



MOTIVATION AND SELF-REGULATION OF LEARNING IN HOMESCHOOLED STUDENTS

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Abstract

In the context of education, motivation and self-regulation of learning are dominant issues. The degree of intrinsic and extrinsic motivation to learn is related to students' academic achievement and literacy development. This study aimed to research the regulatory styles and motivation to learn among homeschooled students, with a particular focus on those who practice unschooling, a form of self-directed learning. A quantitative research strategy was employed, and data were collected using the standardised SQR-Academic questionnaire adapted for the homeschooling context. The questionnaire was completed by 143 homeschooled children (4th to 9th grade), of whom 10.88% reported engaging in unschooling or self-directed learning. The results indicated that identified regulation was prevalent among homeschooled students, who tended to exhibit intrinsic rather than extrinsic motivation. This contrasts with full-time attending students, who generally display a more external regulation style. Among unschoolers, identified regulation was equally prevalent, but the Relative Autonomy Index (RAI) values were higher, indicating a stronger inclination towards intrinsic motivation. Despite these differences in RAI between unschoolers and other homeschoolers, the differences were not statistically significant. The findings are consistent with relevant research from other countries. Future research should explore the factors that influence the degree of intrinsic and extrinsic motivation in homeschooled students.

Keywords: homeschooled students, intrinsic motivation, lower secondary education students, primary education students, regulation of learning, unschooled students

Introduction

Intrinsic motivation is the key to the learning of students. For a student to succeed, they need to be driven by intrinsic motivation. While extrinsically motivated students may achieve short-term success driven by rewards or external pressures, it is intrinsically motivated students who are more likely to attain a deeper understanding and experience lasting benefits from learning. This intrinsic motivation is often accompanied by heightened curiosity, and sustained engagement. Several professional studies have addressed the issues of motivation and self-regulation of learning (Apostoleris, 1999; Kožuchová & Kuruc, 2020; Kuruc, 2017; Mak, 2021; Medlin & Butler, 2018; Medlin & Blackmer, 2020). The foundation of the problem of motivation and self-regulation of learning lies in the Self-Determination Theory, an eclectic model of human motivation and associated self-regulation (Kuruc, 2017c). This theory, developed by Deci and Ryan (2004a, 2004b) from Rochester University, has been extensively summarised by Kuruc (2017b) in his review of related studies (Kasser & Ryan, 1993, 1996; Ryan et al., 1995; Ryan & Deci, 2012).

Kuruc (2017b) reported research on need satisfaction and overall well-being experience, incorporating both hedonistic and eudaimonic approaches, within the context of self-determination theory. He also highlighted research on human aspirations and overall life goals, distinguishing between intrinsic and extrinsic aspirations. According to Kasser and Ryan (1993,

1996), intrinsic aspirations, for example, affiliation, self-development, and altruism, directly fulfill fundamental needs such as autonomy, competence, and relatedness. In contrast, extrinsic aspirations, such as wealth, fame, and self-image, are related to obtaining external rewards and are less likely to bring direct satisfaction to basic psychological needs.

Kuruc (2017b) further summarised the conclusions formulated by Kasser and Ryan (1993, 1996), noting that a hedonistic sense of well-being is linked to extrinsic aspirations, while a eudaimonic sense of well-being is associated with intrinsic aspirations. The authors of Self-Determination Theory favoured a eudaimonic view of well-being, employing measures of the positive effect of mental health on a general organismic concept. This concept includes the measurement of human vitality, psychological flexibility, and the depth of inner perception of well-being (Ryan et al., 1995).

Such a holistic view of Self-Determination Theory allows for significant predictions of overall well-being adjustment based on the nature of self-regulation and the degree of intrinsic and extrinsic motivation, even in education context (Kuruc, 2017b). Furthermore, it can be observed that as the index of intrinsic motivation and perceived self-confidence decreases, the students' results in mathematics, reading, and science literacy, measured in international assessments, also decrease (Kuruc, 2017a).

Four main regulatory styles can be distinguished: external, introjected, identified regulation, and intrinsic motivation. In external regulation styles strong extrinsic motivation prevails, aimed at satisfying external demands. In introjected regulation style extrinsic motivation still prevails. Students initiate or control their behaviour based on efforts to avoid feelings of guilt or shame or to gain appreciation and praise (conditioned self-esteem). In identified regulation style a higher proportion of intrinsic motivation prevails over extrinsic motivation. In intrinsic motivation style is predominantly inward-looking, aimed at developing one's own talents and capacities. Students focus on actively seeking positive changes and challenges without requiring external control (Kuruc, 2017b).

Homeschooling is also a topic of growing research interest. It is integrated into the legislation of many countries (Mazur et al., 2019). Homeschooling originated in the United States and spread to Europe in the final decades of the 20th century. Holt (1964, 1967, 2003) argued that children do not need to be forced to learn. If provided with the liberty to pursue their interests and access to diverse educational materials, they would intuitively acquire knowledge on their own when they are prepared. According to Riley (2016), some parents decided for homeschooling because of the loss of the child's intrinsic motivation in school. A significant advantage of homeschooling is that it often centres on the child's intrinsic motivation to learn, making the educational experience highly motivating (Riley, 2016).

There are many forms of homeschooling. One of them is unschooling or self-directed learning. Unschooling differs from other forms of homeschooling in that it has no curriculum (Rochovská et al., 2023). According to Gray and Riley (2013), the parents of children who practice unschooling do not put their children into schools, do not give the children any schoolwork within the homeschooling, do not use the specified textbooks and do not test them to measure learning progress. Their children can learn whatever they need to know and pursue their interests, and their parents support them in doing so. Unschooling is not only a philosophy of education, but also a lifestyle for many families. Learning is perceived here as a lifelong process in which the entire surrounding world fulfills the function of a classroom (Ricci, 2012). It is important that the children have a suitable environment for self-education, in which they can communicate freely across different age groups and freely learn the main instruments of culture (Gray, 2013).

According to Self-Determination Theory, intrinsic motivation is inherent but can be facilitated or weakened by social and environmental factors (Riley, 2016). Activities that meet children's fundamental needs for competence and autonomy are particularly enjoyable for

them. Engaging in complex problems or achieving mastery over difficult tasks gives children a rewarding feeling of success and self-reliance. The drive to engage in these activities is intrinsically motivated, rendering external rewards unnecessary (Medlin & Butler, 2018). Homeschoolers and unschoolers benefit from environments that foster intrinsic motivation for learning by incorporating regular family activities into their education, avoiding the use of grades or incentives for academic tasks, granting students some autonomy in their studies, and promoting unschooling or self-directed learning (Medlin & Blackmer, 2000; Medlin & Butler, 2018; Riley, 2016). This suggests that homeschoolers and unschoolers might have higher levels of intrinsic motivation than extrinsic motivation.

In research examining parental perspectives on homeschooling, mothers expressed a preference for this educational approach, highlighting that it supports a continuous learning process aligned with human nature. They noted that homeschooling allows for a personalised learning environment that respects individual differences, fostering the development of independent, self-assured individuals who possess a strong sense of self-worth and an understanding of democratic principles, while preserving their intrinsic motivation to learn (Derman & Gürten, 2021).

Research Issue

Several studies focusing on homeschoolers also research their motivation and regulation of learning (e.g., Apostoleris, 1999; Medlin & Blackmer, 2000; Medlin & Butler, 2018; Riley, 2016). Most of these studies employed a questionnaire or structured interview with children or their parents as the research instrument, utilising a quantitative research design.

Kuruc (2017b) extended previous research on motivation and self-regulation of learning by studying a sample of 1,500 lower secondary students from Slovakia. The findings revealed a very low proportion of students exhibiting intrinsic motivation, the highest proportion showing extrinsic regulation and strong extrinsic motivation. Research around the world indicates higher levels of intrinsic motivation among homeschooled students. This underscores the need to identify regulatory styles and motivation in homeschooled students in Slovakia and to study differences within the subgroup of students engaging in unschooling or self-directed learning.

A significant issue in school education is the generally low level of intrinsic motivation among students. The aim of this research is to study alternative learning environments, specifically focusing on how they influence students' motivation to learn. The study is particularly valuable as it contributes new insights into the levels of intrinsic motivation in homeschooled students compared to those attending traditional, full-time schooling.

Research Questions

The following research questions were formulated:

1. What are the regulatory styles and motivations to learn among homeschooled students?
2. What are the regulatory styles and motivations to learn among students who practice unschooling or self-directed learning?

Research Methodology

General Description

This research is part of a larger research that has been ongoing since 2018. In Slovakia, homeschooling has been legally permitted since 2008 for primary education (ISCED 1) and

since 2016 for lower secondary education. To address the need for more detailed research, studies have been conducted on homeschooling in Slovakia and neighbouring countries. These studies compared the legislative framework for homeschooling in Slovakia and neighbouring countries (Rochovská & Mazur, 2019) and examined its conditions (Rochovská et al., 2019). Additional research explored parents' perspectives on homeschooling conditions in Slovakia (Mazur et al., 2019), preferences for methods and forms of homeschooling (Rochovská et al., 2020), the process of compulsory examination in umbrella schools (Rochovská & Droščák, 2022), and the experiences of "home educators" (Rochovská et al. 2022). Comparative studies between unschoolers and traditional homeschoolers were also conducted (Rochovská et al., 2023). These research studies examined various variables affecting homeschoolers' academic success, including school choice, parental pedagogical education, and homeschooling methods. Based on this research, additional factors need to be explored, such as levels of extrinsic and intrinsic motivation among homeschoolers and unschoolers. This phase of the research was conducted between 2022 and 2023.

Sample

During the pilot testing of the research instrument, the students were evaluated on their understanding of the questionnaire items. It was found that comprehension was problematic for third-grade students. However, fourth-grade students were able to understand the questions and, with the assistance of their parents, completed the questionnaire without difficulty. Consequently, the population consisted of homeschooled students in the fourth grade (primary education, ISCED 1) and in grades 5 to 9 (lower secondary education, ISCED 2) in Slovakia for the 2022/2023 school year. This included students who were homeschooled at the request of their legal guardians, for health reasons, or abroad. In total, the population consisted of 1,453 students.

Table 1
Number of Homeschooled Students in Slovakia for the 2022/2023 School Year (Population)

School Year	4th Grade	5th Grade	6th Grade	7th Grade	8th Grade	9th Grade	Total
Homeschooling at the request of a parent or legal guardian	172	172	134	138	75	55	746
Homeschooling for health reasons	14	49	54	57	66	60	300
Homeschooling abroad	59	65	84	61	69	69	407
Total	245	286	272	256	210	184	1453

The final sample comprised 143 homeschooled students. The sample was determined based on the accessibility of respondents and their consent to engage in the research, as there are no official lists of homeschooled students. Assistance in securing the research sample was sought from the civic association Home Education in Slovakia and the Free Democratic School in Košice, which represents homeschooled students.

In terms of gender, the sample comprised 46.15% girls and 51.05% boys. The gender composition of the sample is consistent with the population (based on data from the Centre of Scientific and Technical Information of the Slovak Republic). With respect to age, the sample included students from 9 to 16 years old, with the largest groups being in the 10 to 13-year range. By grade level, the sample consisted of students from fourth to ninth grade. The composition of

the sample, in terms of grade level (Table 1) and region, approximately matches the composition of the population (State School Inspection, 2023). However, the reasons for homeschooling in the sample show some variation compared to the population. In the sample, 84.62% of students are homeschooled at the request of parents, compared to 51.34% in the population. Conversely, the percentage of students in the sample who are homeschooled for health reasons (4.20%) or studying abroad (7.69%) is significantly lower compared to the population, where these percentages are 20.65% and 28.01%, respectively.

Approximately half of the respondents provided details about their homeschooling practices. Since no official data on Slovak homeschoolers are available, comparisons with the population are not possible. The largest segment of respondents (27.27%) identified as classical homeschoolers. An additional 6.99% reported participating in community group education. Among the respondents, 11.19% indicated they practiced unschooling or self-directed learning. Another 4.90% described their approach as a mix of self-directed and classical education, combining to 16.09%. This is consistent with previous research (Rochovská et al., 2020), which found that 15.69% of homeschoolers reported engaging in unschooling or self-directed learning.

Table 2
Characteristics of the Sample

Gender	N	%
Girls	66	46.15
Boys	73	51.05
Missing answers	4	2.80
Age	N	%
9 years	9	6.29
10 years	31	21.68
11 years	30	20.98
12 years	20	13.99
13 years	27	18.88
14 years	12	8.39
15 years	7	4.90
16 years	1	0.70
Missing answers	6	4.20
Year of schooling	N	%
Fourth-year students	28	19.58
Fifth-year students	38	26.57
Sixth-year students	21	14.69
Seventh-year students	27	18.88
Eighth-year students	13	9.09
Ninth-year students	14	9.79
Missing answers	2	1.40
Region	N	%
Bratislava Region	42	29.37
Trnava Region	11	7.69
Trenčín Region	12	8.39

Nitra Region	5	3.50
Žilina Region	8	5.59
Banská Bystrica Region	22	15.38
Prešov Region	22	15.38
Košice Region	17	11.89
Missing answer	4	2.80
Reason for homeschooling	N	%
At the request of a parent or legal guardian	121	84.62
For health reasons	6	4.20
Homeschooling abroad	11	7.69
Missing answers	5	3.50
Characteristics of homeschooling	N	%
Classical homeschooling in home conditions	39	27.27
Unschooling or self-directed learning	16	11.19
Both classical and self-directed education	7	4.90
Education in a community group	10	6.99
Missing answers	71	49.65
Total	143	100

The research, including human subjects, was conducted in accordance with the Standards for Reporting on Empirical Social Science Research in AERA Publications (American Educational Research Association, 2006). Respondents were asked to indicate on the questionnaire that by completing and returning it, they consented to participate in the study. They were assured of anonymity, meaning their names were not recorded, and their identities remained unknown. Participants were informed that their responses would be used solely for statistical analysis and research purposes related to homeschooling, specifically concerning motivation and regulation styles. Participants were also informed that their involvement was voluntary and that they had the option to skip any questions or withdraw from the study at any point without facing any consequences.

Instruments and Procedures

To achieve the research aim, it was essential to select a research instrument appropriate for the Slovak education system. Various instruments are available to measure motivation and regulatory styles in learning, including those for homeschoolers (Apostoleris, 1999; Gottfried et al., 1998; Medlin & Blackmer, 2000; Medlin & Butler, 2018; Riley, 2016). The SRQ-Academic questionnaire (Ryan & Connell, 1989), which was culturally adapted to Slovak contexts in 2017 (Kuruc, 2017a, 2017b, 2017c), was chosen to assess the self-regulated learning styles of Slovak homeschoolers. This questionnaire evaluates the nature of students' motivation and self-regulation concerning school learning. For the research, the questionnaire was adjusted to fit the homeschooling environment. It consisted of four main questions, each with eight response options rated on a four-point scale. The responses identified the regulatory style being measured, categorised into four main styles: external, introjected, identified regulation, and intrinsic motivation. Intrinsic motivation was included based on the Self-Determination Theory, which views learning as a fundamental human need (Kuruc & Kožuchová, 2020).

For each item, respondents were provided with several answer options. They indicated their agreement with each statement on a scale: “very true”, “somewhat true”, “somewhat false”, or “completely false”.

In the first item, respondents were asked: *"Why do I complete assignments (e.g., from textbooks, workbooks, worksheets) and work on projects?"* The responses were rated on the aforementioned scale and included the following options: 1. Because I want to be seen as a good learner, 2. Because I will face difficulties if I don't do them, 3. Because it's enjoyable, 4. Because I would feel bad about myself if I didn't do them, 5. Because I want to understand what I am learning, 6. Because it's expected of me, 7. Because I enjoy solving problems from textbooks, workbooks, worksheets, and working on projects, 8. Because it's important for me to solve problems from textbooks, workbooks, worksheets, and work on projects.

In the second item, respondents answered the question: *"Why do I work on assignments or projects?"* The responses, rated on the provided scale, were as follows: 9. Because I want to avoid angering my parents, 10. Because I want others to think I am a good learner, 11. Because I want to learn new things, 12. Because I would be embarrassed if I didn't do them, 13. Because it is fun, 14. Because it is a rule, 15. Because I enjoy working and learning, 16. Because it is important for me to work and learn.

In the third item, respondents answered the question: *"Why do I try to answer difficult questions from a parent or another adult?"* The responses, rated on the provided scale, were as follows: 17. Because I want others to think I am smart, 18. Because I would be ashamed of myself if I didn't at least try, 19. Because I enjoy answering difficult questions, 20. Because it is what I should do, 21. Because I want to find out if I'm wrong or right, 22. Because answering difficult questions is fun, 23. Because it's important for me to try to answer difficult questions, 24. Because I want whoever is studying with me (a parent or other adult) to speak well of me.

In the fourth item, respondents answered the question: *"Why do I try to perform well in education?"* The responses, rated on the provided scale, were as follows: 25. Because it is what I should do (it is expected of me), 26. So that my parents will think I am smart, 27. Because I enjoy doing well in my studies, 28. Because I will have problems if I don't do well, 29. Because I will feel bad if I don't do well, 30. Because it is important for me to try to do well in my work and study, 31. Because I will be proud of myself if I do well in my studies, 32. Because if I am good at learning, I can get a reward.

The Relative Autonomous Index (RAI) serves as the final measure to assess the overall orientation of the respondent's motivation and regulation (Kuruc, 2017; Ryan & Deci, 2004). The reliability of the questionnaire was assessed in three ways and validated by Kuruc and Kožuchová (2020). First, split-half reliability was calculated, yielding a value of .687, which indicates acceptable reliability. Second, Cronbach's alpha was computed, resulting in a value of .845, reflecting satisfactory reliability. This coefficient is commonly used in questionnaires with items scaled uniformly, assessing the internal consistency of the questionnaire's scales. Third, Scott's homogeneity was evaluated, achieving a value of .647, also deemed acceptable. These methods collectively affirm that the research instrument reliably and accurately assesses the prevailing self-regulatory style among respondents (Kuruc & Kožuchová, 2020).

In the Slovak context, research on self-regulation in learning among secondary school students was conducted in 2009. The SRQ-Academic questionnaire was piloted and demonstrated very good properties. The validity of the modified research instrument for homeschooling conditions was confirmed through expert evaluation. Pilot testing was conducted to assess the quality of the items and propose necessary modifications. Minimal adjustments were made based on the evaluation and integrated into the final questionnaire.

Data Analysis

The questionnaire uses a scoring method based on a scale distribution. Respondents indicate the degree of subjective agreement with each statement, with responses converted into numerical values: "very true" = 4, "somewhat true" = 3, "somewhat false" = 2, and "completely

false" = 1. This conversion transforms verbal responses into numerical data for all items. The items are categorised according to the regulatory and motivational styles they represent. The items related to external regulation are: 2, 6, 9, 14, 20, 24, 25, 28, 32. Items related to introjected regulation are: 1, 4, 10, 12, 17, 18, 26, 29, 31. Items related to identified regulation are: 5, 8, 11, 16, 21, 23, 30. Items related to intrinsic motivation are: 3, 7, 13, 15, 19, 22, 27 (Kuruc, 2017a).

Calculations were performed using a preformatted Excel file, which included formulas presented by the authors of the Slovak version of the SRQ-Academic questionnaire (Kuruc, 2017a). This allowed for the calculation of scores for each regulatory style for every student. Descriptive statistics were used for data analysis, containing absolute frequencies, relative frequencies, mean, standard deviation, median, and mode. This process provided a value for each regulatory style.

At the same time, the Relative Autonomous Index was calculated. Based on this value, the prevailing regulatory style was determined both for the entire group of respondents and for the subgroup practising unschooling or self-directed education.

A chi-square test was performed to assess if there were statistically significant differences between the responses of individuals who favoured unschooling or self-directed education and those of other homeschoolers.

Research Results

Table 3 presents results for the group of respondents consisting of students in grades 4 to 9 of primary school. The table also displays the frequency distribution of the various regulatory styles. As shown, respondents exhibited the highest rates of identified regulation, with a greater proportion of intrinsic motivation than extrinsic motivation. The mean value of the Relative Autonomous Index was 1.40 (median 1.10, and mode 0.19), which falls within the interval $0 < x < 1.5$, also indicating the identified regulation. Intrinsic motivation was the second most prevalent, followed by introjected regulation, with extrinsic regulation the least represented.

Regarding individual students and their inclination towards specific regulatory styles, identified regulation was predominant in 50.63% of the students, intrinsic motivation in 23.75%, introjected regulation in 13.13%, and extrinsic motivation in 12.50%. Additionally, 16 respondents had equal scores for two regulatory styles simultaneously.

Table 3
Regulation Styles of Homeschoolers

Regulation style	External Regulation	Introjected Regulation	Identified Regulation	Intrinsic Motivation	Relative Autonomous Index
Absolute frequency	20	21	81	38	-
Relative frequency (%)	12.50	13.13	50.63	23.75	-
Mean	2.20	2.30	2.90	2.60	1.40
Standard deviation	0.70	0.80	0.70	0.80	2.30
Median	2.20	2.30	3.00	2.70	1.10
Mode	2.78	3.00	3.00	2.86	0.19

Table 4 provides a detailed analysis of the regulatory styles among respondents who reported practicing unschooling or self-directed education. It also shows the frequency distribution of these regulatory styles. The mean and median values of the Relative Autonomous

Index for this group were 1.90, indicating a predominance of intrinsic motivation, as this value falls within the interval $x > 1.5$. In this subgroup, identified regulation was found to be the highest, surpassing the levels observed in the overall group of homeschoolers. This was followed by intrinsic motivation, which also showed a higher rate compared to the overall homeschooler group. Extrinsic regulation was represented at the same level as in the overall homeschooler group, while introjected regulation was slightly lower compared to the general homeschooler group.

In terms of the predominant regulatory style for each respondent, the majority exhibited identified regulation (47.37%), followed by intrinsic motivation (21.05%). An equal percentage of respondents showed the predominance of both introjected regulation and external regulation (15.79% each). Notably, three respondents had identical values for two different regulatory styles simultaneously.

Table 4
Regulation Styles of Unschoolers

Regulation style	External Regulation	Introjected Regulation	Identified Regulation	Intrinsic Motivation	Relative Autonomous Index
Absolute frequency	3	3	9	4	-
Relative frequency (%)	15.79	15.79	47.37	21.05	-
Mean	2.20	2.10	3.00	2.70	1.90
Standard deviation	0.70	0.70	0.50	0.80	3.00
Median	2.00	2.20	3.00	2.90	1.90
Mode	1.44	2.44	3.00	2.86	-

The Relative Autonomous Index (RAI) values varied between the overall group of homeschoolers and the unschoolers group. Determining the statistical significance of these differences was of critical importance. The data on the RAI and the practising of unschooling versus other forms of homeschooling, as indicated by the respondents, are presented in the contingency table (Table 5).

Table 5
Relative Autonomous Index and the Practising of Unschooling vs. Other Forms of Homeschooling

	Observed frequency		Expected frequency	
	RAI > 0 (101)	RAI ≤ 0 (42)	RAI > 0 (101)	RAI ≤ 0 (42)
Unschoolers (16)	11	5	Unschoolers (16)	11.30 89.70
Other homeschoolers (127)	90	37	Other homeschoolers (127)	4.70 37.30

Among the respondents who practised unschooling, 11 (68.75%) had a Relative Autonomous Index (RAI) greater than 0, while 5 (31.25%) had an RAI of 0 or less. Among those who practised other forms of homeschooling, 90 (70.87%) had an RAI greater than 0, and 37 (29.13%) had an RAI of 0 or less. Pearson's chi-square test for independence was employed

to analyse these data. The test revealed no statistically significant difference ($\chi^2(1) = 0.03$, $p = 0.86$) in the level of motivation between respondents who practise unschooling and those who practise other forms of homeschooling. Thus, respondents who practised unschooling did not have a significantly different RAI compared to those who practised other forms of homeschooling.

Discussion

Motivation and self-regulation in student learning have been extensively studied. In the Slovak context, a Slovak version of the SRQ-Academic questionnaire has been developed to identify prevailing regulatory styles among lower secondary school students. The research predicted that, for the majority of students, academic motivation would predominantly involve extrinsic aspirations, which align with a hedonistic view of life well-being. In these students, personal happiness was largely associated with the attainment of self-gratification through aspirations such as wealth, fame, prestige, and image. These extrinsic aspirations often hinder the fulfilment of fundamental needs for autonomy, competence, and relatedness. Instead, they frequently lead to the development of various individual forms of substitute or partial need satisfaction. Only a very small proportion of students demonstrated autonomous regulatory styles, which are associated with intrinsic aspirations and a eudaimonic view of life well-being and personal happiness (Kuruc, 2017b).

Based on relevant research published in international journals (Apostoleris, 1999; Medlin & Blackmer, 2000; Medlin & Butler, 2018; Riley, 2016), it has been found that homeschooled students are generally more intrinsically motivated to learn. Consequently, the English version of the SRQ-Academic questionnaire was adapted to fit the Slovak homeschooling context. This study aimed to research the regulatory styles and motivation to learn among homeschooled students, with a particular focus on unschoolers within the Slovak context. The findings revealed that identified regulation was predominant among homeschoolers (50.63%) and unschoolers (47.37%), followed by intrinsic motivation, which was present in 23.75% of homeschoolers and 21.05% of unschoolers. Conversely, a smaller proportion of students exhibited predominant introjected regulation (13.13% of homeschoolers and 15.79% of unschoolers) and external regulation (12.50% of homeschoolers and 15.79% of unschoolers).

In contrast, research by Kuruc (2017) revealed that external motivation and introjected regulation were predominant among children in Slovak state schools, affecting up to 75% of students. Intrinsic motivation was observed in only 5% of these students, while identified regulation was found in the remaining 20%. Different results were observed in alternative schools in Slovakia, such as Montessori and Waldorf schools, where there was a more balanced distribution between extrinsic and intrinsic motivation. In these schools, 25% of students exhibited predominant intrinsic motivation, and another 25% showed identified regulation. The remaining 50% of the students demonstrated predominantly introjected or extrinsic regulation.

Gottfried et al. (1998) reported comparable results, finding that a supportive home environment had a beneficial impact on academic intrinsic motivation from early childhood through the early teen years. Children who experienced a home setting that focused on educational opportunities and activities demonstrated greater levels of intrinsic motivation towards academics. Additionally, Riley (2016) noted that fostering intrinsic motivation can be challenging within the traditional classroom setting.

Similar results were reported by Gilíková (2017, as cited in Kuruc, 2017a), who conducted research in the Czech Republic with lower secondary students using the SRQ-Academic questionnaire. Kostecká et al. (2023) also reported instances where Czech schools failed to adequately motivate children to learn, leading to various psychosocial issues and a preference for home education over traditional schooling.

Riley (2016) conducted a comparison between homeschooled individuals and those attending traditional schools. The research revealed that young adults who were homeschooled reported greater levels of perceived competence than their peers who received conventional schooling. They also experienced greater satisfaction with autonomy compared to their traditionally schooled peers. However, homeschooled students displayed nearly the same levels of relatedness as those who were educated in traditional school settings (Riley, 2016).

On the other hand, research by Medlin and Blackmer (2000) revealed some differences within educational domains. According to their study, homeschooled children exhibited higher intrinsic motivation in reading compared to students in public schools where grades were used for evaluation. However, they showed lower intrinsic motivation in math. Additionally, there were no differences in intrinsic motivation to learn between homeschoolers and students attending schools implementing portfolio-based assessment.

Similarly, differences were observed based on age and duration of homeschooling. In homeschooled families, intrinsic motivation for learning was higher among older children, particularly in families that provided strong autonomy support. Intrinsic motivation was also positively correlated with the number of years a child had been homeschooled (Apostoleris, 1999). In contrast, during remote learning at home due to the COVID-19 pandemic, children were less motivated than before the pandemic. Before the COVID-19 pandemic, it was estimated that Indian children exhibited approximately 10% lower motivation to learn at home compared to their motivation levels in school (Mak, 2021). The study found that children demonstrated increased motivation to learn when their parents regularly employed goal-setting strategies to foster this motivation. During the pandemic, a child's motivation was positively associated with the parents' enjoyment of homeschooling. Furthermore, the research indicated that motivation levels in children were generally lower when physical punishment was applied more often (Mak, 2021). Previous research also suggests that increasing children's self-determination by reducing external pressures and allowing self-directed studies can improve their intrinsic motivation (e.g., Gottfried et al., 1998).

The SRQ-Academic questionnaire, like any research instrument, has its limitations. It is appropriate to use it as a tool to allow relatively objective feedback on the nature of motivation and regulation of lower secondary students at the point at which they complete the questionnaire. It would need to be used repeatedly at regular intervals to ascertain student's long-term motivation (Kuruc, 2017). Another limitation of the research is the size of the research sample, which is not representative. There are no official lists of homeschoolers, so it is difficult to find research participants willing to answer the questions in the questionnaire. In addition, the composition of the population and the sample differed in the proportion of representation only of one category, the reason for homeschooling, although in terms of other variables, the sample proportionally matched the population. Another limitation was that the research focused on only one country. The results are valid for homeschoolers in Slovakia, and it is questionable to what extent similar results would be found in other countries.

Conclusions and Implications

The essence of this study was to bring new insights into the issue of student motivation and regulation. Research findings highlight the levels of intrinsic motivation among homeschoolers compared to their peers in traditional schools. They also provide insight into the intrinsic motivation of the unschoolers group. Identified regulation was predominant in both groups, with intrinsic motivation exceeding extrinsic motivation. Although the Relative Autonomous Index for unschoolers fell within the range associated with intrinsic motivation, there was no statistically significant difference between the unschoolers group and the rest of the homeschoolers (those using classical homeschooling, educated in community groups, or practicing a mix of classical and self-directed learning).

The results thus indicate that the educational environment plays a significant role in shaping students' prevailing regulation styles. While external motivation for learning is more common among students in traditional schools, a higher proportion of intrinsic motivation is observed among those who are homeschooled. However, further research is needed to explore the regulation styles of students who transition from school to homeschooling, in order to confirm the impact of different learning environments on changes in regulation style.

Future research should also involve applying the research instrument to study motivation to learn in other countries and comparing these results with those of Slovak homeschoolers. Additionally, further research should examine the factors influencing the levels of extrinsic and intrinsic motivation in homeschooled students. It is also important to explore the qualitative aspects of the issue being studied.

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Declaration of Interest

The authors declare no competing interest.

Data Availability Statement

The datasets generated and analysed during the current study are available from the corresponding author upon reasonable request.

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