

Liv Teforlack: Annotated Bibliography

How can we, as educators, improve student independence by fostering a growth mindset in classrooms where collaboration and productive struggle are valued?

Atmojo I.R.W., Ardiansyah R., Adi F.P., Chumdari, Saputri D.W., & Wahyuningtyas, M. (2023). *The Relationship between Self-Regulated Learning and Students' Critical Thinking Skills*. Elementary School Forum (Mimbar Sekolah Dasar). 10(3), 513–526.
<https://ejournal.upi.edu/index.php/mimbar>

The Relationship between Self-Regulated Learning and Students' Critical Thinking Skills by Atmojo et al. (2023) proves that students develop self-awareness in the learning process, yet they need to be given self-regulating learning strategies to effectively improve their critical thinking skills, and therefore foster confidence in independent learning. Atmojo et al. (2023) analyze the quantitative relationship of self-regulated learning (SRL) and critical thinking skills through a random sampling of undergraduate educators from the 2022 class at Elementary School Teacher Education in Indonesia. They explain that Indonesia was ranked 44/49 countries for critical thinking skills; through my own research, I found that the United States was ranked 22nd. I believe that there is room for improvement, despite our ranking above Indonesia, because our teams have firsthand accounts of how the lack of critical thinking skills impacts student self-regulated learning. Their data shows that if SRL increases, so do critical thinking skills. Atomjos et al. (2023) explain, “Students' ability to self-regulate their learning enables them to analyze their experiences by reflecting on them and confirming the knowledge they have, thereby gaining insight into themselves and their surroundings. This ability is in line with the concept of critical thinking skills” (p. 522). The implications of this study reveal a positive impact on lecturers and educators by encouraging students to apply relevant learning strategies and methods so that critical thinking skills and students' SRL abilities can increase (Atomojos et al., 2023, p.522). Though the study focused on undergraduate students, it is evident that these young aspiring educators come from the Indonesian education system, which, in one way or another, shaped their ability to think critically, which can be seen through the explicit teaching or non-teaching of self-regulated learning strategies. Our Western schools have the potential to benefit from this research because it encourages educators to teach students how to develop a relationship with self-regulation and, by correlation, critical thinking skills. In other words, we cannot explicitly teach critical thinking without first developing self-regulated learning strategies through the lens of meta-cognition, motivation, and behavior.

Bashant, J. (2013). *Developing grit in our students: Why grit is such a desirable trait, and practical strategies for teachers and schools*. Journal for Leadership and Instruction. <https://eric.ed.gov/?id=EJ1081394>

Metacognition, motivation, and behavior are intersectionally aligned by building academic regulation—you cannot examine the impact of one scale without the other. Jennifer Bashant (2014) in *Developing Grit in Our Students: Why Grit Is Such a Desirable Trait, and Practical Strategies for Teachers and Schools*, focuses on grit as a predictor of success measured by standardized tests and college readiness. Her main claim is that an explicit teaching of a growth mindset set by school culture impacts student achievement because students understand WHY they need to struggle. Bashant wants schools to build character; to do so, we need to model and develop a common language about character recognition and embed it in the curriculum. In theory, promoting grit would benefit students' self-regulation by elevating motivation and behavior, in turn supporting metacognition. However, Bashant's uses character development as a universal strategy for all students, when in reality, the measurement of grit becomes highly racialized. The development and measurement of grit alone does not erase the institutional barriers that affect student achievement, especially for marginalized (i.e., poor, working class, Black and Brown, queer) students. Teaching grit cannot apply to all students because most students have already obtained grit- grit from existence in a capitalist, white-supremacist, patriarchal society. Students do not need grit, but they do need to recognize how their growing independence is necessary to problem solve. Educators cannot hold students' hands throughout the educational process; we need to hold them accountable for the learning process.

Love, B. L. (2019). *We want to do more than survive: abolitionist teaching and the pursuit of educational freedom*. Beacon Press.

Bettina L. Love (2019) in *We Want To Do More Than Survive: Abolitionist Teaching and The Pursuit of Educational Freedom* explains, "Dark students being gritty, full of excitement and energy, reciting self-improvement statements, and displaying social and emotional intelligence does not stop them from being killed in the streets or spirit-murdered in the classroom...[they] do not need their grit measured or their character examined by researchers or school officials" (pp. 73-74). Love writes for educators who want to do more than survive; she wants educators to thrive WITH their students. However, how can educators learn to thrive, if their students are being "spirit-murdered" in the classroom? To most educators and researchers, measuring and reproducing a grit-based curriculum, instruction, and frameworks is the way to motivate students to run the educational race. Yet, the questioning, stripping, and reforming of grit has not helped students thrive in education, even if they are

academically competitive. Instead of grit-based education, Love wants trauma-sensitive training and free or affordable therapy for students. She wants their spirit, energy, and intelligence in the classroom to be uplifted, not questioned.

McCuin, D. personal communication, September 17, 2025

Dawn McCuin, a fifth-grade teacher at High Tech Chula Vista Elementary, speaks on the value of fostering productive struggle in her classroom when asked about independence and resilience during the mathematical thinking process. She believes that instilling a growth mindset helps students understand and conceptualize what they do know AND how they learned it. She explains, “Show them milestones they have achieved and how far they have come” (D. McCuin, personal communication, September 17, 2025). Building resilience, then, acts as a resource of independence, instead of an explicit, separate skill to teach. This is because she believes that the main cause of negative academic struggle and intimidation stems from a lack of foundational skills. Though McCuin, a veteran teacher, shows great understanding of how to foster productive struggle through mathematics in her classroom, she explains that the lack of support and resources for teachers hinders educators’ ability to create consistent, supportive behavior. Due to the lack of support, she calls for educators to view individual productive struggle as a collective effort amongst the class. Classroom culture is dependent on how much the educator chooses to establish emphasis on peer collaboration as a cornerstone of learning. She explains that collaborative problem-solving tasks that are built into instruction are more likely to elicit student participation because she believes that it is less intimidating learning with/from your peers than your instructor. In her sixteen years of instruction, she’s seen students benefit from peer collaboration, feedback, and motivation, AND direct instruction from an adult educator. Overall, Mccuin believes that students thrive off positive reflection and a collective productive struggle inside the classroom.

Suharto, P.P., Damayanti L.D., & Lengkanawati, N.S. (2025). *Exploring Metacognitive Strategies to Support Young Learners in Developing Their Learner Autonomy*. International Journal of Language Education, 9(2), 331–355. <https://doi.org/10.26858/ijole.v1i2.74998>

Suharto et al.'s (2025) research focuses on the relationship between Indonesian primary-age students learning English as a Foreign Language (EFL) and the metacognitive processes that occur during instruction. They claim that autonomy in language learning informs the learner about the process of monitoring their learning goals, materials, strategies, and outcomes by regulating their thinking and actions while they are learning (Suharto et al, 2025, pg 334). A teacher’s role in the classroom is to facilitate appropriate metacognition development by using daily explicit instructional strategies; however, current language learning research is rooted in secondary education or vocabulary development, NOT autonomous interventions of young learners in EFL. Therefore, their research highlights a significant instructional and research gap between age-appropriate instructional strategies and the development of metacognition skills that eventually foster independence in EFL learners. The goal

is to investigate “how a primary English teacher explicitly instructed young learners in metacognitive strategies to support their autonomy” through the PAR- Plan Do Review reflective framework (Suharto et al, 2025, pg 336). With researchers, the classroom teacher would design a lesson plan that integrated metacognitive strategies appropriate for young learners (i.e. think alouds, explicit modeling), then the teacher implemented PAR, planning for activity, completing language tasks, and reviewing learning outcomes with students. Through data collection over a week, spanning 18 classroom sessions of 4th-grade students, Suharto et al. found the following instructional strategies promote autonomous learning: incorporating goal-setting, multimodal scaffolding, and structured reflection. Thus, metacognitive strategies support rich reflective practices during language learning, which can support the overall literacy development of all language learners.

Young, J. R., Bevan, D., & Sanders, M. (2023). *How productive is the productive struggle? Lessons learned from a scoping review*. International Journal of Education in Mathematics, Science and Technology, 12(2), 470–495. <https://eric.ed.gov/?id=EJ1413403>

According to Young et al. (2023), in *How productive is the productive struggle? Lessons learned from a scoping review*, productive struggle, “involves encountering obstacles, making mistakes, and experiencing a level of cognitive discomfort while actively working towards a solution,” (p.471). Using Google Scholar, EBSCO databases, and the Mendeley Library, Young et al. (2023) researched “productive struggle AND mathematics” to create a scoping review of existing literature. A scoping review of existing literature has not yet been included in a scholarly review until now. They seek to answer the following: 1.) What are the characteristics of the scholarly works published from 2011 to 2020 examining the productive struggle in K-12 mathematics educational contexts?, and 2.) How do these works link the productive struggle to the teaching and learning of mathematics? They seek to answer research question one (1) by examining 45 relevant results through credible research engines, varying K-12 grade levels, and methodology. They found that current research has evidence of breadth but lacks depth in content focus, equity, and measurement. This finding may impact how our lesson study team frames our street data to include quantitative data, considering Young et al. found an absence of quantitative studies. Furthermore, their findings on research question two (2) show that productive struggle is linked to the teaching and learning of mathematics through:

1. Direct examination of the productive struggle with primarily in-service and pre-service teachers, but not students.
2. Some consideration of the combined impact of attribution, meta-cognition, and frustration on the implementation and impact of the productive struggle, and;
3. Limited surface-level considerations of mathematics content and teaching processes. (Young et al., 2023, p.492)

Overall, they found, “Consistent theoretically sound operational definitions for the productive struggle and more explicit reporting of the mathematics content focus across studies will help to improve the quality and efficacy of the measurement of the productive struggle within the mathematics educational context” (Young et al., 2023, p.492). In other words, how productive struggle is operationalized and measured

remains elusive in the existing literature. This is relevant because we can propose furthering the empirical study of the characteristics, tasks, and effects of productive struggle implementation in all areas of study, not just mathematics. Our theory of action is rooted in understanding that you cannot foster independent thinking without fostering a productive struggle; in other words, students must learn how to problem-solve, even when the objective seems too difficult to access. It is an educator's job to develop accessible goals/steps with appropriate scaffolding to reach students, yet research suggests that we [educators] have not done a sufficient job to collect data on productive struggle that will facilitate our understanding of how to best teach a growth mindset.