management and for guiding research examining its relationship to their academic success. We advance this larger purpose through four major sections. We begin by describing work supporting the significance of time management within post-secondary contexts. Next, we review the limited empirical findings linking time management and the motivational and strategic processes viewed as central to self-regulated learning. We then evaluate conceptual ties between time management and processes critical to the forethought, performance, and post-performance phases of self-regulated learning. Finally, we discuss commonalities in the antecedents and contextual determinants of self-regulated learning and time management. Throughout these sections, we identify avenues of research that would contribute to a greater understanding of time management and its fit within the framework of self-regulated learning. Together, these efforts demonstrate that time management is a significant self-regulatory process through which students actively manage when and for how long they engage in the activities deemed necessary for reaching their academic goals."

Wolters, C. A., & Brady, A. C. (2020). College students' time management: A self-regulated learning perspective. *Educational Psychology Review*, 33, 1319–1351. https://doi.org/10.1007/s10648-020-09519-z

"As an example, Pintrich and Zusho (2007) stated that students' "time and effort planning or management" and monitoring of their time management can be understood as expressions of their regulation of behavior... According to models of SRL (Pintrich 2000; Zimmerman 2000), however, students who are self-regulating their learning do not just initiate and then mechanically follow a set of procedural steps until their academic work is done. Instead, after beginning an academic task, these students instigate and sustain an active feedback loop through which they monitor their engagement, evaluate the information it provides, and respond in ways that sustain or improve their progress toward their goals... For Pintrich (2000), monitoring represented a unique and sufficiently critical process that it was considered a unique phase apart from the control aspects of performance... For Pintrich (2000), monitoring represented a unique and sufficiently critical process that it was considered a unique phase apart from the control aspects of performance.

Wolters & Brady (2020)

Daria Benden: Recipients of AERA SIG Motivation in Education's Paul R. Pintrich Award (2022)

List of Past Paul Pintrich Award

https://motsig.org/about/awards/

Winners:

- **2022: Daria Benden**
- **2021: Hyun Ji Lee**
- **2020: Dajung Shin**
- **2019: Cora Parrisius**
- **2018: Dajung Oh**
- **2017: EunJin Seo**
- **2016: Stacy Priniski**
- **2015: Katherine Muenks**
- **2014: Jeremy Hamm**
- **2013: Katerina Schenke**
- **2012: Yujin Chang**
- **2011: Fani Lauermann**
- **2010: Minhye Lee**
- **2009: Kara Makara**
- **2008: Keith Ciani**

Abstract

"Students' expectancy and value beliefs about math influence their academic choices and success in math-intensive study programs. Short-term declines in these motivational beliefs can serve as early warning signs of academic difficulties and dropout. However, such short-term motivational changes are underresearcherd. Based on Eccles et al.'s (2020) situated expectancy-value theory, this study analyzed *within-person* changes in the associations among students' course-specific (summative) or week-specific (situated) expectancies and task values in gateway math courses for students in physics, math, or math teacher education majors (*N* = 773). Random intercept cross-lagged panel models showed increasing within-person alignment between students' course-specific expected success and intrinsic/utility values (but not costs) over one semester. This alignment was linked to unidirectional spillover (i.e., cross-lagged) effects from expectancy to intrinsic/utility values. Students' week-specific expectancy-value beliefs, reported at the beginning of the semester, showed no significant alignment and spillover effects. Differences in students' course- or week-specific expectancy-value beliefs favored male and higher-achieving students and were largely time-invariant. Alignment between course-specific expectancy and value beliefs was higher for students who failed or dropped out of their math courses compared to those who succeeded. Greater motivational alignment can thus indicate greater disengagement from (math) coursework in challenging academic contexts. These findings highlight the importance of differentiating between-person and within-person motivational processes, suggest that summative versus situation-specific assessments of motivational beliefs may show different developmental patterns, and demonstrate that motivational alignment and spillover effects can be a sign of maladaptive motivational processes concerning students' persistence in challenging STEM contexts."

Benden, D. K. & Lauermann, F. (2023). Searching for motivational alignment and spillover effects: A random-intercept cross-lagged analysis of students' expectancies and task values in math-intensive study programs. *Contemporary Educational Psychology, 73*, Article 102166. https://doi.org/10.1016/j.cedpsych.2023.102166

Daria Benden with her dissertation advisor, Fani Lauermann

Daria Benden studied math and physics teacher education at the University of Bonn from 2011 to 2016 (BSc and MEd) and earned her PhD in Psychology from TU Dortmund University in 2022. Her research focuses on motivational changes during educational transitions and students' educational choices in math, physics, and teacher education.

Recipients of APA Division 15 Paul R. Pintrich's Dissertation Awards

Past Recipients of the Paul R. Pintrich Dissertation Awards

https://apadiv15.org/awards/pintrich-award/past-recipients-of-the-paul-r-pintrich-dissertation-awards/

2022 **Yeo-eun Kim:** *"Study, Socialize, and Play: Understanding Students' Multiple Goal Pursuit and Multiple-Goals-Directed Self-Regulation"*
2021 **Nikki Glover Lobczowski:** *"Building From the Inside Out: The Formation and Regulation of Emotions in Collaborative Learning"*
2020 **Kevin Wong:** *"The Promise of Educational Media for Dual Language Learners' L1 and L2 Vocabulary Development"*
2019 **Jenna Finch:** *"Executive Functions in Elementary School: Contextual Influences and Links to Adaptive Functioning"*
2018 **Amanda Baker:** *"Epistemic Profiles, Dissonance Negotiation, and Perspective Transformation in Postsecondary Service-Learning"*
2017 **Alison Koenka:** *"Grade Expectations: An Investigation of Performance Feedback, Classroom Goal Structures, and the Motivational Consequences of Their Dynamic Interplay"*
2016 **Gregory Trevors:** "*Controversial Science Knowledge: A Multi-study Examination of How Epistemic Cognition and Emotions Relate to the Ways We Learn Science"*
2015 **Teomara Rutherford:** "*Calibration of confidence judgments in elementary mathematics: Measurement, development, and improvement"*
2014 **Kate Snyder:** *"Developmental Pathways in Underachievement"*
2013 **Kate Niehaus:** *"School Support, Parental Involvement, and Academic and Social-Emotional Outcomes for English Language Learners"*
2012 **Maggie Renken:** *"Computer Simulations and Conceptual Change: What is the Role of Simulated Experiments in the Context of Prior Belief Bias and Ambiguous Data?"*
2011 **Jamaal Matthews:** *"Toward a Holistic Understanding of Identification with Academics in Ethnic-Minority Boys at Risk for Academic Failure"*
2010 **Andrew Butler**: *"Using Repeated Testing and Variable Encoding to Promote Transfer of Learning"*
2009 **Chris Hulleman**: *"The Role of Utility Value in the Development of Interest and Achievement"*
2008 **Lynette S. Arnold:** *"Enhancing Student Academic Regulatory Processes: A Study of Metacognitive Knowledge Monitoring, Strategic Enhancement and Achievement"*
2007 **Brian Beitzel**: *"Designing Contrasting Video Case Activities to Facilitate Learning of Complex Subject Matter"*
2006 **David Fortus:** *"Design-Based Science and the Transfer of Science Knowledge and Real-world Problem-Solving Skills"*
2005 **Michele Gregoire Gill:** *"Effects of Augmented Activation, Refutational Text, Efficacy Beliefs, Epistemological Beliefs, and Systematic Processing on Conceptual Change"*
2005 **Robert Klassen:** *"A cross-cultural investigation of the efficacy beliefs of South Asian immigrant and Anglo non-immigrant early adolescents"*
2004 **Elizabeth A. Linnenbrink:** *"The Dilemma of Performance Goals: Promoting Students' Motivation and Learning in Varying Goal Oriented Classrooms"*

Recipient of the APA Division 15 Paul R. Pintrich Dissertation Awards (2022)

Study, Socialize, and Play: Understanding Students' Multiple Goal Pursuit and Multiple-Goals-Directed Self-Regulation

Yeo-eun Kim

Dissertation Committee:
Shirley L. Yu (chair), Christopher A. Wolters, Eric M. Anderman, Ann A. O'Connell

Abstract:

"I am really motivated, I just have too many other things that I need to (or want to) do."

The inspiration of my dissertation directly came from my experience teaching and mentoring students from diverse backgrounds and conducting school-based research. Given the pervasive and salient challenges students face toward achieving multiple goals, the aim of this dissertation was to shift the focus in the self-regulated learning literature from single-goal to multiple-goal pursuits. My dissertation, which examines the interplay between multiple goals (academic, social, and well-being), self-regulation, and student success, contributes to the field in at least three ways. First, I address the discrepancy between theory and practice by situating students' self-regulatory processes in the broader context of multiple goals and illuminating the complexity in the process. Second, I facilitate a holistic understanding of students' full selves and identify implications for the challenges that confront students from diverse backgrounds. Finally, I take an innovative methodological approach which included (1) qualitative analysis of the content of students' multiple goals, (2) data visualization of the connections between different goals, and (3) quantitative analysis of the associations among the interrelations of goals, self-regulatory processes, and academic, social, and well-being outcomes. Overall, this dissertation highlights three main themes: (1) students pursue multiple goals, both academic and nonacademic; (2) multiple goals dynamically interact with each other in a goal network; and (3) students self-regulate both *within* and *between* multiple goals.

Continuing Paul Pintrich's Legacy by Further Expanding Students' Self-Regulated Learning from Single to Multiple Goals Context

Yeo-eun Kim

(Shirley L. Yu's Former Student)

Yeo-eun Kim is a Postdoctoral Research Fellow in the Department of Education at Washington University in St. Louis. She holds a PhD in Educational Psychology and an interdisciplinary specialization in Quantitative Research Methods from The Ohio State University. Her research focuses on understanding and improving students' motivation and self-regulated learning in diverse personal and social settings. She is particularly interested in supporting all students to pursue and achieve multiple goals including academic, social, and well-being goals. She will join Florida State University in the Fall of 2023 as an assistant professor in the Department of Educational Psychology & Learning Systems.

The impact of Paul Pintrich is deeply rooted in my professional identity. The core question I ask, both in research and teaching, is how to support student success by enhancing their motivation and self-regulation. In particular, Pintrich's model of self-regulated learning served as the foundation and inspiration for all of my research projects. It is somewhat magical to think about my connection with Paul Pintrich, as I think of him as my academic grandfather through my incredible doctoral advisor, Shirley Yu.

Because of this deep connection, I was amazed and stunned to hear the news that I won the Paul R. Pintrich Outstanding Dissertation Award from APA Division 15. It meant a lot to me and the award felt so special, mainly because it was named after Paul Pintrich, who mentored three of my dissertation committee members, including Shirley Yu (chair), Chris Wolters, and Eric Anderman. In addition, this was the award my postdoc mentor, Andy Butler, won for his dissertation work. I feel humbled and honored to be amongst the amazing researchers who won this award.

Pintrich's scholarship especially inspires my research on students' multiple goals. As pursuing multiple goals is an inescapable and critical part of daily life, students are constantly challenged to self-regulate between different academic and non-academic goals. Students are more than just *students*; they are human beings with various goals in and out of the classroom.

Pintrich (2003) highlighted the need to better understand how students may regulate and use various strategies to pursue multiple goals. However, existing models of self-regulated learning have heavy concentrated on describing various aspects involved in achieving a single (most often academic) goal. I firmly believe that decontextualizing students' learning experiences and narrowly focusing on a single academic goal, can be detrimental. In our recent publication, *Educational Psychologist* (Kim et al., 2023), we developed the "Multiple Goals Regulation framework" that reconceptualize how students establish, pursue, and adopt various goals. We illustrate specific processes (e.g., goal prioritizing, goal shielding, goal switching) that students can use to self-regulate *within* and *between* goals. The Multiple Goals Regulation Framework facilitates a holistic understanding of students' lived experiences by acknowledging diverse goals closely attached to their social and cultural identities.

In a related study, which has been published at *Contemporary Educational Psychology*, we provide empirical evidence on the dynamic interplay between multiple goals and self-regulatory strategies (Kim et al., 2021).

Reflecting on my passion for supporting multiple goals, I admit that I was lucky and privileged to work with Shirley as my doctoral advisor and Andy as my postdoc advisor. Shirley and Andy have consistently supported my academic and non-academic goals, acknowledging the importance of my life outside of academia.

I will never forget my conversations with Shirley where she shared some fun memories with Paul. She told me students would see Paul on campus and then see him again at the gym (even taking the same aerobics classes). He shared and modeled his values on balancing work and life.

As I transition into a faculty role in the fall, I want to pay this forward to my mentees by supporting them to become more motivated and self-regulated lifelong learners in *all* facets of life.

Abstract

As the pursuit of multiple goals is an inescapable reality in everyday life, students are consistently challenged to self-regulate toward achieving an array of academic goals as well as social and well-being goals. Nevertheless, prominent self-regulated learning models are limited in explaining and guiding how students can self-regulate in the context of multiple goals. Hence, we developed the multiple goals regulation framework that reconceptualizes how students establish, pursue, and adapt an array of goals. We illustrate specific processes (e.g., goal prioritizing, goal shielding, goal switching) that students can engage in to self-regulate both within and between goals. The new framework contributes to the literature in three main ways. First, we challenge the traditional conceptualization of effective self-regulated learning that focuses on the persistent pursuit of a single academic goal without considering the interdependent nature of goals. Second, we facilitate a sustainable and adaptive cycle of self-regulatory processes by highlighting the importance of navigating and negotiating between multiple academic and nonacademic goals. Finally, our effort offers a more inclusive understanding of students' lived experiences by acknowledging a diverse set of goals that are closely attached to their social and cultural identities.

Kim, Y., Yu, S. L., Wolters, C. A., & Anderman, E. M. (2023). Self-regulatory processes within and between diverse goals: The Multiple Goals Regulation Framework. *Educational Psychologist*. Advance online publication. https://doi.org/10.1080/00461520.2022.2158828

Paul R. Pintrich: A Template for Mentorship and Collegiality

Recipient of the APA Division 15 Paul R. Pintrich Dissertation Awards (2015)

Teomara (Teya) Rutherford

Dissertation: Calibration of Confidence Judgments in Elementary Mathematics: Measurement, Development, and Improvement

Innovative math thinkers, crucial for a modern STEM workforce, are those who take ownership of their learning. This ownership can be characterized as self-regulated learning (SRL): the ability to set goals, monitor progress toward these goals, and make adjustments when necessary to ensure achievement (Pintrich, 2000; Zimmerman, 2008).

Fostering SRL is especially important in mathematics, where students who cannot monitor their understanding inevitably miss foundational material needed to understand more advanced concepts. Students who can realistically assess their likelihood of success on a given task, and who can accurately reflect on previous performance, are more able to set challenging yet attainable goals, maintain motivation towards achieving these goals, and make use of strategies necessary for their success (Greene & Azevedo, 2007; Pintrich, 2004; Winne, 2004).

My dissertation addressed the accuracy of these assessments as *calibration* of confidence (Stone, 2000), and set out a course of research on the measurement of calibration, its links with mathematics performance, and its malleability.

The first paper of the dissertation presented practical and predictive results of varying calibration measures from authentic educational data: elementary-aged students' interactions with the year-long supplemental mathematics software, Spatial Temporal (ST) Math (Rutherford, 2017a). This paper demonstrated that real data from children behaved very differently than the simulated data largely relied upon in prior studies comparing calibration measures (e.g., Masson & Rotello, 2009; Nietfeld et al., 2006; Schraw et al., 2013). Distribution among the quadrants of correctness and confidence was uneven and the data presented novel patterns of missingness. Robustness to these patterns was demonstrated most by the G Index measure; however, Sensitivity and Specificity, when used together, best-predicted achievement.

The second paper examined how calibration, operationalized as *sensitivity* and *specificity*, was related to the change in achievement from pre to posttest over a year's work with ST Math, both within and across students (Rutherford, 2017b). I found that both measures had unique but small associations with performance gains from pre to posttest within students—when students were better calibrated, they had greater gains. Specificity also had a predictive value between students—students who, on average, were better at identifying when they were incorrect had greater gains.

The third paper (published only in the dissertation) investigated whether student calibration would improve after repeated practice and feedback within ST Math quizzes. Elementary students who had a year's practice with calibration measures within ST Math were not better calibrated than those who had just begun the use of ST Math, indicating that the calibration practice in ST Math may not have directed students' attention enough to provide the explicit instruction regarding metacognition noted as needed in Bannert and Mengelkamp (2013).

All three dissertation studies were grounded in Dr. Pintrich's work on SRL (2000, 2004). Although my current work focuses less on calibration, I rely on the Pintrich SRL framework, especially considering how students regulate cognition, motivation, behavior, and context. My NSF CAREER grant combines frames from Pintrich (2000) and Efklides (2011) to examine how student motivation varies across time and context and how these variations associate with student regulation behaviors, such as adjusting their attention, choosing content on which to work, and accessing tools to support their learning.

My research examining the interplay between motivation, cognition, and behavior (e.g., Lee et al., 2023; Liu et al., 2022; Rutherford et al., 2018) aligns with Paul Pintrich's legacy. My own mentors were colleagues or mentees of Pintrich, and they often spoke of his friendship, warmth, and intellect. His impact on them was palpable, and through them, he provided a template for mentorship and collegiality that I have tried to emulate.

Receiving the Pintrich Dissertation Award was a great honor and a wonderful induction into my post-PhD involvement with our academic communities in AERA and APA. I hope to continue contributing to SRL research and communities in ways that honor Paul Pintrich.

References are available by contacting Teomara (Teya) Rutherford (teomara@udel.edu)

Teomara (Teya) Rutherford is an Associate Professor of Learning Sciences and Educational Statistics and Research Methods at the University of Delaware School of Education, with appointments in Computer and Information Sciences and Psychological and Brain Sciences. She is also the Associate Director of Graduate Studies for the School of Education. Rutherford received her PhD in Learning, Cognition, and Development from the University of California, Irvine, her JD from Boston University School of Law, and her bachelor's degree in Elementary Education with a concentration in Computers in the Classroom from Florida International University. Dr. Rutherford's research focuses on learning and motivation, especially in STEM and digital contexts. Her research has been supported by 6M in federal grants as PI or Co-PI and published in *Contemporary Educational Psychology*, *Learning and Instruction*, and *Computers and Education* outlets.

Paul R. Pintrich: Motivation's Role in the Formation and Regulation of Emotions in Collaborative Learning

Nikki Glover Lobczowski

Recipient of the APA Division 15 Paul R. Pintrich Dissertation Awards (2021)

Nikki Glover Lobczowski: *"Building From the Inside Out: The Formation and Regulation of Emotions in Collaborative Learning."*

Nikki Glover Lobczowski

is an Assistant Professor in the Learning Sciences program in the Department of Educational and Counselling Psychology for the Faculty of Education at McGill University. Previously, she was a Postdoctoral Associate at the Learning, Research, and Development Center (LRDC) at The University of Pittsburgh and the Human-Computer Interaction Institute (HCII) at Carnegie Mellon University. She graduated with a PhD in Education from the University of North Carolina at Chapel Hill, specializing in the Learning Sciences and Psychological Studies. Nikki's research focuses on designing and studying context-sensitive interventions for collaborative settings incorporating cutting-edge technologies and analytic methods using a social regulation of learning framework. Recently, she has been investigating the dyadic differences that impact collaborative learning, examining emotional regulation strategies in a project-based learning environment, creating a theoretical model of the formation and regulation of emotions in collaborative learning, and designing technologies to support students and teachers in secondary school math contexts.

Collaboration is an important lifelong and career skill; thus, teachers are moving away from traditional teaching practices and adopting student-centered pedagogies such as collaborative learning. Students often struggle, however, to negotiate, manage conflicts, and construct knowledge with other group members. Currently, gaps remain in the literature regarding emotions in collaborative learning. Specifically, the formation and regulation of emotions often have been studied separately. This dissertation aims to review, observe, analyze, and posit the relationships between the formation and regulation of emotions in collaborative learning settings. Thus, the research aim of this dissertation is as follows: *Explore how emotions and emotion regulation emerge and co-exist in collaborative learning environments.*

To achieve my research aim, I have written three articles aimed at understanding the emotional processes that students experience in collaborative settings and the accompanying regulation processes for these emotions. In the first paper, I reviewed the literature on socioemotional processes, highlighting student interactions, the challenges that can affect group emotions in collaborative learning, and the strategies students use to regulate these emotions.

In my empirical paper, I further analyzed the key social processes related to the formation and regulation of emotions in small-group learning. For this, I studied six groups of second-year graduate pharmacy students (n = 29) in a project-based learning course. I used representative case sampling to choose three groups that rated their meta-emotional judgments about collaboration as high, medium, and low over six weeks. I qualitatively coded and analyzed their social processes to discover themes that demonstrated the salient events that triggered emotional responses from each group and salient events that were common across all three groups.

"Receiving the 2021 Paul R. Pintrich Outstanding Dissertation Award from Division 15 of the American Psychological Association for this work has been the highlight of my (emerging) academic career."

My third article is a theoretical paper in which I drew from literature in various fields of psychology (e.g., social and educational) to introduce a new model that integrates both the formation and regulation of emotions in collaborative learning (FRECL). I specifically highlighted the fundamental processes that influence emotional responses and subsequent regulation. Together these three articles provide a look into the formation and regulation of emotions in collaborative learning through diverse methodologies and theoretical frameworks.

To understand how emotions and emotion regulation emerge and co-exist in collaborative learning environments, I designed the three articles in this dissertation to focus on the elements of formation and regulation, separately and together, using various methods and theoretical frameworks. These two constructs (i.e., formation and regulation of emotions) have been primarily studied independently or together only in non-academic settings. Thus, my dissertation represents the first attempt to fill this important gap in the literature on collaborative learning.

Receiving the 2021 Paul R. Pintrich Outstanding Dissertation Award from Division 15 of the American Psychological Association for this work has been the highlight of my (emerging) academic career. Paul Pintrich's work (e.g., 4x4 SRL framework) was unsurprisingly instrumental to the regulation stage in the FRECL model but also heavily impacted the creation of the context stage. I cannot overstate this importance, as this conception of collaborative contexts drives my research, teaching, and understanding of day-to-day social interactions. To be forever associated with his name is an honor that humbles me.

Paul R. Pintrich's and Barbara Hofer's Work, Theories, Research, and Ideas Have Been Incredibly Influential and Beneficial to My Professional Life as a Teacher

Tara Luhrs
A New York City Teacher

Tara Luhrs received an MA in English Literature from St. Francis College in 1998 and an MS from The College of Staten Island in 2002. She has been an English teacher for 25 years at her alma mater, James Madison High School in Brooklyn, New York. Additionally, she was an adjunct lecturer at St. Joseph's College in Brooklyn, working for their Continuing Education Program. Tara was a master teacher for Project Freire Literacy's Saturday Program at Franklin Delano Roosevelt High School, helping new immigrant students with language and reading skills, and was a dean of discipline from 2001-2009. In 2009, Tara revamped the conflict resolution program and re-written a modernized curriculum, honing my focus on progressive discipline and self-regulation, having trained in peer mediation, negotiation, the Therapeutic Crisis Interventions (TCIS) and the Life Space Crisis Intervention (LSCI). She also holds a post-master's certificate from The College of St. Rose for school building administration. Tara is enrolled in the Ethical and Equitable Practice post-master's certificate program at Queens College.

Paul R. Pintrich's (1995) article "Understanding Self-Regulated Learning" explains the difference between self-regulated learning and what it looks like within a college classroom setting. Pintrich describes four students and their learning approaches' impact on their school experiences. He explains that self-regulated learning is teachable. I have the confidence today to impact my students through this idea that any student can be a lifelong learner as long as they have the right skill set to learn.

My students can develop this skill set to carry into college and be very successful. Understanding how impactful being a self-regulated learner is, takes years of trials and challenges, honest conversations in the hallway, and intense parent meetings where I am to blame for the poor grades on assessments. It also involves not letting a child keep his head down because of the fear of what the administrator would think if they popped in for a visit. Furthermore, it includes the constant badgering of them to submit their classwork– much to their chagrin that the school requires them to do schoolwork. Alas, does my classroom fit the criteria of failure? No. Do they need to do more for themselves? Yes. Do I allow enough autonomy in the room? Maybe. I do know that they are in need of developing self-regulation.

Pintrich's idea of the self-regulated learner is part of the bigger picture of students' success in education that creates not just learners for the present but life-long learners for the future. Pintrich explains in his article how this specific approach to learning is where individuals are responsible for managing their learning and adapting their learning strategies to their own needs. He observed, "First, self-regulated learners attempt to control their behavior, motivation and affect, and cognition" (Pintrich, 1995, p. 5).

Self-regulation also includes self-assessment and self-reflection, which helps individuals gain insight into their learning processes. Self-regulated learners actively participate in learning and can adjust their learning strategies in response to environmental changes. Learners can also adjust their strategies in response to feedback from teachers and peers. Using the thermostat analogy is genius. It is like homeostasis for emotions. This has allowed me to adapt and adjust my teaching practices.

Teaching in a New York City high school is rewarding but also an incredibly challenging experience. The students come from diverse backgrounds and have a wide range of abilities, which makes the job anything but easy. I know I did not sign up for "easy." I wanted to teach because I felt a passion in my veins that could not be explained unless you were down in the proverbial classroom trenches with me.

The connection I have with Pintrich's idea of self-regulated learning has solidified the foundation for which I now teach. Clearly, students who are actively engaged and reflect on improvement are more successful in my classroom.

Barbara Hofer's work on the importance of student autonomy, self-direction, and metacognition in learning further emphasizes the need for students to be actively engaged in the learning process. I agree with Hofer's idea that teachers should use various teaching methods to foster student engagement and create an environment conducive to learning. There is no better way than to develop and use the self-regulated learning model in a way that benefits everyone.

Pintrich's and Hofer's work, theories, research, and ideas have been incredibly influential and beneficial to my professional life as a teacher. Through their work and research, I have gained insights into motivation, self-regulated learning, and metacognition that I have been able to apply and use in my classroom.

Specifically, Pintrich's work on self-regulated learning and metacognition has been especially influential in my teaching practice. I have used his theories to create activities and lessons to encourage students to be more aware of their learning goals, strategies, and progress. Additionally, I have used Pintrich's research to help my students develop metacognitive skills to more effectively transfer knowledge to new contexts and more deeply understand the material.

Pintrich and Hofer, "through their work and research, I have gained insights into motivation, self-regulated learning, and metacognition that I have been able to apply and use in my classroom."

"First, self-regulated learners attempt to control their behavior, motivation and affect, and cognition. A good analogy is a thermostat that regulates room temperature by monitoring the current temperature and then turning on or off the heating/ cooling unit to bring the actual temperature in line with the preset desired temperature. In the same way, students can monitor their own behavior, motivation, and cognition, and then regulate and adjust these characteristics to fit the demands of the situation The second important component of self -regulated learning, also suggested by the thermostat analogy, is that there is some goal the student is attempting to accomplish, analogous to a preset desired temperature. This goal provides the standard by which the student can monitor and judge her own performance and then make the appropriate adjustments." (Pintrich, 1995, p. 5)

Pintrich, P. R. (1995). Understanding self-regulated learning. *New directions for Teaching and Learning*, 63, 3-12.

Hofer, B. K., Yu, S. L., & Pintrich, P. R. (1998). Teaching college students to be self-regulated learners. In D. H. Schunk & B. J. Zimmerman (Eds.), *Self-regulated learning: from teaching to self-reflective practice* (pp. 57–85). Guilford Press.

Paul R. Pintrich: Self-regulated Learning is a Means to Support Students' Academic Success

Anna Brady

(Chris Wolters' Former Student)

Anna Brady, PhD, is an assistant professor in educational psychology in the College of Education at Georgia Southern University. Two-time The Ohio State University graduate, Brady earned both a MA and PhD in Educational Psychology. Brady teaches undergraduate and graduate courses at Georgia Southern University focused on learning theories and classroom assessment. Brady's research focuses on understanding college students' academic success through the lens of motivation and self-regulated learning and, in turn, intervening in these areas to support positive academic outcomes. She is also interested in the impact of learning about educational psychological concepts (e.g., learning theories) on pre-and in-service teachers.

The range of interventions developed based on Pintrich's framework of self-regulated learning is one enduring example of his contribution to the field (Pintrich & Zusho, 2007). This is exemplified by the intervention developed through a collaboration with the Dennis Learning Center and Center for Life Sciences Education at The Ohio State University (Brady et el., 2021; Hensley et al., 2021).

Students in an introductory biology course were randomly assigned to engage in either a metacognition or a metacognition + time management workshop. Our research team investigated the influence of these two workshops on students' self-regulated learning and academic achievement (Hensley et al., 2021). In addition, using qualitative methods, we examined students' perceptions of the workshops (Brady et al., 2021).

Following implementing the workshop interventions, we conducted 20 semi-structured interviews to understand better students' experiences engaging in the intervention. Our findings highlighted three features that allowed the intervention to impact students' study strategies: receptivity to workshop content, motivation and ability to change, and conditions for sustained change. Integrating metacognition and time management into this intervention emphasizes an expanded perspective on self-regulated learning.

When invited to contribute to this issue of the *Times Magazine*, I chose to reflect on this intervention because it encapsulates the influence of Paul Pintrich's work on my scholarship. In particular, emphasizing the role of motivation, context, and behavior regulation in self-regulated learning was paramount to Pintrich's work.

Pintrich's influence on my research goes beyond the studies described above. Pintrich's four-phase model of self-regulated learning (Pintrich & Zusho, 2007) has guided many of the studies that I have conducted. I regularly use the Motivated Strategies for Learning Questionnaire (Pintrich et al., 1991) when assessing students' self-regulated learning, and identifying ways to use self-regulated learning to support students (Pintrich et al., 1987) is at the center of my work.

A final way that Pintrich has influenced my work is through the mentoring of my PhD advisor, Chris Wolters. In addition to his role as a professor in educational psychology at The Ohio State University (OSU), Wolters was the director of the Dennis Learning Center while he served as my MA and PhD advisor.

The Dennis Learning Center implements courses, academic coaching, and workshops guided by educational psychology research, often theories of self-regulated learning. As a graduate student at OSU, I was heavily involved in the Dennis Learning Center, where I taught learning-to-learn courses and coached undergraduate and graduate students. I also presented workshops to the OSU community, highlighting how research and practice can build on one another.

"Pintrich's influence on my research goes beyond the studies described above. Pintrich's four-phase model of self-regulated learning (Pintrich & Zusho, 2007) has guided many of the studies that I have conducted. I regularly use the Motivated Strategies for Learning Questionnaire (Pintrich et al., 1991) when assessing students' self-regulated learning, and identifying ways to use self-regulated learning to support students (Pintrich et al., 1987) is at the center of my work."

When meeting with Wolters, we often discussed my observations in these roles and how they aligned with or challenged educational psychology theories. These conversations challenged me to think more deeply about gaps in theories.

Wolters' mentorship extended (and continues to extend) beyond scholarship. I have always appreciated Wolters' support in developing my identity as a researcher and teacher. Frequently, I would ask Wolters for guidance on a research dilemma, and he would share stories about his times in graduate school or as an early career scholar. Of course, Paul Pintrich was a crucial player in many of these stories.

Wolters' enjoyment of digging into theories was clearly a product of his work with Pintrich. One key experience that I assume many people have after graduating with a PhD is the lingering voice of their advisor in their head as they write or conduct studies. I appreciate that Wolters' voice, in my mind, continues to encourage me to dig deeper and more critically into theories.

Abstract

"College students' performance in introductory-level biology course work is an important predictor of ongoing persistence in the major. This study reports on a researcher–educator partnership that designed and compared two cocurricular workshops. Seventeen laboratory sections of an undergraduate biology course were randomly assigned to one of two educational interventions during the regularly scheduled lab class section after students had completed and received the results for the first exam. The baseline Metacognition intervention was an hourlong workshop focused on effective learning strategies and self-awareness in the learning process; the extended Metacognition plus Time Management (Metacognition+TM) intervention included the aforementioned workshop plus a second hourlong workshop on time management and procrastination. Based on three exams and self-report surveys administered before the intervention and at the end of the semester, students who participated in the Metacognition+TM intervention experienced greater increases in their exam scores and degree commitment than those in the baseline intervention. Additionally, group status moderated the effect of the intervention, as the Metacognition+TM intervention was especially effective in increasing use of time management tools by students from minoritized groups."

Hensley, L., Kulesza, A., Peri, J., Brady, A. C., Wolters, C. A., Sovic, D., & Breitenberger, C. (2021). Supporting undergraduate biology students' academic success: Comparing two workshop interventions. *CBE—Life Sciences Education*, *20*(4), 1-21. https://doi.org/10.1187/cbe.21-03-0068

Paul R. Pintrich: A Role Model for Understanding Student Motivation and Classroom Social Dynamics

Sarah McKellar

(Allison Ryan's Former Student)

"As a new teacher, I struggled to motivate students, as I saw students' desire to look good in front of their peers kept them from getting the support they needed. From this, I discovered Allison Ryan and Paul Pintrich's work on student motivation and classroom social dynamics. From leveraging insights from this work, I could better understand my students' behavior and the seeming contradictions in students' needing academic support yet avoiding getting help."

Sarah McKellar received her PhD from the University of Michigan's Education & Psychology program. Her research investigates how social context shapes adolescent socio-emotional development and academic outcomes with two overlapping objectives. First, she investigates how adolescents' relationships with caring adults (e.g., teachers) and their peers interact to support motivation and engagement in STEM areas. Second, she studies how motivation to persist in STEM areas among youth from diverse racial and socioeconomic backgrounds is shaped by their social contexts and awareness of structural constraints and societal inequity. She began her career as a high school teacher and worked as a research scientist at UChicago STEM Education before starting her PhD at Michigan. Dr. McKellar is wrapping up a postdoctoral research fellowship at the University of Pittsburgh's Learning Research and Development Center (LRDC). In fall 2023, she will join the University of Alabama's College of Education as an Assistant Professor of Educational Psychology.

My interest in understanding how classroom social context shapes adolescent academic motivation began when I was a high school teacher in California. As a new teacher, I struggled to motivate students, as I saw students' desire to look good in front of their peers kept them from getting the support they needed. From this, I discovered Allison Ryan and Paul Pintrich's work on student motivation and classroom social dynamics. From leveraging insights from this work, I could better understand my students' behavior and the seeming contradictions in students' needing academic support yet avoiding getting help.

Through this work, I gained insight into how classroom practices could help align student social and academic goals and start designing my classes' social norms to increase academic engagement. Yet there were still so many unknown questions about student peer processes, and my desire to know more about student peer dynamics and adolescent identity development planted the seeds to pursue my PhD to develop skills and insights to eventually contribute to research in the field of academic motivation and social development.

For this essay, I was invited to write about my work and the role that Allison has played as a mentor, the foundations of which were no doubt set by the mentorship Allison received from Paul. As part of this essay, I was also asked to discuss these themes related to Allison and Paul's published work. The review article "Why do students avoid getting help when they need it?" by Ryan, Pintrich, and Midgley (2001) illustrates many of the key questions teachers ask and are answered by Allison's work.

Beyond logistical or practical considerations (e.g., timing, resources, helpers), this article reviews the two key psychological reasons why students avoid seeking help: the desire to be autonomous when learning and concern about being perceived as less competent. For these two reasons, Ryan et al. focused on how threats to competency prevent students from seeking help. This dynamic is informed by several factors that fall under two domains: 1) personal characteristics and 2) contextual characteristics, as well as the interaction between them. This review's focus on contextual factors resonates with me because I am most inspired by Allison and Paul's foregrounding of academic and social context when investigating student motivation throughout their careers.

My goal is to contribute to motivational science theories emphasizing the importance of social context and identify development for enhancing student academic motivation. Ryan et al. (2001) outline three aspects of classroom context that shape student avoidance of help-seeking (& motivation): 1) classroom rules and norms, 2) achievement goal structures in the classroom, and 3) Social/interpersonal climate of the classroom.

Many of the key takeaways of this article can be illustrated by what many teachers are faced with in motivating their students and offering solutions or points of access into what the individual can do and what systemically needs to happen to design motivating learning contexts for all youth, or what more we can be doing for teachers to give them the time and resources to attune to students' social context within their classrooms.

Over a decade after my struggles and discoveries as a high school teacher, my research primarily examines how social interactions and relationships shape adolescent academic motivation, engagement, and emotional well-being over time. I specifically study school-based interactions in math and science classrooms to attenuate persistent racial and gender exclusion in STEM fields. Together Allison and I have investigated how peer dynamics (e.g., popular peers or friend influence) and specific teacher practices, such as mastery classroom goals (i.e., learning progress over performance), predict adolescent motivational beliefs over time (McKellar et al. 2020; McKellar et al. 2019; Brass, McKellar, et al., 2019).

In addition to learning theories and content from Allison, I have observed and gained insights into her research process. Under Allison's mentorship, she modeled and encouraged positive collaboration; her work embodies motivational science as an interdisciplinary area of research. Thus, I was also able to work with and learn from two other motivation experts throughout my PhD, Kai Cortina, who served as my co-advisor and who co-chaired my dissertation, and Stuart Karabenick, the leader of the Motivation Lab, which was my intellectual playground to debate and think in-depth about motivational theory and practice.

Allison also encouraged me to focus my expertise and identity as a motivation researcher alongside my second line of research to understand how educational contexts exacerbate or attenuate educational inequity. This foundation that Allison provided made me comfortable wrestling with challenging questions that are not easily answered and seeking out multiple methodological and theoretical approaches to understanding phenomena.

This fall, I will join the University of Alabama community as an Assistant Professor of Educational Psychology. My program of research goals includes integrating my existing lines of work to investigate the role of peer social interaction and students' sociopolitical development in relation to their academic motivation and engagement. In that role, I look forward to mentoring students and creating a lab culture that reflects my PhD experience under Allison's supervision—one that encourages my students to develop a sense of community among members to advance the field.

Ryan, A. M., Pintrich, P. R., & Midgley, C. (2001). Avoiding seeking help in the classroom: Who and why? *Educational Psychology Review, 13*, 93–114. https://www.jstor.org/stable/23363528

Paul R. Pintrich's Research Directly Influenced My Educational Practices

Rinat Levy Cohen

(Akane Zusho's Former Student)

Rinat Levy Cohen received her PhD from Fordham Graduate School of Education. She studies self-regulated learning and motivation in online and augmented learning environments. Her dissertation examined the relationship between achievement motivation and help-seeking behaviors in ASSISTments. At the New York Hall of Science, she studies how visitors regulate their shared problem-solving while interacting with the Connected-Worlds Simulation. Rinat served as an adjunct professor at New York University (NYU). She taught the course Foundations of the Learning Sciences, which focuses on the social and cultural issues of learning as they relate to individual and group cognition in the context of media-rich technology learning environments. Rinat is passionate about applying research to practice. She directs the McLeod Innovation Center at Fairfield College Preparatory School. As the inaugural Director, Rinat developed a program that fosters learners' innovation, self-regulation, and design-thinking skills and allows them to learn by doing and failing.

I reviewed the Article "Toward an Integrated Model of Student Learning in the College Classroom" by Akane Zusho. I began by summarizing Zusho's analysis of three prominent learning theories in higher education. I then succinctly describe Zusho's model of student learning in the college classroom, which considers all three learning theories' theoretical perspectives. Finally, I reflect on Zusho and Paul R. Pintrich's impact on my research and educational practices.

Review of the Article (Zusho, 2022)

Zusho begins by reviewing the research on the three prominent learning theories in the college classroom: self-regulated learning (SRL), patterns of learning, and student engagement. Zusho provides an overview of the state of each research literature and measurement limitations. She maintains that these learning theories often assess the same construct but use different terminology. She argues that these learning models should be linked theoretically and practically.

Zusho compared and contrasted all three learning theories and, in turn, identified overlaps in terminology and measurements:

- Zusho concluded that all three learning theories share the assumption that students are active participants in the learning process. For instance, the SRL literature suggests that learners seek help, set goals, and monitor their progress.
- Zusho indicated that all three theories assume that the learning process is impacted by personal (e.g., prior knowledge) and contextual factors (e.g., academic discipline).
- Zusho posited that all three learning theories proposed that the learning process is likely impacted by students' perceptions about their competence (i.e., self-efficacy) and meaningfulness (e.g., interest in a subject matter).

Zusho presented an extended (built on her prior work with Paul Pintrich) and integrated model of student learning in the college classroom. Zusho's model reflects the similarities between these three learning theories. To illustrate, the model depicts learning as a cyclical and dynamic process. Additionally, the model illustrates how personal and contextual factors impact motivational and cognitive processes in the learning process. Zusho hopes her model is a step toward integrating all three research fields to deepen our understanding of the learning process in the college classroom.

Paul Pintrich and Akane Zusho's Research's Impact on my Career

As a teacher, I was often puzzled by my students' behavior. Why were some of my students consistently seeking help while others never asked for help even though I offered to stay after school and help them? One of the first classes I took at Fordham University was Akane's course, Cognition and Instruction. Akane introduced me to the research on achievement motivation and Paul's work on help-seeking behavior. At that moment, I knew that I had found my research passion. I joined Akane's research lab and worked with her on a paper about reading and self-regulated learning.

Paul, Akane, and colleagues have established a general understanding regarding students' achievement motivation (e.g., self-efficacy) and help-seeking intentions in traditional learning environments. However, we do not know enough about the relationship between achievement motivation and help-seeking behaviors in the context of online learning and especially among middle school students. My dissertation research built on their work and aimed to fill in the gap in the research.

Paul's work has also directly influenced my work as the Director of the McLeod Innovation Center at Fairfield College Preparatory School. I have incorporated self-regulated learning skills into all the courses in the innovation center. For example, students who take our courses keep an engineering notebook. All our courses include engineering design challenges. In their engineering notebooks, students write detailed notes about their design process. They must set goals and deadlines, evaluate their progress and learning, and reflect on their epistemological beliefs. Paul Pintrich's research legacy directly influenced my educational practices.

Abstract

"In the last special issue devoted to this topic, Pintrich (Educ Psychol Rev 16:385–407, 2004) provided an in-depth critique of his conceptual framework on self-regulated learning (SRL), comparing and contrasting it to Biggs' student approaches to learning (SAL) perspective. Since then, there have been a number of advances in the study of learning in higher education. To that end, the purpose of this article is to provide a critical analysis of three distinct yet overlapping streams of research in higher education, namely SRL, patterns of learning (including SAL), and student engagement. The theoretical bases of each of these approaches are outlined followed by a review of recent trends. Finally, an integrative model of student learning is proposed, which draws on the strengths of each of these traditions."

Zusho, A. (2017). Toward an Integrated Model of Student Learning in the College Classroom. *Educational Psychology Review* 29, 301–324. https://doi.org/10.1007/s10648-017-9408-4

Dissertation Abstract

"The aim of this study was to examine the relationship between common classroom help-seeking determinants (achievement goals, self-efficacy, prior knowledge, gender, and help-seeking perceptions) and help-seeking behaviors online (hint use percentage, latency of help seeking, answer attempt percentage, feedback level percentage, and seeking help after making an error). Participants (N = 408) responded to a survey and solved math problems in the interactive learning environment ASSISTments. The survey consisted of 42 items that assessed participant math achievement goals, self-efficacy, and gender. Students' help-seeking behaviors and math prior knowledge scores were received in the form of log file data from ASSISTments and anonymized. In all five regression models, achievement goals, self-efficacy, prior knowledge, and help-seeking perceptions served as predicting variables. A different dependent variable (hint use percentage, latency between hint requests, help after error, feedback amount, and answer attempt count) was regressed on those predictors in each model."

Cohen, Rina Levy, "The Relationship Between Help-Seeking Determinants and Help-Seeking Behavior Online" (2022). *ETD Collection for Fordham University*. AAI29992963.https://research.library.fordham.edu/dissertations/AAI29992963

Like Paul R. Pintrich, I Walked Away with Further Questions for Future Research

Sean Adcroft

(Akane Zusho's Former Student)

I recall my excitement several years ago when I landed on my dissertation topic - developing self-regulated learning through time-management skills and mindfulness practice. I had the very good fortune of having Akane Zusho as my mentor, who helped me understand that achieving the goal I sought was a matter of persistence best aided by a mastery goal orientation.

Akane helped me appreciate that my dissertation did not need to be a magnum opus. Instead, it could be successful if it contributed to the current body of knowledge in my field. Whether a dissertation's hypothesis is upheld or proved wrong, it can still serve this purpose.

This understanding reduced my anxiety and helped me appreciate those who had gone before me, building the existing corpus of knowledge on self-regulated learning. One of these people was Paul R. Pintrich. When asked to write a reflection on Pintrich's work and how it has impacted my own, I was both humbled and honored to do so. As a starting point, I read and summarize "Goal Orientation and Self-Regulated Learning in the College Classroom: A Cross-Cultural Comparison" (Pintrich, Zusho, Schiefele, & Pekrun, 2001).

The article opens with the current state of understanding, "adapting a mastery goal will facilitate self-regulated learning and that endorsement of relative ability goals or extrinsic goals will be negatively related to self-regulated learning." (Pintrich et al., p. 149, 2001). It then introduces research that seems to contradict this understanding.

Then, it introduces the current study, which looks to contribute to the knowledge of how one's goal orientation (mastery, extrinsic, or relative) impacts one's use of self-regulated learning (SRL) and affect and performance. This exemplifies the essence of educational research – we state what is known, provide an example of a seeming contradiction, then design a study designed to investigate further and expand the body of knowledge.

The article goes on to define and investigate several hypotheses:

- Mastery goals would be positively related to self-regulated learning.
- Mastery goals to be positively related to general effort & personal interest.
- Extrinsic goals would be negatively related to efficacy & self-regulation.
- Extrinsic goals would be negatively related to interest but positively related to anxiety.
- Relative ability goal orientation would be positively related to efficacy, self-regulated learning and performance.

Sean Adcroft earned his PhD from Fordham University under the mentorship of Akane Zusho, whom Paul R. Pintrich had mentored. Sean has applied his understanding of goal theory and self-regulated learning to his position as Director of Instructional Technology & Libraries for a K-12 School District. Acknowledging that technology is a gateway to a sea of information, SRL is necessary for students to navigate these waters and catch fish among the detritus.

Thus, the study offered a more complex understanding of goal orientation – that the efficacy of the various orientations (mastery, extrinsic, & relative) might be related to the outcome under consideration (Pintrich et al., 2001).

The study supported the researcher's first two expectations - mastery goal orientation was the most adaptive for using self-regulated learning and general effort and performance. Results indicated that extrinsic goals were neither harmful nor helpful to self-regulated learning. The study did not find support for the researchers' expectation that relative ability goal orientation would be positively related to self-efficacy, SRL, or performance.

Like all good research, the study ends with possible questions for future research. Is there an interaction between the goal orientation promoted in the classroom and the goal orientation adopted by each student?

As I reflect on my areas of interest, this article is a model for the research process. Begin with the current theory, review current research to find contradictions or gaps in current understanding and propose a study to add to our collective understanding.

Seeing the challenge to attention presented by technology, my dissertation sought to instill SRL through direct instruction in time management and mindfulness meditation. To know if my intervention had the desired impact, I needed a tool by which I could measure self-regulated learning among fifth-grade students before and after my interventions.

I found the Children's Perceived use of Self-Regulated Learning Inventory (CP-SRLI), a measure of SRL "grounded in the model of Pintrich" (Vandevelde, Van Keer, & Rosseel, p.418, 2013). Although my interventions did not reach statistical significance, I took comfort in knowing that I had contributed to the body of knowledge. Moreover, like Pintrich, I walked away with further questions for future research.

"In general, in terms of our first question, the results suggest that for college students a mastery goal orientation is the most adaptive goal orientation to adopt in terms of self-efficacy, interest, strategy use, and performance. Students who were focused on mastering and understanding the course material were more likely to increase their self-efficacy beliefs, become more interested in the course content, increase in their use of deeper processing and self-regulation strategies, as well as increase their general effort, and at least in the USA sample, perform better in the course. This general conclusion is in line with normative goal theory predictions."

Pintrich, P. R., Zusho, A., Schiefele, U., & Pekrun, R. (2001). Goal orientation and self-regulated learning in the college classroom: A cross-cultural comparison. In F. Salili & C. Chiu (Eds.), Student motivation: The culture and context of learning (pp. 149–169). Dordrecht, the Netherlands: Kluwer

Dissertation Abstract

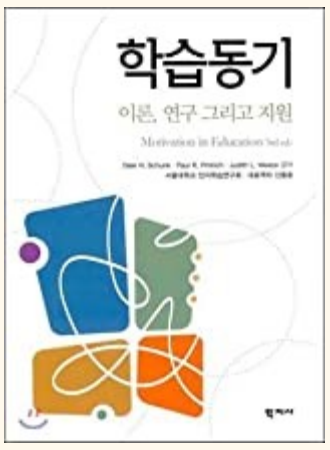
"Students have always faced the challenge of focusing their wandering minds. Today, the ubiquitous presence of technology makes this task more difficult. This study sought to help students harness their attention in the face of distraction using Zimmerman's model of self-regulated learning (SRL), mindfulness practice, and the Pomodoro Technique for time management. Eighty-two fifth graders from a suburban elementary school in the Northeastern United States participated in one of four treatment conditions: SRL intervention, Mindfulness curriculum, both SRL and Mindfulness, or neither. Using a pre- /post-intervention design, students completed surveys measuring their level of SRL and perceived stress. Three sub-tests measuring sustained attention were also completed before and after the interventions. It was hypothesized that the SRL intervention would increase students' reported SRL skills, while those in the mindfulness class would report decreased stress and improved sustained attention. Believing that stress can have a moderating effect on SRL, it was believed that students in the SRL and mindfulness class would experience both benefits. Statistical analysis did not support these hypotheses. Limitations of this study, as well as possible further research, are explored."

Adcroft, Sean Kennedy, "Developing Self-Regulated Learning with Time Management and Mindfulness Practice" (2018). *ETD Collection for Fordham University*. AAI10837688. https://research.library.fordham.edu/dissertations/AAI10837688

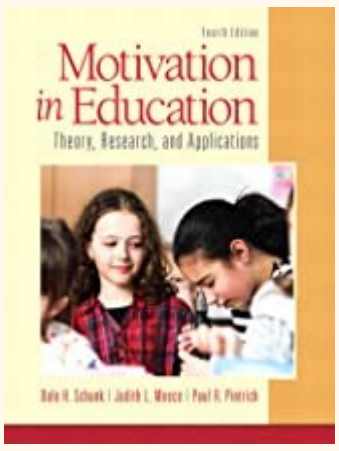
Paul R. Pintrich's Selected Publications

Year	Citation
2015	Linnenbrink-Garcia L, Maehr ML, **Pintrich PR**. Motivation and Achievement *Menc Handbook of Research On Music Learning: Volume 1 Strategies*. DOI: 10.1093/acprof:osobl/9780195386677.003.0006
2005	Zusho A, **Pintrich PR**, Cortina KS. Motives, goals, and adaptive patterns of performance in Asian American and Anglo American students *Learning and Individual Differences*. 15: 141-158. DOI: 10.1016/J.Lindif.2004.11.003
2004	**Pintrich PR**. Understanding the Development of Student Thinking in the College Classroom *The Journal of Higher Education*. 75: 476-480. DOI: 10.1353/Jhe.2004.0025
2004	**Pintrich PR**. Learning to Think: Disciplinary Perspectives *The Journal of Higher Education*. 75: 476-480. DOI: 10.1080/00221546.2004.11772270
2004	**Pintrich PR**, Blazevski JL. Applications of a Model of Goal Orientation and Self-Regulated Learning to Individuals with Learning Problems *International Review of Research in Mental Retardation*. 28: 31-83. DOI: 10.1016/S0074-7750(04)28002-8
2004	Conley AMM, **Pintrich PR**, Vekiri I, Harrison D. Changes in epistemological beliefs in elementary science students *Contemporary Educational Psychology*. 29: 186-204. DOI: 10.1016/J.Cedpsych.2004.01.004
2004	**Pintrich PR**. A conceptual framework for assessing motivation and self-regulated learning in college students *Educational Psychology Review*. 16: 385-407. DOI: 10.1007/S10648-004-0006-X
2003	Linnenbrink EA, **Pintrich PR**. THE ROLE OF SELF-EFFICACY BELIEFS IN STUDENT ENGAGEMENT AND LEARNING IN THE CLASSROOM *Reading & Writing Quarterly*. 19: 119-137. DOI: 10.1080/10573560308223
2003	Zusho A, **Pintrich PR**, Coppola B. Skill and will: The role of motivation and cognition in the learning of college chemistry *International Journal of Science Education*. 25: 1081-1094. DOI: 10.1080/0950069032000052207
2003	**Pintrich PR**, De Groot EV. A Motivational Science Perspective on the Role of Student Motivation in Learning and Teaching Contexts *Journal of Educational Psychology*. 95: 667-686. DOI: 10.1037/0022-0663.95.4.667
2003	**Pintrich PR**, Conley AM, Kempler TM. Current issues in achievement goal theory and research *International Journal of Educational Research*. 39: 319-337. DOI: 10.1016/J.Ijer.2004.06.002
2002	**Pintrich PR**. The role of metacognitive knowledge in learning, teaching, and assessing *Theory Into Practice*. 41: 219-225. DOI: 10.1207/S15430421Tip4104_3
2002	Linnenbrink EA, **Pintrich PR**. Achievement goal theory and affect: An asymmetrical bidirectional model *Educational Psychologist*. 37: 69-78. DOI: 10.1207/S15326985Ep3702_2
2002	Linnenbrink EA, **Pintrich PR**. Motivation as an enabler for academic success *School Psychology Review*. 31: 313-327. DOI: 10.1080/02796015.2002.12086158
2002	Harackiewicz JM, Barron KE, **Pintrich PR**, Elliot AJ, Thrash TM. Revision of achievement goal theory: Necessary and illuminating *Journal of Educational Psychology*. 94: 638-645. DOI: 10.1037/0022-0663.94.3.638
2001	Ryan AM, **Pintrich PR**, Midgley C. Avoiding Seeking Help in the Classroom: Who and Why? *Educational Psychology Review*. 13: 93-114. DOI: 10.1023/A:1009013420053
2000	**Pintrich PR**. An Achievement Goal Theory Perspective on Issues in Motivation Terminology, Theory, and Research. *Contemporary Educational Psychology*. 25: 92-104. PMID 10620384 DOI: 10.1006/Ceps.1999.1017
2000	**Pintrich PR**. Understanding Student Motivation and Providing Hope for Teachers *Contemporary Psychology*. 45: 207-210. DOI: 10.1037/004730
2000	**Pintrich PR**. Multiple goals, multiple pathways: The role of goal orientation in learning and achievement *Journal of Educational Psychology*. 92: 544-555. DOI: 10.1037/0022-0663.92.3.544
1999	**Pintrich PR**. Understanding Interference and Inhibition Processes from a Motivational and Self-Regulated Learning Perspective: Comments on Dempster and Corkill *Educational Psychology Review*. 11: 105-115. DOI: 10.1023/A:1022020308002
1999	**Pintrich PR**. Taking control of research on volitional control: Challenges for future theory and research *Learning and Individual Differences*. 11: 335-354. DOI: 10.1016/S1041-6080(99)80007-7
1999	Linnenbrink EA, Ryan AM, **Pintrich PR**. The role of goals and affect in working memory functioning *Learning and Individual Differences*. 11: 213-230. DOI: 10.1016/S1041-6080(00)80006-0
1999	Patrick H, Ryan AM, **Pintrich PR**. The differential impact of extrinsic and mastery goal orientations on males' and females' self-regulated learning *Learning and Individual Differences*. 11: 153-171. DOI: 10.1016/S1041-6080(00)80003-5
1999	**Pintrich PR**. The role of motivation in promoting and sustaining self-regulated learning *International Journal of Educational Research*. 31: 459-470. DOI: 10.1016/S0883-0355(99)00015-4
1998	Wolters CA, **Pintrich PR**. Contextual differences in student motivation and self-regulated learning in mathematics, English, and social studies classrooms *Instructional Science*. 26: 27-47. DOI: 10.1023/A:1003035929216
1997	Hofer BK, **Pintrich PR**. The development of epistemological theories: Beliefs about knowledge and knowing and their relation to learning *Review of Educational Research*. 67: 88-140. DOI: 10.3102/00346543067001088
1997	Ryan AM, **Pintrich PR**. "Should I Ask for Help?" The Role of Motivation and Attitudes in Adolescents' Help Seeking in Math Class *Journal of Educational Psychology*. 89: 329-341. DOI: 10.1037/0022-0663.89.2.329
1996	Garcia T, **Pintrich PR**. The Effects of Autonomy on Motivation and Performance in the College Classroom *Contemporary Educational Psychology*. 21: 477-86. PMID 8979875 DOI: 10.1006/Ceps.1996.0032
1996	Vanderstoep SW, **Pintrich PR**, Fagerlin A. Disciplinary Differences in Self-Regulated Learning in College Students *Contemporary Educational Psychology*. 21: 345-62. PMID 8979869 DOI: 10.1006/Ceps.1996.0026
1996	Wolters CA, Yu SL, **Pintrich PR**. The relation between goal orientation and students' motivational beliefs and self-regulated learning *Learning and Individual Differences*. 8: 211-238. DOI: 10.1016/S1041-6080(96)90015-1

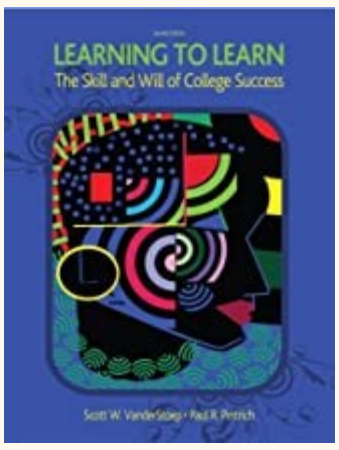
Paul R. Pintrich's Selected Books



2013

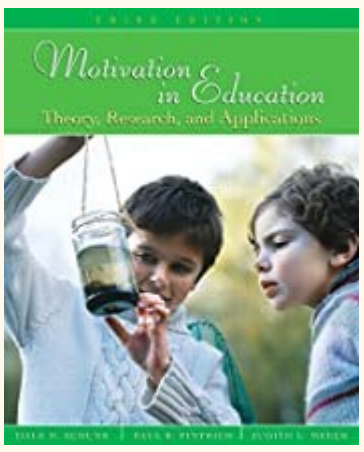


2012

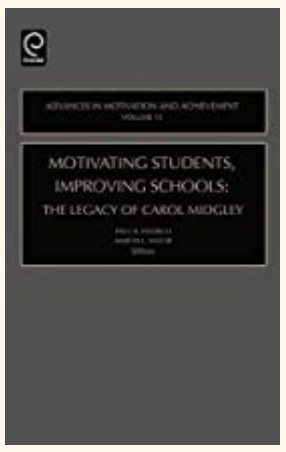


2007

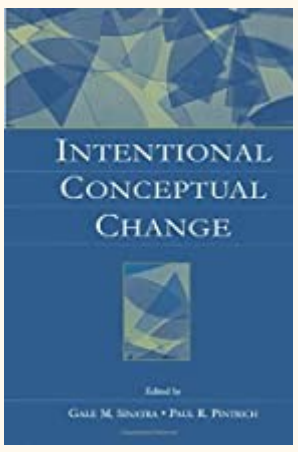
2006



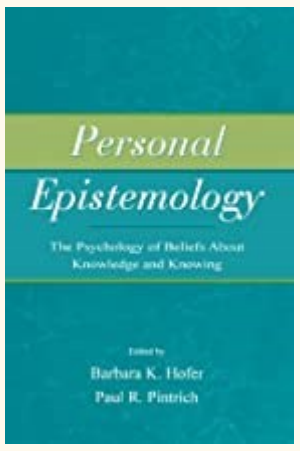
2007



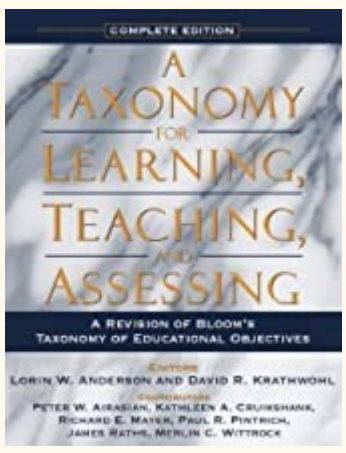
2004



2003

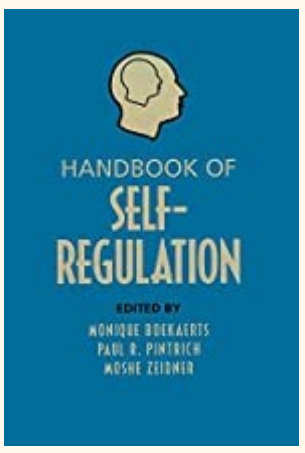


2002



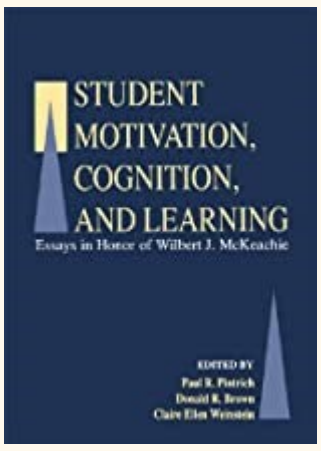
2001

2001

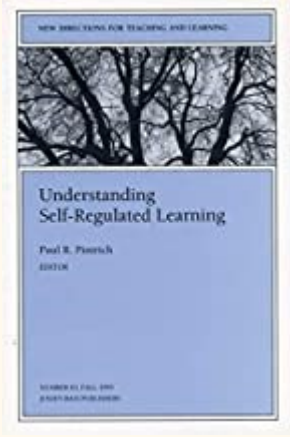


2000

1997



1994



1995