SPECIAL INTEREST GROUP

Studying and Self-Regulated Learning

American Educational Research Association

2021 Spring Newsletter

Future Directions of Research, Teaching and Learning that Support SRL while Transitioning to a Post-Covid World

Edited by Dr. Aloysius C. Anyichie and Dr. Robin L. Akawi

Table of Contents

Dr. Pamela F. Murphy

Letter From The Chairs

Dr. Pamela F. Murphy
Senior SSRL Chair
University of Arizona Global Campus
Dr. Jill Salisbury-Glennon
Junior SSRL Chair
Auburn University

Welcome to the Spring 2020 edition of the SSRL SIG Newsletter!
We sure hope you and your families are safe and sound during the COVID-19 pandemic.

Dr. Jill Salisbury-Glennon

We sincerely hope that you are all staying safe and well as we all continue to navigate our way through this COVID-19 global pandemic.

Most Sincerely and with Kind Regards!
Pam and Jill

Letter From The Editors

Dr. Aloysius C. Anyichie, The University of British Columbia, Vancouver
Dr. Robin L. Akawi, Sierra College

Dr. Aloysius Anyichie

As we approach what seems to be a light at the end of the tunnel of the Covid-19 pandemic, and have been challenged with the task of determining how to navigate education and research in new ways, it is logical to posit the need for continuing to investigate what our new world will look like as we transition out of the pandemic.

Dr. Robin L. Akawi

In this current newsletter, you will find numerous research topics highlighting the critical importance of self-regulated learning (SRL) both during the pandemic and noting future directions for SRL research moving forward. These contributions include a multitude presentations that are included in the AERA 2021 convention along with several abstracts. In addition, several Gradate Student awards are noted as well as the award for Outstanding Poster. The life and legacy of Dr. Stuart Karabenick is highlighted in this newsletter along with sharing the details on a special Invited Speaker event at this year's AERA convention. Enjoy!

Graduate Student Committee Report

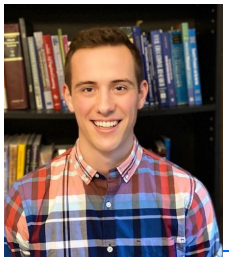
The GSC continues to support the Research Lab Spotlight Series and the Graduate Student Research Spotlight Series. In addition to these initiatives, we have begun work on some new and exciting initiatives to better sup-port collaboration and community among our graduate students and junior scholars. Broadly, these will center around networking opportunities and the job search/ application process. We look forward to sharing this work with you in the coming months. The purpose of the SSRL SIG graduate student committee is to: (a) represent the voice, interests, and needs of graduate students, and (b) promote graduate students' professional development.

1. **SSRL Research Lab Spotlight**. This project was established in 2018 and is ongoing. The GSC initiated this project to showcase research labs of world-class, highly productive scholars in our field. The purpose of this project is, in part, to foster the professional development of graduate students by introducing them to the works of prominent SRL scholars. We ask scholars to share information about their research labs that are published in our SIG Newsletter and Times Magazine as well as on our Facebook page and website. We have already published many showcases in the last two years and, in this issue, you will be able to read about Dr. Sanna Jarvela's work.
2. **Graduate Student Research Spotlight Series.** This spotlight series was initiated in 2019. This project highlights the current work of graduate students engaged in the SIG. The goal of the Graduate Student Research Spotlight Series is to provide an opportunity for the readership of the Studying and Self-Regulated Learning SIG to learn about the ongoing research being completed by graduate students of the SIG, and for graduate students to co-develop experience summarizing and disseminating their own work.
3. **Conversations with Productive Scholars Video Series.** This Video Series is one of the first projects of the GSC. In this project, the SSIG SIG's graduate student members interview highly productive educational scholars. The purpose of this project is to provide advice to graduate students on how to become successful in their research and study. GSC members believe that these interviews offer an excellent source for professional development for our SIG's graduate student members. Several interesting interviews with SRL's distinguished scholars can be found on the SIG's website https://ssrlsig.org/).

We take this opportunity to thank all of you who have helped us and have contributed to the ongoing work of the GSC, and to the broader SIG community. We encourage all SIG graduate student members to participate in our projects (e.g., conducting interviews with SRL researchers or sending summaries about their work). We also encourage you to invite other interested graduate students to become members of our SIG. If you have any questions, concerns, or suggestions, please do not hesitate to contact us.

Our sincere regards,

Joseph Tise
tise.joseph@gmail.com



Jake Follmer
djakefollmer@gmail.com


Dr. Pamela F. Murphy

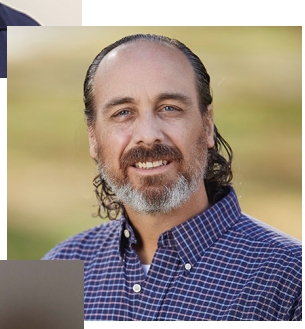
AERA 2021 Program Announcement

Dr. Pamela F. Murphy
University of Arizona Global Campus

Greetings SRL Scholars!
Although the dates and times of our SIG sessions at AERA 2021 are all virtual this year, there are many sessions, events and news to be aware of.

Business Meeting - April 11, 6:15-8:15pm EDT:
Please join us for the annual SSRL SIG business meeting where keynote speaker Dr. Akane Zusho will give a talk entitled "Leveraging principles of self-regulated learning to promote equity in the classroom." During the meeting, we will recognize our outgoing leadership, introduce our incoming leadership and announce the recipients of several awards, including the Barry Zimmerman Award, the Graduate Student Research Award, and the Outstanding Poster Award.


Dr. Akane Zusho



AERA SSRL SIG Election Results:
All positions below are a 1-year term (2021/2022)
Congratulations to all!

Junior Chair

• Aubrey Whitehead, College of Wooster

Junior Secretary/Newsletter Chair

• Kendall Hartley, University of Nevada Las Vegas

Junior Treasurer/Membership Chair

• Megan Krou, Teachers College, Columbia University

Junior Program Chair

• Aloysius Anyichie, Bishop's University

Dr. Pamela F. Murphy

AERA 2021 Program Announcement Continued

Below are the Roundtable, Paper/Symposium, and Poster Sessions

Roundtable Sessions:

- Comparing Behavioral Data Versus Self-Reported Use of Learning Strategies in a Multiperspective Hypermedia Learning Environment
- Measurement Invariance of the Regulation of Learning Questionnaire for Chinese and Canadian Undergraduate Students' Self-Regulated Learning
- Self-Regulated Learning and Academic Achievement in Online Learning for Adult Learners
- Relations Between Hong Kong Students' Motivational Beliefs, Self-Regulated Learning Strategy Use, and English Writing Achievement
- Differences Between System- and Learner-Initiated Self-Regulated Learning Processes within Hypermedia Revealed Through Dimension Reduction
- Examining Teaching Experience, Prior Knowledge, and Self-Regulated Learning's Influence on Teachers' Epistemic Emotions in Technological Pedagogical Content Knowledge (TPACK)
- They Might Be Normal Like a White Person": Examining Preservice Teachers' Self-Regulation and Intercultural Competence

Paper and Symposium Sessions:

- First Steps Toward Self-Regulation: The Role of Assessment in Kindergarten Learning
- Collaborating with Teachers to Design Assessments for Self-Regulated Learning in Authentic Classroom Writing Tasks
- Classroom Assessment as the Co-Regulation of Learning
- Classroom Assessment and Self-Regulation: A Conceptual Framework to Support Learning
- The Effectiveness of Intelligent Tutoring Systems on Self-Regulated Learning: A Synthesis of the Literature
- Advances in Socially Shared Regulation in Computer Supported Collaborative Learning
- Self-Regulated Learning Behaviors in Learning Management Systems and Their Implications for Academic Achievement in Higher Education
- Mobile Learning: A Summary of Systematic Reviews of Pre-K-12 and Higher Education
- Coping with Teachers' Obstacles Regarding Self-Regulated Learning Beliefs and Practices: Implications for Unique Program-Based Simulations
- Effects of Self-Regulated Learning Training on Teachers' SRL, Self-Efficacy and Perceived Instructional Effectiveness in Computer-Supported Collaborative Learning Environments
- Who Benefits from Learning-to-Learn Courses? Comparing Self-Regulated Learning in First-Generation College Students
- Designing a Self-Regulated Learning Tool in Support of Student Persistence in Online Learning
- Low- and High-Achieving Self-Regulated Learners in the Context of a High-Stakes Academic Long-Term Task
- Response Latency to Self-Regulated Learning Scaffolds Relates to Metacognition and Course Performance
- Effectiveness of Self-Regulated Learning Strategies on Academic Achievement in Online and Blended Environments: A Meta-Analysis
- Online Formative Versus Summative Quizzes in Promoting Self-Regulated Learning and Student Achievement
- Improving College Students' Self-Regulated Learning Evaluating the Impact of a Learning to Learn Course
- The Smartphone in Self-Regulated Learning and Student Success: Clarifying Relationships and Testing an Intervention
- Discouraging Last-Minute Homework Submission: A Preliminary Exploration of Self-Regulated Learning Among Female Students in Quantitative-Related Courses
- Process Analysis of Teachers' Self-Regulated Learning in Technological Pedagogical Content Knowledge Development
- Coordinating and Social Isolation: New Literacy Opportunities for Vulnerable Populations
- Examining the Relationship Between Metacognition, Emotions, and Learning Within a Game-Based Learning Environment

Poster Sessions:

- Investigating Science Teachers' Professional Growth in Self-Regulated Learning Through Professionl Development: An Extreme Case Analysis
- Preparing to Teach Online: A Conceptual Framework for Supporting Culturally Diverse Learners in Online Environments
- Teacher' Use of Practices that Support Self-Regulated Learning
- The Effects of Prompting Self-Regulated Learning Strategies to Facilitate Conceptual Change in an Online Learning Environment
- The Effect of Self-Regulated Learning and Academic Entitlement on Students' Online Learning Achievement
- Student Emotional Characteristics of Online Discussion Posts and Their Self-Regulated Learning Skills
- Utilizing Eye Tracking and Performance Measures Captured Over Time in Multimedia Environments to Foster Emerging Self-Regulatory Skills

AERA 2021 Conference: SSRL SIG Abstracts

Studying Collective Problem Solving Regulation in an Immersive Open-Ended Museum Exhibit

Rinat Levy Cohen, Fordham University (rlevycohen@fordham.edu); Aditi Mallavarapu, Leilah Lyons, & Stephen Uzzo (amalla5@uic.edu, llyons@nysci.org, suzzo@nysci.org New York Hall of Science)

Technology increasingly supports social learning experiences and thus, researchers advocate for educational technologies to be designed with socially shared regulation of learning (SSRL) phases in mind (Järvelä & Hadwin, 2013). Building on self-regulated learning (SRL) and SSRL models, we examined the regulation of collaborative problem solving in the Connected Worlds exhibit, an immersive, synchronous, and multi-user ecological simulation. Participants (N=26, 22-57 years of age, M=33) were randomly divided into two separate 30 minute sessions (N= 12, and N=14). They worked collaboratively -- within their team and with the other teams -- to help the interconnected biomes (Desert, Grasslands, Jungle, and Wetlands) thrive. Participants wore digital lapel recorders to capture their conversations which were later transcribed and segmented into speaking turns. Initial data analysis applied a priori codes taken from the SRL and SSRL literature and further elaborated through inductive coding by three researchers. We found that we had to augment our codes to properly embrace the dynamic nature of the observed behavior. These changes reflected aspects of shared regulation that occur when learning takes place (1) in an immersive, open-ended learning environment, where (2) learners work together in large groups. Preliminary findings suggest that designers and researchers may benefit from recognizing (1) how planning and evaluation acts can be tactically embedded in immersive learning environments, and (2) how separating the target of a social regulation act from the goals for that regulation reveal more nuance in contentious groups.

Rinat Levy Cohen

Aditi Mallavarapu

Leilah Lyons

Stephen Uzzo

Understanding the Impact of the COVID-19 Pandemic as Challenges to Undergraduates' Self-Regulated Learning

Lauren Hensley, Ryan Iaconelli, Christopher Wolters

This study investigates challenges to undergraduates' engagement in self-regulated learning during the COVID-19 global pandemic. Our findings revealed that abrupt changes to living and learning environments tested students' abilities to manage core dimensions of their learning, including their use of time and effort, their motivation and emotional functioning, their study context, and their help-seeking and social support. Through reflexive thematic analysis of written responses from 328 college students in Spring 2020, we identified three core challenges of emergency remote learning. These challenges included feeling disconnected, distracted, and discordant; struggling to engage amidst lost autonomy and personal stressors; and experiencing academic burden and burnout. These themes highlight the importance that learning contexts and social connectedness have on undergraduates' ability to enact self-regulated learning behaviors and strategies. Implications for practice center on anticipating how changes to the learning context may create specific types of challenges and taking steps to help students overcome them (e.g., instructor guidance and flexibility, online learning workshops, expanded support services). We recommend that future studies continue to examine the importance of context in self-regulated learning, particularly in terms of interpersonal processes and physical locations that may support or impede engagement.

Lauren Hensley

Ryan Iaconelli

Christopher Wolters

Preparing to Teach Online: A Conceptual Framework for Supporting Culturally Diverse Learners in Online Environments by Hall, K., & Anyichie, A.C.

Hall, K.

Researchers in both self-regulated learning (SRL) and culturally-responsive teaching (CRT) suggest pedagogical practices in support of students' learning and performance. Researchers are paying increased attention to the contextual aspect of SRL and examining how factors such as culture can influence SRL use and performance. Research documents the importance of student culture in the classroom, especially in online environments, and the effectiveness of culturally-relevant practices. However, there is limited research on how SRL can best serve culturally-diverse learners in online environments. To address this gap, we propose that a CR-SRL Framework can provide instructors with best research-based practices to create an effective, inviting online learning environment for culturally-diverse students. Implications and suggestions for practice, policy, future research, and theory are discussed.

Anyichie, A.C.

Continued on the next page

Abstracts - Continued

Self-Regulated Learning and Academic Achievement in Online Learning for Adult Learners

Angela M. Lui, David W. Franklin, Jr., Elie ChingYen Yu, Heidi L. Andrade, Jason Bryer, Diana Akhmedjanova, & Timothy Cleary

The purpose of this study is to examine the relationship between self-regulated learning (SRL) and the academic performance of adult learners in two online institutions using the Diagnostic Assessment and Achievement of College Skills (DAACS) SRL Survey, which includes Metacognition, Motivation, and Strategies domains. Our sample (n = 11,690) included students from two online institutions. Findings revealed weak, null, or negative relationships between SRL skills and students' concurrent and long-term academic performance. Motivation was positively related to aspects of academic performance. Metacognition, particularly Planning, was negatively associated with our outcome variables, though these relationships were small. Of the eleven SRL subdomains, Anxiety and Managing Understanding were related to most of the outcome variables, across both institutions. Classification trees revealed that they might interact with our covariates.


Angela M. Lui

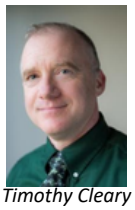

David W. Franklin


Elie ChingYen Yu


Heidi L. Andrade


Jason Bryer


Diana Akhmedjanova


Timothy Cleary

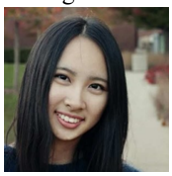
The mechanism of escaping self-discrepancy through video gaming and college students' academic commitment

Huajian, Gao; Yiwen Yang, Jiahua Yang

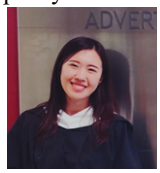
Video gaming is becoming a common entertainment among college students. While video gaming helps students escape from negative feelings from daily life, it could affect their academics. The purpose of the study is to explore the interrelationship between video gaming escapism and the academic commitment of college students with different self-discrepancy and self-efficacy. Nine hundred and thirty-six undergraduate students from a large public university participated in this study. The results indicated that students' engagement in video games and actual-ideal self-discrepancy correlate with escapism, but no correlation was found between self-discrepancy and video game playing. Specially, the relationship between escapism and self-discrepancy is only found significant among students who have high engagement in video games, whereas the same relationship was not significant for students who are low in video game engagement. Also, students' self-efficacy fully mediated the relationship between video game escapism and academic commitment. The findings highlighted the negative influence of video game escapism on students' academic performance. These results suggested that promoting students' academic self-efficacy could be a useful way to help students who perceive a large actual-ideal self-discrepancy and want to escape through playing video games.

Gao Huajian

Yang Yiwen



Yang Jiahua



Study Diaries Improve Learners' Metacognitive Awareness

Zahia Marzouk, Mladen Raković, Philip H. Winne

Setting goals is essential to the regulatory process of learning. However, research shows students rarely are taught how to set goals and plan learning even though learners regard these as difficult. Goal setting interventions have shown positive effects on achievement and reflecting on goal attainment is an essential guide for future learning. In a regular undergraduate class, 56 students used a study diary template for four weeks in a pre-post design. Prompts guided learners in setting goals by selecting learning tactics to apply to specific content. Reflective questions about goals attained shaped plans for future studying. We observed significant improvement in students' metacognitive awareness. The more goals students set, the higher the probability that goals were attained. We theorize when students set more goals associated with more explicit study tactics, they have more opportunities to apply and monitor study tactics. This sets the stage for productive SRL that increases goal attainment. Students reported ten reasons for not attaining goals. Time management and distractions were most common. Reasons reported for not attaining goals declined over four weeks. Reflecting on reasons appears to have raised learners' awareness of what to control about study tactics to boost studying success. Based on these findings, we recommend a study diary template be provided to guide students' goal setting, boost reflection on goal attainment and improve students' metacognitive awareness.

Zahia Marzouk

Mladen Rakovic

Philip H. Winne

Continued on the next page

Abstracts - Continued

Investigating Science Teachers' Professional Growth in Self-Regulated Learning through Professional Development: An Extreme Case Analysis

Anastasia Kitsantas, Timothy J. Cleary, Erin Peters-Burton, Angela Lui, Kim McLeod, Jacqueline Slemp, Xiaorong Zhang

There is increasing research evidence supporting the positive influences of professional development (PD) activities on teacher knowledge and skills. In particular, self-regulated learning (SRL) PD programming can help teachers facilitate student self-responsibility of learning in science contexts. Much less in known about the differences in teachers' perceptions and reactions to implementing SRL processes in these contexts. The current explanatory sequential mixed methods design study examined (1) gains in high school science teacher knowledge, self-efficacy and skills in applying SRL principles before and after an SRL PD workshop, (2) perceptions and attitudes about SRL implementation of teachers with advanced versus emerging skills in SRL post-PD. As part of a long-term project, 19 in-service secondary science teachers (47% Biology, 21% Chemistry, 11% Earth Science, 21% Physics) were recruited from eight high schools. From this pool of teachers, two "extreme" subgroups (advanced and emerging SRL skills) of teachers were identified based on their SRL knowledge and skills at posttest following a weeklong PD experience. Pretest-posttest analysis showed statistically significant gain scores in their knowledge and familiarity of SRL, efficacy for infusing SRL principles in the classroom, and application of SRL in case scenarios. Qualitative analysis of teacher interview data revealed that while both subgroups agreed on the importance of SRL, teachers with advanced SRL skills exhibited more flexible, responsive, and positive perspectives about SRL implementation, and exhibited different perceptions of the key challenges to SRL implementation than teachers who displayed weaker SRL skills at posttest. Implications for teacher training are discussed.


Anastasia Kitsantas

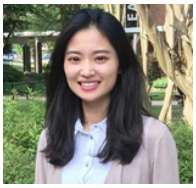

Timothy J. Cleary


Erin Peters-Burton


Angela Lui


Kim McLeod


Jacqueline Slemp


Xiaorong Zhang

Coping with Teachers' Obstacles regarding SRL Beliefs and Practices: Implications for Unique Program-based Simulations

Bracha Kramarski, Yafit Moradoff, and Orna Heaysman (Bar Ilan University, Israel)

Empirical studies show that teachers are impeded in adopting SRL in learning and teaching, resulting from their belief systems and lack of professional practice-oriented SRL. Thus, supporting teachers in changing their pedagogical practice is a challenge faced in teachers' professional development programs. This study aims to examine how teachers' pedagogical change can be supported through integrating two major conceptual frameworks into a holistic model – professional vision (PV) and self-regulation of learning (SRL) by implementing unique simulations with real actors. Using a quasi-experimental design, three groups of elementary school teachers (n = 113) were compared in a blended–technology learning environment, that included viewing, analyzing, and discussing videotaped lessons followed by debriefing and discussing the teaching/learning processes (30 hours). One group practiced PV with the combined SIM-SRL model (SIM +SRL group; n = 38), which included simulations supported by SRL prompts, while the other practiced PV with simulations only, without the SRL support (SIM group; n = 37); both were compared to a control group (n = 38). The findings indicated that after exposure to the SIM+SRL training model, teachers' PV increased and their pedagogical beliefs shifted towards student-centered learning significantly more than the other groups. Teachers of the SIM+SRL group showed the strongest beliefs in their SRL self-efficacy, which was, in turn, manifested in their lesson performance in class, favoring student-centered learning. The control group's gains were inferior to those of the two simulation groups. The current study adds new perspectives regarding curricula and practices for both preservice and in-service teachers.


Oma Heaysman


Bracha Kramarslo


Yafit Moradoff


Melissa Quackenbush


Linda Bol


Timothy Cleary


Joanna Garner

Effects of SRL Training on Teachers' SRL, Self-Efficacy, and Perceived Instructional Effectiveness in CSCL Environments by Melissa Quackenbush, Ph.D. Linda Bol, Ph.D. Timothy Cleary, Ph.D. Joanna Garner, Ph.D.

We investigated of the effects of training on teachers' self-regulated learning (SRL), self-efficacy for teaching, and perceived instructional effectiveness computer-supported collaborative learning (CSCL) environments with 80 K-12 teachers who had recently transitioned to teaching in a CSCL environment as a result of COVID-19. We also explored how teachers use SRL skills in their learning and instruction. Analyses of teachers' self-reported SRL skills, self-efficacy for teaching, and perceived instructional effectiveness revealed training statistically significantly impacted teachers' SRL, self-efficacy for teaching, and perceived instructional effectiveness. Analyses of interviews and weekly reflections showed teachers in the treatment group frequently and specifically described their SRL skills. These findings suggest training in CSCL pedagogy and SRL skills likely contributes to teachers' professional development in CSCL.

Continued on the next page

Abstracts - Continued

What Modulates Self-Regulated Writing? Investigating the Relationship Between Self-Regulated Learning, Emotions, and Self-Efficacy During Writing by Michelle Taub and Joel Schneier (University of Central Florida)

Self-regulated learning is a multidimensional construct that views students as active learners. In college, students are expected to become more independent learners who use these self-regulatory skills. Studies show different factors impact a student's self-regulation, such as emotions. This study investigated the relationship between college students' emotions, self-efficacy, and self-regulated learning during a writing task. Results found significant correlations between anger, contempt, and joy (detected by facial recognition) and monitoring and reflection (detected by keystroke logging), as well as correlations between students' writing self-efficacy and planning. Results emphasize the importance of fostering self-regulated writing to design more appropriate pedagogical interventions for teaching writing in college. We should also further investigate the causal relationships between emotions, motivation, and self-regulated writing.

Michelle Taub

Joel Schneier

Academic Help-Seeking and Help-Giving in Postsecondary Physics: The Importance of Achievement Goals and Generational Status

Andrew H. Perry, Elise Allen, Shirley L. Yu

Recent estimates suggest that only 40% of college students who enroll in science, technology, engineering, and mathematics (STEM) majors actually complete their degree programs (PCAST, 2012), with additional findings suggesting that grades are vitally important for retention in STEM fields (Rask, 2010). Given this research, an examination of what psychological variables predict student achievement in STEM classes is warranted. We examined the role of motivation, self-regulated learning, and generational status on academic performance in undergraduate physics. Specifically, we assessed whether self-regulated learning mediates the relations between achievement goal adoption and course grades. Achievement goal orientations, academic help-seeking and help-giving, and course grades were assessed in undergraduate physics courses at a major Midwestern university (N = 1271; 28.5% female, 17.3% first-generation in college). Generational status was examined as a moderator of these relations. Achievement goals predicted grades, mediated by help-seeking and help-giving behaviors. Mastery-approach and performance-approach goals positively predicted adaptive forms of help-giving, which in turn positively predicted grades. Generational status moderated the help refusal mediation for mastery-approach goals, as refusing to give help to peers was more deleterious to grades for first-generation students when mastery-approach oriented. Results indicate that approach-oriented goals positively relate to achievement through self-regulated learning behaviors, especially for first-generation students. These findings have important implications for supporting students' help-seeking and help-giving behaviors in the classroom, and, in turn, for bolstering academic performance.

Andrew H. Perry

Elise Allen

Dr. Shirley L. Yu

Constructivist Learning Environment and Strategic Learning in Engineering Education

Chengcheng Li, Ph.D. candidate, Shaoan Zhang, Ph.D. Tiberio Garza, Ph.D. Yingtao Jiang, Ph.D. (University of Nevada, Las Vegas)

Background: Undergraduates' first-year experience in engineering education impacts their retention and persistence. Strategic learning strategies (i.e., skill, will, and self-regulation) are important to students' academic achievement and retention.
Aims: This study aimed to examine how skill mediates the relationship between self-regulation and will, and how the constructivist learning environment influences students' self-regulation.
Sample: Data were collected from 293 first-year engineering undergraduates enrolled in an introductory seminar course in Fall 2019.
Results: The results indicated skill partially mediated the relationship between self-regulation and will, and one dimension of the constructivist learning environment (i.e., sharing ideas with others) was correlated with self-regulation.
Conclusions: Results indicate that students' critical knowledge about and knowing how to use learning strategies and thinking skills (skill) enhances their self-regulated use of learning strategies, thus increasing their will in strategic learning. Additionally, this study also found that one dimension of the constructivist learning environment (i.e., sharing ideas with others) was negatively correlated with self-regulation, which is contrary to the findings of the previous research. A potential explanation is that before sharing ideas with others, students may not think about how to manage the collaboration process, resulting in dependence on others.
Implications: This study may help faculty and researchers see how to use strategic learning strategies as they encourage engineering students toward academic success. Also, this study provided insights into how to design the constructivist learning environment integrating the strategic learning strategies to enhance students' first-year experience in engineering education.

Chengcheng Li, Ph.D. candidate

Shaoan Zhang, Ph.D.

Tiberio Garza, Ph.D.

Yingtao Jiang, Ph.D.

Continued on the next page

Abstracts - Continued

Teachers' Use of Practices that Support Self-regulated Learning

David Longhurst, Greg Callan, Samantha Tibbets, Aliya Halterman

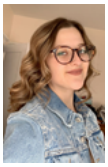
Self-regulated learning (SRL) entails several sub-processes that facilitate student success (Cleary & Platten, 2013). SRL can be developed through interventions and classroom supports; however, teachers rarely use SRL supports (Dignath & Büttner, 2018). Prior research on this topic typically examined a limited number of SRL supports and relied on observational methods. This presentation used open-ended questions to examine how teachers use a broader array of SRL supports (15 practices) and factors that differentiate the use of these supports. Participants were 112 K-12 teachers who open-endedly defined SRL (SRL knowledge), described how they support SRL, identified barriers to SRL in school, and reported demographics (e.g., years of teaching experience, degree-level, grade levels taught, student SES, and student special education status). In brief, most teachers reported zero or only one SRL support. Teachers most often supported SRL through direct instruction, SRL worksheets, self-assessment, and modeling and least often through normalizing academic challenges, and completing long-term, complex assignments. SRL supports correlated positively with teachers' SRL knowledge, teaching experience, and reporting time as a barrier, and negatively correlated with believing teachers are assigned too much responsibility for student learning. Although we examined many SRL supports and used open-ended measures, our results mirror prior research suggesting teachers use few SRL supports (Dignath-van Ewijk, & van der Werf, 2012). Given that SRL knowledge significantly predicted SRL supports, future research should examine a functional relationship with experimental designs. Our findings highlight practices teachers already use and can be further encouraged, as well as under-utilized practices to increase.

David Longhurst

Greg Callan

Samantha Tibbets

Aliya Halterman



The Effects of Prompting Self-Regulated Learning Strategies to Facilitate Conceptual Change in an Online Learning Environment by Alana Kennedy, Gale Sinatra, Stephen Aguilar

Despite a vast body of research about self-regulated learning (SRL) and its association with academic success, no research has yet examined the effects of using SRL to induce conceptual change. In this study, we drew from self-regulation theory and conceptual change theory to examine whether prompting the use of self-regulated learning (SRL) strategies was linked to shifts in scientific misconceptions. Undergraduates were recruited at a private four-year university through a subject pool which resulted in a sample of N = 69 students. We employed an experimental design to assess if prompting undergraduates to use specific SRL strategies in an online learning environment facilitated conceptual change compared to a control group where SRL strategies were not prompted. Our preliminary findings suggest that participants in the control group performed better than participants in the treatment group although these differences were not significant. Across both conditions, changes in students' conceptual understanding from pretest and posttest were also not significant. In addition, we found that the amount of time spent engaging with the refutation text was an important covariate for explaining differences in conceptual change scores between conditions. Taken together, these findings were surprising given that prior research indicated the positive effects of incorporating SRL strategies in online learning environments as well as the efficacy of refutation texts as a way to promote conceptual change. Given the current reliance on online learning, more research is needed to explore how SRL strategies can be used as a vehicle to reduce misconceptions and support learning.

Alana Kennedy

Dr. Gale Sinatra

Dr. Stephen Aguilar:

Michelle Taub

Detecting Self-Regulated Learning, Metacognition, and Emotions with Game-Based Learning Environments

Michelle Taub, University of Central Florida

Research has demonstrated that game-based learning is an effective means of fostering student learning, self-regulation, positive emotions, motivation, and engagement. It is unclear, however, how increases or decreases in emotions are related to specific self-regulatory processes during game-based learning. The goal of this study was to examine if the evidence of confusion or frustration at the onset of an activity and its duration throughout that activity are predictive of the evidence of that emotion at the end of the activity during game-based learning with CRYSTAL ISLAND, a game that fosters SRL, microbiology learning, and scientific reasoning. Participants were college students from a large university in the US. Gameplay activities included: (1) knowledge acquisition, (2) help seeking, (3) scientific reasoning, and (4) metacognitive monitoring. Results from mixed effects models revealed students with high evidence scores of confusion at the onset of metacognitive monitoring and a short duration of confusion during metacognitive monitoring had the lowest evidence scores of confusion at the end of that instance. For frustration, students with the lowest evidence scores at the end of the metacognitive monitoring instance had a high evidence score at the onset with a long duration. These results demonstrate the differential impacts of confusion and frustration when engaging in self-regulatory activities during game-based learning, demonstrating the complex relationship between emotional and metacognitive processes.

Continued on the next page

Abstracts - Continued

Low- and High-Achieving Self-Regulated Learners in the Context of a High-Stake Academic Long-Term Task
Dr. Carmen Hirt, Dr. Yves Karlen, Dr. Katharina Maag Merki, Francesca Suter, MA

While solving academic tasks, students are more or less successful at self-regulated learning (SRL; Dent & Koenka, 2016). SRL is a cyclic process that includes cognitive, metacognitive, motivational, and emotional components (Panadero, 2017). Previous research has shown that successful and less successful learners systematically differ in various SRL components, mostly focusing on university-level or classroom contexts. Mainly, those studies analyzed single SRL components individually or combined regarding different learning tasks (e.g., DiFrancesca et al., 2016; Heirweg et al., 2020), making it difficult to merge these findings. There is a lack of research analyzing not only single SRL components but taking a holistic view on SRL on a high-stake academic long-term task beyond the classroom context. Therefore, our study examined the extent to which students differ in their SRL in terms of completing a graduation paper during one school year.
Based on the grades of N = 1215 high-school students' graduation papers (57% female; Mage = 17.5, SD = .80), high- and low-achievers (with and without consideration of pre-achievements) were compared regarding multiple SRL components of a whole SRL cycle using Mann-Whitney U test. The group comparisons revealed that irrespective of pre-achievements, high-achievers showed lower work avoidance, boredom, hopelessness, and higher strategy use and self-reported quality of strategy use than low-achievers. While low-achievers with higher pre-achievements especially showed lower prior knowledge and struggled with emotions and their regulation, low-achievers with lower pre-achievements have particularly to deal with intrinsic motivation. Our results highlight learners' different needs depending on their pre-achievements and show the importance of personalized learning support.

Dr. Carmen Hirt

Dr. Yves Karlen

Dr. Katharina Maag Merki

Francesca Suter

The Executive Functions for Learning Inventory: Development, Validation, and Contributions to Strategy and Learning Beliefs by Jake Follmer

Jake Follmer

While a number of indirect measures of executive function (EF) exist, available measures are not developmentally specific to secondary and post-secondary learners, are largely diagnostic in focus, and are not grounded in theories of self-regulated learning. The current research examined validity and reliability evidence supporting the use of a 33-item indirect measure, titled the Executive Functions for Learning Inventory (EFLI). The EFLI was designed to measure the following EFs: inhibitory and attentional control, shifting, updating, planning, organizing, and emotion regulation. Across four studies based on distinct samples, we examine: response processes associated with completion of the EFLI (Study 1a; N=5); the internal structure of the instrument based on confirmatory factor analysis (Study 1b; N=390); the ability of the EFLI to predict a criterion measure of EF as well as measures of 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). Implications for the proposed use of the EFLI and for the roles of EFs in students' learning beliefs and strategy use are discussed.

Across-Task Relations Among Monitoring Judgments: Effects of an Embedded Learning Strategy on Monitoring Accuracy by Jake Follmer

Using a practice testing paradigm, this study examined the effects of item feedback on learners' metacomprehension and monitoring judgments before, during, and after comprehension testing. Participants (N=294) were randomly assigned to one of three conditions: a feedback, no feedback, and control condition. Participants completed an assessment of prior knowledge, read a 1,000-word science text, and completed a measure of reading strategies. They also provided metacomprehension, item-level, and postdictive judgments of performance across comprehension testing. Measures of bias were calculated for each set of judgments. Results indicated that correctness feedback engendered less bias in learners' metacomprehension judgments but greater bias in item-level and postdictive judgments. Conditional and serial indirect effects were significant only for those in the feedback condition. Findings provide evidence of positive but also differentiated effects of item feedback on students' monitoring bias. Feedback may induce metacognitive bias during and after testing experiences in the context of text learning.

Distinct Stereotype Threat Perceptions: Longitudinal Validation of a Two-Dimensional Measure Across Two Undergraduate Science Samples
Totonchi, D. A., Perez, T., Hall, K., & Braitman, A.
This longitudinal study validated a two-dimensional measure of stereotype threat with two samples of underrepresented science undergraduates. Confirmatory factor analyses supported the multidimensionality of stereotype threat and suggested students distinguished between self-reputation and group-reputation stereotype threats. Results of multi-group and longitudinal measurement invariance tests suggested that the two-dimensional measure was structurally stable across groups and time. Chemistry, compared to biology, students indicated higher levels of both stereotype threats. Students in both courses started the semester with higher perceptions of group-reputation than self-reputation threat. The two beliefs developed similarly in the two classes. Overall, our study supports the existence of distinct stereotype threats and provides evidence for a valid measure for assessing this multi-dimensional phenomenon in various science fields.

Hall, K.
Non-Presenting Author

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

In honor of the the numerous and exceptional contributions to the field of research related to teaching self-regulated learning and motivation, spanning 50 years, this year's recipient of the Barry J. Zimmerman Award for Outstanding Contributions is Stuart A. Karabenick.

His research matched with his values will no doubt continue to be relevant and sought out for a better understanding of student success that encompasses equity, diversity, and inclusion, as well as care, mentorship, allyship, and responsibility.

There is an Invited Speaker event that will take place at the AERA 2021 Conference to Commemorate the Life and Legacy of Dr. Stuart A. Karabenick. Stuart has been referred to as remarkable, an ally, mentor, prolific scholar/writer, intellectually stimulating, modest, collaborative, and uniquely as well as fully equity minded. Highlights of those who have interacted with Stuart will be shared during the AERA event.

Details: Invited Speaker Event
Monday, April 12, 2021, from 11:10am to 12:40pm EDT (8:10 to 9:40am PDT)
Located at the 2021 AERA Global Meeting Space

Co-Sponsors: Devision C - Learning and Instruction; SIG- Motivation in Education; SIG-Studying and Self-Regulated Learning
Affiliate Sponsors: University of Michigan - School of Education; Combined Program in Education and Psychology; Department of Psychology.
Chairs: Hefer Bembenutty (Queens College, CUNY) and Carlton J. Fong (Texas State University)

Participants include: Jacquelynne S. Eccles, Akane Zusho, Fani Lauermann, Jefferey R. Albrecht, Allison M. Ryan, Revathy Kumar, Ruth Butler, Helen M. G. Watt, Sofia Eleftheria N. Gonida, Anastasia Efklides, Allan L. Wigfield, Avi Kaplan, Tim Urdan, Jean-Louis Berger, Stephen J. Aguilar, Nayssan Safavian, Melissa C. Gilbert, and Kara A. Makara.

Graduate Student Research Spotlight: Award for

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

Cassandra Gonzales, Texas State University

Cassandra Gonzales

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.

Graduate Student Research Spotlight: Award for

Insights from Shared Regulation of Learning in an Immersive Museum Simulation

Rinat Levy Cohen, Fordham University

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).

Rinat Levy Cohen

Graduate Student Research Spotlight: Award for

Gratitude and Self-Regulated Learning Research Journey

Melissa Quackenbush, Old Dominion University

Melissa Quackenbush

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).

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.

Graduate Student Research Spotlight: Award for

Harnessing User Data to Investigate University Students' SRL

Joseph Tise, The Pennsylvania State University

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.

Joseph Tise

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!

Outstanding Poster Award Announcement!

This year's outstanding poster award for a submission to the AERA SSRL SIG is awarded to **D. Jake Follmer** for *"Measuring Executive Function Skills: Leveraging Learners' Beliefs about Strategic Processes to Inform Assessment of Self-Regulated Learning"*

D. Jake Follmer

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).

How to Make a Charitable Donation

If you are looking for organizations to donate to this year, consider our SSRL SIG. In addition to basic operating costs, we use funds to support our three awards and the Graduate Student Mentoring Program. With your help, we can continue to support initiatives like these and possibly expand them in the future. If you are interested in making a charitable donation to our SSRL SIG, follow these three steps:

- Write a check payable to "AERA" and in the notes field on the check write:

  "Donation to Studying and Self-Regulated Learning

- Include a brief cover letter explaining your intent to donate to our SIG. Also, include the address where you want AERA to send you a receipt for tax purposes.
- Send the check and cover letter to:

  American Educational Research Association

  Attn: Norman Tenorio, Director of Finance and Administration

  1430 K St., NW, Suite 1200

  Washington, DC 20005

You can make a difference with your

2020-2021 Executive Board and Chairperson Contact Information

Executive Committee

Chairs
Senior: Pamela Ford Murphy (pamela.murphy@uagc.edu)
Junior: Jill Salisbury-Glennon (salisji@auburn.edu)

Program Chairs
Senior: Aubrey Whitehead (awhiteh6@gmu.edu)
Junior: Abraham Flanigan (abrahamflanigan@gmail.com)

Secretary/Newsletter
Senior: Aloysius Anyichie (aloy.anyichie@alumni.ubc.ca)
Junior: Robin Akawi (rakawi@sierracollege.edu)

Treasurers/Membership
Senior: Darolyn A. Flaggs (dflaggs@kennesaw.edu) Junior:
Gregory Callan (greg.callan@usu.edu)

Award Committee Chairs

Outstanding Poster Award
Roger Azevedo (roger.azevedo@ucf.edu)

Graduate Student Research Award
Héfer Bembenutty (hefer.bembenutty@qc.cuny.edu)

Barry J. Zimmerman Award for Outstanding Contributions
Anastasia Kitsantas (akitsant@gmu.edu)

Contributors

Graduate Student Committee Chairs
Co-Chair: Joseph Tise (tise.joseph@gmail.com)
D. Jake Follmer (Mentor) (djakefollmer@gmail.com)

Graduate Student Mentoring Program Chair
Matthew Bernacki (mlb@unc.edu)

SSRL SIG Times Magazine Editor-in-Chief Héfer Bembenutty (hefer.bembenutty@qc.cuny.edu)

Historian Chairs
Amarilis Castillo (amarilisc@txstate.edu)
Kate Durham (kzh0089@auburn.edu)

Social Media Coordinators
Rinat Levy-Cohen (rlevycohen@fordham.edu)
Ryan Iaconelli (iaconelli.1@buckeyemail.osu.edu)

Webmaster
Charles Raffaele (craffaele@gradcenter.cuny.edu)


Check out the SIG website!
https://ssrlsig.org


"Like" the SSRL SIG on Facebook!
https://www.facebook.com/groups/


Follow the SSRL SIG on Twitter!
https://twitter.com/AERA_SSRL

Future Directions of Research, Teaching and Learning that Support SRL while Transitioning to a Post-Covid World