AERA SIG

SIG

Studying and Self-Regulated Learning

Linda Bol

Professor Linda Bol: A Distinguished Scholar Recipient of the Barry J. Zimmerman Award (2024) for Her Significant Contributions to Self-Regulated Learning Research

Studying and Self-Regulated Learning (SSRL) Special Interest Group (SIG) of the American Educational Research Association (AERA)
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Linda Bol: A Role Model of Calibration Research and Culturally Self-Regulated Pedagogy
Héfer Bembenutty

In this special issue, the Studying and Self-Regulated Learning (SSRL) Special Interest Group (SIG) of the American Educational Research Association (AERA) acknowledges, honors, and celebrates Professor Linda Bol's scholarship and distinguished career contributions to education, training, and research in self-regulated learning. Throughout her extensive career, Linda has offered innovations on how to teach, research, and assess self-regulated learning, particularly in the area of calibration.

In this special issue, her colleagues and current and former students provide testimonies of Linda's impact on their personal and professional growth and development. Linda is a Professor of Educational Psychology in the Department of STEM Education and Professional Studies at Old Dominion University, Norfolk, Virginia. She completed her PhD in 1991 at the University of California, Berkeley. She teaches doctoral and master's courses, such as Metacognition and Self-Regulated Learning.

Linda's grants include one supported by the US Department of Education ($26,250,000), titled A Technology-Facilitated Scale-Up of a Proven Model of Mathematics Instruction in High Needs Schools, in which she was Co-Principal Investigator. Linda's accolades include receiving the Graduate Teaching Award from the College of Education at Old Dominion University in 2017. Two of Linda's students, Deana Ford (2016) and Katrice Hawthorne (2016), have been honored with the Graduate Student Research Award from the Studying and Self-Regulated Learning SIG of the American Educational Research Association for their research conducted under Linda's guidance. During her time at Old Dominion University, Linda has chaired 26 dissertations and served as a committee member for 36 dissertations. She has also held various roles, including Graduate Program Director and member of the Graduate Administrators Council.

Linda's research focuses on calibration, which describes a calibrated learner as one whose judgment of performance and actual performance are synchronized (Bol & Hacker, 2012; Chen, 2003). Awareness of calibration involves metacognition that serves as a learner's self-monitoring process of the accuracy, presence of bias, and reliability of performance, goals, objectives, or strategies when engaged in academic tasks. A high level of calibration is associated with satisfactory performance, while accuracy bias is associated with low academic performance. Calibration judgment involves the activation of a feedback loop in which learners reflect on academic outcomes, assess their performance, and enact future actions based on the feedback.

Linda's research aligns with Zimmerman's (2013) cyclical phases of self-regulated learning: forethought, performance, and self-reflection. During the *forethought phase*, Linda emphasizes the need for calibration in this phase, as some learners struggle to accurately assess their motivation, performance, and select strategies. During the *performance phase*, Linda suggests that some learners have difficulty self-observing and controlling their intentions, leading to judgment inaccuracy and bias issues. During the *self-reflection phase*, Linda believes that learners may attribute outcomes to inaccurate causes and use task feedback to initiate new tasks with inaccurate goals, restarting the forethought process based on their satisfaction with the feedback (see Bol and Hacker, 2012).

Linda has researched calibration research and pedagogy in culturally diverse populations and settings. For instance, she examined the impact of high-stakes testing on restructuring efforts in schools that serve at-risk students (Bol & Nunnery, 2004). She evaluated the pedagogy and practices of elementary teachers in an urban high-poverty school (Berry, Bol, & McKinney, 2009). She researched school counselors' perceptions of the counseling needs of

Linda and Héfer Bembenutty during the AERA conference in Toronto, 2019.

biracial children in an urban educational setting (Nishimura, & Bol, 1997). With an emphasis on self-regulated learning among culturally diverse populations, Linda's research and pedagogy is consistent with the culturally self-regulated pedagogy model (Bembenutty, 2022, 2023, White & Bembenutty, 2014, 2016).

The culturally self-regulated pedagogy model is grounded in the social cognitive theory and self-regulated learning theory. It involves individuals actively managing and controlling their learning process, including their thoughts, emotions, behaviors, and actions, to achieve academic success (Zimmerman, 2013). In this model, students are construed as active, proactive agents who purposefully pursue academic goals, develop valuable skills, and can reflect and act upon feedback and academic outcomes. Teachers, too, are conceived as self-regulated pedagogues who are proactive, agentic, self-efficacious, and self-reflective on matters associated to their teaching profession.

Instruction is improved when both students and teachers embrace a culturally self-regulated pedagogy that is systematically integrated into all classroom instruction on a daily basis (White & Bembenutty, 2014, 2016). Bembenutty (2023) has expanded the existing literature by integrating culturally self-regulated pedagogy with digital technologies among teacher candidates. This model emphasizes the impact of diversity and inclusion on the preparation of teachers as culturally self-regulated agents through cycles of self-regulation. This model places responsibility on both teachers and students to understand how their personal, environmental, and behavioral variables influence their cultural perspectives and motivation to acquire the necessary skills.

Bembenutty (2022, 2023) views the culturally self-regulated pedagogy model, reflected in Linda's research and teaching, as an extension beyond the traditional culturally responsive pedagogy. As exemplified in Linda's work, the culturally self-regulated pedagogy model encompasses educational approaches that intentionally integrate diverse cultural perspectives to improve teaching and learning experiences. This model includes the following:

1. **Integration and Celebration of Cultural Identity**: Teachers and students embed their cultural identities within the framework of self-regulated learning and recognize the importance of cultural backgrounds as a vital component that influences academic success.
2. **Culturalized and Self-Regulated Curriculum, Instruction, and Assessment**: The educational processes of curriculum, instruction, and assessment are each culturalized, designed, and implemented through cyclical phases of self-regulated learning.
3. **Self-Efficacy and Feedback**: Culturally self-regulated pedagogy underscores the significance of self-efficacy—the belief in one's ability to achieve goals, and feedback with a crucial role in this process.
4. **Motivation and Performance**: Students' and teachers' levels of motivation and performance are continuously self-monitored. It is critical to comprehend what motivates teachers and students and to preserve their enthusiasm, interest, and agency.
5. **Goal Setting, Strategies, and Academic Delay of Gratification**: Self-regulated learning depends on having well-defined goals, avoiding distractions, and utilizing effective strategies. Students and teachers gain the ability to overcome obstacles and modify their strategies as they work toward both short- and long-term goals.
6. **Self-Reflection and Self-Monitoring**: Both inside and outside of the classroom, regular self-reflection on development and outcomes takes place. This self-reflecting process is facilitated by self-monitoring tools and logs.
7. **Interactive Dual Process**: Both teachers and students engage in an interactive process of self-regulation in which they work together, allowing a two-way concomitant flow, to improve their skills, competencies, and to accomplish mutual educational objectives.

As demonstrated in Linda's successful career, culturally self-regulated pedagogy fosters an inclusive, agentic, and dynamic learning environment where cultural diversity enriches the educational journey of teachers and students. For educators interested in grasping and applying culturally self-regulated pedagogy as essential for nurturing an environment where students and teachers can uphold their cultural identity while achieving calibration and academic success, Linda's work stands as a commendable role model. For educators looking to incorporate or deepen their comprehension of calibration and culturally self-regulated pedagogy, Linda is the scholar we should emulate. Linda's research and pedagogy epitomize culturally self-regulated pedagogy, and we should all aspire to follow her lead.

References are available by contacting Héfer Bembenutty (hefer.bembenutty@gmail.com).

Linda Bol: Recipient of the Barry J. Zimmerman Award for Her Contributions to Self-Regulated Learning Research

Timothy J. Cleary's Letter of Nomination

I am delighted to nominate Professor Linda Bol, PhD, for the Barry J. Zimmerman Award for Outstanding Contributions to educational psychology, teacher education and preparation, and the field of self-regulated learning (SRL). Dr. Bol's research focuses broadly on metacognition and SRL, with a specific focus on the importance and determinants of calibration accuracy. Her expertise also extends to teacher assessments and pedagogical practices that examine the intersection between teaching and student learning processes and outcomes.

Dr. Bol's scholarly work and her selfless dedication and service to the SSRL SIG and broader field of SRL collectively embody the meaning and spirit of this prestigious award. In addition to collaborating with well-known researchers in the field and consistently publishing in top-tier journals, Dr. Bol's scholarly work has significantly enhanced our understanding of metacognitive processes among school-aged and college populations and the pivotal role that teachers play in optimizing student success. From my perspective, she has exerted a substantial theoretical, empirical, and applied influence within the fields of education and SRL.

Dr. Bol is currently Professor (with tenure) in the Department of STEM Education and Professional Studies at Old Dominion University. Since arriving at Old Dominion in 2000, she was promoted to Associate Professor in 2003 and Professor in 2008. Prior to Old Dominion, Dr. Bol worked as an Assistant and Associate Professor at the University of Memphis from 1993 to 2000.

A key aspect of Dr. Bol's scholarship is her focus on calibration accuracy among students and approaches for improving this skill. She has also examined the role of teacher assessments in promoting student learning, specifically regarding the development of psychometrically strong and contextually relevant rubrics. Dr. Bol's research is theoretically rich and consistently utilizes rigorous research designs (e.g., randomized control trials, sophisticated correlational analyses, survey designs).

In terms of broad impact, her work in human learning and SRL cuts across distinct student populations, educational contexts, and content areas, and has specifically examined the effects of innovative academic interventions for ethnically and financially diverse samples across the developmental spectrum (K-12, community colleges, and four-year colleges).

Dr. Bol's focus on calibration and student learning processes has also extended to multiple content areas including science, mathematics, English, and social studies. From my perspective, her ability to address such a broad array of topics, school contexts, and populations underscores her flexible and nimble approach to conducting research and her intentional and strategic vision for generalizing the key findings from her work.

One of the most important qualities of Dr. Bol's scholarship is its breadth of coverage and applied focus. As noted previously, much of Dr. Bol's research addresses the educational needs of academically vulnerable student populations. She has conducted research in Title 1 schools, community colleges, and more traditional institutions of higher education.

Although the broader professional community is just now beginning to adequately consider and address diversity, equity, and inclusion topics in education, Dr. Bol's consideration of race and ethnicity, the challenges of learning in urban contexts, and the disadvantages experienced by marginalized populations over the past couple of decades underscores her pioneering efforts in these areas.

In recent years, many universities have also increasingly recognized the value of publicly engaged scholarship. Publicly engaged scholarship is viewed as having a direct benefit to the external community, is visible and shared with community stakeholders, is collaborative, and has both public and scholarly impact. This type of scholarship is valued because it influences, enriches, and improves the lives of people beyond the academy.

Although Dr. Bol's scholarship reflects strong scientific rigor and contributes unique knowledge to educational psychology and teacher education, it also reflects her dedication to serving the broader good. She works directly with teachers on improving teaching and assessment practices in the classroom and has secured major grants to improve mathematics achievement of under-represented and marginalized student populations.

Dr. Bol also exhibits an extensive track record of writing and submitting technical reports and papers to colleges, public schools, foundations, and governmental agencies. In short, a special aspect of Dr. Bol's scholarly career is the broad ways in which she has creatively and strategically embedded or communicated research-based principles and practice with a broad array of educational contexts and situations.

In terms of productivity, Dr. Bol has published more than 55 peer-reviewed journal articles and 7 book chapters. Supplementing these publications are over 80 presentations given at national and international meetings and a litany of invited lectures and technical reports.

According to Google Scholar analytics (September 2023), Dr. Bol has been cited over 5,129 times and exhibits an h-index of 31 and lifetime i10-index of 50. Her article, Test prediction and performance in a classroom context, published in the *Journal of Educational Psychology*, has been cited more than 650 times. Nine other publications have been cited more than 200 times, further illustrating the value and importance of her work to the scholarly community.

Dr. Bol's extramural grant funding is also impressive, in terms of both quantity and quality. Broadly speaking, her success in obtaining grants has enabled her to address several critical issues including interventions to promote academic success among marginalized and high need populations, trauma-based care and supports, small learning communities, and teacher assessment practices. As one illustration, Dr. Bol recently served as co-PI on a $26 million dollar grant from the Department of Education to develop and use technological innovations in mathematics across high need secondary school settings.

Although Dr. Bol's scholarly accomplishments and educational innovations make a compelling case for receiving the Barry J Zimmerman Award, I have been even more impressed with the nature, depth, and consistency of her service contributions and dedication to the fields of education, teaching, and SRL.

Dr. Bol has demonstrated steadfast dedication and outstanding service to the fields of education and educational psychology as well as professional organizations such as AERA and the SSRL SIG. At a national level, she has served on the editorial board for top-tier journals (e.g., *Journal of Educational Psychology, Journal of Experimental Education,* and *Metacognition and Learning*) and has volunteered as a Faculty Mentor (AERA, Division C).

Perhaps her most extensive service contributions have been to the SSRL SIG. In addition to being a founding member, Dr. Bol served on the SIG's Executive Board as Chair, Program Chair, Treasurer, and Secretary. Due to her strong leadership capabilities and her overall willingness and desire to support the SIG, Dr. Bol served multiple terms in several of these roles over the past few decades.

In closing, I sincerely hope the award committee recognizes the quality, scope, and uniqueness of Dr. Bol's contributions to scholarly literature, our educational system, and the SRL field. Over the last few decades, she has made significant contributions to SRL research and teacher education and has conducted investigations that not only impact theory and science, but also the daily lives and practices of educators and the students they serve.

Timothy J. Cleary can be contacted by email (timothy.cleary@rutgers.edu).

Timothy J. Cleary is a professor and Chair of the Department of School Psychology in the Graduate School of Applied and Professional Psychology (GSAPP) at Rutgers University. He conducts research on SRL and motivation-related intervention and assessment issues.

Linda with some of her AERA colleagues in Toronto, 2019.

Congratulations, Linda!

We are all proud of you!

Linda in first grade.

ABSTRACTS

The effects of training in self-regulation on metacognition and math achievement were investigated. The participants were 116 community college students enrolled in developmental math courses. Students enrolled in 16 classrooms were randomly assigned to the treatment and control groups. Participants in the treatment group completed four self-regulated learning (SRL) exercises based on Zimmerman's (2002) cyclical model. The exercises were completed weekly and repeated for a total of 3 weeks. During the last week of class, participants completed a final exam to measure math achievement as well as the metacognitive self-regulation and time/study environment management scales on the Motivated Strategies for Learning Questionnaire ([MSLQ], Pintrich, Smith, Garcia, & McKeachie, 1991). There were significant differences between the two groups, indicating that training in SRL improved math achievement and metacognitive skills assessed on both MSLQ scales. The findings suggested that training in SRL improves math achievement, metacognitive self-regulation and time/study environmental management skills of students enrolled in developmental math courses.

Bol, L., Campbell ,K. D. Y., Perez, T., & Yen, C. (2016). The effects of self-regulated learning training on community college students' metacognition and achievement in developmental math courses, *Community College Journal of Research and Practice, 40*:6, 480–495. https://doi.org/10.1080/10668926.2015.1068718

"Research on calibration remains a popular line of inquiry. Calibration is the degree of fit between a person's judgment of performance and his or her actual performance. Given the continued interest in this topic, the questions posed in this article are fruitful directions to pursue to help address gaps in calibration research. In this article, we have identified six research directions that if productively pursued, could greatly expand our knowledge of calibration. The six research directions are: (a) what are the effects of varying the anchoring mechanisms from which calibration judgments are made, (b) how does calibration accuracy differ as a function of incentives and task authenticity, (c) how do students self-report the basis of their calibration judgments, (d) how do group interactions and social comparisons affect calibration accuracy, (e) what is the relation between absolute and relative accuracy, and (f) to what extent does calibration accuracy predict achievement? To help point the way to where we go from here in calibration research, we provide these research questions, propose research methods designed to address them, and identify prior, related studies that have shown promise in leading the way to fill these gaps in the literature."

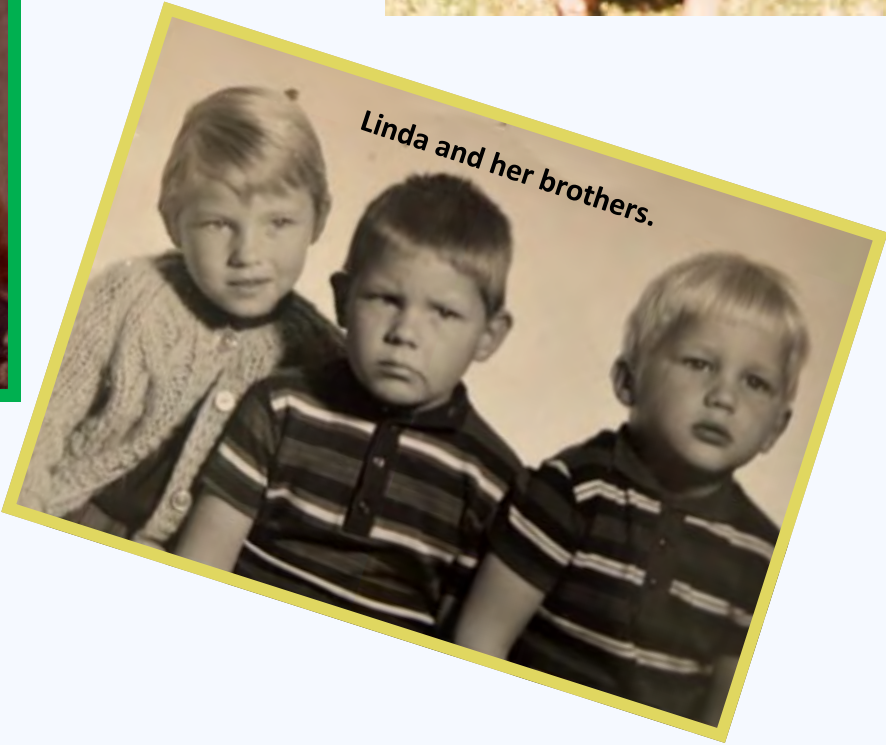Bol, L., & Hacker, D. J. (2012). Calibration research: Where do we go from here? *Frontiers in Psychology, 3*, 229. https://doi.org/10.3389/fpsyg.2012.00229

Linda's undergraduate graduation.

Linda (right) and her sister.

Linda in high school

Linda and her brothers.

AERA SIG Studying and Self-Regulated Learning

Linda Bol: Our Collaboration Has Made Me a Better Researcher

Douglas J. Hacker

In 1994, I got my first appointment as an assistant professor at The University of Memphis. My appointment was due in large part to a recommendation from Linda Bol who had arrived at Memphis a couple of years earlier. We shared an interest in program evaluation and consequently worked together on a few projects involving the Memphis City Schools. Along with a cadre of colleagues, our work was presented at national conferences and published in some top journals on school reform.

More germane to our long-standing collaboration, Linda and I have been interested in calibration, a students' ability to judge their performance on classroom assessments. Our argument was that accurate predictions of performance would be key to self-regulated study: Students' low predictions would encourage them to greater study in contrast to high predictions, which would allow students to allocate their study efforts to other pursuits. Our first step was to empirically investigate whether students could accurately predict their performance on commonly administered classroom exams.

Two of our studies, which were presented at AERA, Hacker, Bol, et al. (1998) and Bol, Hacker, and Vaden (1999) showed that low-performing students were strongly overconfident in their judgments of performance, high-performing students were slightly underconfident, but average-performing students were quite accurate. Shortly after, we again saw this pattern of cognitive bias in a study we conducted that was reported in the *Journal of Educational Psychology* (Hacker, Bol, et

Douglas J. Hacker is Professor Emeritus from the University of Utah, Department of Educational Psychology. Hacker's research interests have included metacognition, self-regulated learning, writing and reading processes, teacher education, and school and program evaluation. He recently has made significant contributions to the area of the detection of deception.
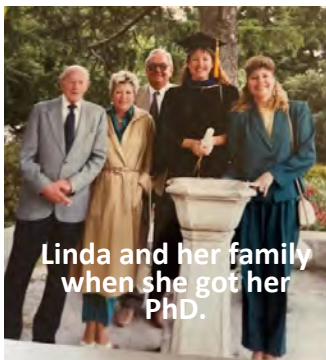
Linda and Douglas

al., 2000). This study has been cited nearly 700 times and has contributed to many subsequent studies of calibration. At the same time, two social psychologists, Dunning and Kruger (1999), were finding similar results. They subsequently labeled the cognitive bias the "unskilled and unaware effect"; however, based on what we have found in our research, a more accurate moniker would have been "unskilled and highly unaware and highly skilled but still unaware."

Linda and I have collaborated over 30 years on programmatic research concerning calibration and its critical role played in self-regulated learning. We have examined the effects of practice on calibration (Bol & Hacker, 2001), looked at the effects of explanatory style on accuracy (Bol, Hacker, et al., 2005), examined strategies to increase accuracy (Hacker & Bol, 2005; Hacker, Bol, et al., 2008), examined the effects of achievement level (Bol, O'Shea, Hacker, et al., 2003), and weighed the effects of knowledge in conjunction with social-cognitive influences (Hacker & Bol, 2004; Bol & Hacker, 2005),

We also investigated the calibration accuracy of students in specific classroom contexts, such as biology and mathematics (Bol, Riggs, Hacker et al., 2010; Hacker, Bol, et al., 2011; Bol, Hacker, et al. 2012), and expounded on the theoretical and empirical bases of calibration and its critical connection to self-regulated learning (Hacker, Bol, et al., 2008; Bol & Hacker, 2012; Bol & Hacker, 2018; Hacker & Bol, 2019). Of course many questions still remain concerning self-regulated learning and how to foster it in learners, but I believe Linda and I have contributed to a foundation for answering those questions.

In addition to our collaboration, Linda has conducted research on self-regulation with her students and promoted the exchange of ideas on self-regulated learning by co-founding the Studying and Self-Regulated Learning

Abstract

"The critical component of formal education is helping students become self-regulatory agents of their own thinking and that successful self regulation requires that students accurately monitor their cognitive and affective states and processes. The study of calibration, defined as a measure of the degree to which people's subjective judgments of performance correspond to their actual performance, helps to understand the accuracy of the learner's monitoring. This chapter reviews the calibration research. It is organized in three sections: research that has examined factors that may contribute to calibration; research that has investigated whether calibration accuracy can be improved; and research that has sought to establish a link between calibration accuracy and academic performance. The chapter discusses how the empirical evidence supports the theoretical claims and learning implications associated with each major phase in B. J. Zimmerman's (see record 2008-03648-007) model as well as the cyclical interactions among components of these phases. According to Zimmerman's model, the forethought phase encompasses task analysis, learning goals, strategic planning, and self-motivation beliefs. The self-reflection phase of the theoretical model includes self-judgment and self reaction."

Hacker, D. J., & Bol, L. (2019). Calibration and self-regulated learning: Making the connections. In J. Dunlosky & K. A. Rawson (Eds.), *The Cambridge handbook of cognition and education* (pp. 647–677). Cambridge University Press. https://doi.org/10.1017/9781108235631.026

SIG. She has mentored a cadre of graduate students, providing them with the skills necessary to conduct their own inquiries into knowing and to establish their own programs of research.

In addition to self-regulation, Linda has mentored her students in diverse areas of research, including scoring reliability, co- and socially shared regulation of learning, motivational prompts and test performance, learning in small communities, and students' learning in mathematics. Truly, only a gifted researcher/instructor could successfully mentor students in such diverse areas of interest.

Our collaboration has been a gift to me. Linda's desire to know, drive for discovery, and research acumen have been infectious over the years, and have made me a better researcher. Moreover, our deep friendship and respect for one another that has developed over the years goes well beyond the academic. I can think of no other person so deserving of the Barry J. Zimmerman Award for Outstanding Contributions than Linda Bol.

References are available by contacting Douglas J. Hacker (Doug.Hacker@utah.edu).

Fruitful Directions for Future Research: Where Does Linda Bol Go from Here?

Katrice A. Hawthorne

Linda and her family when she got her PhD.

Linda getting her PhD.

Linda with her students during their graduation ceremony, 2023.

Katrice A. Hawthorne, PhD is assistant vice provost for assessment and institutional effectiveness at Virginia Commonwealth University. Her current research

I f you are familiar with calibration research, then you know the article from which I nabbed this title, "Calibration Research: Where Do We Go from Here?" (Bol & Hacker, 2012). In this article, Bol and Hacker (2012) outline "fruitful directions" for calibration research. I had the pleasure of not only following one of those fruitful directions but, perhaps most impressively, of pursuing that research with Linda Bol.

I first met Linda in 2010 when she became my graduate advisor. In 2011, I had the pleasure of taking a class taught by her, and after that, I sought out not only her courses but her guidance. Linda would go on to serve as chair of my dissertation committee and now as my dear friend and mentor. I tend toward formalities, and after the successful defense of my dissertation and my profuse thanks to Dr. Bol, she said, "It's Linda now. We're colleagues," and it is hard to describe how my heart swelled in that moment. I received a graduate research award from the Studying and Self-Regulated Learning SIG for that dissertation work, which is as much her award as it is mine.

Now let's get back to those fruitful directions. In Linda's advanced research design courses, her assignments always end with a directive to consider fruitful directions for future research. This encourages students to not only think outside of the box but also to consider how we might contribute to and extend the research literature. Linda introduced me to metacognition, calibration, and self-regulated learning research, yet she never imposed her opinions on me. Instead, she motivated me to consider novel approaches to their study. This challenged me to study the relationship between absolute and relative accuracy (Hawthorne, Bol, & Pribesh, 2017), one of the fruitful directions outlined by Bol and Hacker (2012).

I suggested studying these concepts through the lens of writing self-regulation and calibration, and Linda praised what I thought might have been my pie-in-the-sky idea. This research challenged me in more ways than one, but Linda provided constructive feedback all along the way. Her insights and support were and continue to

be invaluable. Moreover, the study (Hawthorne, Bol, & Pribesh, 2017) found statistically significant main effects between calibration accuracy by criteria and prior achievement.

Linda's commitment to teaching, learning, research, and the success of her students both in and out of the classroom is unmatched. She creates a community for her students in ways that few faculty do, and she provides avenues for her students to flourish. She plays host in multiple ways by connecting new advisees to those in later stages of the program and connecting current students to former students. She invites us to not only collaborate but also to cheer each other on. She has invited current and former students to lunches and dinners, and the connections that have emerged are incredibly enriching.

Linda is not simply focused on her productivity; she is dedicated to nurturing and elevating her students. She inspires her students to be knowledge producers, not simply consumers. As a result, the research avenues that Linda and her students explore are always impressive.

While some advisors might consider me an academic failure because I did not pursue a typical academic career, choosing instead to go into administration, specifically in learning outcomes assessment, Linda has offered enduring support. One of the true tests of learning is being able to apply that learning in various contexts. I have learned to infuse my assessment work with the lessons she taught me about metacognition and calibration, and I consider it a fruitful direction.

Linda continues to write successful grants, pursue research, and mentor

students, always in pursuit of those fruitful directions. If you are a graduate student or a junior scholar, read Linda's work, and if you can work with her, embrace that opportunity. She has high expectations, but she will help you activate the self-regulation strategies needed to reach them. Linda is not one to rest on her laurels of which there are many, yet there are still so many places for her to go from here, and I can't wait to see what direction she takes us in next.

References are available by contacting Katrice A. Hawthorne (khawthor@odu.edu).

Linda with students and colleagues during the AERA conference in Toronto, 2019.

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John Nietfeld

Linda Bol: Leading the Way in Helping Us Calibrate the Field of Self-Regulated Learning

John Nietfeld is a Professor of Educational Psychology in the Department of Teacher Education and Learning Sciences at North Carolina State University. His research focuses on supporting self-regulated learning, improving metacognitive skills in classroom settings, and more recently in developing game-based learning environments to encourage science literacy.

I was so pleased to hear that Linda Bol will be recognized with the Barry J. Zimmerman Award for Outstanding Contributions, and am honored to provide some brief comments and personal reflections on her work. Linda has been an inspiration in my career, particularly as I have navigated the pursuit of a better understanding of the role of metacognition and study tactics in classroom environments.

On a personal note, I have always felt Linda to be unique in how welcoming and supportive she has been in this academic space, and for that I am very grateful. Whether it has been in a poster session, an AERA mentoring event, or other venue Linda is extremely approachable for colleagues and students alike.

In this small space, I would just like to emphasize three contributions from Linda's work that I have found particularly impactful and that might be useful to others entering this area of research.

Linda's innovative work in calibration really came into our purview in an article with Doug Hacker and others (Hacker et al., 2000) in the *Journal of Educational Psychology* on test prediction and performance in a classroom context. Before this work little was known about the relationship between calibration and academic achievement in actual classrooms. This was a significant paper in a number of ways but primarily in that it was one of the first in vivo examinations of the impact of metacognitive judgments and performance in a classroom setting and also revealed the need to further develop metacognitive interventions that impact performance and achievement.

A number of years later, after more work by Linda and others had made significant gains in this field, she and Hacker (2012) sent another checkpoint and challenge to the field of calibration research. Here they articulated a 'state of the field' for those of us working in calibration that I have referred to numerous times.

Their six research directions have personally influenced and guided mine and many others' work in calibration. If you have taken an interest in this field and have not read this article the research directions are still very relevant, and this is a recommended read.

Linda's focus on classroom-based environments has been evident throughout her career as she has conducted a large portion of her work on metacognition and self-regulated learning (SRL) in actual classroom contexts. Her efforts to offer up externally valid recommendations have come from a range of participants (e.g., high school, university students, teachers), domains (e.g., biology, education) and contexts (e.g., in-person, online). Linda's work has taught me that these settings provide unexpected challenges and show the complexity of investigating metacognition and SRL, but also delivered findings in the naturalistic settings that would not have been revealed in controlled lab settings.

Linda's mentorship has been evident and on display regularly at AERA events, such as when she has discussed her work for the SSRL SIG graduate student mentoring program or when she has worked for various graduate student research committees in Division C. She has dedicated time to giving back to the research community and in developing the next wave of SRL researchers. These efforts extended to her writing as she and Hacker (2014) wrote an extremely useful article for emerging scholars that pointed out how to conduct effective journal reviews and tips for publishing in high quality journals. Moreover, she (Bol et al., 2022) has argued for greater access for students by considering open educational resources in courses that prevent socioeconomic status from being a barrier to higher education coursework.

In closing, I would like to say thanks to Linda for being a great academic role model to people she probably does not even realize she has impacted. I expect to see much more interesting and forward thinking work coming from her in the near future as we push the field ahead.

References are available by contacting John Nietfeld (jlnietfe@ncsu.edu).

Linda and her family.

Linda and her mother.

Inspired by Linda Bol:
Navigating Academia with Sincerity and Rigor

Deana J. Ford

I am honored to testify to Linda's well-deserved recognition with the Barry J. Zimmerman Award for Outstanding Contributions from the AERA Studying and Self-Regulated Learning SIG. Linda's journey to receiving this prestigious award is a testament to her exceptional dedication, expertise, and unwavering commitment to the field of studying and self-regulated learning.

During my PhD program, Linda played a pivotal role as an instructor, mentor, and friend leaving an indelible mark on my academic, professional, and personal development. As an instructor, Linda seamlessly combined her vast knowledge with a unique teaching style that was both challenging and rewarding. Her classes were not only informative but also transformative.

One of the standout qualities that set Linda apart was her ability to maintain high expectations for her students. I found this quality incredibly valuable. Linda's high standards challenged me to elevate my thinking while fostering a deeper understanding of the material. This pedagogical approach not only enhanced my academic performance but also instilled in me the importance of setting ambitious goals and striving for excellence.

As my dissertation methodologist and chair, Linda's expectations became even more demanding. However, this elevated level of challenge was precisely what I needed to reach my highest potential. One of the most impactful aspects of Linda's influence on my academic journey was the inspiration for my current research. Her expertise and work introduced me to the fascinating realm of metacognitive accuracy. This unexpected turn in my research trajectory, sparked by Linda's guidance, has enriched my scholarly pursuits.

Under Linda's guidance, I learned to approach research with rigor and precision. Linda modeled the qualities of an exceptional methodologist and dissertation chair, setting the bar high for scholarly excellence.

Beyond the academic realm, Linda emerged as a role model who embodied qualities I aspired to emulate. She demonstrated the art of providing specific and constructive feedback to students, a skill that I have integrated into my own teaching philosophy. Linda's mentorship even extended beyond the classroom, encompassing valuable insights into navigating the complexities of academia and research.

In addition to Linda's exceptional qualities as an instructor and mentor, her sincere, honest, and caring demeanor sets her apart as an extraordinary individual. Linda's genuine warmth and authenticity created a supportive learning environment, fostering open communication and trust. Her honesty provided transparent insights into the challenges and rewards of academic pursuits.

Beyond academia, Linda's caring nature extended to personal well-being, offering holistic support and valuable advice. This sincere, honest, and caring approach not only enriched my academic journey but also served as a powerful example for me as an aspiring scholar.

Drawing from my personal and professional relationship with Linda, I offer the following three recommendations to those aspiring to excel in a similar field.
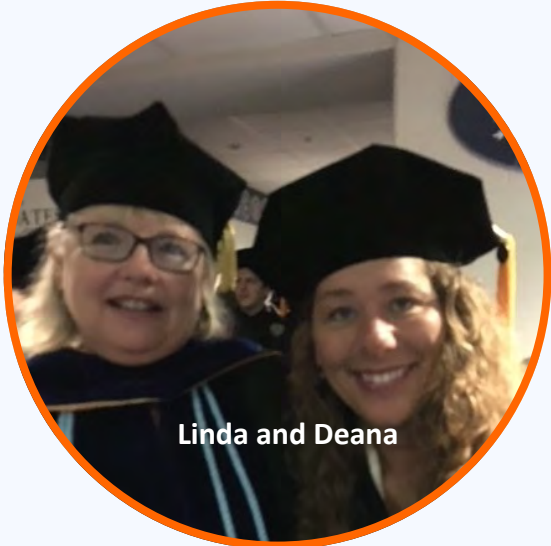
1) **Embrace High Expectations**: Just as Linda challenged me to reach new heights, aspiring scholars should embrace high expectations. These standards serve as catalysts for personal and academic growth, pushing individuals to exceed their perceived limitations.

2) **Develop Specific Feedback Skills**: Linda's exemplary feedback practices and honesty significantly impacted my approach to teaching and mentoring. Learning to provide specific, constructive, honest feedback is a crucial skill that fosters a supportive learning environment and promotes continuous improvement.

3) **Seek Diverse Research Avenues**: Linda's diverse expertise broadened my research horizons. To thrive in the field of studying and self-regulated learning, individuals should actively explore various research avenues, allowing for unexpected and enriching discoveries.

In conclusion, Linda's achievements and contributions to studying and self-regulated learning are nothing short of commendable. Her impact extends far beyond the confines of academia, shaping the academic journeys of those fortunate enough to be under her guidance. As we celebrate Linda's well-deserved recognition, let us also reflect on the profound influence she continues to exert on the future generation of scholars in our field.

Deana J. Ford's Dissertation Abstract

"This dissertation describes an empirical study that investigated how metacognitive training influenced lower achieving Algebra students' calibration accuracy, achievement, and development of mathematics literacy. Multiple methods were used to collect and analyze the data. Close analysis of students' work and classroom observations revealed that students that were exposed to the metacognitive training had significantly higher prediction accuracy and made gains in their understanding of the mathematics word problems than did students who did not receive the metacognitive training. Overall, however, both the intervention and comparison groups improved in their academic performance and became more mathematically literate and accurate in their metacognitive judgments.

These findings suggested that explicit instruction of self-regulation strategies was beneficial for improving metacognitive judgments among lower achieving Algebra students in this study. Results further suggest that the problem-solving strategy enhanced mathematics learning for both groups. Further research is warranted to better understand students' metacognitions as they engage in the problem-solving process."

Ford, D. J. (2018). The effects of metacognitive training on algebra students' calibration accuracy, achievement, and mathematical literacy. Doctoral dissertation, Old Dominion University, DOI: 10.25777/sr5m-9w69 https://digitalcommons.odu.edu/teachinglearning_etds/14

Linda and Deana

Deana J. Ford holds a Ph.D. in Curriculum & Instruction from Old Dominion University, specializing in teaching and learning with a research methodology focus. Currently an Assistant Professor at Mercer University, she brings 10 years of experience as a secondary mathematics teacher and department chair, and her research centers on self-regulation theory, particularly focusing on metacognitive awareness among preservice teachers.

Linda Bol: A Devoted Colleague, Collaborator, and Mentor

Anastasia Kitsantas, Tony Perez, Denelle Wallace-Alexander, & Erin Cousins

We all met Linda at different points in our academic lives. She has been a wonderful colleague to talk to and rely on throughout the years, an inspiring collaborator, naturally a dot-connector and dot-creator, and a skilled mentor who cares deeply about her students.

Tony met Linda after joining Old Dominion University as an assistant professor 10 years ago. Soon after starting, she invited him to co-author a manuscript she was writing with one of her students, Karen Campbell. They went on to publish this article in the *Community College Journal of Research and Practice* (Bol et al., 2015). This experience certainly encapsulates her generosity, skilled mentoring, and expertise in self-regulated learning. She is a staunch supporter of early career scholars, and is always available to offer guidance. Tony says that it is his hope that others will have the good fortune of working with a supportive colleague like Linda Bol.

Linda giving to Anastasia Kitsantas a plaque (Anastasia receiving the Zimmerman Award).

Denelle also knows Linda as her mentor and sponsor for 20 years. As her dissertation chair, she encouraged her to tap into her inner strength in the face of heartbreak as her marriage fell apart during the dissertation process. She continues to help her navigate her professional life, which has kept her passion for research and writing alive. In fact, because of her personal and professional relationship, Linda Bol has been the conduit through which she has entered rooms where she was not previously invited. Linda continues to encourage her to knock on doors that she has never considered. Denelle's suggestion to graduate students and junior scholars is to connect with an individual that is not only interested in how their research relates to their interests but is willing to invest in them as an individual, like Linda.

Erin has also been fortunate to be one of Linda's students for several years. She was her advisor, professor, and eventually her dissertation chair. Her influence led her to choose self-regulated learning (SRL) as one of her primary research interests, and her expertise has been invaluable on several related research projects they completed together. Linda has also contributed to her professional advancement by introducing her to educational psychology scholars and setting up meetings with educational research professionals to provide career

advice. Erin states that she is so grateful to Linda for being an inspiring scholar, a generous mentor, and a kind and thoughtful friend. Working with Linda has been an immense privilege.

I, **Anastasia,** met Linda more than 25 years ago during a job interview. The connection was strong as we shared

similar research interests and we were both involved in the SSRL SIG. Coincidently, we both ended up working in higher education institutions in the State of Virginia. We occasionally served together on professional committees and we crossed paths multiple times at professional meetings. She has always been very generous with her time and welcomes everyone with a big smile. I became interested in her scholarship particularly in the area of calibration in the early 2000s (Bol, & Hacker, 2001) and I continue to follow her recent research with her colleagues (e.g., Cousins, Bol, & Luo, 2022) on self-regulated learning.

References are available by contacting Anastasia Kitsantas (akitsant@gmu.edu).

Linda is certainly our role model for what it means to be a great friend, colleague, and researcher in a university setting. She brings extraordinary energy and dedication to everything she does for her students, colleagues, the profession, and the community. We are thrilled to congratulate her on receiving this prestigious award from the SSRL SIG.

Linda Bol: A Colleague, Mentor, and Friend

Tian Luo

Tian Luo is an associate professor of Instructional Design and Technology as well as a certificate coordinator for the Online Teaching for K-12 Teachers Certificate Program at Old Dominion University. She currently serves as a Co-Editor-in-Chief for the *Journal of Information Technology Education: Research* and *Journal of Information Technology Education: Innovations in Practice*. Her scholarly focus predominantly revolves around issues in teaching and learning, emphasizing the design and examination of learning environments enabled by digital tools, particularly within the realm of social media.

Linda Bol has been my esteemed colleague since the commencement of my journey as a new faculty member at Old Dominion University (ODU) in 2015. Over time, our professional relationship has evolved, and she is now my formal assigned mentor within our shared department. The impact that Linda has made in my professional journey is immeasurable. I am extremely honored to write this reflection essay which describes our professional journey together and the contributions that she makes in my career success.

Linda's approachability, genuine interest in the success of junior faculty, and willingness to go above and beyond expectations have positioned her as an outstanding colleague and mentor at ODU. My first encounter with her kindness was when I chaired my very first dissertation student. As a new assistant professor, the tasks were daunting, especially when it came to forming a dissertation committee on behalf of the student. Through other colleagues, I learned about Linda's work in self-regulated learning (SRL), which aligned with the student's dissertation topic. I hesitantly approached her to serve on the committee, as we had never met. To my surprise, Linda promptly agreed to serve.

Throughout the dissertation process, she not only provided invaluable feedback to the student but also exemplified a mentorship style that became a guiding light for me. She was kind, approachable, and never slow in answering questions from me or my student.

Our collaboration extended beyond dissertation committees, resulting in the publication of a study that was published in the *Journal of E-learning*, a leading journal in the field of online learning. This study sheds light on the relationship between self-regulated learning strategies, academic performance, and satisfaction among online high school graduates (Price et al., 2021). Linda's unwavering dedication continued as she served on subsequent dissertation committees, significantly contributing to our shared academic endeavors.

Besides working on dissertation committees, I often reference Linda's work on SRL in my course where I teach cognition and instructional design. In this course, the doctoral students are tasked to write a systematic review where they identify a gap in the literature revolving around the course topics and contribute to a systematic review addressing such topics. The vast majority of students in the course complete the paper and consider it concluded; however, with Linda's unwavering support, encouragement, and guidance through multiple rounds of revisions, one student who was Linda's advisee was able to transform a course paper into a publishable work (Cousins et al., 2023). Linda not only gave her the encouragement to contribute to larger discussions in the field, but also imparted valuable lessons about academic publishing. This systematic review is concerned with the long-term impacts of self-regulated learning interventions in K-12 contexts.

If I were to proffer a few recommendations to junior scholars aspiring to work in this field based on the insights gleaned from Linda, they would be as follows: 1. Cultivate humility, 2. Exemplify leadership through modeling, and 3. Foster a habit of continuous inquiry. One of the initial messages Linda sent to me during our formal mentor-mentee meetings was, "We are mentoring each other." Despite her decades of experience and extensive scholarly accomplishments, Linda consistently ensured that I never felt subordinate.

Throughout our nine years of professional relationship, she never failed to demonstrate kindness, accessibility, and genuine willingness to help, much like a supportive friend. Through asking questions, she delved into understanding not only my scholarly pursuits but also me as an individual. She always creates a comfortable atmosphere when we have a conversation, tailoring my mentoring experiences to accommodate individual differences.

While I personally do not work in the field of educational psychology, I know that Linda's work has been shaping and will continue to shape in the areas of calibration, metacognition, cognition, motivation, and self-regulated learning, all of which intersect with many multi-disciplinary fields including my own in instructional design and technology.

As a colleague and mentee, I have personally observed and experienced her unwavering dedication, expertise, and steadfast support to colleagues and students. I extend my heartfelt gratitude to Linda for her impactful contributions to the field, and I endeavor to pay it forward by mentoring and supporting others in the field.

References are available by contacting Tian Luo (tluo@odu.edu).

Linda presenting her research during a AERA conference.

We are thrilled to discuss the profound impact that Linda Bol has had on our lives. Her remarkable achievements in SRL are widely recognized. However, we have the privilege of knowing her on a more personal level. Throughout the years, she has consistently provided us with unwavering support, encouragement, and inspiration. From welcoming us into her home to actively engaging in our career development and ensuring that we are prepared beyond graduation, Linda has been an invaluable mentor. Linda, we look forward to celebrating this great achievement, the Barry J. Zimmerman Award, with you!

LINDA BOL: MORE THAN A MENTOR
Stephanie Greenquist-Marlett & Courtney T. Hill

Stephanie Greenquist-Marlett is a doctoral candidate in the Educational Psychology program at Old Dominion University. Her research interests include teacher knowledge, beliefs, and implementation of self-regulated learning strategies in classroom settings.

It is a distinct honor for me to be in the same academic sphere as Linda, and even more so to be her mentee, her co-collaborator, and her friend. When I was applying to Old Dominion University, I was familiar with her work and I reached out to her specifically, inquiring if she might consider taking me on as one of her doctoral students. I received a quick reply – the answer was no. Linda had conferred with her team and they decided that they were unable to take on any more distance students. The university was in Virginia, while I was all the way on the opposite coast in California. I was disappointed to say the least. Linda's reputation in the field of educational psychology, and specifically as an expert of self-regulated learning, precedes her. Her published works and other contributions to her area of study are undeniably important, relevant, and critical to the development of SRL knowledge and practices in educational settings. I wanted to study under the best, and she was the best. Undeterred by her initial rejection, I tried again. I pled my case for why she might reconsider. I wanted her to know what it would mean to me to work beside her, to learn from her. I begged her to give me a chance, to at least let me apply to the program. Plus, I explained, I had "practically already purchased my ODU swag". She replied that she considered my request and would allow me to submit my application, cheekily saying that "if you already have your eye on ODU swag, we have reached a whole new level of commitment." This is my third year as Linda's graduate research assistant and mentee, and in that time, she has gifted me with a tremendous amount of guidance, knowledge, and advice, methodically and patiently developing my skillsets and understanding of SRL with genuine care and companionship. The first time I visited the campus, Linda was there to greet me with open arms and a friendly smile. And she made sure I left with a bag full of ODU swag.

Courtney T. Hill is the Associate Director for Student Success at the University of North Carolina Charlotte. She is a doctoral student in the Educational Psychology and Program Evaluation program at Old Dominion University and adjunct instructor in the Department of STEM Education and Professional Studies. Her research interests are in academic help seeking, self-regulated learning, and metacognition.

I consider it a tremendous honor to express my personal thoughts on Linda, who is undeniably the most deserving recipient of the prestigious Barry J. Zimmermann Award for her exceptional contributions to the field of self-regulated learning (SRL). I first met Linda in her capacity as PhD supervisor for the Educational Psychology and Program Evaluation program at Old Dominion University. I distinctly recall feeling an overwhelming sense of apprehension as I began my PhD journey, but all those worries went away after my first meeting with Linda. She exuded warmth, kindness, and a genuine down-to-earth nature that instantly put me at ease. Not only did she share her own research interests with me, but she also took the time to attentively listen to my own aspirations. Although I was uncertain about my academic path and research interests at that time, it was her unwavering passion and dedication to the field of SRL that ignited my curiosity and propelled me to delve into the field. From that day forward, she transcended the role of a mere supervisor; she became my mentor, and I have been immensely proud to be her mentee (and friend) ever since. Thank you for everything, Linda!

Linda Bol's dedication and contributions to the study of self-regulated learning have left an indelible mark on our field. As a colleague and friend, I have had the privilege of witnessing Linda's extraordinary journey in academia and her profound impact on the world of education and psychological science.

My association with Linda Bol goes beyond professional collaboration; it is a friendship nurtured through shared academic pursuits and mutual respect. From the moment I met Linda, I was struck by her passion for understanding the intricacies of self-regulated learning and her unwavering commitment to the betterment of education. Beyond her brilliance as a scholar, Linda's warmth, generosity, and humor contribute to her charm making her the most fun professor, coauthor, chair, dean, and woman to know in academia.

In the classroom, Linda models how to adeptly share feedback with students that validates their efforts and inspires growth. At the University level, Linda is a sought-after committee member, student advisor, and chair, because she expertly balances criticality with care resulting in improved outcomes and collaborative success. In the field of research, Linda's publications and presentations continue to punctuate the literature from the field, as her contributions have established a solid foundation in the field of Studying and Self-Regulated Learning. Personally, her mentorship and guidance have been instrumental in shaping my career, and I am forever grateful for the invaluable lessons she has imparted.

Over the years, Linda and I have collaborated on research and course development projects, sharing ideas, insights, and a common goal – to advance our understanding of how individuals regulate their learning processes. One of the most memorable research projects I had the privilege of working on with Linda was a longitudinal study focused on the calibration of students' metacognitive processes. Through meticulous data collection and analysis, we explored how students' perceptions of their learning aligned with their actual performance. Linda's expertise in research methods and program evaluation was evident throughout the project, ensuring the rigor and validity of our findings. Linda's contributions were immeasurable, from designing the study to interpreting the results, and her passion for bridging the gap between research and practice was palpable.

The significance of this study extended beyond the realm of academia, as it shed light on practical implications for educators and policymakers. For example, in my current leadership role in Bergen County, New Jersey, I am positioned to share Linda's work on calibration with numerous administrators, teachers, and parents seeking to understand the discrepancies between outcomes and perceived preparation. Linda's insights into this area of self-regulated learning impact how boards of education interpret district test scores, how teachers understand their professional evaluations, and most importantly how students learn to see themselves as capable learners and develop greater self-awareness skills leading to stronger self-efficacy in academic settings. I am privileged to both know the scholar who brings this learning phenomenon to our collective understanding, as well as the ripple effects of her work in our world.

Derived from my collaboration with Linda Bol, I offer the following recommendations to

Melissa Quackenbush, PhD, is a K-12 Central Office Administrator in Bergen County, NJ with a proven commitment to instructional innovation. As the Director of Curriculum, Instruction, and Articulation at Ramapo Indian Hills Regional High School District, her expertise in program evaluation, instructional design, technology innovation, and curriculum development contributes to her visionary leadership which fosters positive climate change and organizational growth, enhancing student learning outcomes. Melissa's extensive experience in K-12 educational leadership, higher education teaching, and program evaluations, along with her numerous presentations and publications, make her a positive influence in the field of Education.

Celebrating Linda Bol's Outstanding Contributions to Studying and Self-Regulated Learning
Melissa Quackenbush

those venturing into the field of self-regulated learning:

- **Embrace Interdisciplinary Collaboration**: Self-regulated learning is a multifaceted concept that benefits from diverse perspectives. Collaborate with experts from various fields, as it fosters innovation and enriches research outcomes.
- **Continual Growth and Adaptation**: Education is an evolving landscape. Stay updated with the latest research, methodologies, and technologies, as they can profoundly impact the study of self-regulated learning.
- **Promote Applied Research**: Strive to bridge the gap between research and practice. Engage with educators, policymakers, and practitioners to ensure that your findings have a meaningful impact on the field of education.

Linda Bol's exceptional contributions to self-regulated learning research have not only advanced our knowledge but have also inspired countless scholars, educators, and leaders, including myself. Her unwavering dedication, innovative thinking, and passion for education continue to be a source of inspiration for all of us in the field.

Linda with some of her students and colleagues during the AERA conference in Toronto, 2019.

John Nesbit is a professor of educational psychology and learning design at Simon Fraser University. His most recent research investigates simulation-based inquiry learning and argument visualization.
Qing Liu is an Associate Director of Assessment and Instructional Design and Adjunct Professor in the Faculty of Education at Simon Fraser University. Her research focuses on cognitive tools, individual differences, and argumentation-based learning.
Mari Fukuda is a postdoctoral research fellow in the Faculty of Education at Simon Fraser University. Her research interests are simulation-based inquiry learning and self-regulated learning.

Three Themes from Linda Bol's Research
John C. Nesbit, Qing Liu, & Mari Fukuda

To recognize and appreciate Linda Bol's contributions to educational psychology, we decided to revisit a few of her "greatest hits." We touch on three research foci which represent but do not encompass the many contributions she has made to our field throughout her career.

Teacher Assessment Practices

When she was still at the University of Memphis, Linda collaborated with Amy Strange to examine the gap between teachers' stated instructional goals and how they assessed students in high school biology courses (Bol & Strage, 1996). Prior research had indicated that teachers may have instructional goals that emphasize application, critical thinking, and problem solving, while their teaching practices focus on acquisition of basic domain knowledge with little opportunity to apply or reason with that knowledge. Bol and Strage interviewed high school teachers, categorized the teacher's test items, and collected their students' responses to the items. Despite teachers' stated intentions which emphasized higher order thinking, only 5% of their test items required reasoning with or application of the basic biology information their students had studied.

The researchers' analysis of interviews indicated that teachers may not be aware of this gap. Because there was little evidence about the frequency with which teachers used more authentic types of assessment that evaluate application of knowledge, Linda collaborated with other researchers to conduct a large-scale survey of teacher assessment practices (Bol, Stephenson, O'Connell, & Nunnery, 1998). They found elementary school teachers more frequently used alternative or authentic assessments than high school teachers. One of their more counterintuitive findings was that more experienced teachers tended to make greater use of alternative assessments than the least experienced teachers.

Linda with Denelle Wallace, her first doctoral student from ODU at AERA in Montreal.

Learner Metacognition and Calibration

Shifting from teacher assessments to students' metacognitive monitoring, Linda drew attention to the role of calibration judgements in educational settings. Of course, calibration accuracy has important theoretical and practical implications in that it reflects metacognitive monitoring and contributes to productive self-regulated learning. Linda, by now at Old Dominion University, collaborated with Doug Hacker to find that calibration accuracy correlates with learning achievement in undergraduate courses (Bol & Hacker, 2001). If students inaccurately gauge their mastery of studied materials or misjudge how well they will perform, they may make poor decisions about allocating time and effort in subsequent learning. Over the past two decades, Linda and colleagues have conducted substantial research on calibration in various educational settings.

They found that postdictions made after completing a task tend to be more accurate than predictions. Another consistent finding is higher-achieving students are typically more accurate and yet less confident in their calibration than lower-achieving students. Although calibration has been found to be stable across tasks, Linda's research conveys to educators the invaluable message that students' calibration accuracy can be developed through appropriate interventions. For example, Linda and colleagues (2012) conducted research with high school biology students and found either providing guidelines for practicing calibration or having students exercise calibration in small groups was effective in increasing calibration accuracy.

A combination of the two interventions was even more effective. Prompting students to reflect on possible disparities between their judged and actual performance can be helpful for higher-performing students, while incentives like bonus points for greater accuracy have been found effective for lower-achieving students (Bol & Hacker, 2012; Hacker & Bol, 2019; Hacker, Bol, & Bahbahani, 2008).

Self-Regulated Learning

Since at least 2011, Linda has worked with colleagues to investigate self-regulated learning (SRL) from both theoretical and empirical perspectives. As one might expect from her previously established specialization in calibration accuracy, a distinctive feature of her SRL research is an emphasis on its metacognitive components. Bol and Garner (2011) conducted a literature review that focused on student-content interaction, specifically the utilization of electronically enhanced texts in distance education environments. They argued that accurate calibration in each of the cyclical phases of Zimmerman's SRL model is key to effective SRL and made suggestions for the design of interventions and tools to support learners' self-monitoring.

Another noteworthy aspect of her contribution is adopting mixed-methods designs to depict the SRL practices of both learners and educators (Bol et al., 2016; Spruce & Bol, 2015; Price et al., 2021). Using questionnaires, classroom observations, and interviews, Spruce and Bol (2015) examined the SRL-related beliefs, knowledge, and classroom practices of elementary and middle school teachers. Echoing Linda's much earlier work on teacher assessment practices, they found that although teachers' instructional knowledge and their practice of SRL facilitation during the monitoring phase were aligned, there was divergence between teachers' self-reported knowledge and their classroom practice during the planning and evaluation phases.

Bol et al. (2016) examined the effect of a three-week intervention involving strategy use exercises in a community college mathematics class to promote the use of SRL strategies for goal setting, self-monitoring, self-reflection, and time management. The researchers found that SRL training improved metacognitive skills assessed by a questionnaire as well as mathematics achievement accessed by a final exam.

Taken together, these studies underline the importance of adopting multiple measures and methods to fully capture the practice and process of SRL. Looking back over three selected foci of Linda's research career in education psychology we can see connections and continuities that give it tremendous coherence and depth.

We congratulate Linda on being awarded the Barry J. Zimmerman Award for Outstanding Contributions. We hope readers can glean from our highly abridged tour of her research why the award is so deserved.

References are available by contacting John Nesbit (jcnesbit@sfu.ca).

"Accuracy of both global and item-level calibration judgments plays an important role in current and future study efforts..."

"Calibration has been defined as the degree of fit between a person's judgment of performance and his or her actual performance (Keren, 1991). As such, calibration reflects a metacognitive monitoring process that provides information about the status of one's knowledge or strategies at a cognitive level (Nelson, 1996). Based on this information, control at a metacognitive level can be exerted to regulate one's knowledge or strategies. Therefore, greater accuracy in a person's judgments of performance (i.e., being well calibrated) creates greater potential for self-regulation (Zimmerman and Moylan, 2009)... Calibration research will be further advanced when we identify patterns of findings guided by sound theoretical models and based on precise descriptions of terms, measures, contexts, tasks, and populations. As we have argued previously (Hacker et al., 2008b), calibration has been measured in different ways but largely studied in more contrived contexts using college students. Granted, we must consider the trade-off between internal and external validity as we move into more naturalistic settings, such as classrooms and employ more authentic tasks. Various research methods with varying levels of control will better inform our questions overall."

(Bol & Hacker, 2012; https://doi.org/10.3389/fpsyg.2012.00229)

AERA SIG Studying and Self-Regulated Learning

Joanna Garner, PhD, is a Research Professor and the Executive Director of The Center for Educational Partnerships at Old Dominion University, where she conducts research to build, test, and disseminate teaching, learning, and identity formation models in formal and informal learning environments.

Linda Bol: Scholar, Mentor, and Friend

I t is with pleasure that I write to honor my incredible colleague and friend, Dr. Linda Bol. I have known Linda for nearly 14 years. I am grateful she was present when I interviewed for a research faculty position at Old Dominion University in the summer of 2010. As an assistant professor with an emerging interest in the relations between self-regulated learning and executive functions, it was a joy to "talk shop" with her over lunch. I was familiar with her work in calibration and was thrilled that even before I joined ODU a few months later, she invited me to collaborate on an article where we considered overlapping and unique aspects of self-regulated learning and executive functions in the relatively new online learning area. I will always be grateful for her warmth and hospitality when my young family arrived in Norfolk. Since then, I have enjoyed talking with Linda about SRL and other important topics such as our shared love for dogs!

Thank you, Linda! Many congratulations on the Barry J. Zimmerman Award for Outstanding Contributions to the field of Self-Regulated Learning.

Although readers will be familiar with Linda's standing as a founding member of the SSRL SIG, her outstanding body of experimental and intervention work, and her insightful integration of calibration and Zimmerman's model of SRL, they may be less familiar with her significant acumen in educational program evaluation. Linda possesses a rare combination of focused and sustained scholarly activity and leadership roles on large-scale, sponsored research projects. Given that my roles as a Research Professor, Executive Director, and collaborative faculty member in ODU's Educational Psychology and Program Evaluation doctoral program call for scholarship, grant writing, program evaluation, and graduate student mentoring, I feel incredibly fortunate to have had Linda as a role model in each of these areas. She balances and integrates scholarly research with large-scale, rigorous evaluation projects. Her efforts to bring authentic research and program evaluation opportunities to her students while allowing them the autonomy to develop their ideas and forge their paths are inspiring.

Shanan Chappell Moots, PhD, serves as director of research analytics and research associate professor in the Center for Educational Partnerships at Old Dominion University. Her research focuses on K-12 and post-secondary STEM projects, military child and family educational programs, college and career readiness initiatives, and educational program evaluations.

I first met Linda Bol in 2006, when I was accepted to Old Dominion's PhD program in Curriculum and Instruction. Linda served as my graduate program director during much of my doctoral studies.

Linda maintained high expectations for me and my peers, and she inspired me to engage in rigorous, empirical educational research. She always supplemented her teaching with lessons and experiences from the classroom and the field, providing evidence of her expertise. She also encouraged me to connect with professional organizations aligned with my areas of interest to promote my ability to contribute to the body of literature for my fields. Linda played a significant role in shaping who I am as a social scientist and educational researcher, and I'm grateful to her for that.

In 2011, I joined the faculty at Old Dominion, and I am fortunate to have worked with Linda in several capacities. We partnered on federal grants in my days as junior faculty, where she modeled quantitative and qualitative data collection and analysis. We have partnered on professional presentations and served together on dissertation committees. Linda is one of the first to consult when I need work-related advice, and I have turned to her often. She likewise seeks my support through guest lecturing for her courses and co-authoring articles and conference presentations whenever possible.

Over the past eighteen years, I have been honored to call Linda a teacher, mentor, colleague, and friend, and I cannot imagine anyone better suited for this recognition.

Melani Loney is a Program Manager for STEM Education Initiatives at the Center for Educational Partnerships at Old Dominion University, where she designs and conducts grant-based teacher professional development projects focusing on instruction in the STEM subject areas.

I am honored to have the opportunity to reflect on the positive impact that Linda Bol has had on me through my PhD program in Educational Psychology and Program Evaluation. I was very fortunate to meet Linda Bol in 2015, before entering the EPPE program through my full-time position at the Center for Educational Partnerships at Old Dominion University. When I decided to apply to the program, Linda agreed to be my advisor, and throughout the process, her passion for teaching and research was obvious. The classes taught by Linda provided a good blend of theory and practice, and she found a way to reach all of her students from very different backgrounds and experience levels. Linda provided self-regulated learning and program evaluation instruction and was never too busy to assist students with questions or concerns. Linda's expertise in self-regulation was crucial as I wrote my dissertation. Her guidance and support of the idea through research and writing provided a strong foundation for a successful defense.

My graduate student experience did not take the typical path, as I began my journey later in life after a 24-year career as a teacher and administrator in K-12 education. Linda's guidance helped me connect my past experiences with new theories.

Linda, congratulations on receiving the Barry Zimmerman Award! I do not doubt that we will continue to see great things from you in the field of self-regulated learning.

Dean Dice giving Linda the Instructional Publication Award, 2023.

Linda and Sofia Aburto at their BA graduation.

Linda with Ann O'Connell during her first AERA conference after receiving her PhD.

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