

BEYOND THE CLASSROOM: MOTIVATING INDEPENDENT LEARNING THROUGH TECHNOLOGY

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Abstract

Many students have found themselves in situations where they wish to learn more about a subject, whether in school subjects or related fields. However, they often abandon these pursuits due to several hardships that they may encounter. Common challenges include a general lack such as difficulty in finding the starting point when approaching a new subject, difficulty in finding quality materials or not having a clear learning path to follow. Moreover, students may find it difficult to find a purpose for these studies beyond satisfying their curiosity or find themselves overwhelmed by the mandatory work given by the school, leaving them with either too little time or too exhausted to pursue their individual studies. As such, there are ways in which technology can help teachers convince their pupils to engage in the process of self-education and how to use technology as another tool at their disposal. It can also help the students by giving them the motivation and the tools they need, giving them general advice on where to start and how to continue, without taking away their agency in what they choose to pursue, as well as giving them advice on how some subject can help them in the future. By integrating technological solutions into education, students can develop independent learning skills that extend beyond the classroom and serve their long-term academic and personal growth.

Keywords: self-education; independent study; self-learning motivation; technology in personalized education; learning challenges; study strategies;

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Introduction

In today's increasingly digital world, students are more encouraged than ever to engage in self-learning through the wide array of available technologies. Whether they aim to satisfy their curiosity, fill gaps left by classroom instruction, or prepare for future goals, many students begin their independent studies with enthusiasm but often stop soon after. Common barriers include uncertainty about where to start, which resources can be trusted, and how to plan an effective learning path.

Self-Determination Theory (Deci & Ryan, 1985) explains that intrinsic motivation is fueled by the psychological needs for competence, autonomy, and relatedness. Meanwhile, Self-Directed Learning theory (Candy, 1991) highlights the importance of learner autonomy, resource management, and self-regulation. Although technology provides students with unprecedented access to learning tools, many still lack guidance on how to use these tools meaningfully.

This paper examines how middle and high school students approach self-study: the methods they prefer, what drives them to continue, the challenges they face, and the support they wish they had. Drawing from survey responses, this paper explores how students navigate common obstacles in self-study and the strategies some have found to stay motivated and persist independently.

Literature Review (Theoretical foundation)

The increase in the availability of information through the use of technology has changed the approach which students take in their self-study journey, giving them more agency in choosing their study methods and subjects. This literature review draws on key theoretical perspectives to frame the study's investigation into how students approach self-study, what motivates them to do so, and what obstacles they face. Two core frameworks underpin this analysis: Self-Directed Learning (Candy, 1991), which explores how students take control of their learning process; and Self-Determination Theory (Ryan & Deci, 1985), which explains how autonomy, competence, and relatedness drive motivation. In addition, recent studies on educational technology highlight how digital tools and pedagogical strategies can either support or hinder student agency. This review begins by examining motivation theory, then explores SDL models, and finally connects both to students' lived experiences with AI tools and teacher support.

Self-Determination Theory (SDT) (Ryan & Deci, 1985) offers the foundation necessary for understanding student motivation. The theory identifies three psychological needs that support intrinsic motivation: autonomy (the feeling of control over one's actions), competence (feeling capable in regard to the chosen subject), and relatedness (the feeling of belonging and supported by others). In the context of self-study, autonomy is especially prominent, students choose what,

when, and how they learn, often outside the boundaries of structured classroom environments. However, while autonomy can encourage engagement, it may also create new challenges for the students. For instance, if learners feel unsure of their ability to manage tasks (a lack of competence), or isolated in their efforts (a lack of relatedness), their motivation may decline.

SDT is particularly valuable in interpreting the findings of this study. Many students reported intrinsic reasons for self-studying, such as curiosity and personal growth—but also highlighted issues like uncertainty, limited feedback on their progress, or being alone in their studies. These align closely with competence and relatedness gaps, which suggest that even motivated students may find difficulties without appropriate support systems. When applied to educational practice, SDT frames the role of teachers not as authority figures or content providers, but as guides that help students pursue their study goals.

Self-Directed Learning (SDL) describes a process in which students take charge of their education by setting goals, finding resources, and managing their progress (Candy, 1991). Candy sees SDL as both a mindset and a skillset, shaped by self-management, learner control, and the ability to pursue learning independently. Garrison adds a psychological model with three components: motivation, self-management, and self-monitoring—highlighting how reflection and planning are important for self-study (Garrison, 1997).

In this study, SDL helps explain how students navigate independent learning and why some struggle. Difficulties with time management, organization, and finding reliable materials often stem from improper self-management or monitoring skills.

The increasing accessibility of digital learning platforms has significantly influenced how students pursue self-study. From video tutorials and online forums to intelligent writing assistants and search engines, students now have an extended array of tools at their disposal. AI-powered applications such as ChatGPT and Grammarly offer fast, personalized support, helping students clarify concepts, generate ideas, or practice language proficiency. These tools tend to enhance autonomy, as students can progress at their own pace, on their own terms (Wang & Li, 2024).

However, autonomy alone is not enough. Research suggests that students often lack the skills to critically evaluate AI-generated content or to use these tools in ways that deepen understanding (Jin et al., 2023). When feedback is shallow or too generic, students may struggle to build competence, a key pillar of intrinsic motivation in Self-Determination Theory (Ryan & Deci, 1985). Similarly, because digital tools are often used in isolation, they can diminish relatedness by cutting students off from peer dialogue or teacher feedback that would otherwise reinforce effort and belonging (Alasgarova & Rzayev, 2024).

Studies have also shown that while AI may boost motivation in the short term, its impact depends mostly on the student's digital literacy and support context (Artemova, 2024). Without proper structured guidance, learners may rely too much on AI outputs without engaging on a deeper level with the subject, an issue directly tied to gaps in self-monitoring and self-management skills identified in SDL theory (Garrison, 1997). In the present study, many students reported both appreciation for the convenience of AI tools and frustration with their limitations, particularly when seeking reliable resources, feedback, or structure.

Together, these findings suggest that while AI and digital tools expand what's possible in self-study, they also introduce new problems in regard to autonomy, competence, and relatedness. Like any learning aid, their value hinges on whether students are taught not just what to use, but how and why, a role where teachers and peer communities still play a crucial role.

All in all, the frameworks of Self-Determination Theory and Self-Directed Learning offer complementary perspectives on student autonomy and the factors that support or hinder it. While SDT highlights the motivational aspect of autonomy, competence, and relatedness, SDL focuses on the practical skills needed to manage learning independently. New digital tools, particularly AI-powered applications, complicate the picture by empowering autonomy to the detriment of competence or relatedness because of the lack of guidance. As this review suggests, cultivating effective self-study requires more than access to technology, it demands intentional support from educators who can help students develop the skills and confidence to learn independently, reflect critically, and stay connected.

Methodology

This study employed a mixed-methods survey approach to investigate how middle and high school students engage in self-study, including their motivations, preferred methods, perceived challenges, and use of digital tools. The survey combined both quantitative (multiple-choice) and qualitative (open-ended) questions to capture an ample view of student behaviours and attitudes. Survey responses were collected in Romanian and translated into English for analysis and quotation purposes.

Participants were middle and high school students. A total of 63 students responded to the survey. Participation was voluntary and anonymous. The survey included 7 sections: demographic information, study habits, motivation for self-study, challenges encountered, and use of digital/AI tools. Items were designed based on themes drawn from Self-Determination Theory and Self-Directed Learning models and informed by recent literature on educational technology.

Quantitative data were analyzed using descriptive statistics to identify trends in student behaviour and attitudes. Qualitative responses were grouped thematically to identify recurring

patterns related to motivation, challenges, tool usage, and support systems. These themes were then interpreted through the theoretical lenses of SDT and SDL.

Results

The survey gathered responses from a diverse group of students across grades V to X, representing both lower and upper secondary levels and various study profiles, including technological, humanistic, and general middle school tracks. In total, there were 60 respondents. The quotes will be presented first in the original language (Romanian) and then translated into English in the same order.

Students reported a wide range of motivations. The most common reasons included:

- Personal growth and intellectual curiosity (e.g., “Dorința de a învăța lucruri noi”, “Pasiunea de cunoaștere”; “Desire to learn new things”, “Passion for knowledge”);
- Academic success (e.g., “Să am note mari”, “Vreau să intru la liceul dorit”; “To get good grades”, “I want to get into my desired high school”);
- Career preparation or self-betterment (e.g., “Pentru viitorul meu”, “Dezvoltarea de sine”; “For my future”, “Personal growth”);

Some students were also extrinsically motivated by external role models, parental influence, or the desire to make others proud.

Key obstacles identified were:

- Lack of structure or time management difficulties (“Gestionarea timpului”, “lipsa unui plan de învățare clar”; “Time management”, “Not having a clear learning plan”);
- Comprehension issues and difficulty understanding certain content (“Neînțelegerea unor subiecte mai dificile”, “Nu înțeleg sensul mereu”; “Difficulty understanding more challenging topics”, “I don’t always understand the meaning”);
- Distractions and low motivation (“Telefonul”, “lipsa de motivație”, “atenția scurtă”; “Mobile phone”, “Lack of motivation”, “Short attention span”);

These point to challenges aligned with self-monitoring and competence, echoing SDL theory and SDT.

To overcome difficulties, students relied on multiple support sources:

- Artificial intelligence tools (ChatGPT, Copilot) were frequently cited, being the most used overall;
- Online platforms and resources (e.g., Brainly, Scribd, W3Schools) were widely used;

- Books/manuals, teachers, friends, and family were mentioned, of which teachers were the most common;

Most students believed self-education was crucial for:

- Personal autonomy and preparing for adulthood (“Pentru a ști să te descurci”, “Să știu cum să mă comport”; “So I know how to manage on my own”, “To know how to behave”);
- Long-term success and adaptability (“Pentru dezvoltarea noastră”, “Autoeducația este importantă pentru că ne oferă libertatea de a învăța continuu.”; “For our development”, “Self-education is important because it gives us the freedom to learn continuously.”);

Discussions and conclusions

The findings of this study highlight the emphasis placed by AI platforms and self-learning tools(e.g. W3School, Khan Academy, etc.) on autonomy, often at the expense of competence, which is only somewhat achieved by some self-learning tools, and relatedness. From the perspective of Self-Determined Theory(Ryan & Deci, 1985), the failure to meet these values hinders the motivation of the students. Moreover, students’ desire for autonomy, which is underlined by the Self-Directed Learning theory, is encouraged by these tools, yet the issues regarding unclear studying paths or time management problems suggest that self-management and self-monitoring skills remain lacking. These limitations call for outside assistance.

As such, these findings suggest a need for insights to help guide students on their self-learning journey. This can be done by promoting online sources that can be trusted and, if necessary, a rough order in which some of these need to be studied in. Additionally, teachers can help students by showing them how to formulate prompts for AI and how to best utilize it for studying.

Self-study offers students great opportunities for autonomy, personal growth, and lifelong adaptability, but in order to achieve most of these goals they still require some amount of guidance. Overreliance on AI platforms can lead to a shallow understanding, and relying completely on technology can undermine some of the benefits it provides, but with some intervention from educators, not as an authority figure or an information source but as a guide to help students learn how to use the tools at their disposal. This kind of support will lead to students that are more motivated than ever to study on their own for their future using these tools efficiently.

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