

**The Relationship between Trauma, Self-Efficacy for Self-Regulated Learning, and Academic
Achievement in Middle School Students**

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Abstract

Due to current events including social justice movements and the COVID-19 pandemic, the impact of trauma on learners is ever present and disrupts student self-concepts. Self-efficacy for self-regulated learning (SRL) is key to academic achievement, and students who do not have this part of their self-concept struggle with learning. It is worth exploring the relationship between trauma and SRL in adolescent learners who are at a pivotal point of developing their self-efficacy. To explore this, we propose to recruit between 300-400 middle school (7th and 8th grade) students to respond to self-report surveys on their self-efficacy for SRL and their experience with trauma. Based on background with traumatic experiences and symptomatology, students will be divided into “trauma” experimental and “no trauma” comparison cohorts and subsequently matched with respect to demographic backgrounds. Academic achievement and demographic data will be obtained from the school. Descriptive analyses as well as analyses of variance (ANOVAs) and regressions will be performed on the obtained data to examine relationships, with a hypothesis that significant impacts will be found by self-efficacy for SRL on trauma and academic achievement. For all significant interactions that emerge, effect sizes will be used to understand the magnitude of the relationship.

The Relationship between Trauma, Self-Efficacy for SRL, and Academic Achievement in Middle School Students

In the world as we know it, learners have unfortunate and ample opportunities to be exposed to traumatic experiences at any age. Such experiences may include exposure to social unrest, systemic inequalities, or public health crises. Exposure to traumatic experiences can have widespread effects on individuals; this includes in neurological, developmental, social, emotional, and other domains. As educators and educational researchers, this concept is important and notable as the effects of trauma are not separate from the learner; in fact, they are brought with the learner into the classroom as the learner's adaptations to their context (Boyratz & Granda, 2019; Romano et al., 2015).

Despite the fact that these adaptations to traumatic circumstances can be advantageous in certain respects, there is a body of evidence demonstrating that a history of traumatic experiences and post-traumatic stress disorder (PTSD) symptomatology is negatively predictive of academic achievement (Boyratz et al., 2016). Conversely, there is also literature showing self-efficacy for self-regulated learning (SRL) is positively predictive of academic achievement. Self-efficacy beliefs are a component of the forethought phase of SRL and thereby influences the implementation of SRL strategy use during the performance phase. As SRL skill implementation positively correlates with academic achievement, it is in this way that self-efficacy for SRL influences achievement. Furthermore, as this cycle induces a mastery experience for learners when they utilize SRL strategies, the cycle is continued as this then increases student self-efficacy for SRL (Dermitzaki & Efklides, 2000; Pintrich, 2000).

Literature Review

Various databases, including Google Scholar, Proquest Education Journals, Sage Journals, and ScienceDirect, were used to explore prior literature relating to trauma, middle school, self-efficacy for SRL, and academic achievement. Included papers related to at least three of these four concepts, were empirical, original, peer reviewed, and published in the last ten years. Literature reviews, meta-analyses, and editorial commentaries were excluded. However, though they were not included, their references were examined for relevant works. Five primary papers emerged from this review of the literature.

Student Self-Regulation

University Students

Despite the focus of this proposal being in middle school students, the vast majority of work in this field focuses on students who are already enrolled in university programs. In 2013, Ben-Eliyahu and Linnenbrink-Garcia surveyed 246 undergraduate students about their favorite and least favorite courses. They compared mean differences in emotional regulation between class types (more positive emotions in favorite courses; more self-regulated emotion strategies in least favorite classes); looked to see if emotional regulation strategies predicting emotions across contexts of favorite and least favorite classes (self-regulated emotion strategies predict emotions in classes); and explored how emotional regulation varies with emotion across class contexts (stronger connection in least favorite classes). This seems to indicate that self-regulation skill-building should be embedded in university courses, and student engagement and enjoyment should be considered during curriculum design (Ben-Eliyahu & Linnenbrink-Garcia, 2013).

In 2016, Boyraz et al. followed this research up by exploring how effort regulation (a component of SRL) and academic achievement mediate the interaction between PTSD and college enrollment in college students with a history of trauma based upon the expectancy model of

motivation. This topic was chosen since PTSD has been shown to result in a negative impact on reduced self-efficacy, perceived competency, and negative attributions. Furthermore, college enrollment and SRL both overlap with respect to the idea of persistence and effort, but contextual factors impact one's ability to regulate effort--this includes ideas such as PTSD symptomatology. To examine this, 484 college freshmen were recruited to complete a questionnaire on traumatic events, their participation in on campus activities, PTSD symptomatology, and the effort they expend in their courses; achievement and enrollment data were also collected later. After controlling for achievement, they found PTSD resulted in lower effort regulation, which impacted lower grade point averages (GPA), which reduced enrollment. The authors concluded that interventions focusing on students with trauma may improve educational outcomes by fostering social supports, providing mental health screenings, and providing educators with training on what these symptoms look like (Boyratz et al., 2016).

Boyratz et al. then followed up this work in 2019 looking to examine if avoidance coping and academic locus of control mediate the relationship between PTSD symptomatology and academic achievement. To explore this, the authors recruited 280 university freshmen who had been exposed to trauma, and had them complete a number of self-report questionnaires on adverse life events, PTSD symptomatology, avoidance coping, academic locus of control, and demographics; achievement data was also collected. The authors found one pathway from PTSD, through the mediating factor of locus of control, to freshman GPA. Furthermore, a second pathway was also supported: this one begins with PTSD, is mediated first by avoidance coping, mediated next by academic locus of control, and finally impacts freshman GPA. These results lead the authors to conclude that interventions should be developed to target academic locus of control, and

in particular these interventions should be tailored for students with backgrounds of trauma (Boyratz et al., 2019).

Most recently, Ferrara and Panlilio (2020) explored how childhood trauma might impact reading comprehension, and if this hypothesized relationship is mediated by metacognition. This was hypothesized as metacognition can be maladaptive if it's ruminative, and this impacts SRL; students with trauma in particular tend to use metacognition maladaptively and appraise their learning more negatively, if they engage academically at all. The authors recruited 179 introductory educational psychology undergraduate students to complete self-report surveys on metacognition, reading comprehension, trauma, and demographics. Results showed that childhood traumatic experiences did not relate to reading comprehension, conflicting with prior research. However, trauma symptoms were found to indirectly and negatively predict reading comprehension. This indicates that despite there not being a direct connection, the indirect connection would indicate the importance of educator awareness of trauma symptoms. Furthermore, for those who do exhibit trauma symptomatology, interventions addressing metacognitive strategies may be helpful (Ferrara & Panlilio, 2020).



High School Students

There was one included paper that looked at adolescents. Ben-Eliyahu and Linnenbrink-Garcia (2015), as mentioned earlier, surveyed high school students. This was the only study found for this literature review that was moderately close to the population of interest for this proposal. Ben-Eliyahu and Linnenbrink-Garcia aimed to test an “integrative SRL framework” to see how it impacted academic achievement. They hypothesized that academic achievement would increase with students exposed to the framework, and would do so across contexts. This is based on the logic that self-regulation impacts one's experience in educational settings. There are three main

types of SRL as established by these authors: emotion, cognition, and behavior. As cognitive and behavioral regulation have literature establishing their relationship with SRL, it would make sense that students would be better able to use learning strategies if you work on all three components. After surveying 178 high school and 280 undergraduate students from the United States, the authors found emotional, behavioral, and cognitive regulation are all three related to achievement, whether it is directly or indirectly. Emotional regulation was observed to be inconsistent across age groups, and regulation was observed to occur more often in classes students enjoyed. This may be due to student engagement, because students have more capacity to regulate in these contexts, or something else entirely (Ben-Eliyahu & Linnenbrink-Garcia, 2015).

As they were examining how self-regulation impacts one's experience in educational settings across three types of regulation (emotion, cognition, and behavior), understanding age differences is important to ensure individuals across development are provided with the tools they need to succeed. Here, the authors observed emotional regulation was to be inconsistent across age groups. This may signify a broader developmental stage, the stress of transitioning to the college setting, or a number of other concepts. The authors indicate that examining self-regulation across age demographics is a needed area of research (Ben-Eliyahu & Linnenbrink-Garcia, 2015).

Ben-Eliyahu and Linnenbrink-Garcia (2015) use this paper to build on their 2013 work by adding emotional regulation in with behavioral and cognitive regulation to look at SRL holistically as it relates to academic achievement. It is also valuable due to its examination of high school students; exploring these ideas in adolescents is sparse. Because it demonstrates the relationship between all these types of regulation, including across age, it provides a case for those students who struggle with self-regulation, including students with a history of trauma, and why they may show reduced academic achievement. The "why" they explore when breaking down the

relationships between the components of each type of regulation is valuable here as it establishes what types of future research and interventions might help students with trauma (Ben-Eliyahu & Linnenbrink-Garcia, 2015).

The Impact of Trauma on Students

For the papers that looked specifically at trauma it again is notable that university students were the primary population of study. However, all the works examined seem to indicate that educational interventions could assist students with trauma learn to self-regulate effectively and thereby experience increased academic success. For instance, Boyraz et al. (2016) show us the value of exploring SRL and related concepts. Furthermore, they show how these ideas connect to PTSD by showing the pathways by which PTSD impacts future academic outcomes. The authors establish student regulation of academic effort as a key part of SRL processes here that PTSD connects to to reduce GPA and enrollment. Pinpointing this construct is useful for further exploration and connection to other ideas within this literature review. It also opens avenues for discussion of where future research and interventions should explore when combined with other ideas, such as emotion regulation, attributions, and self-efficacy (Boyraz et al., 2016).

In addition, given that the follow-up paper by Boyraz et al. (2019) establishes pathways whereby PTSD and trauma impact academic outcomes, it provides utility in this literature review to explain an additional contextual reason why we understand these students may struggle academically. Just as emotion regulation and effort regulation have been established as factors impacting achievement in this population, this paper adds coping mechanisms and locus of control/attributions to this pool of factors that impact success. This provides a more holistic look at student experiences within this literature review (Boyraz et al., 2019).



The most recent paper addressed here by Ferrara and Panlilio (2020) is important for two main reasons. First, it provides an applied academic context (beyond arbitrary enjoyed and disliked classes) and skills students need in which trauma may have an impact. Additionally, it also clarifies that traumatic experiences themselves may not be enough to impact academic outcomes; instead, sustained symptomatology while engaging in the academic context may be the key to understanding which students will struggle academically and which will not. This concrete application adds to the discussion around the constructs discussed above as factors in impacting academic success in students with a background of trauma (Ferrara & Panlilio, 2020).

Purpose of the Study

Though we have this body of knowledge, it is as of yet uncertain how self-efficacy for SRL and traumatic backgrounds interact and impact academic achievement in middle school students. This question is critical to ask as prior research has established middle school as an important developmental stage not only for students to obtain SRL skills, but for students to develop their self-efficacy with respect to their ability to use those strategies (Zimmerman & Martinez-Pons, 1990). Research needs to be pursued to examine how trauma and self-efficacy for SRL interact to impact academic achievement in middle school students. Therefore, this paper proposes the following research questions be explored to address the gap in the literature:

1. What effects does trauma have on self-efficacy for SRL in 7th and 8th grade students?
2. Does self-efficacy for SRL mediate the relationship between trauma and academic achievement in 7th and 8th grade students?

Method

Design

This experimental quantitative study aims to explore the relationship between trauma, self-

efficacy for SRL, and academic achievement in middle school students. The following research questions will be addressed:

3. What effects does trauma have on self-efficacy for SRL in 7th and 8th grade students?
4. Does self-efficacy for SRL mediate the relationship between trauma and academic achievement in 7th and 8th grade students?

Participants

Table 1

School District Demographics

	%
Race	
American Indian or Alaska Native	0.3%
Asian	19.8%
Black or African American	10.0%
Hispanic	27.1%
Multiple Races	5.9%
Native Hawaiian or Other Pacific Islander	0.1%
White	36.8%
Socioeconomic Status	
Disadvantaged Status	27.8%
Not Disadvantaged	72.2%

Students with dis/Abilities

Students with dis/Abilities	14.4%
Other Students	85.6%

English Language Learners

English Learners	26.8%
Other Students	73.2%

To examine the relationships between trauma, self-efficacy for SRL, and academic achievement, 7th and 8th grade students will be recruited from middle schools in one district in the Northern Virginia region of the United States. A sample size of up to 500 students will be sought out with the goal of final participant numbers ranging from 300-400 7th and 8th grade students to provide a 95% confidence interval based upon the student population of the school district examined. Student demographic data for this school district are included in Table 1. As much as possible, the recruited sample will reflect the district's demographic distribution; however, as this is a convenience sample, this may not be possible. Furthermore, 6th grade students will be excluded as not all middle schools include 6th grade.

Measures

Self-report surveys will be administered to students online, including questions about trauma (Childhood Trauma Checklist, CTQ; Bernstein et al., 2003) and self-efficacy for SRL (Self-Efficacy for Learning Form--Abridged, SELF-A; Kitsantas & Zimmerman, 2008). Demographic and achievement data will be collected from the school for those students who provide consent for participation.

Trauma

In this study, childhood traumatic experiences will be measured using the Childhood Trauma Checklist (CTQ, Bernstein et al., 2003), written by and validated in children and adolescents in 2003 by Bernstein and colleagues. The scale has been shown to be reliable (internal consistency coefficients > 0.80) and valid (test-retest reliability, correlation = 0.88). This questionnaire has 28 items to measure emotional abuse and neglect, physical abuse and neglect, and sexual abuse. These items include “People in my family hit me so hard that it left me with bruises or marks.” Learners respond on a 5-point Likert scale, with 1 representing Never True, and 5 representing Very Often True. High scores indicate high levels of trauma, and low scores indicate low levels of trauma (Bernstein et al., 2003).

Self-Efficacy for SRL

In this study, self-efficacy for SRL will be measured using the Self-Efficacy for Learning Form--Abridged (SELF-A), written by and validated in adolescents in 2007 by Kitsantas and Zimmerman. The scale has been shown to be reliable (Cronbach's $\alpha = 0.97$) and valid ($cfi = 1.00$; Zimmerman & Kitsantas, 2007). This questionnaire has 19 questions, including “When you are feeling depressed about a forthcoming test, can you find a way to motivate yourself to do well?” Learners respond on a scale ranging from 0-10 (“definitely cannot do it”), to 90-100 (“definitely can do it”) in 10-unit increments. Higher scores indicate high levels of self-efficacy for SRL, and lower scores indicate lower levels of self-efficacy for SRL (Zimmerman & Kitsantas, 2007).

Demographics

Student demographic data will be requested from the school and extracted from student records following parental consent, student assent, and survey completion. Student personal information requested will include grade level, racial identity, socioeconomic status (SES), and



gender identity. Gender identity is coded as trichotomous, with three possibilities: female, male, and non-binary, and is self-reported to the school. SES is dichotomous and measured based on student disadvantaged status. Disadvantaged students are eligible for free and reduced lunch, their family receives funds from the Temporary Assistance for Needy Families Program, is eligible for Medicaid, and/or is identified as Migrant or Homeless (Virginia Department of Education, 2020). Racial identity may include American Indian, Asian, Black, Hispanic, Multiple Races, Native American, and White.

Academic Achievement

Academic achievement variables will be requested at the end of the academic year, based upon scores on the Virginia Standards of Learning (SOL) assessments. The SOLs outline what students are expected to know in mathematics, reading, writing, and science, and are typically administered via a computer (though paper versions are available for students as needed). SOLs are administered during the fourth quarter of each academic year. Scores are/are not indicative of passing or failing a grade level (Virginia Department of Education, 2020, *Standards of Learning (SOL) & Testing*). SOL assessments are scored from 0-600 points, with a score under 400 indicating a failing grade; scores from 400-499 indicating a passing grade; and a score from 500-600 indicating an advanced passing score (Virginia Department of Education, 2020, *SOL Test Scoring & Performance Reports*).

Procedure

During the spring prior to data collection, approval will be requested from the George Mason University (GMU) Institutional Review Board (IRB) for the proposed study. Once IRB approval is obtained, middle schools administrators will be contacted by email regarding their interest in participation. Those willing to participate will be recruited. Following school interest,

approval from the respective middle schools' IRBs will be requested during the spring and summer prior to the beginning of the academic year. School staff, including teachers and administrators, will be recruited via email for assistance in distributing recruitment messaging, as well as consent and assent forms, and surveys. Teacher and administrator recruitment and consent will occur during the first quarter of the academic year.

A recruitment letter from the researchers containing basic study information, researcher contact information, IRB contact information, and information for a school contact will be distributed by school administrators to parents of 7th and 8th grade students at the end of the first quarter of the academic year. Attached to this email will be a link to an online consent form for parents to review and provide consent if they so choose. Consenting parents will also include the name of their child enrolled in 7th or 8th grade. The provided names will create a list of potential student participants. These potential 7th and 8th grade participants will be sent a recruitment letter from the researchers during the second quarter of the school year via their teachers. This letter will contain basic study information, researcher contact information, IRB contact information, and information for a school contact. Attached to this email will be a link to an online assent form for students to review and have the option to provide assent.

Should students provide assent, they will be provided with instructions for completion of the self-report questionnaires. These instructions will prompt students to provide their best answers, not take too long on any one question, as well as remind them that there is no right or wrong answer and they can choose to not answer a question or leave the survey at any time. Students will then be prompted to provide their name and/or student ID number, respond to items from the SELF-A, and respond to the CTQ.

Following the data collection period from student participants, demographic data will be

requested from the participating school during the second and third quarter of the school year.

Academic achievement data will then be collected following the end of the academic year and de-identified following data cleaning.



Ethical Considerations

To ensure ethical treatment of all participants, IRB approval from both GMU and participating schools will be obtained prior to data collection. Consent and assent forms with clear explanations of what is expected of participants will be provided with contact information stated for participants to use should they need clarification on any points related to the study. As surveys will be implemented online, the privacy information for the software used will be provided for participants to read prior to providing consent or assent. Due to the nature of trauma, mental health resources will be provided for participants in the consent forms as well as at the end of the surveys. Once data collection is completed, personally identifiable information--such as student names and identification numbers--will be removed to de-identify data and protect participant identity and confidentiality. Each student's profile will be labeled with a unique identifier by and only accessible to the researchers to protect participant information. Prior to and following deidentification, only researchers approved by the IRB will have access to collected data, and data will be stored in a secured, password-protected file on the primary investigator's computer.

Planned Data Analysis

Data to be examined will include trauma as measured by scores on the CTQ (independent, continuous, interval variable), self-efficacy for SRL as measured by the SELF-A (independent, continuous, interval variable), student demographics (independent and categorical variables), and academic achievement (dependent, continuous, interval variable). Descriptive statistical analyses, including means and standard deviations, will be run on all included variables. An analysis of

variance (ANOVA)--and appropriate post hocs, if applicable--will then be run on all variables to examine relationships between each. A regression analysis will be performed to examine if both trauma and self-efficacy for SRL are predictive of academic achievement. Finally, a regression will be run to examine if self-efficacy for SRL mediates the relationship between trauma and academic achievement. For all significant analyses, effect sizes will be calculated to explore the magnitude of the relationship.

Limitations

This proposed study has multiple limitations. First, due to the sensitive nature of trauma and PTSD, willingness to participate at all levels (from the school to the students) may be difficult to attain. It is expected that a large number of participants will need to be solicited for recruitment to ensure the number of students needed for a 95% confidence interval is obtained. Considering this, it may be advantageous to recruit multiple schools and/or districts for participation. Results will also need to be accepted cautiously as participants who do engage in this study may not be comfortable being open about a topic as sensitive as trauma.

In addition to willingness to participate, due to the online nature of the questionnaires, access to technology is required for participation in this study. The school district that is likely to be solicited for participation is a moderately-affluent school district that provides students with electronic devices on which surveys could be completed. However, it is unknown if students will have internet access at home. Considering this information, as well as noting some students may have difficulty reading the surveys as there is only one English version of the questionnaire, it would be worthwhile to work with school administrators and teachers to find time for students to complete surveys while at school to ensure accessibility for all. That being said, because this is an affluent school district, the generalizability of the results will need to be scrutinized closely. The

types of trauma, symptomatology, and available treatments may differ with less-affluent districts, and these less-affluent districts may also find responding to such studies less accessible for a variety of reasons (e.g., trust in researchers and willingness to participate, internet access, etc.).

Future research will be needed to support generalizability.

References

- Ben-Eliyahu, A. (2019). Academic emotional learning: A critical component of self-regulated learning in the emotional learning cycle. *Educational Psychologist*, 54(2), 84-105.
<https://doi.org/10.1080/00461520.2019.1582345>.
- Ben-Eliyahu, A., & Bernacki, M. L. (2015). Addressing complexities in self-regulated learning: A focus on contextual factors, contingencies, and dynamic relations. *Metacognition and Learning*, 10(1), 1–13. <https://doi.org/10.1007/s11409-015-9134-6>
- Ben-Eliyahu, A., & Linnenbrink-Garcia, L. (2013). Extending self-regulated learning to include self-regulated emotion strategies. *Motivation and Emotion; New York*, 37(3), 558–573.
<http://dx.doi.org.mutex.gmu.edu/10.1007/s11031-012-9332-3>
- Ben-Eliyahu, A., & Linnenbrink-Garcia, L. (2015). Integrating the regulation of affect, behavior, and cognition into SRL paradigms among secondary and post-secondary students. *Metacognition and Learning*, 10(1), 15–42. <https://doi.org/10.1007/s11409-014-9129-8>
- Bernstein, D. P., Stein, J. A., Newcomb, M. D., Walker, E., Pogge, D., Ahluvalia, T., Stokes, J., Handelsman, L., Medrano, M., Desmond, D., & Zule, W. (2003). Development and validation of a brief screening version of the Childhood Trauma Questionnaire. *Child Abuse & Neglect*, 27(2), 169–190. [https://doi.org/10.1016/S0145-2134\(02\)00541-0](https://doi.org/10.1016/S0145-2134(02)00541-0)
- Boyratz, G., & Granda, R. (2019). Crossing the Finish Line: The role of posttraumatic stress and type of trauma exposure in college graduation. *Journal of Loss and Trauma*, 24(1), 50–68.
<https://doi.org/10.1080/15325024.2018.1512828>

- Boyratz, G., Granda, R., Baker, C. N., Tidwell, L. L., & Waits, J. B. (2016). Posttraumatic stress, effort regulation, and academic outcomes among college students: A longitudinal study. *Journal of Counseling Psychology*, 63(4), 475–486. <https://doi.org/10.1037/cou0000102>
- Boyratz, G., Zhu, Y., & Waits, J. B. (2019). Avoidance coping and academic locus of control as mediators of the relationship between posttraumatic stress and academic achievement among first-year college students. *Anxiety, Stress, & Coping*, 32(5), 545–558. <https://doi.org/10.1080/10615806.2019.1638681>
- Dermitzaki, I., & Efklides, A. (2000). Aspects of self-concept and their relationship to language performance and verbal reasoning ability. *The American Journal of Psychology*, 113(4), 621–637. <http://dx.doi.org/10.2307/1423475>
- Ferrara, A. M., & Panlilio, C. C. (2020). The role of metacognition in explaining the relationship between early adversity and reading comprehension. *Children and Youth Services Review*, 112(2020), 1-10. <https://doi.org/10.1016/j.childyouth.2020.104884>
- Pintrich, P. R. (2000). The role of goal orientation in srl. In *Handbook of Self-Regulation* (pp. 451–502). Elsevier. <https://doi.org/10.1016/B978-012109890-2/50043-3>
- Romano, E., Babchishin, L., Marquis, R., & Fréchette, S. (2015). Childhood maltreatment and educational outcomes. *Trauma, Violence, & Abuse*, 16(4), 418–437. <https://doi.org/10.1177/1524838014537908>
- Virginia Department of Education. (2020). *Data Elements*. Virginia Department of Education.

https://www.doe.virginia.gov/statistics_reports/research_data/data_elements.shtml#disadvantage

Virginia Department of Education. (2020). *SOL Test Scoring & Performance Reports*.

<https://www.doe.virginia.gov/testing/index.shtml>

Zimmerman, B. J. (1989). A social cognitive view of self-regulated academic learning. *Journal of Educational Psychology*, 81(3), 329-339.

Zimmerman, B., & Kitsantas, A. (2008). Reliability and validity of Self-Efficacy for Learning Form (SELF) scores of college students. *Zeitschrift Für Psychologie/Journal of Psychology*, 215(3), 157. <https://doi.org/10.1027/0044-3409.215.3.157>

Zimmerman, B. J., & Martinez-Pons, M. (1990). Student differences in self-regulated learning: Relating grade, sex, and giftedness to self-efficacy and strategy use. *Journal of Educational Psychology*, 82(1), 51–59. <https://doi.org/10.1037/0022-0663.82.1.51>