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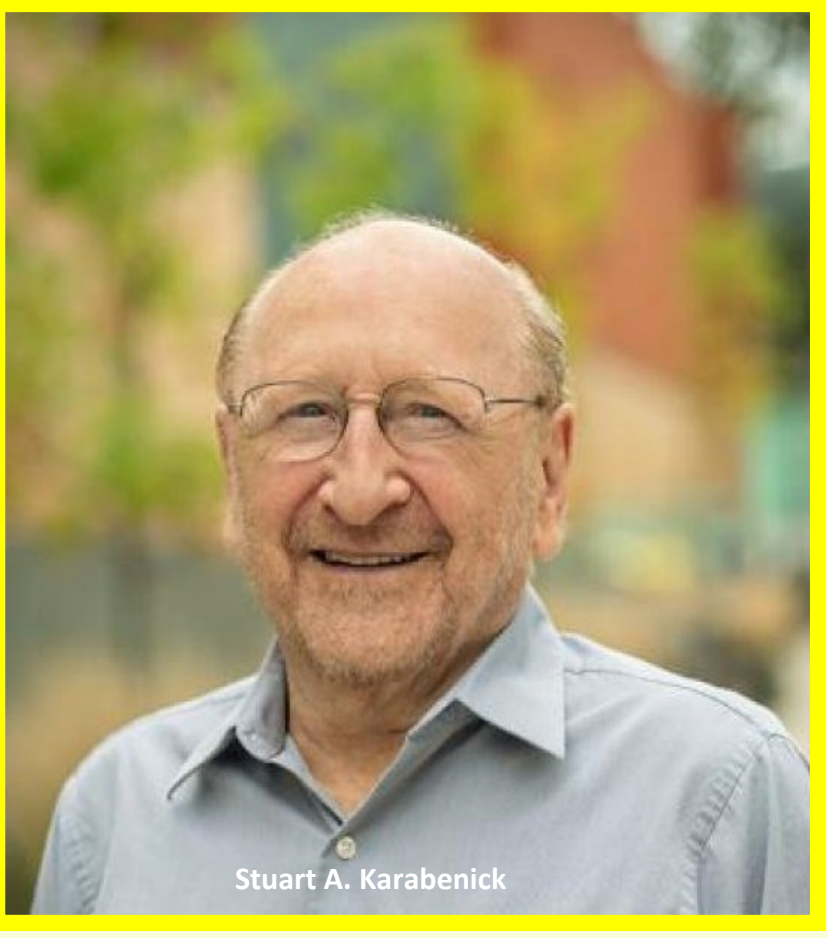
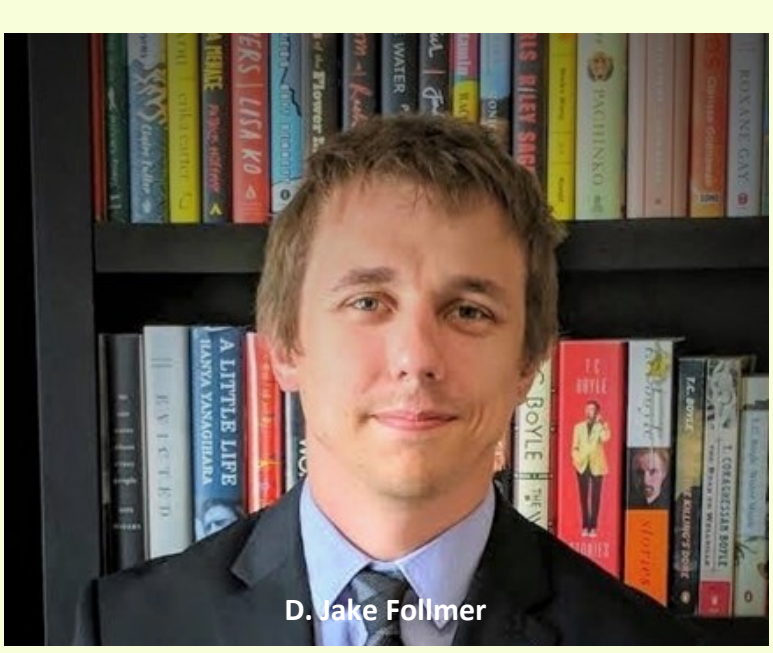
Pamela F. Murphy, Senior Chair SSRL SIG
Héfer Bembenutty, Editor-in-Chief, Content & Graphic Editor

CELEBRATING THE EXCELLENT SSRL SIG 2021 AWARD RECIPIENTS

Stuart A. Karabenick: Recipient of the Barry J. Zimmerman Award for Outstanding Contributions


Stuart A. Karabenick

D. Jake Follmer: Recipient of the Outstanding Poster Award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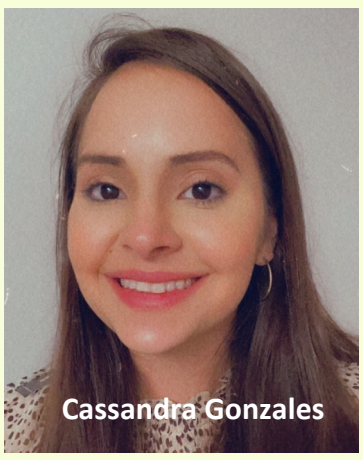
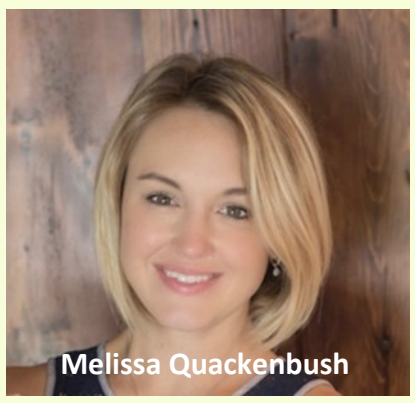

Cassandra Gonzales


Melissa Quackenbush


Rinat Levy Cohen

Recipients of the Graduate Student Research Award:
Cassandra Gonzales
Rinat Levy Cohen
Melissa Quackenbush
Joseph C. Tise


Joseph C. Tise

Editorial

Accepting Educational Responsibility, Equity, Diversity, Inclusion, and Self-Regulated Learning

Héfer Bembenutty, Editor-in-Chief

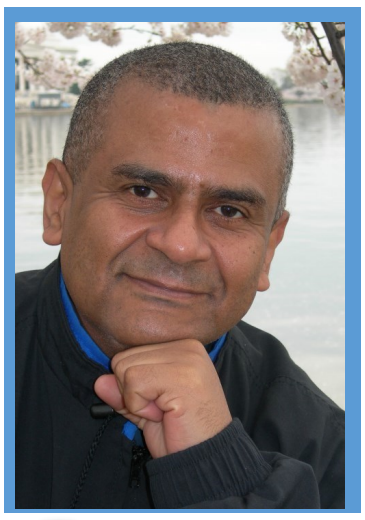
In this special issue of the *Times Magazine*, the Studying and Self-Regulated Learning (SSRL) Special Interest Group (SIG) of the American Educational Research Association (AERA) renders tribute to the excellent 2021 award recipients. Stuart A. Karabenick is the recipient of the Barry J. Zimmerman Award for Outstanding Contributions. Before passing away, Stuart expressed intention and met the requirements to be nominated for the award. D. Jake Follmer won accolades for his poster presentation and received the Outstanding Poster Award. Awardees of the Graduate Student Research Award are Cassandra Gonzales, Rinat Levy Cohen, Melissa Quackenbush, and Joseph C. Tise.

Consistent with the AERA annual theme, *Accepting Educational Responsibility*, in our SSRL SIG, we are proud of all the work we have done since our humble beginnings. Research papers accepted for our SIG presentations represent our members' meaningful efforts, individually and collectively, of accepting educational responsibility.

Stuart's 50 years of contributions to researching and teaching self-regulated learning and motivation are laudable, reflecting that he accepted his educational responsibility. His lifelong service was dedicated to promoting academic achievement and helping the new and diverse generation of scholars and teachers. He planted many seeds of diversity, motivation, and self-regulated learning that are germinating worldwide.

Stuart was a self-regulated learning champion who advocated for equity, diversity, inclusion, and social justice. He rejected all forms of racism, xenophobia, transphobia, Islamophobia, anti-Semitism, homophobia, and Anglophobia. He denounced sexism, sexual harassment, misogyny, bullying, and ethnocentrism. He was not afraid to mentor students and colleagues of all diverse perspectives. He conducted research directly focused on Muslim, African American, Arabic, minoritized and marginalized individuals. Based on his research and disposition, today, he would have denounced hate crimes against Asians.

Jake is cognizant of his educational responsibility. His research paper assessing Executive Function Skills (EFs) informs learners' beliefs about strategic processes of self-regulated learning, which reveals that he has accepted his educational responsibility. Jake aims to advance the understanding of the development and instruction on self-regulation. The assessment tools he used have been valuable and empirically solid while understanding that more research needs to be conducted to assess the ability of the EFs to predict self-regulatory behaviors.



Jake's acceptance of educational responsibility will help him continue exploring the assessment of EFs through behavioral traces, direct observations, and microanalytic protocol-based measures. His cheerful disposition will guide him to integrate into his research how EFs operate among marginalized, minoritized, and diverse learners. How would learners experiencing any form of racism, xenophobia, Islamophobia, anti-Semitism, homophobia, sexual harassment, and misogyny respond to Jake's EFs assessments?

The four recipients of the Graduate Student Research Award have conducted laudable research, and they are applauded for it.

- Cassandra conducted a meta-analysis to explore whether academic help seeking is associated with college students' achievement. She found that college student achievement was negatively and significantly correlated with forms and perceptions of nonadaptive help-seeking: avoidant help-seeking, executive help-seeking, and help-seeking threat.
- Rinat examined the regulation of collaborative problem-solving in a museum exhibit. She found that it is essential to adopt a dynamic of the approach to served learning regulation.
- Melissa found that online training was positively associated with teachers' self-regulated learning, self-efficacy for teaching, and perceived instructional effectiveness in computer-supported collaborative learning environments.
- Joseph found support for the contention that the speed with which students respond to self-regulated learning scaffolds is beneficial to their learning, with students in the quick responders group benefiting most in their reported metacognitive awareness. Those in the moderate- and quick-responders groups benefited most in their course performance.

Graduate students are the present and future of our discipline. They will be the future professors, teachers, researchers, administrators, policymakers, and the soul of our entire educational system. The SSRL SIG is responsible for nurturing their development by providing resources and support for their growth. Senior SIG members are invited to dedicate time, resources, and financial support to graduate students. Senior SIG members may make special donations to our SIG so the SIG could help its graduate students. Mentoring graduate students is a fundamental goal of our SIG and discipline.

Graduate students are invited to continue accepting educational responsibilities for nurturing and developing their self-regulated learning knowledge, skills, and disposition. As part of accepting educational responsibility, they may include equity, diversity, and inclusion in their research agenda.

Graduate students may train themselves by reading rigorous publications that promote diversity, equal treatment for all, the inclusion of marginalized and minoritized learners, and assessing how those learners' conditions impact their ability to engage in self-regulated learning. Dissertations would be very revealing if they could identify theoretical grounds to add diversity elements in their projects.

Graduate students may seek dissertation advisors who would integrate solid theoretical approaches and constructs involving diverse learners. Focusing on technology, computer analysis, artificial intelligence, behavioral traces, microanalytic protocol-based measures, digital games, and multichannel data significantly advance our discipline, but they are not enough. Integration of diversity in those areas should shed light on the behavior and learning experiences of underrepresented students.

Graduate students should not be comforted, consoled, or delighted by just including gender and ethnic differences in their research; instead, they could paddle out to sea. They are invited to cast out into the deep to provide practical solutions to social injustices that create human drama and interfere with learning.

We thank Stuart for his research on self-regulated learning and activism promoting equity, diversity, and inclusion. We admire and respect Jake for his commendable devotion to exploring the factors impacting executive functions and self-regulated learning.

We are most indebted to our four graduate students, Cassandra, Rinat, Melissa, and Joseph, who have accepted their educational responsibility of promoting self-regulated learning. We count on them to lead our field to journeys never imagined of learning and dignity for all learners and humankind. Integral research on self-regulated learning would involve educational responsibility and promotion of equity, diversity, and inclusion.

Editorial Note: Amanda Ferrara from The Pennsylvania State University, generously and efficiently, served as the copyeditor of this issue of the *Times Magazine*. Thanks, Amanda!

Editorial Note: This editorial contains opinions consistent with the AERA value of freedom of expression but its content should not be construed as reflecting the position of AERA, the SSRL SIG or its members.

Stuart A. Karabenick: Legacy and Contributions to Self-Regulated Learning Research

Marie C. White, *Gordon College*

I am glad to learn that Stuart A. Karabenick is the recipient of the 2021 Barry J. Zimmerman Award, which is a tribute to the significant impact his work made on the research supported by our SIG, Studying and Self-Regulated Learning. I remember when I contacted Stuart to be our speaker at the business meeting in 2014. He did not hesitate, readily accepted. Stuart remained a strong contributor to our work in the SIG and as a friend and mentor to our members until the time of his passing.

My research in help-seeking as the social component of self-regulated learning all began with an article published by Stuart (along with John R. Knapp) in 1991 connecting help-seeking and strategic learning. When I met Stuart in 2013, I was quickly drawn to the strong character of the man as well as his warmness and sincere desire for my success in my research.

In my attempt to describe Stuart's legacy, I have decided to share his beautifully composed obituary. As unusual as this is, the description of his character, scholarship, and influence is evidenced in the consistent support and contributions he made to our SIG in the area of help-seeking and self-regulated learning.

In an interview conducted by Héfer Bembenutty (2015), Stuart shared how he would like his legacy to be remembered. He stated that he would like to be remembered as someone who contributed to advances in theory and research that have relevance for teaching and learning. An essential and rewarding part of that role involves mentoring and, in many cases, being enlightened by students, younger scholars, and researchers with their areas of expertise and interest.

When Stuart died peacefully in the company of his four loving children, on August 1, 2020, he was 80 years old. He was a devoted family man who loved jazz music and spending time with friends. Stuart earned a bachelor's degree in psychology with honors in 1962 and a PhD in 1967 from the University of Michigan. He was an Emeritus Professor at Eastern Michigan and a Research Professor Emeritus of Education at the Combined Program of Education and Psychology, School of Education, and Adjunct Professor of Psychology, College of Literature, Science, and the Arts at the University of Michigan.

Stuart was an associate editor of *Learning and Instruction* and coordinator of the Motivation and Emotion Special Interest Group of the European Association for Research on Learning and Instruction (EARLI). He was an active member of the American Educational Research Association's (AERA) Motivation in Education and Studying and Self-Regulated Learning Special Interest Groups and Learning and Instruction (Division C).

A prolific writer, some of Stuart's influential books include *Strategic Help Seeking: Implications for Learning and Teaching* (1998), *Help Seeking in Academic Settings: Goals, Groups, and Contexts* (with Richard Newman, 2013), *Decade Ahead: Theoretical Perspectives on Motivation and Achievement* (with Timothy C. Urdan, 2010), and *Teacher Motivation: Theory and Practice* (with Paul W. Richardson and Helen M. G. Watt, 2014).

Stuart was the recipient of numerous grants, including funding from the National Science Foundation (NSF), the US Department of Education (USDOE), and the Spencer Foundation. In 2019, while in retirement, he received a new NSF grant.

Fully devoting his professional life to research and mentoring, Stuart published with his students and a lengthy list of collaborators worldwide. With his kindness, professionalism, wisdom, cheerful disposition, and open mindset, he shaped countless graduate students' and colleagues' growth.

He was a remarkable scholar who left an indelible mark on the fields of strategic help seeking, self-regulated learning, relevance for learning and motivation in education, academic delay of gratification, perceived achievement goal structures, teacher responsibility and motivation for professional development, culturally diverse instructional practices, and computer-mediated instruction.

Education Week (2014) quoted Stuart as emphasizing that "help seeking suggests a deficit, but we need students to think of it as managing resources to solve a problem" (p. 1). In 2019, he was the keynote speaker at EARLI. In 2016, he was the keynote speaker at the International Conference of Motivation in Thessaloniki, Greece, and in 2014 at the Studying and Self-Regulated Learning SIG at AERA.

Stuart offered advice to graduate students during an interview conducted by Jeffrey Albrecht, and he shared his acquired wisdom from a five-decade career in *Education Review*.

Kara Makara offered a tender tribute to Stuart in these terms, "Stuart was a dedicated, supportive, inspiring, and generous PhD advisor and mentor. He achieved the very rare accomplishment of having both breadth and depth—in his knowledge, his expertise in different psychological and educational areas, his mentoring, his writing, his connections to others, and in his life interests. Stuart will be greatly missed."

Proudly, Jeffrey Albrecht rendered these words about his compassionate and caring mentor, "Stuart was epistemologically courageous, always encouraging us to ask difficult conceptual and methodological questions. He was never afraid to earnestly confront the limitations of our understanding in educational and psychological research."

A statement by Allyson M. Ryan in the September issue of our SIG's *Times Magazine* is inspiring. Her statement could be made by each one of us who interacted with Stuart over time. Allyson initially knew Stuart through his seminal work on help seeking and self-regulated learning. In her tribute, she shared that she had read his work when developing her early research project during her first year in graduate school (1993- 1994). In addition, she stated Stuart's empirical and theoretical work over several decades has shaped the field and would continue to impact all who care about motivation, self-regulation, and help seeking. Harder to imagine is the loss of his thoughtful and kind nature that made him a superb advisor, dedicated citizen, and good friend. For so many people, he was the go-to person for advice and encouragement.

There is no greater recognition of Stuart's legacy than to have it include the high honor of receiving the Barry J. Zimmerman Award. I am glad that our SIG recognizes his contributions to self-regulated learning research in the spirit consisting of our dear and esteemed mentor, Barry J. Zimmerman.

Marie C. White is an Adjunct Professor at Gordon College and an Educational Psychologist at Center for Advocacy and Learning. She teaches courses in Public School Law, Social and Emotional Learning, and Historical Inquiry.

Barry J. Zimmerman Award for Outstanding Contributions

Broadening My Perspective on Self-Regulated Learning with Stuart A. Karabenick

Jean-Louis Berger, *University of Fribourg*

Jean-Louis Berger is a professor of educational psychology at the University of Fribourg, Switzerland. He was a visiting scholar at the University of Michigan in 2008-2009 under Stuart A. Karabenick.

Let's start with the most important: Stuart Karabenick was the kind of mentor who does not try to have you help him achieve his agenda, but he was collaborating and guiding towards developing the mentee's personal interests. He made a huge difference in my professional development.

In 2008-2009, right after finishing my PhD in Switzerland, I was a visiting scholar at the University of Michigan. I continued working with Stuart on self-regulated learning (SRL) for the next twelve years. Our friendship went on until he passed away.

My first interest was pursuant to the publication of a paper he co-authored on cognitive pretesting (Karabenick et al., 2007), which I saw as a methodology applicable to study the validity of strongly criticized SRL self-reports such as the *Motivated Strategies for Learning Questionnaire*.

The study we conducted on the construct validity of self-reported metacognitive learning strategies was published in English (Berger & Karabenick, 2016) and French (Berger & Karabenick, 2019). Rather than simply discarding the use of self-reports in SRL research and the decades of research that relied on it, we were both convinced that the question of validity was not sufficiently investigated by looking at the correlation with achievement or performance. We agreed that to improve these items, it was more relevant to understand how the respondents cognitively process the items.

Following another of my interests in SRL, we tried to understand the reciprocal effects between motivation and strategy use in the context of high school math (Berger & Karabenick, 2011). At that time, I became familiar with the Expectancy-Value Theory (EVT), which Stuart adopted as a motivational framework, at least in the context of our collaboration.

Working on the EVT article took over ten years. The article looks at the motivational value, based on EVT, of SRL strategies (Karabenick et al., 2021). We wrote and rewrote the paper several times, analyzing and reanalyzing the data over several years. From one rejection to the next, we kept improving the paper and were joined by Katerina Schenke and Erik Ruzek, who significantly improved the paper's analytic part, which was decisive.

Sadly, the paper acceptance came a few months after his death. I am sure that he is indeed proud that the article is finally published and that his ideas on strategy motivation are presented to the scientific community. I am continuing this research line, as I am convinced it has relevance in understanding SRL further.

To conclude, meeting and collaborating with Stuart for 12 years has significantly impacted me and my career. I met a person I consider a model of humanity. He cared about me and was interested in knowing how I might help in doing research and who I was and how I felt. Professionally, he inspired me in the way he was supervising, mentoring, and caring for his graduate students and me.

I learned enormously from him, and I apply what I learned from him today. Stuart was the kind of person whom you will remember forever and from whom you always get inspiration.

References are available upon request from the author (jean-louis.berger@unifr.ch)

Karabenick, S. A., & Berger, J.-L., Ruzek, E., & Schenke, K. (2021). Strategy motivation and strategy use: Role of student appraisals of utility and cost. *Metacognition and Learning*. https://doi.org/10.1007/s11409-020-09256-2

There is substantial evidence that students' use of self-regulated learning strategies is directly related to their motivation to achieve desired learning outcomes (designated outcome motivation: OM). Further, motivational beliefs about the strategies themselves (designated strategy motivation: SM) may also influence strategy use. In the absence of systematic analyses of SM, we examined beginning U.S. high school students' (n = 253) appraisals of the utility and cost of using cognitive, metacognitive and resource management strategies and their reported use of those strategies in mathematics classes. Students who appraised a strategy as higher in utility reported greater frequency of use, but perceived cost was only a weak inverse function of reported use. Mixed effects modeling used to examine relations across strategies within students also verified that strategy use was positively related to its perceived utility for most students. However, relations between reported strategy use and perceived cost varied considerably: inversely related, unrelated, and for a sizable proportion of students even positively related. We discuss the necessity of developing a model of SRL that includes SM as well as OM influences on learning strategy use and learning outcomes, and the importance of within-person in addition to between-person analytic approaches to understand self-regulated learning.

Barry J. Zimmerman Award for Outstanding Contributions

Stuart A. Karabenick: A Culturally Inclusive and Self-Regulated Mentor, Colleague, and Friend

Revathy Kumar (*University of Toledo*), Nancy Seay (*Simmons College*), & Jeffery Warnke (*Walsh University*)

Our fondest shared memories of Dr. Stuart Karabenick are the intellectually stimulating experiences we had as we worked together on a Spencer-funded project designed to explore middle school students' experiences in culturally diverse learning environments. The three of us—Nancy Seay, Jeffery Warnke, and Revathy Kumar—worked alongside Dr. Karabenick on this project for a long time. Each one of us benefitted from our association with him, both professionally and personally.

Jeffery Warnke: As I've reflected upon the news of Stuart's passing, he, along with Revathy, were central figures in my initiation into educational research and the academy. I was a graduate assistant on a research project in which he and Revathy were principal investigators, and it was in this role, he demonstrated a number of important lessons I have tried to emulate in my work.

Though he was at a point in his career where he was well-established and regarded, Stuart treated us grad students like colleagues with an amazing knack for humility and modesty as he mentored us into the role of researchers in education. As I teach research methods, I can hear his lessons imparted to recognize the limitations and nature of evidence and check my positionalities.

Maybe more than anything, I came to know him as a well-rounded and well-grounded human being who could talk about a wide range of topics and find ways to connect to a broad range of people. For me, it was his love of music, a shared politics, and in the last time I saw him as we shared a flight and a taxi ride to a conference, his welcoming of me into the club of senior men with beards.

Nancy Seay: I came to know Stuart as a student research assistant on a project where he was co-PI. One of my fondest memories is one of his holiday parties, attended by an eclectic group of scholars and researchers who had been involved in his various projects throughout the year. I was amazed that while he had given so much to our project, he was also simultaneously contributing to so many other important studies.

Recently, however, Stuart's scholarly work with self-regulated learning, especially in the area of help seeking, has taken on greater importance for me as I consider mechanisms to engage with my students and promote deep learning in remote spaces. I am grateful for the time I have spent with Stuart and his lasting impact on my life as an educator.

Revathy Kumar: Dr. Karabenick was my mentor, colleague, and friend – someone I always turned to for advice, both professional and personal. Working collaboratively with him on the Spencer project is one of the highlights of my professional career.

The project's goal was to examine ways in which schools can meet the challenges social inequalities pose for the education and well-being of cultural minority students and how schools, administrators, and teachers can promote an environment in which all students grow—intellectually, interpersonally, and socially.

We co-authored several articles that emerged from this project. Together we explored Arab-American adolescents' identity negotiations, caught as they were in the crossroads of ethnicity, religion, nationality, and the school cultural context. We examined the impact of teachers' implicit and explicit biases on their instructional practices.

Our last joint publication in *Contemporary Educational Psychology* in 2019, "Culturally inclusive and responsive curricular learning environments (CIRCLEs): An exploratory sequential mixed-methods approach," was a fitting culmination of our collaboration on the project. I would be remiss if I do not add that Stuart was particularly proud of the acronym (CIRCLEs) he coined during one of our regular monthly luncheon meetings at Panera.

As we share our fond memories of Stuart, we recognize how much we are indebted to him for enriching our personal and professional journey.

Jeffery Warnke is an Assistant Professor in the Division of Education at Walsh University. He teaches courses in the foundations of education and has research interests that span issues of democracy, citizenship, justice, culture, identity, and inclusion in education.

Nancy Seay chairs the Department of Sociology at Simmons College of Kentucky, where she has been a faculty member since 2017. Nancy currently coordinates community-based asset mapping research for the Kerner Commission 2.0 in Louisville, Kentucky.

Revathy Kumar is Professor of educational psychology at the University of Toledo. Her research focuses on social and cultural processes involved in constructing a sense of self and identity among adolescents and young adults in culturally diverse societies.

Kumar, R., Karabenick, S. A., Warnke, J. H., Hany, S., & Seay, N. (2019). Culturally inclusive and responsive curricular learning environments (CIRCLEs): An exploratory sequential mixed-methods approach. *Contemporary Educational Psychology*, *57*, 87-105.
https://doi.org/10.1016/j.cedpsych.2018.10.005

"Cultural inclusion, cross-cultural openness, and positive intergroup relationships are essential considerations as schools are becoming increasingly multicultural because of shifting demographic patterns in the U.S. We explored Arab/Arab-American (ArA), Chaldean (Chal), African American (AfA) and European American (EuA), student perspectives on Culturally Inclusive and Responsive Curricular Learning Environments (CIRCLEs) through the theoretical lenses of culturally relevant/sustaining pedagogy, social identity and social categorization theories, and the intergroup contact hypothesis utilizing an exploratory sequential mixed-method research design. In Phase I we conducted focus group interviews (N = 57) in 12 culturally diverse middle schools with 114 ArA, 41 Chal, 48 AfA, and 100 EuA students. Students discussed their school experiences focusing on interactions with teachers and peers, the curriculum, and school policies. Phase I informed the development of the CIRCLE measure in Phase 2. Multi-group confirmatory factor analysis (CFA) of CIRCLE items supported the generalizability of a hierarchical first and second order structure of the measure (CIRCLE) and its subscales across ArA (977), Chal (244), AfA (270), and EuA (1423) student groups. Analyses of the interviews and CFA results indicate that cultural self-other awareness and openness to different ways of thinking and being among teachers and students, through sensitively designed culturally inclusive curricula and school policies and programs responsive to student diversity is an educational imperative."

Barry J. Zimmerman Award for Outstanding Contributions

Stuart A. Karabenick: Mentor and Pioneer of Help Seeking Self-Regulated Learning Research

Kara Makara, *University of Glasgow*

Stuart Karabenick was my doctoral advisor and mentor during my time in the Combined Program in Education and Psychology at the University of Michigan from 2007-2014. After moving abroad for my current role at the University of Glasgow, we continued to keep in touch through video chats and his motivation lab mailing list. He was a supportive advisor who believed deeply in his students, and I am fortunate that he spent so much time to mentor me, offer feedback on my writing, support my professional development, and continue supporting me in my early career.

My research and teaching continue to be deeply impacted by Stuart's research on motivation and self-regulated learning. Like him, my research is multifaceted. I have explored academic help seeking, achievement goals, assessment, interpersonal connections, and cross-cultural comparisons, pulled together by a common strand of understanding how social interactions in educational settings influence motivation and learning.

I regularly re-read and continue to share his numerous books and studies on academic help seeking with my own students. I also deeply benefited from his work on measurement, from his paper on cognitive processing of self-report items and memories of the effort we would spend on survey development in our motivation lab.

Stuart's work continues to inspire subsequent generations of researchers. One of my doctoral students has completed a mixed-methods study examining cultural differences in academic help seeking among Chinese and British graduate students in the UK and factors shaping their help seeking behaviors and attitudes. I was pleased she had an opportunity to hear Stuart give his keynote at EARLI 2019 on Motivation and Self-Regulated Learning. I also advise two master's students this year who are conducting systematic literature reviews on academic help seeking, one examining qualitative research on academic help seeking and the other looking at research on socioeconomic status and academic help seeking.

More generally, my academic values have also been shaped by Stuart. His insatiable intellectual curiosity and excitement, openness to different theories and approaches in the fields of motivation and self-regulated learning, and dedication to mentoring are qualities I hope to emulate. He was very good at making connections, whether it be bringing together different people or different ideas.

Stuart would share stories of the history of the field and encourage our lab group to read and deeply discuss a wide range of different papers and book chapters. He invited many scholars, from the US and internationally as well, to meet with us. Stuart also taught me to reframe challenges as opportunities for learning, whether it be the challenges of running a school-based study, pursuing interdisciplinary learning, or academic writing.

I remember one of my first papers I worked on with Stuart—he must have returned it a dozen times with suggestions and corrections. I learned through this experience that feedback is valuable and academic writing is a skill you have to develop. He also demonstrated kindness—regularly treating our motivation group to lunch and welcoming us into his home, giving us opportunities to meet his wife, Julie, to meet informally with visiting scholars, and to relax and celebrate together.

Stuart played an important role in advancing research on teaching and learning and through supporting other researchers. It comforts me to know that Stuart's legacy will live on through the memories of his family and friends, through his successors' and collaborators' research, and through future generations of scholars who discover his work and continue to learn from him.

Makara, K., & Karabenick, S. A. (2017) Longitudinal high school research revealed: Using surveys to assess student motivation and social networks. *SAGE Research Methods Cases Part* 2. SAGE. (https://doi.org/10.4135/9781473977747)

"This case describes a longitudinal study of high school students' academic and social motivation and social networks at school. When working together as a PhD student and advisor, we built a university-school partnership and conducted a student survey project that spanned five years. A portion of the project data was used for a dissertation on students' social networks and their academic and social motivation. The case study describes the project context and development of the partnership, the research design and procedure, and an overview of the analysis and dissemination of complex data to school staff. Particular attention is paid to the use of social network analysis (SNA) as a methodological tool for assessing social relationships in schools. The longitudinal nature of the study required maintenance of a sustainable relationship with the school…"

Kara Makara is a Lecturer based in the School of Education at the University of Glasgow in Scotland, UK. Her research focuses on understanding how students' social interactions in educational settings influence the development of their motivation and learning.

Gonida, E. N., Karabenick, S. A., Makara, K. A., & Hatzikyriakou, G. A. (2014). Perceived parent goals and student goal orientations as predictors of seeking or not seeking help: Does age matter? *Learning and instruction, 33,* 120-130. https://doi.org/10.1016/j.learninstruc.2014.04.007

"To study the contribution of perceived parent achievement goals to students' attitudes towards academic help seeking, 4th, 6th, 7th, and 9th grade students in Greece (n = 712) reported perceptions of their parents' achievement goals, personal achievement goal orientations, and help-seeking beliefs and intentions. Students' mastery goal orientation positively predicted their help-seeking attitudes (perceived benefits and intentions to seek help) and negatively predicted their help-seeking avoidance attitudes (perceived costs and intentions to avoid seeking help), whereas performance-avoidance orientation directly predicted their help-seeking avoidance attitudes. Multiple-group path analysis indicated that perceived parent goals predicted student help seeking and help avoidance attitudes through students' own achievement goal orientations…"

Barry J. Zimmerman Award for Outstanding Contributions

Stuart A. Karabenick: A Self-Regulated Learning Scholar and an Activist Concerned with Equity

Jeffrey Albrecht, *University of Michigan*

Jeffrey Albrecht graduated from the University of Michigan's Combined Program in Education and Psychology in 2019 as one of Stuart's last two graduate students. Jeffrey is now a Community School Coordinator for the Transforming Research into Action to Improve the Lives of Students (TRAILS) program at the University of Michigan Department of Psychiatry.

Stuart was a true motivation scientist (Pintrich, 2003) who conducted empirical, interdisciplinary, use-inspired basic research. The first time we spoke was when he called to let me know that he wanted to recommend me for admission to the Combined Program in Education and Psychology at the University of Michigan.

Before recommending me, Stuart called to personally verify that I would pursue an original, interdisciplinary, and intertheoretical research program committed to finding solutions to both practical and theoretical problems.

I wanted to study psychological measurement and expand my research on educational relevance to identify interventions to motivate students at risk for high school dropout, while also using my research as a service to support underserved students, which I was able to do with Stuart from 2013-2019.

What initially brought Stuart and me together was our mutual interest in psychological measurement, especially the challenge of establishing construct validity, (i.e., collecting evidence that a psychological measure captures the phenomenon that it claims to assess). I was focused primarily on quantitative methods for examining validity until I read *Cognitive processing of self-report items in education research: Do they think what we mean?* by Stuart and his colleagues (2006).

In that article, they introduced the concept of cognitive validity, i.e., whether survey respondents process and interpret assessment and survey items consistently with the designer's intended meaning, and proposed using cognitive interviewing as a confirmatory, rather than exploratory, method for testing the validity of survey items. Since then, I have conducted dozens of cognitive interviews with adolescents, college students, and university faculty with surveys assessing motivation, self-regulation, and epistemological beliefs, and every time, it has transformed the ways I think about the constructs, the cognitive processes, and the language we use to measure psychological phenomena.

Through cognitive interviews, I learned more about communication and social science complexities than through any other activity. Every time, my assumptions about what surveys assess were exposed and shattered, leaving me keenly aware of the limitations of prominent psychometric approaches to scale validation and of my knowledge, which Indeed, Stuart believed that confronting evidence that challenges our theories recognized is one of the most important scholarly experiences.

Stuart's work impressed upon me the importance of examining self-regulation in research on learning and motivation and got me thinking about the role of self-regulated learning and the motivation for self-regulated learning in several prominent relevant interventions.

In my dissertation (Albrecht, 2019), I proposed the educational relevance appraisal model, which posits that students use elaboration and value enhancement strategies to influence their relevance beliefs and self-regulate their learning and motivation. I found evidence supporting this model in two studies with over 800 racially and economically diverse students at a rural fringe high school in Michigan.

In his personal and professional lives, Stuart was an activist concerned with equity. He strongly encouraged and supported my pursuit of applied research in students and educators' service at an underserved high school, which led to my current work as a community school coordinator.

After graduation, Stuart and I met regularly for lunch to discuss work and life. He was a dear friend and transformative mentor whose wisdom will always inform my work and significant life decisions.

Albrecht, J. R., & Karabenick, S. A. (2018). Relevance for learning and motivation in education. *The Journal of Experimental Education, 86*(1), 1–10. https://doi.org/10.1080/00220973.2017.1380593

"Questions of educational relevance have surfaced frequently among educators, philosophers, and social scientists for centuries. Recently motivation scientists have reinvigorated such questions and are directing considerable empirical attention to develop interventions to help students make connections between what they do in school and their lives. These intervention efforts have had mixed results, and in response researchers have pointed to the need for increased clarity around the construct of relevance: what it means and how it should theoretically relate to academic motivation and achievement. In this introduction, a brief history of interdisciplinary perspectives on educational relevance and overview of emerging views among researchers in education and psychology."

Outstanding Poster Award

Measuring Executive Function Skills: Leveraging Learners' Beliefs about Strategic Processes to Inform Assessment of Self-Regulated Learning

D. Jake Follmer, *West Virginia University*

D. Jake Follmer is an Assistant Professor in the Department of Counseling and Learning Science at West Virginia University. His current research examines text-embedded strategies and supports to promote learners' comprehension, evaluation, and integration of informational texts.

I am honored to have received the 2021 AERA SSRL SIG Outstanding Poster Award. This award reflects an important accomplishment in my developing research program, and I am appreciative of the SSRL SIG Poster Award Committee for their consideration.

Research in self-regulated learning (SRL) is replete with studies aiming to understand, assess, and promote learners' efforts to support their learning success. In many ways, traditional methods of assessing metacognitive and strategic processes, such as self-report measures, are in abundance and have been widely used (Winne & Perry, 2000).

Notably, while executive functions (EF/EFs) have been shown to contribute meaningfully to learners' metacognition and strategy use, their theoretical positioning in SRL models remains underarticulated. Increasingly, there have been calls for increased attention to the neural mechanisms that underly metacognition (e.g., Azevedo, 2020) and, more specifically, to how EFs promote learners' metacognitive and self-regulatory processing (Roebers, 2017).

Accordingly, my work – centered on this project – was based on several assumptions:

- to date, EFs have primarily been assessed through either task-based (so-called direct) or inventory-based (indirect) measures;
- existing indirect measures of EF are not firmly grounded in theories of SRL, have a strong clinical focus, and are largely commercially available;
- there is value in the use of a learning-centered assessment of learners' beliefs about their EF skills, both in terms of potential for theoretical advancement but also in terms of leveraging learners' beliefs to support the development of more holistic and multidimensional assessments of self-regulatory processing; and
- continued study of the role of EFs in learners' SRL may instigate advances in our understanding of the development, modeling, and instruction of metacognition and metacognitive regulation.

This research project sought to develop a brief, learning-centered, and empirically available indirect measure of learners' reported EF, titled the Executive Functions for Learning Inventory (EFLI). The inventory was developed to capture information about the following EFs: inhibitory and attentional control; shifting; updating; planning; organizing; and emotion regulation.

Objectives

To evaluate and support the proposed use of the EFLI, we conducted four studies on distinct samples of learners and examined: response processes associated with the completion of the EFLI based on eye-tracking methodology (Study 1a; *N* = 5); the internal structure of the instrument based on second-order confirmatory factor analysis (Study 1b; *N* = 390); the ability of the EFLI to predict criterion measures of EFs, learning beliefs, and strategy use among college learners in the United States (Study 1c; *N* = 30); and the ability of the EFLI to predict effort and metacognitive self-regulation among college learners in the United Kingdom (Study 1d; *N* = 150).

Theoretical Framework

EF has been identified as a multifaceted regulatory construct that subserves learners' self-regulation (e.g., Garner, 2009; Hofmann et al., 2012) and contributes meaningfully to SRL, in part through performance and regulation of tactics and strategies (Follmer & Sperling, 2016; Winne, 1996). Based on recent research, in this investigation, we positioned EF as a regulatory construct facilitative of and necessary for learners' metacognitive control and self-regulatory processing (cf. Roebers, 2017).

In accord with our theoretical and empirical focus, our proposed use of the EFLI emphasized the specific roles of EFs in facilitating learners' goal-oriented behavior, self-regulated learning, and learning task completion (Borkowski & Burke, 1996; Garner, 2009; Winne, 1996; Zimmerman, 2008) among secondary and, in particular, post-secondary learners.

Results

Analyses revealed a number of significant findings:

1. participants (Study 1a) demonstrated consistent processing of the inventory, with similar fixations over inventory items and fewer regressions to both scale and instructions across completion of the inventory;
2. scores on the inventory (Study 1b) aligned with a second-order structure in which first-order factors assessed inhibitory and attentional control (F1), shifting (F2), updating (F3), planning (F4), organizing (F5), and emotion regulation (F6) and a second-order executive functioning factor explained variation in first-order EF factors;
3. scores on the EFLI did not vary based on gender or class standing and explained a significant amount of the variance in related measures of learners' EF and strategy use (based on college learners in the US); and
4. scores on the EFLI uniquely predicted scores on effort and metacognitive self-regulation compared with an existing, clinically-oriented EF measure (based on college learners in the UK).

Implications

Collectively, these studies suggest that the EFLI may serve as a valuable and empirically-available instrument for gauging secondary and college learners' beliefs about their EFs and how EFs support strategy use and other SRL skills (Dawson & Guare, 2010; Follmer & Sperling, 2016; Garner, 2009). While these findings show promise, future research is also needed to provide an ongoing evaluation of the ability of the EFLI to predict learners' task-oriented and regulatory behaviors through authentic measures, including, as examples, behavioral traces, direct observations, and microanalytic protocol-based measures (e.g., Cleary et al., 2012; Perry & Winne, 2006).

Current Research

Current research projects that I'm working on include:

- ⇒ implementing scalable, text-embedded EF supports designed to promote students' comprehension-integration of complex and conflicting informational texts;
- ⇒ promoting at-risk college learners' study calibration and self-regulation skills through reflective and metacognitive scaffolds;
- ⇒ developing task-based and microanalytic methods to assess learners' monitoring and use of their EF skills during learning tasks;
- ⇒ understanding the supports and barriers that rural educators experience in promoting P-12 students' self-regulation skills; and
- ⇒ designing and evaluating a model of socially-regulated lesson study to support secondary instructional design and revision.

EFs reflect a long-studied regulatory construct that has more recently been implicated in both learning and SRL. One goal of my work in developing this inventory was to situate future inquiry that aims to:

- ♦ leverage learners' beliefs about their EFs as entry points for intervention work intending to promote EF use in context;
- ♦ incorporate learners' reported EF into a broader, multidimensional approach to the assessment of EF and SRL, including microanalytic protocols, that extends beyond traditional direct-indirect methods of assessing EFs; and
- ♦ provide the opportunity for examinations of how learners evaluate their EF use – in the task and over time – and the factors that impinge on their engagement of EF across learning contexts.

References are available upon request from the author (djakefollmer@gmail.com)

Outstanding Poster Award

Selected Publications on Self-Regulated Learning

D. Jake Follmer, *West Virginia University*

Follmer, D. J. (2018). Executive function and reading comprehension: A meta-analytic review. *Educational Psychologist*, *53*(1), 42-60. https://doi.org/10.1080/00461520.2017.1309295

"This article presents a meta-analytic review of the relation between executive function and reading comprehension. Results (*N* = 6,673) supported a moderate positive association between executive function and reading comprehension (*r* = .36). Moderator analyses suggested that correlations between executive function and reading comprehension did not vary systematically by age range, type of executive function measure used, type of reading comprehension measure used, or whether the study was a dissertation or a published article but did vary by type of executive function examined in the studies. Studies linking specific executive functions with reading comprehension are then reviewed. The article concludes by discussing implications for a theoretical model of reading comprehension as well as for future research."

Follmer, D. J. (2020). Examining the role of calibration of executive function performance in college learners' regulation. *Applied Cognitive Psychology*. https://doi.org/10.1002/acp.3787

"This study examined learners' calibration of their executive function performance and the contribution of learners' calibration accuracy to their self-regulated learning. A measure of calibration bias of EF performance is introduced and an evaluation of the utility of the measure is presented. Direct and indirect measures of EF, an assessment of students' metacognitive strategy use, and academic achievement information were obtained from a sample of 189 college learners. Findings revealed that students who were overconfident in their appraisal of their EF performance obtained significantly higher scores on a criterion self-report measure of EF. Evaluation of hierarchical regression analyses revealed that learners' ability to monitor their EF performance predicted criterion measures of EF and metacognitive strategy use, and accounted for unique variance in both outcomes after controlling for their academic achievement. The utility of this calibration bias measure as well as implications for future research are discussed."

Follmer, D. J., & Clariana, R. (2020). Predictors of Adults' Metacognitive Monitoring Ability: The Roles of Task and Item Characteristics. *The Journal of Experimental Education*, 1-23. https://doi.org/10.1080/00220973.2020.1783193

"Learners' monitoring judgments during reading are based on a variety of cues, and the roles of task features in promoting and constraining judgment accuracy are beginning to be understood. This work examined task and item characteristics influencing adults' monitoring of performance during reading and study tasks. In Study 1a, adults (*N* = 242) read an expository text, provided text ratings, completed comprehension items, and provided confidence judgments during testing. Readers' text complexity ratings predicted their item-level confidence, while their ratings of interest and cohesion predicted their bias scores. In Study 1b, the roles of linguistic features in predicting item-level monitoring estimates were examined using the comprehension items (item *n* = 23) from Study 1a. Selected item features, including length, ease, density, concreteness, and meaningfulness, were examined. Item ease significantly predicted item-level bias, while ease, density, concreteness, and meaningfulness predicted item-level confidence. Study 2 (*N* = 68) applied similar procedures to examine the effect of item feedback on the contributions of item features to learners' monitoring. Participants were randomly assigned to one of two item feedback conditions. Item density emerged as a significant predictor of item-level confidence, but only for those who first received item-by-item correctness feedback followed by massed feedback."

Follmer, D. J., & Sperling, R. A. (2019). Examining the role of self-regulated learning microanalysis in the assessment of learners' regulation. *The Journal of Experimental Education*, *87*(2), 269-287. https://doi.org/10.1080/00220973.2017.1409184

"We examined the degree of convergence among self-regulated learning microanalysis, measures of metacognitive monitoring, and a self-regulated learning questionnaire during reading. Participants' reported strategy use during reading, as measured by self-regulated learning microanalysis, was significantly related to scores on a self-regulated learning questionnaire. Self-monitoring on the microanalytic protocol was significantly related to a measure of metacognitive monitoring as well as to participants' item-level confidence judgments. Participants who made strategy attributions for performance tended to have higher scores on the measure of reading comprehension. Strategic planning and strategy use during reading of the text also predicted comprehension. Implications and future directions for the study of self-regulated learning microanalysis are discussed. "

Follmer, D. J., Sperling, R. A., & Suen, H. K. (2017). The role of MTurk in education research: Advantages, issues, and future directions. *Educational Researcher*, *46*(6), 329-334. https://doi.org/10.3102/0013189X17725519

"The advent of online platforms such as Amazon's Mechanical Turk (MTurk) has expanded considerably researchers' options for collecting research data. Many researchers, however, express understandable skepticism of the viability of using platforms such as MTurk. In this article, we provide a background on the use of MTurk as a mechanism for collecting research data. We then review what is currently known about the advantages and issues associated with using MTurk and highlight important areas for future research. We conclude by discussing implications of the use of crowdsourcing platforms such as MTurk for education research."

Follmer, D. J., & Sperling, R. A. (2019). A latent variable analysis of the contribution of executive function to adult readers' comprehension of science text: the roles of vocabulary ability and level of comprehension. *Reading and Writing*, *32*(2), 377-403. https://doi.org/10.1007/s11145-018-9872-3

"Emerging evidence suggests that executive function plays an important role in adult readers' understanding of text. This study examined the contribution of executive function to comprehension of expository science text among adult readers, as well as the role of vocabulary ability in the relation between executive function and text comprehension. The roles of additional reader characteristics, including age, reading time, prior knowledge, and vocabulary ability, in comprehension were also examined. Using structural equation modeling, a latent executive function factor significantly predicted comprehension after accounting for age, reading time, prior knowledge, and vocabulary ability. Vocabulary ability mediated the relation between executive function and both lower-level and higher-level reading comprehension. Executive function contributed more strongly to lower-level compared with higher-level comprehension of the text. Implications for future research are discussed."

Graduate Student Research Award

Is Academic Help-Seeking Associated with College Student Achievement? A Meta-Analysis

Cassandra Gonzales, *Texas State University*

Cassandra Gonzales is a doctoral student in the Developmental Education Graduate Program (learning support concentration) at Texas State University, and she is currently working on her dissertation. Born and raised in South Texas, Cassy is a first-generation college student and earned her master's degree in counseling psychology from Texas A&M University-Kingsville.

I am truly honored to receive a Graduate Student Research Award from the SSRL SIG. As a doctoral student in developmental education, my passion is to understand how best to support college students in navigating their learning environment and attaining their academic goals. I want to extend my sincerest gratitude for the award to the committee, chair, and entire SSRL SIG, as well as to my co-authors, my doctoral advisor (Dr. Carlton J. Fong), and all my colleagues and mentors at Texas State University.

Objective

Learning is hardly ever accomplished alone. Experiencing difficulty throughout the learning process is virtually inevitable for nearly all students, and seeking out help is often required. More specifically, we situate our investigation in postsecondary learning contexts, in which adjusting to one's educational environment and self-regulating learning resources are more salient compared to primary and secondary school settings (Knapp & Karabenick, 1988).

College can be fraught with academic difficulties, particularly as students transition into a new learning environment and are required to navigate relatively independently. Thus, there is a clear need for continued research into the help-seeking process so that college campuses maximally support students' academic attainment.

Although most motivated learning strategies tend to be positively associated with student performance, help-seeking is a weak correlate to student outcomes, such as grades or GPA (Credé & Phillips, 2011). Some have suggested that help-seeking is curvilinearly related to academic achievement, so that high achievers do not actively seek help, but for those with lower achievement, help-seeking may be beneficial (Karabenick & Knapp, 1988).

Moreover, the quality and characteristics of help-seeking behaviors, goals, and attitudes are often overlooked but may illuminate under what circumstances help-seeking can be maximally productive for students' academic performance. To examine the extant literature on this topic and explore discrepancies in the literature, we meta-analytically synthesized correlations of help-seeking and college student academic achievement.

Theoretical Framework

Grounded in the literature on self-regulated learning, academic help-seeking refers to the motivated process of recognizing a need for assistance and seeking it (Karabenick, 2003). College students can seek academic help from formal sources, such as instructors or institutional services, and informal sources, such as peers or internet searches. The source of help varies, but the goal of help-seeking can be operationalized along a continuum from non-adaptive to adaptive. A specific form of adaptive help-seeking is instrumental help-seeking (instrumental goal), in which mastery-oriented students request help that provides support, such as hints so that a specific problem can be solved independently.

Numerous research studies have found that adaptive help seeking is an active strategy linked with academic success. Non-adaptive help-seeking, on the other hand, primarily involves a student who avoids help-seeking even when they need assistance. In addition to avoidant help-seeking, when students request help but intend for someone else to solve the problem, scholars have identified this behavior as executive help-seeking or expedient goal help-seeking.

Data Sources/Results

After a rigorous retrieval process, screening, and coding studies and their effect sizes, our final pool that met inclusion criteria was 108 studies using college student samples (N = 34,941). We extracted 238 effect sizes from 119 unique postsecondary student samples on seven types of help-seeking.

We used multivariate random effect meta-analysis with robust variance estimation, with effect sizes nested within studies. For general help-seeking (mostly measured by MSLQ), the weighted average effect size was r = .056 (95% CI [.03, .08]). To further probe help-seeking sources, the correlations between achievement and formal and informal help-seeking were analyzed separately, but only formal help-seeking was significant (r = .118).

The average weighted correlation for instrumental help-seeking and achievement was significant and positive: r =.120 (95% CI [.06, .18], 22 samples). Meta-analytic findings revealed that college student achievement was negatively and significantly correlated with forms and perceptions of nonadaptive help-seeking: avoidant help-seeking (r = -.176; 29 samples), executive help-seeking (r = -.092; 14 samples), and help-seeking threat (r = -.056; 15 samples).

In addition, the type of achievement outcome significantly moderated the relationship between instrumental help-seeking and academic achievement. With GPA as the reference group, when the outcome variable was measured using tests, correlations were smaller, which suggested that the relationship between instrumental help-seeking and academic performance was larger for GPA outcomes (compared to test outcomes).

Study Significance

Our study is significant because it explains how studies that do not measure the quality of the help-seeking behavior but simply the frequency or degree of help-seeking may underestimate the benefit of this self-regulated strategy.

My Current Research

I am interested in holistically investigating how Latinx college students' community cultural wealth (CCW; Yosso, 2005), sense of belonging, and campus racial climate relate to their help-seeking behaviors and perceptions and academic achievement. Since Latinx students are much more likely to be the first in their family to attend college (Excelencia in Education, 2019), they may experience difficulty navigating an institutionalized college environment that often lacks the cultural congruity needed to validate their college participation (Gloria et al., 2009).

This study may clarify how educational stakeholders can contribute to support Latinx students' academic success by examining the role that sense of belonging, campus racial climate, and cultural wealth has on Latinx students' help-seeking behaviors and perceptions and their overall academic achievement.

Completing my research has felt pretty daunting at times. Therefore, self-regulated strategies such as time management and motivational regulation help me continue my research. Breaking down my work into phases helps plan and set goals for completing each aspect of my research in a timely manner, and of course, rewarding myself when I accomplish them!

Receiving this distinction for my work on academic help-seeking and achievement for college students is very meaningful, as it validates the importance of my scholarly endeavors and the legacy of the late Dr. Stuart Karabenick, who has inspired my studies. This award will fuel my motivation to continue this line of research in my dissertation and beyond!

References are available upon request from the author (cassy.gonzales@txstate.edu)

Graduate Student Research Award

Insights from Shared Regulation of Learning in an Immersive Museum Simulation

Rinat Levy Cohen, *Fordham University*

I am honored to receive the Graduate Student Research Award (GSRA) from the Studying and Self-Regulated Learning SIG of AERA. I have spent the past five years working passionately to develop my research literacy skills. It is heartwarming to realize that the hard work is beginning to pay off. I am the first person in my family to attend college, and I would not have achieved this accomplishment without the endless support from my family and mentors.

I am lucky to have incredible mentors. At Fordham, my mentor, Dr. Akane Zusho, has inspired me to pursue educational psychology and has transformed me into a critical thinker and researcher. Working with Dr. Leilah Lyons at the New York Hall of Science (NYSCI) exposed me to the invaluable insights gained from user-centered design processes and interdisciplinary research teams. I also want to thank my co-authors, Aditi Mallavarapu, Dr. Leilah Lyons, & Dr. Steven Uzzo, for their invaluable partnership.

Introduction

This work is part of a larger project to design a digital, data-driven dashboard for the Connected Worlds exhibit at NYSCI. The exhibit allows visitors to engage in collaborative problem solving, and it became apparent that they needed support with managing the problem-solving process as a group. Designing a dashboard that would bolster socially shared regulation of learning (SSRL) (Järvelä & Hadwin, 2013) required us to understand how visitors work with each other within the exhibit.

Theoretical Background

In an SSRL group, members co-construct task perceptions, plans, and goals; adapt plans due to changes in the environment; and evaluate their progress towards their goals (Järvelä & Hadwin, 2013; Panadero & Järvelä, 2015). This framework proposes three levels of learning regulation (self-regulation, co-regulation, and shared-regulation) that can occur simultaneously. Phases of SSRL inform the design of scaffolds in computer-supported collaborative learning (CSCL) settings. For example, supports have been designed to facilitate shared planning and evaluation (e.g., Järvelä et al., 2015). This paper demonstrates that when a learning environment is highly immersive and includes many learners, SSRL models do not appear to fit seamlessly. We developed a modified coding scheme that builds on and extends SSRL to immersive CSCL environments. The following questions guided our study: *How do groups regulate their shared learning in an immersive digital learning environment? What SSRL processes and sub-processes come into play?*

Methods

Setting & Sample

Connected-Worlds is an immersive multi-user ecological simulation. Visitors need to work collaboratively to help their biome (Desert, Grasslands, Jungle, and Wetlands) thrive. A thriving biome has sufficient water supply and plants. Individuals interact with the exhibit by diverting the water flow to their biome and planting seeds. The water supply is available from three sources (Waterfall, Reservoir, and Mountain Valley) and can be diverted to each biome by dragging "logs" around the floor of the exhibit (see Figure). A volunteer group (*N*=26), new to the simulation, was recruited (22-57 years of age, *M*=33).

Procedure & Measures

Participants were randomly divided into two separate 30-minute sessions (*N*= 12, and *N*=14) and again into one of four smaller teams (one team per biome). They wore digital lapel recorders to capture their conversations. The data from the recorders were transcribed and segmented into speaking turns. Only the speaking turns of the person wearing that recorder were coded. Initial data analysis applied *a priori* codes taken from the self-regulated learning (SRL) and SSRL literature (e.g., Järvelä & Hadwin, 2013; Winne & Hadwin, 1998) and further elaborated through multi-cycle inductive coding (Miles et al., 2014).

Preliminary Findings

All of the literature-derived codes were represented in our corpus (e.g., monitoring). We found, however, that the traditional definitions for the more goal-oriented *planning* and *evaluating* problem-solving phases did not quite fit within our data and context. They needed to be modified to embrace both *tactical* and *strategic* granularities of planning and evaluation acts. For example, participants proposed plans with larger, strategic goals (e.g., "Let us set up an irrigation system") but also proposed more immediate, tactical plans (e.g., "Let us shunt the reservoir water over there"). The information users would need to support these regulation plans would be quite different.

Additionally, we found that the existing SSRL framing of the social mode of regulation (self-regulation, co-regulation, and shared regulation) did not adequately capture large-group nuances. Instead, we needed to distinguish between the *regulated entity* and the *regulation orientation*. For example, a person can choose to regulate the actions of another teammate (regulated entity:*companion-you*) in the interest of serving their own goals (regulation orientation:*own*), in the interest of helping the other person meet their own goals (regulation orientation:*other*), or in the interest of serving shared goals (regulation orientation:*shared*). Each of these has different implications for the design of software supports.

Conclusion

Through the lens of our coding scheme, we have been able to infer several preliminary findings of SSRL in a highly immersive environment, including large numbers of learners. Further, understanding the process of SSRL in such settings can be enhanced by the theory of distributed cognition (Hollan, Hutchins, & Kirsh, 2000). Distributed cognition recognizes that the mechanisms of cognition (e.g., memory and monitoring) extend beyond a single person's brain, encompassing the gestalt of people and objects playing a role in the joint endeavor (Hollan et al., 2000). We expect that via our analysis, we will link standard SRL and SSRL activities to how distributed cognition views how groups manage their activities (Artman & Garbis, 1998).

Doctoral Research

I am currently a doctoral candidate in the Contemporary Learning and Interdisciplinary Research (CLAIR) program at Fordham University. My dissertation research examines adolescents' help seeking intentions within interactive learning environments. More specifically, I examine how individual differences between students (e.g., gender and learning goals) impact online help-seeking intentions and, in turn, the kind of digital feedback they prefer.

References are available upon request from the author (rlevycohen@fordham.edu)

Rinat Levy Cohen is a PhD Candidate in Learning Sciences at Fordham University. Her research interests lie at the intersection between technology, cognition, and achievement motivation.

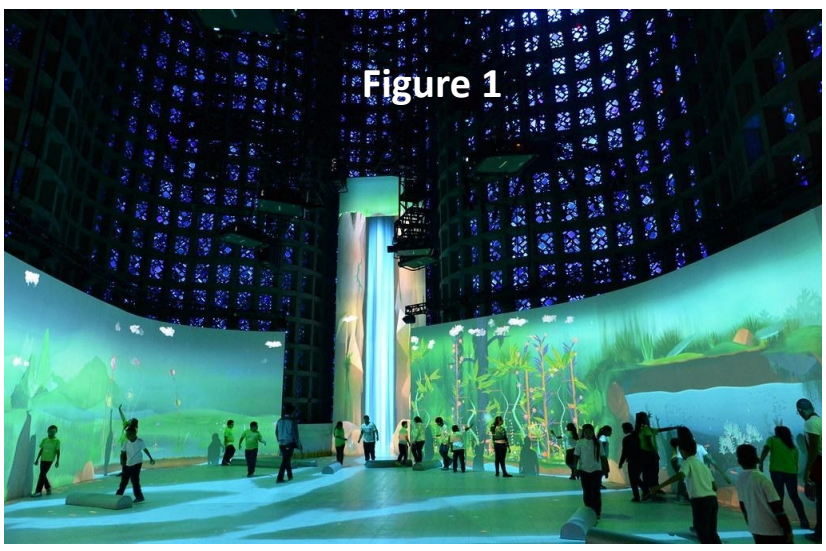


Figure 1

Gratitude and Self-Regulated Learning Research Journey

Melissa Quackenbush, *Old Dominion University*

Quite simply, I am humbled to receive this year's AERA SSRL SIG Graduate Student Research Award. The receipt of this award is a testament to the power of advising, mentoring, and lifelong learning. My research was supported by the incredible expertise of my advisor, Linda Bol, my SSRL SIG mentor, Timothy Cleary, and the Old Dominion University EPPE community, especially Dr. Tony Perez and Joanna Garner. Without the generous support of these individuals, I would not have had the privilege of embarking on this research project's journey and fueling my passion for studying the phenomena of lifelong learning and enjoying it in the process. To each of you, my lifelong learning role models, thank you for your time, efforts, and investment in my growth. This award is as much yours as it is mine.

Research Objectives

The purpose of this study was to examine the effects of instructional coaching on teachers' self-regulated learning (SRL), their self-efficacy for teaching, and perceived instructional effectiveness in computer-supported collaborative learning (CSCL) environments. The following research questions were addressed:

1. What is the impact of instructional coaching on teachers' SRL, self-efficacy for teaching, and perceived instructional effectiveness in a CSCL environment when compared by training focus (e.g., CSCL only versus CSCL and SRL)?
2. How do teachers in this study use SRL skills for their learning and instruction?

Theoretical Framework

To help teachers talk about practices that reflect their tacit understandings of how to promote SRL in CSCL contexts, explicit scaffolding is needed (Butler et al., 2004; Perry et al., 2007; Perry et al., 2006). Questions following SRL strategies, including asking process and metacognitive questions, prompt transfer and promote discussion, reinforcement, and transfer of SRL skills (Perry et al., 2007; Tillema & Kremer-Hayton, 2002).

Teacher SRL skill training in CSCL environments requires learning and practice opportunities for autonomy, goal setting, metacognition, self-evaluation, and self-reflection (Buzza & Allinotte, 2013; Ganda & Boruchovtich, 2018; Kramarski & Michalsky, 2015; Perry et al., 2006; Tillema & Kremer-Hayton, 2002). In addition, teacher training provides educators with opportunities to calibrate their self-efficacy beliefs, maintain their concentration and motivation as professionals, manage their time, and better control their emotions throughout the learning process (Ganda & Boruchovitch, 2018).

Data Sources

As pretests of teachers' SRL, self-efficacy for teaching, and perceived instructional effectiveness in a CSCL environment, all participants completed the Online Self-Regulated Learning Questionnaire, the Online Teachers' Sense of Self-Efficacy Scale, and the K-12 Online Teachers' Knowledge Survey.

Intervention. Based on a review of literature on teacher SRL training (Bol et al., 2016; Leidinger & Perels, 2012; Ness & Middleton, 2012), a three-week instructional coaching intervention was developed for all participants to receive weekly training in a CSCL environment for approximately one hour (Dignath & Büttner, 2018; Perry et al., 2008; Willems et al., 2019).

Interview. Adapted from Spruce and Bol's (2015) interview protocol measuring teachers' knowledge and application of SRL, the interview questions were designed in concurrence with the three phases of Zimmerman's SRL model (2000). The interview format was semi-structured, allowing for the follow-up to standard questions with one or more individually tailored questions to get clarification or probe a participant's reasoning (e.g., elaboration, examples; Leedy & Ormrod, 2019).

Melissa Quackenbush, PhD, lives outside NYC with her husband and two children, Myles (10) and Emery (3). She is the District Humanities Supervisor at Paramus Public Schools, and Melissa maintains her research and consulting work in her spare time.

Results

Quantitative Data. All participants showed significant gains from pre- to post-testing on teachers' SRL, self-efficacy for teaching, and perception of instructional effectiveness measures. However, the difference between group conditions (e.g., comparison versus treatment) was not statistically significant.

Qualitative Data. Striking differences and similarities between groups emerged from interview participants' responses to questions about using SRL skills in their learning and instruction. By comparing the similarities and differences between interview participants' responses by group conditions, the results highlight contextual factors impacting how teachers in this study use SRL skills in CSCL environments.

In terms of differences, teachers in the treatment group described their SRL skill use in their learning and instruction as externally focused, whereas teachers in the comparison group described their SRL skill use in their learning and instruction as internally focused. Additionally, teachers in the treatment condition described their SRL skill use in their learning and instruction with greater specificity when compared with teachers' responses from the comparison condition. The instructional coaching group condition implicitly encouraging SRL may have contributed to this result.

While differences were observed in teachers' responses to questions about their goal setting, motivation, and self-evaluation, there were similarities between groups, especially regarding SRL use in their instruction. Teachers' descriptions about SRL use in their instruction addressed defining goals and supporting students' plans for learning using schedules, feedback, and empowerment. Furthermore, teachers in both group conditions emphasized validating students' effort during their learning and providing self-reflection time. Lastly, teachers' descriptions of their SRL skill use in their learning and instruction increased in frequency from session one to three of the instructional coaching intervention for participants in both group conditions.

Significance of the Study

Determining how teachers develop awareness and apply SRL skills in their learning and instruction may aid K-12 educators' practices for professional development, curriculum design, and day-to-day operations. The results from this study support the practice of instructional coaching as a plausible support for teachers' application of SRL skills in their learning and instruction in CSCL environments, as noted in prior research on the impact of instructional coaching on K-12 teachers' knowledge and practice (Desimone, & Pak, 2017; Neuman & Cunningham, 2009; Teemant et al., 2011).

Imbedding SRL skills in curriculum design practices allows teachers to become more aware of their SRL skills and explicitly teach students SRL skills during instruction (Cleary, 2018). In this study, teachers frequently described their SRL behaviors in relation to the structures established by their administrators (e.g., online class meeting schedules, collaborative lesson planning time and tools, feedback surveys). When these structures were well-developed and communicated by school leaders, teachers described SRL supports specifically as noted in themes in previous studies examining teacher effectiveness (Basileo & Marzano, 2016; Hattie, 2016).

Prior research demonstrates the necessity of SRL skills in CSCL environments (Järvelä & Hadwin, 2013; Winters et al., 2008). Therefore, as K-12 teachers prepare to deliver instruction in CSCL environments, this study's results on practices in K-12 school settings promote teachers' SRL, self-efficacy for teaching, and perceived instructional effectiveness in CSCL environments.

Current Research Projects and Methods

I am involved in three research projects at this time. As an independent contractor, I am supporting equity assessments at two public school districts. As the Supervisor of Humanities at Paramus Public High School, I am collecting data on middle and high school teachers' perceptions of at-risk students' SRL in virtual learning environments to support the development of a district-wide intervention strategy.

Lastly, for fun, I am supporting a study of special education students' academic achievement in resource room settings. I use mixed methods for these research projects, including document review, interviews, focus groups, descriptive and inferential statistics, and correlational analysis.

Conclusion

The opportunity to share my research and passion for supporting teachers' SRL through receiving this award is a gift I am very grateful to receive. My post-doctoral research aspirations include exploring how SRL strategies support effective K-12 learning environments, particularly in CSCL contexts. Again, many thanks for this special recognition.

References are available upon request from the author (mquac001@odu.edu)

Harnessing User Data to Investigate University Students' SRL

Joseph Tise, *The Pennsylvania State University*

As a researcher just beginning my journey, I sometimes find it challenging to view my work without rose-colored glasses. I easily find fascination and importance in my research, but I am not always confident that others do! I am whole-heartedly honored and appreciative to be awarded the *Graduate Student Research Award* this year. Such an award provides me with (at times, much needed) validation that I must be doing something that others find interesting. No person is an island, and that maxim is no more valid anywhere than in this awarded research paper.

Three co-authors, Rayne Sperling, Ying Wang, and Jennelle Malcos, helped me conceptualize, critique, analyze, and refine this work to its present form. I sincerely thank them for their essential contributions to this research and continued support/encouragement.

Research Description

Self-regulated learning (SRL) is imperative in post-secondary environments (Ewijk et al., 2015; Fabriz et al., 2014), especially given the recent unprecedented move to mostly-online education due to the COVID-19 pandemic. Many students require support to effectively self-regulate their learning, and fortunately, prior research has shown that SRL can be successfully supported through technology-based scaffolding (Zheng, 2016).

Despite differences, the varied extant SRL models conceptualize SRL as a dynamic, cyclical process that includes strategy use triggered by goal-setting and striving (Schunk & Greene, 2018). Most models also acknowledge the important roles played by domain knowledge, motivation, cognitive strategy use, metacognition, and time/resource management in given learning tasks.

The tool used in this study is based on the Success through Self-Regulated Learning (StSRL) theoretical framework (Sperling, 2017), which incorporates all of these dimensions. The StSRL framework was designed to bridge SRL theory and practice by guiding instructors to generate prompts that scaffold and support students' SRL.

The current study adopted one overarching purpose: to determine if response latencies to SRL-scaffolding prompts relate to reported metacognitive awareness and course performance. Specifically, this study sought to answer the following research questions:

- 1) **Do students who respond quickly, moderately, and slowly to prompts differ in their post-survey reported metacognitive awareness after controlling for pre-survey reported metacognitive awareness?**
- 2) **Do students who respond quickly, moderately, and slowly to prompts differ in their final course grade after controlling for Exam 1 performance?**

Participants (N = 255) enrolled in a university biology course voluntarily completed a pre- and post-survey that assessed demographic information and their self-reported metacognitive awareness (MAI; Schraw & Dennison, 1994)—among other variables—before and after their engagement with the SRL-scaffolding tool. Students who responded to at least 80% of these prompts were included in the study.

Participants' median response latency (in hours) among all answered prompts was calculated by subtracting the prompt release date/time from the student's response date/time. Three groups were formed based on median response latency values. The fastest-third (n = 84) were considered *quick*, the middle third (n = 83) *moderate*, and the slowest third (n = 88) *slow* responders. Course grades (in percentage) were collected from the course learning management system.

ANCOVA analysis indicated the mean post-survey reported metacognitive awareness was different among the three groups, after controlling for pre-survey reported metacognitive awareness ($F(2, 251) = 4.93$, $p = .008$, $\eta p2 = .04$). Post-hoc comparisons indicated students in the quick group reported higher metacognitive awareness at post-survey than both the moderate (mean difference = 3.80, $p = .004$) and slow (mean difference = 3.20, $p = .014$) groups, after controlling for pre-survey metacognitive awareness ($F(2, 251) = 4.93$, $p = .008$, $\eta p2 = .04$).

Further, ANCOVA results indicated mean course grades were not equal among the three groups ($F(2, 251) = 4.33$, $p = .01$, $\eta p2 = .03$), after controlling for Exam 1 performance. Post-hoc comparisons indicated students in the slow group performed worse than those in the quick (mean difference = 1.64%, $p = .008$) and moderate groups (mean difference = 1.46%, $p = .016$).

This study adds value in three ways. First, this study supports previous research that shows students' SRL can be promoted through technology-based scaffolding. Second, this study provides evidence that a technology-based SRL scaffolding tool can support students' SRL and academic performance in an authentic learning environment. Third, it indicates that *how* students engage with an SRL-scaffolding tool matters.

"Self-regulated learning (SRL) is imperative in post-secondary environments."

Joseph Tise studies how to promote self-regulated learning within authentic learning environments, focusing on cognitive learning strategies and metacognitive awareness. He is finishing his dissertation in the Educational Psychology program at The Pennsylvania State University.

Current Research and Conclusion

Ongoing research with this project will attempt to replicate and extend these findings to additional domains and investigate additional research questions (e.g., how response latency may depend on the specific SRL process targeted by the prompt).

I utilize several strategies to conduct the research efficiently. First, I schedule specific times in my calendar dedicated to particular projects. This helps ensure that each project receives attention each week (even if one project requires more than others). I also build in "flex work" time, which is essentially time for me to choose "in the moment" what to work on. This allows sufficient flexibility to deal with time-sensitive issues that pop up.

Second, I use a time-tracking software (Toggl) to hold myself accountable for my blocked times on the calendar. Finally, I keep a Word document handy to record research ideas that pop up throughout the day or week. Many will be scrapped, but some (including the one reported here) make it through.

To conclude, I am honored to be the *Graduate Student Research Award* recipient this year. It serves as a reminder that the research we do is essential. My co-authors and I are excited about this year's AERA annual meeting and cannot wait to see everyone at the Business Meeting!

References are available upon request from the author (tise.joseph@gmail.com)