

**Self-Control in the Digital Age:
Empowering Students with Metacognitive Strategies for Success**

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Abstract

Students are encountering increasingly significant challenges to their attention due to technological distractions. This paper explores the critical role of self-control—defined as the self-initiated regulation of thoughts, feelings, and actions toward long-term goals—in achieving academic and personal success. Effective self-control extends beyond effortful inhibition and encompasses a range of cognitive and situational strategies. The paper synthesizes current research on interventions that empower students to develop self-regulation skills, with a particular focus on metacognitive strategies and habit formation techniques.

The integration of both cognitive and situational strategies is particularly effective in promoting self-control. Cognitive strategies enhance self-awareness and decision-making abilities, which are crucial for academic performance. Internally-focused practices such as mindfulness help students recognize and manage distractions, thereby improving their self-regulation. In contrast, situational strategies focus on modifying one's environment to minimize temptations. This can include creating study environments free from distractions or using digital tools to block access to distracting websites. These approaches have been shown to support better academic outcomes and self-regulation by reducing the cognitive load associated with resisting distractions.

Overall, a diverse repertoire of self-control strategies is essential for students to navigate the frequent and varied challenges they face. Interventions that teach a combination of both cognitive and situational strategies help students develop a robust toolkit for managing distractions. The paper emphasizes the importance of embedding self-control education into the curriculum from an early age and progressively building complexity over time. By doing so, educators can equip students with the skills needed to achieve their long-term goals and enhance their overall well-being.

Introduction

Today's students are immersed in a world which places unprecedented demands on their attention. While technology offers opportunities for improved learning and connection, its potential for digital distraction also presents significant obstacles to students' ability to regulate their behavior (Parry & Le Roux, 2018; McCoy, 2020). Self-regulation is important for decision-making and encompasses a spectrum of skills that are fundamental to both academic success and personal growth (Byrnes, 1998; Zimmerman, 1990; Nota et al., 2004). Self-control, the process of avoiding immediate temptations in favor of long-term goals, is especially important and has been shown to impact both academic performance and life outcomes (Moffitt et al., 2013). Self-control is not driven by effortful inhibition, as it's often conceived, but by a student's strategies for managing their cognitive and situational behaviors (Galla & Duckworth, 2015; Hennecke & Bürgler, 2022).

This paper synthesizes contemporary research on interventions aimed at empowering students to develop their own self-regulation toolbox: a repertoire of cognitive and situational strategies for enhancing self-control. In particular, it will focus on evidence supporting the use of interventions which focus on the development of self-initiated metacognitive and habit-formation skills. Empowering students with adaptable strategies for controlling their behavior is vital for the development of lifelong decision-making skills. Interventions which aim to help students develop cognitive and situational strategies for self-control will improve academic performance while also equipping students with the mental resilience necessary to thrive in an increasingly complex world.

Self-Control is Essential for Decision-Making

Our minds are brimming with cognitive biases which prevent us from making decisions which align with our long-term goals—the fact that far-off benefits feel less important than immediate ones is well-established in the decision science literature. This “hyperbolic discounting” means that people have an innate tendency to prefer immediate rewards over delayed ones even when the short-term rewards are small ones (Ainslie & Haslam, 1992). The ability to overcome these time-inconsistent limitations of the human mind is a key aspect of decision-making success. Fudenberg and Levine (2006) even proposed that many decision-making challenges are much like a game between our short-term, impulsive selves and a long-term, patient self. There is a growing body of evidence supporting the value of self-regulation strategies in a decision-making context (Byrnes, 1998). In the realm of decision education, the term “self-regulated learning” encompasses all of the psychological processes and behaviors which enable students to become independent learners (Zimmerman 1990).

This review will focus on self-control, which has proven to be extremely relevant for student success. Duckworth et al. (2019) defined self-control as the self-initiated regulation of thoughts, feelings, and actions when enduringly valued goals conflict with momentarily more gratifying goals. It is well-established that students who can resist momentarily rewarding temptations in the pursuit of long-term goals excel academically. Students’ abilities to effectively regulate themselves in the cognitive, motivational, and behavioral dimensions of academics are positively associated with academic success, understanding, problem-solving, and task persistence (Nota et al., 2004; Jung et al., 2017). High levels of self-control are also associated with positive

outcomes beyond academic performance: a forty-year study of 1,000 individuals found that childhood self-control predicted adult health, wealth, and happiness (Moffitt et al., 2013).

The Challenge of Digital Distractions

Today's students are immersed in an academic environment in which immediately gratifying technological distractions are more accessible than ever before. As technology is increasingly incorporated into the academic experience, self-control challenges are quite literally at their fingertips. The ubiquity and accessibility of phones, tablets, and laptops in classroom environments is high, particularly for college students (Elliott-Dorans, 2018). It's even higher in independent study and homework situations, when students are typically completing work on a laptop and within easy reach of their phones.

The majority of college students perceive technology devices as valuable tools which support their learning and choose to use them in class when given the opportunity (Vahedi et al., 2021). However, research shows that a significant percentage of undergraduates (70–90%) misuse their phones during class on a regular basis (Parry & le Roux, 2018). Even when students were told that their laptop usage was being monitored, more than one-third of students' time online during class was spent checking email, messaging friends, using social media, shopping, watching videos, and playing games (Ravizza et al., 2017).

Students' off-task usage of digital technology such as tablets, cellphones, or laptops is commonly referred to as digital distraction and has been shown to disrupt self-control and consequently academic performance (Flanigan & Kim, 2020; McCoy, 2020). Parry and le Roux (2018) found

that students who self-reported social media use during lectures also had lower academic performance. While the majority of research on technology distractions has involved college students, there's evidence that this is true for younger students as well (Kay, 2017; McCoy, 2020). It's clear that students need strong self-control abilities in order to resist the digital distractions that arise in and outside of the classroom.

Helping Students Build their Self-Control Toolbox

Willpower—our ability to actively inhibit unwanted impulses—is frequently considered to be the primary means by which we overcome temptations which conflict with our long-term goals (Baumeister, 2014). However, when Galla and Duckworth (2015) investigated the relationship between student performance and self-control, they found that students who scored highly on measures of self-control weren't purely relying on willpower: their success was mediated by their ability to create and sustain useful habits. Similarly, in a study which collected nearly 4,500 diary data entries from students regarding their use of various strategies to resist desires, effortful self-control was completely unrelated to goal attainment (Milyavskaya & Inzlicht 2017). A prime example of a failed willpower-based intervention is the Drug Abuse Resistance Education (DARE) program; as it turns out, encouraging students to “Just Say No” to drugs is extremely ineffective (Rosenbaum, 2007).

Rather than relying on willpower, students can enhance self-control through a variety of psychological tools for resisting immediate temptation in pursuit of more favorable long-term outcomes (Fujita & Kross, 2020). Bürgler & Hennecke (2023) suggest that a primary goal of self-control research should be to develop interventions aimed at helping people deal with daily

self-control conflicts more successfully. In particular, they emphasize the benefit of a “strategy repertoire”: an individual’s set of tools and techniques for coping with self-control challenges (Werner & Ford, 2023). Possessing a variety of different strategies for regulating oneself allows a person to select a strategy that fits the demands of a specific self-control conflict. Recent research suggests that strategy repertoire may even be a precondition for successful self-control (Hennecke & Bürgler, 2022).

In their investigation of self-control strategies used by high school and college students, Duckworth et al. (2018) identified two key categories: cognitive strategies which focus on altering students’ mental representations, and situational strategies which focus on altering students’ physical or social environments. There is evidence that being able to effectively regulate these two categories of behavior is especially important for maintaining self-control in a technological context—Anthonysamy et al. (2020) found that classroom interventions focused on both personal regulation and environmental regulation were successful for reducing digital distraction. The following sections will review interventions which aim to help students develop self-initiated cognitive, situational, and combined strategies for improved self-control, with an emphasis on strategies for overcoming technological distractions.

Cognitive Interventions

Cognitive strategies for self-control target a student’s mental representations of their situation and environment and include setting goals, self-monitoring one’s behaviors, increasing psychological distance from the tempting behavior, and mentally contrasting positive and

negative outcomes of a goal (Duckworth et al., 2019). Research has shown that metacognitive skills are essential to the self-regulation of academic behavior and the development of self-control (Pintrich, 2000; Perry, 2019; Hennecke & Bürgler, 2022). Beyond the academic context, Bürgler & Hennecke (2023) found that higher levels of metacognitive knowledge, planning, monitoring, and evaluation were also associated with higher levels of success in resolving daily self-control conflicts.

A meta-analysis of academic interventions related to metacognition found that programs typically involve teaching students to become more aware of their own cognitive processes so that they can better monitor their learning progress (Perry et al., 2019). A separate meta-analysis which analyzed multiple types of self-regulated learning interventions found that programs based on metacognitive theories reported the largest effects for academic achievement, with strategies focused on attention and concentration having the largest effect sizes (Theobald, 2021). In addition to impacts on self-regulation, metacognitive instruction also has direct impacts on decision-making skills. In a randomized controlled trial, Batha & Carroll (2007) found that low-performing students who received metacognitive strategy instruction improved their performance on decision-making tasks.

Skills involving metacognitive awareness, also referred to as self-monitoring, seem especially vital for the development of self-control and other decision-making skills (Turner & Hodis, 2023). In order for students to effectively apply self-control strategies, self-monitoring must first alert them to a discrepancy between their current performance and their long-term goals (Dent & Koenka, 2016). This self-monitoring may be especially important when it comes to maintaining

control of one's attention when tempted by technology; a qualitative study of student strategies for resisting digital distractions revealed that students often 'catch' themselves being distracted after a period of cognitive unawareness (Aagaard 2021).

Mindfulness has been shown to reduce procrastination and enhance awareness of short- and long-term goal conflicts, allowing greater appreciation of the need for self-control (Elkins-Brown et al., 2017). One notable mindfulness curriculum is MindUP, a program which centers around breathing practices, mindful awareness practices, and introductory lessons that teach students about how different parts of the brain affect emotions and cognition. Thierry et al. (2016) examined the long-term impact of the MindUP program on the development of preschool students and found that the program had a positive impact on the students' executive function skills, as reported by their teachers. Additionally, students in the MindUP group improved on working memory, planning, and organization skills and achieved higher overall scores and vocabulary scores on their end-of-year literacy assessment. More recent research has also shown evidence for the efficacy of MindUP in elementary school settings (Crooks et al., 2020; Hai et al., 2022).

Similarly, a year-long study of a mindfulness-based intervention called Mindkeys Training demonstrated a positive effect on the reduction of pupils' deficits of self-control (Suárez-García, 2020). In this program, a mindfulness expert conducted training sessions with third grade teachers and students to explain what mindfulness was and how it could be applied in the classroom. Teachers in the experimental group added mindfulness activities, such as breathing awareness and consciously doing routine activities, to their daily classroom activities. In addition

to reducing self-control challenges, the intervention also improved students' attention levels and reduced aggressiveness.

Situational Interventions

As their name suggests, situational strategies involve modifying elements of a student's environment to reduce temptations and make self-control easier (Duckworth et al., 2016). This can involve intentionally placing oneself in environments which facilitate self-control success—for example, a student might choose to study in a quiet library rather than in a social setting—or, it can involve modifying aspects of one's situation to reduce temptation or distractions—such as studying with their phone in another room to resist the temptation to check it.

Self-control can take the form of habits that were consciously self-initiated in the past but that have evolved into automatic responses to situational cues. Recent research has illuminated the enormous potential of habit creation as a self-control strategy (Carden & Wood 2018). Building good habits can make beneficial behaviors like studying or going to sleep on time the default choice, bypassing the need for conscious deliberation (Fiorella, 2020). Svartdal et al. (2020) emphasized the powerful influence of environmental cues on student self-regulation; habit-based interventions may support durable behavior change by disrupting contextual cues that activate bad habits and creating supportive environments for beneficial ones.

To understand which type of situational strategies are most effective at helping students exhibit self-control, it is helpful to understand the approaches used by successful students. Aagaard

(2021) found that successful students set up stumbling blocks that prevent distraction from unfolding, essentially adding friction to undesirable behaviors. Closing one's laptop, for instance, transforms distraction from being a habitual click away to a more conscious and effortful action. Other times, students employ digital tools that block the possibility of distraction altogether, such as browser extensions which block tempting social media websites (Aagaard 2021). Rosen (2017) provides recommendations for specific skills that educators can recommend to students to deepen their focus and improve their attention, such as teaching them how to minimize alerts and notifications, and creating specific screen-free zones for studying.

Situational interventions are a much newer concept in the decision education literature and there have been few rigorous evaluations of their efficacy. An especially notable situational intervention was developed by Duckworth et al. (2016). In two field studies, high school and college students, respectively, were introduced to the idea of "removing temptations from sight rather than trying to resist them directly". Students were encouraged to choose whichever strategies worked best for them: some used apps that blocked access to social media, some put their phones on mute, and others turned their phones and computers off entirely. Compared to students prompted to use willpower or students given no strategy at all, treated students self-reported that they were more successful at achieving their academic goals the following week.

There are several promising curricula available online for educators to utilize in the classroom, although their effectiveness has not yet been formally evaluated. HabitWise is an evidence-based program that empowers students to use the psychology of habit formation to improve their

wellness, productivity, money management, and relationships (Alliance for Decision Education, 2020). The detailed lesson plans include videos, tools for teaching students about habit loops, and resources for leading a final project in which students choose from a variety of habit-formation tools and monitor their progress towards a self-selected goal. Additionally, CharacterLab recommends teaching students about the WOOP tool, which provides students with a framework for brainstorming actions to take to overcome barriers to their goals. They suggest that after learning about this strategy, students “improved their grades, their on-time attendance, and their in-class behavior” (CharacterLab, 2018). CharacterLab also has developed several evidence-based playbooks for educators and parents which identify simple self-control and habit formation skills (2024).

Combined Interventions

Much of the research supporting the efficacy of self-control strategies has focused on one strategy at a time, without testing the possibility that people use multiple strategies as they work towards their goals, or testing which strategies are used more often than others. The interdependent relationship between metacognition, habit formation, and self-control suggests that interventions which teach students how to use both cognitive and situational strategies may be even more effective than either type of strategy alone.

Grunschel et al. (2018) developed and evaluated a group training that aimed to reduce procrastination by addressing self-regulatory failures. The training consisted of five weekly sessions of 90 minutes each which taught college students a repertoire of skills that they could use to address issues like time management, self-motivation, distractions, and temptations.

Techniques included modifying aspects of the study environment, employing principles of self-reinforcement, and if-then strategies for dealing with social distractions. Throughout the intervention, students were asked to monitor and reflect on their current study behavior. The authors found that procrastination decreased and measures of self-regulated learning—such as goal setting and planning, time management, and concentration—increased. Students had positive responses to the intervention; 97% of the 106 students indicated that they would recommend the training to a friend who tends to procrastinate academic tasks.

Another recent intervention, this one specifically focused on internet usage behaviors, shows promise for helping students improve their self-regulatory skills in the context of digital distractions. The Healthy Internet Use Program is a three-month training intervention developed to increase cognitive awareness of internet use and teach students strategies for changing their internet use behavior. A pilot study of university students revealed that the program successfully increased awareness of Internet use, academic motivation, and efficient time management (Çelik, 2016). In a randomized controlled trial, Uysal and Balci (2018) found that Healthy Internet Use Program helps reduce the prevalence of internet addiction in middle school students.

Lastly, the Toolbox Project is an intervention which is currently in Phase 3 of a field experiment consisting of approximately 750 classrooms and 18,750 students (John Templeton Foundation, 2019). This intervention aims to educate children about “the science of self-control” through a school-based curriculum. A pilot study found that students taught the self-control curriculum displayed significant increases in their knowledge of self-control principles over time compared to a control curriculum (John Templeton Foundation, 2019).

Implications for Decision Education

Evidence shows that a flexible repertoire of skills is essential for navigating the frequent and varied self-control challenges that life presents. This need for diverse cognitive and situational strategies in developing self-control has significant implications for the field of decision education. Although it is clear that metacognitive awareness and habit-building skills are crucial for combating technology distractions, research gaps exist in understanding how these strategies complement each other and their effectiveness across individuals and situations.

Future research should evaluate the effectiveness of interventions aimed at helping students develop and maintain recurring behaviors linked to not only academic success, but also well-being, such as sleep, exercise, and healthy eating. There is an especially pressing need for programs which teach students about the basic mechanisms of habits, including the role of context, repetition and rewards, and how to apply these principles to improve their self-control. Longitudinal studies are critical given the time required to form new habits and the tendency for behavior change efforts to wane over time. Additionally, there is a need for large-scale RCTs, as many of the existing evaluations of interventions are observational or have very small sample sizes.

If the goal of education is to equip young people with not only knowledge of the world, but knowledge of themselves, an educational foundation in the science of self-control is a powerful tool for doing so. By starting with simple principles of mindfulness in elementary school and building the curriculum complexity over time, educators can help students develop a lifelong

awareness of metacognitive strategies, goal-setting techniques, and habit formation skills. Ultimately, these strategies can help individuals use decision science to structure their lives in ways that make it easier to achieve their long-term goals.

References

- Ainslie, G., & Haslam, N. (1992). Hyperbolic discounting. *Choice over time*. Russell Sage Foundation.
- Aagaard, J. (2021). 'From a Small Click to an Entire Action': Exploring Students' Anti-Distraction Strategies. *Learning, Media and Technology*, 46, 355-365.
- Alliance for Decision Education. (2020). *HabitWise Teacher's Guide*.
<https://programs.alliancefordecisioneducation.org/courses/habitwise>
- Alphonso, K., Durrani, S., & Sood, M. (2019). Effects of Mindfulness Strategies on Student Self-Regulation Skills in Primary and Elementary Students.
- Anthonyamy, L., Koo, A. C., & Hew, S. H. (2020). Self-regulated learning strategies in higher education: Fostering digital literacy for sustainable lifelong learning. *Education and Information Technologies*, 25(4), 2393-2414.
- Batha, K., & Carroll, M. (2007). Metacognitive Training Aids Decision Making. *Australian Journal of Psychology*, 59, 64-69.
- Blackwell, A.L., Yeager, D.C., Mische-Lawson, L., Bird, R.J., & Cook, D. (2014). Teaching Children Self-Regulation Skills within the Early Childhood Education Environment: A Feasibility Study. *Journal of Occupational Therapy, Schools, & Early Intervention*, 7, 204-224.

Bürgler, S., Hoyle, R. H., & Hennecke, M. (2021). Flexibility in using self-regulatory strategies to manage self-control conflicts: The role of metacognitive knowledge, strategy repertoire, and feedback monitoring. *European Journal of Personality, 35*(6), 861-880.

Hennecke, M., & Bürgler, S. (2022). Metacognition and self-control: An integrative framework. *Psychological Review*.

Baumeister, R. F. (2014). Self-regulation, ego depletion, and inhibition. *Neuropsychologia, 65*, 313-319.

Byrnes, J.P. (1998). The Nature and Development of Decision-Making: A Self-Regulation Model.

Carden, L., & Wood, W. (2018). Habit formation and change. *Current opinion in behavioral sciences, 20*, 117-122.

Çelik, Ç. B. (2016). Educational intervention for reducing Internet addiction tendencies. *The Turkish Journal on Addictions, 3*(3), 375-386.

CharacterLab. (2018). *WOOP for Classrooms*.

<https://characterlab.org/character-hub/resources/woop-for-classrooms/>

CharacterLab. (2024). *Playbooks*. <https://characterlab.org/character-hub/playbooks/>

Crooks, C. V., Bax, K., Delaney, A., Kim, H., & Shokoohi, M. (2020). Impact of MindUP among young children: Improvements in behavioral problems, adaptive skills, and executive functioning. *Mindfulness, 11*, 2433-2444.

De Ridder, D. T., Lensvelt-Mulders, G., Finkenauer, C., Stok, F. M., & Baumeister, R. F. (2012).

Taking stock of self-control: A meta-analysis of how trait self-control relates to a wide range of behaviors. *Personality and Social Psychology Review, 16*(1), 76-99.

Dent, A.L., & Koenka, A.C. (2016). The Relation Between Self-Regulated Learning and

Academic Achievement Across Childhood and Adolescence: A Meta-Analysis.

Educational Psychology Review, 28, 425-474.

Dignath, C., & Büttner, G. (2008). Components of fostering self-regulated learning among

students. A meta-analysis on intervention studies at primary and secondary school level.

Metacognition and learning, 3, 231-264.

Donker, A. S., De Boer, H., Kostons, D., Van Ewijk, C. D., & van der Werf, M. P. (2014).

Effectiveness of learning strategy instruction on academic performance: A meta-analysis.

Educational Research Review, 11, 1-26.

Duckworth, A.L., White, R.E., Matteucci, A.J., Shearer, A., & Gross, J.J. (2016). A Stitch in

Time: Strategic Self-Control in High School and College Students. *Journal of*

educational psychology, 108 3, 329-341 .

Duckworth, A. L., Milkman, K. L., & Laibson, D. (2018). Beyond willpower: Strategies for

reducing failures of self-control. *Psychological Science in the Public Interest, 19*(3),

102-129.

Duckworth, A.L., Taxer, J.L., Eskreis-Winkler, L., Galla, B.M., & Gross, J.J. (2019).

Self-Control and Academic Achievement. *Annual Review of Psychology, 70*, 373-399 .

- Elkins-Brown, N., Teper, R., & Inzlicht, M. (2017). How mindfulness enhances self-control. In *Mindfulness in social psychology* (pp. 65-78). Routledge.
- Elliott-Dorans, L. R. (2018). To ban or not to ban? The effect of permissive versus restrictive laptop policies on student outcomes and teaching evaluations. *Computers & Education, 126*, 183-200.
- Fiorella, L. (2020). The Science of Habit and Its Implications for Student Learning and Well-Being. *Educational Psychology Review, 32*, 603-625.
- Flanigan, A. E., & Kim, J. H. (Eds.). (2022). *Digital distractions in the college classroom*. IGI Global.
- Fudenberg, D., & Levine, D. K. (2006). A dual-self model of impulse control. *American economic review, 96*(5), 1449-1476.
- Fujita, K., Orvell, A., & Kross, E. (2020). Smarter, not harder: A toolbox approach to enhancing self-control. *Policy Insights from the Behavioral and Brain Sciences, 7*(2), 149-156.
- Galla, B. M., & Duckworth, A. L. (2015). More Than Resisting Temptation: Beneficial Habits Mediate the Relationship Between Self-Control and Positive Life Outcomes. *Journal of Personality and Social Psychology, 109*(3), 508.
- Grunschel, C., Patrzek, J., Klingsieck, K. B., & Fries, S. (2018). "I'll stop procrastinating now!" Fostering specific processes of self-regulated learning to reduce academic procrastination. *Journal of Prevention & Intervention in the Community, 46*(2), 143-157.

- Hai, A. H., Franklin, C., Cole Jr, A. H., Panisch, L. S., Yan, Y., & Jones, K. (2021). Impact of MindUP on elementary school students' classroom behaviors: A single-case design pilot study. *Children and Youth Services Review, 125*, 105981.
- Healey, D. M., & Halperin, J. M. (2015). Enhancing Neurobehavioral Gains with the Aid of Games and Exercise (ENGAGE): Initial Open Trial of a Novel Early Intervention Fostering the Development of Preschoolers' Self-Regulation. *Child Neuropsychology, 21*(4), 465-480.
- John Templeton Foundation. (2019). The Toolbox Project: A Randomized Controlled Trial. <https://www.templeton.org/grant/the-toolbox-project-a-randomized-controlled-trial>
- Jung, K.R., Zhou, A., & Lee, R.M. (2017). Self-Efficacy, Self-Discipline and Academic Performance: Testing a Context-Specific Mediation Model. *Learning and Individual Differences, 60*, 33-39.
- Kay, R., Benzimra, D., & Li, J. (2017). Exploring factors that influence technology-based distractions in bring your own device classrooms. *Journal of Educational Computing Research, 55*(7), 974-995.
- Kitsantas, A., Winsler, A., & Huie, F. (2008). Self-Regulation and Ability Predictors of Academic Success During College: A Predictive Validity Study. *Journal of Advanced Academics, 20*, 42-68.

Le Roux, D. B., & Parry, D. A. (2018). In-lecture media use and academic performance:

Investigating demographic and intentional moderators. *South African Computer Journal*, 30(1), 87-107.

McCoy, B. (2020). Gen Z and Digital Distractions in the Classroom: Student Classroom Use of

Digital Devices for Non-Class Related Purposes. *Journal of Media Education*, 11(2), 5-23.

Metz, S. M., Frank, J. L., Reibel, D., Cantrell, T., Sanders, R., & Broderick, P. C. (2013). The

effectiveness of the learning to BREATHE program on adolescent emotion regulation. *Research in Human Development*, 10(3), 252-272.

Milyavskaya, M., Saunders, B., & Inzlicht, M. (2021). Self-control in daily life: Prevalence and

effectiveness of diverse self-control strategies. *Journal of Personality*, 89(4), 634-651.

Moffitt, T. E., Poulton, R., & Caspi, A. (2013). Lifelong impact of early self-control. *American*

Scientist, 101(5), 352-359.

Nota, L., Soresi, S., & Zimmerman, B. (2004). Self-Regulation and Academic Achievement and

Resilience: A Longitudinal Study. *International Journal of Educational Research*, 41, 198-215.

Perry, J., Lundie, D., & Golder, G. (2019). Metacognition in Schools: What Does the Literature

Suggest About the Effectiveness of Teaching Metacognition in Schools?. *Educational Review*, 71(4), 483-500.

Pintrich, P.R. (2000). *The role of goal orientation in self-regulated learning*.

- Ravizza, S. M., Uitvlugt, M. G., & Fenn, K. M. (2017). Logged in and zoned out: How laptop internet use relates to classroom learning. *Psychological science*, *28*(2), 171-180.
- Rosen, L.D. (2017). The Distracted Student Mind — Enhancing Its Focus and Attention. *Phi Delta Kappan*, *99*, 14-8.
- Rosenbaum, D. P. (2007). Just say no to DARE. *Criminology & Public Policy*, *6*, 815.
- Suárez-García, Z., Álvarez-García, D., García-Redondo, P., & Rodríguez, C. (2020). The effect of a mindfulness-based intervention on attention, self-control, and aggressiveness in primary school pupils. *International journal of environmental research and public health*, *17*(7), 2447.
- Svartdal, F., Dahl, T. I., Gamst-Klaussen, T., Koppenborg, M., & Klingsieck, K. B. (2020). How study environments foster academic procrastination: Overview and recommendations. *Frontiers in Psychology*, *11*, 540910.
- Theobald, M. (2021). Self-regulated learning training programs enhance university students' academic performance, self-regulated learning strategies, and motivation: A meta-analysis. *Contemporary Educational Psychology*, *66*, 101976.
- Thierry, K.L., Bryant, H.L., Nobles, S., & Norris, K.S. (2016). Two-Year Impact of a Mindfulness-Based Program on Preschoolers' Self-Regulation and Academic Performance. *Early Education and Development*, *27*, 805 - 821.

Turner, M., & Hodis, F.A. (2023). A Systematic Review of Interventions to Reduce Academic Procrastination and Implications for Instructor-based Classroom Interventions.

Educational Psychology Review, 35, 1-39.

Uysal, G., & Balci, S. (2018). Evaluation of a school-based program for Internet addiction of adolescents in Turkey. *Journal of addictions nursing, 29*(1), 43-49.

Vahedi, Z., Zannella, L., & Want, S. C. (2021). Students' use of information and communication technologies in the classroom: Uses, restriction, and integration. *Active Learning in Higher Education, 22*(3), 215-228.

Werner, K. M., & Ford, B. Q. (2023). Self-control: An integrative framework. *Social and Personality Psychology Compass, 17*(5), e12738.

Zimmerman, B. J. (1990). Self-regulated learning and academic achievement: An overview. *Educational Psychologist, 25*(1), 3-17.