

CHARACTERISTICS OF SCHOOL ANXIETY AND LEARNING MOTIVATION IN PRIMARY SCHOOL CHILDREN IN THE CONTEXT OF DIGITALIZATION

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The present study aims to analyze the characteristics of school anxiety and learning motivation among primary school students, as well as potential gender differences in the manifestation of these variables. The research was conducted on a sample of 108 students aged 9 to 10 years. The findings indicate an overall high level of learning motivation, with the majority of students reporting high or very high levels of academic motivation. At the same time, the results reveal a moderate level of school anxiety within the investigated sample, as most students display normal levels of anxiety. Comparative analysis revealed statistically significant gender differences in the level of school anxiety, with girls reporting higher scores than boys. In contrast, no statistically significant gender differences were found in learning motivation.

Keywords: *digitalization, school anxiety, learning motivation, primary school students, gender differences.*

PARTICULARITĂȚI ALE ANXIETĂȚII ȘCOLARE ȘI MOTIVAȚIEI PENTRU ÎNVĂȚARE LA COPIII DE VÂRSTĂ ȘCOLARĂ MICĂ ÎN CONTEXTUL DIGITALIZĂRII

Studiul de față are ca scop analiza particularităților anxietății școlare și ale motivației pentru învățare la elevii de vârstă școlară mică, precum și posibilele diferențe în manifestarea acestor variabile în funcție de aspectul gender. Cercetarea a fost realizată pe un eșantion de 108 elevi cu vârste cuprinse între 9 și 10 ani. Rezultatele indică un nivel general ridicat al motivației pentru învățare, majoritatea elevilor prezentând niveluri înalte sau foarte înalte ale motivației școlare. În ceea ce privește anxietatea școlară, rezultatele nuanțează un nivel moderat al acesteia la nivel eșantionului investigat, majoritatea elevilor manifestând niveluri normale ale anxietății. Analiza comparativă a scos în evidență diferențe semnificative statistic între fete și băieți în nivelul anxietății școlare, fetele raportând valori mai ridicate, în timp ce în cazul motivației pentru învățare nu au fost identificate diferențe semnificative între cele două grupuri.

Cuvinte-cheie: *digitalizare, anxietate școlară, motivație pentru învățare, elevi de vârstă școlară mică, diferențe gender.*

Introducere

The past few decades have brought fundamental changes to how education is organised and experienced. Digital technologies have not only reshaped the logistics of teaching - the tools, platforms, planning and managing classroom activities, scheduling and resources - but have progressively altered the cognitive and emotional landscape in which children learn [22, p.222]. This shift is particularly visible at the level of primary schooling, where digital integration has moved from an occasional supplement to a routine instructional expectation. International research increasingly reveals that digital resources outline not just how content is delivered, but how do students relate to learning itself - their engagement, their motivation and their effective responses to academic tasks [10]. In the Moldovan primary school context, this integration has taken distinctive and multifaceted forms. Teachers at this level regularly draw on platforms such as *educatieinteractiva.md*, Deploy visually dynamic tools like Canva for lesson design and also incorporate interactive assessment applications: Kahoot, Wordwall, Quizzes, Menti.com into formative practice. These tools are not pedagogically neutral; each makes distinct demands on attention, executive functioning, and emotional regulation in children aged 8 to 10. What remains underexplored, however, is how this digitalized teaching environment interacts with the motivational and affective profiles of younger primary school children specifically. The present study addresses precisely this gap.

The digitalization of education has intrinsically modified the conditions under which students encounter information, relate to their teachers and construct meaning alongside their peers, generating in this way a new set of psychological and pedagogical challenges that surpass the merely technical dimension of instructional change. While this transformation generates new opportunities for enriched learning experiences, it also introduces novel challenges related to children's emotional and motivational adjustment within the educational environment. Recent empirical studies indicate that the effects of digital technologies on students cannot be categorized as uniformly beneficial or detrimental; rather, their impact is contingent upon the quality of pedagogical integration and the relational context in which learning occurs [4]. Consequently, the affective and motivational dimensions of school activity emerge as critical determinants in understanding how students perceive and engage with the educational process [26]. School anxiety and learning motivation represent two pivotal psychological variables that significantly influence students' engagement in academic activities, educational performance, and their broader adaptation to the demands of the school environment [18]. During the early years of primary schooling, children pass through a developmental stage marked by the progressive formation of learning motivation, the consolidation of an emerging self-concept, and the gradual acquisition of social-emotional competences. This developmental phase may also be accompanied by the emergence of anxiety-related experiences associated with evaluative situations, peer relationships, or academic expectations [7]. Accordingly, examining the specific characteristics of school anxiety and learning motivation among primary school children becomes not merely relevant but necessary for understanding how younger students adapt or struggle to adapt to the evolving demands of the contemporary educational landscape.

Anxiety

The emotional difficulties most consistently documented in developmental psychology research. Anxiety occupies a particularly prominent place, appearing with notable frequency across childhood and adolescence and constitutes one of the leading concerns that bring families to seek mental health services for their young ones [2]. Within the specialized literature, anxiety is broadly conceptualized as a multi-dimensional affective state characterized by apprehension, psychological tension, and persistent worry, typically arising in response to situations perceived as threatening, unpredictable, or exceeding their available coping resources [1]. Empirical investigations conducted within the Romanian academic context converge in suggesting that anxiety may manifest as early as childhood, developing in close association with the progressive formation of emotional competences and with children's capacity for adaptation to the social and educational environments in which they are embedded. [3]. Childhood represents a critical developmental stage for the emergence and consolidation of anxiety-related symptoms, as children encounter substantial cognitive, emotional, and social transitions. During this period, the school environment becomes one of the primary frameworks in which feelings of unease and worry may arise, particularly in assessment-based situations and circumstances involving academic performance [18]. Thus, studies focusing on the mental health of Romanian students indicate that anxiety constitutes one of the most frequently undergone psychological concerns among children and adolescents, with an estimated prevalence of approximately 13% for anxiety disorders [6]. A UNICEF report analyzing the well-being of students in Romania in the same way emphasizes that academic pressure, evaluative procedures, and broader transformations within the educational system may contribute to elevated levels of stress and anxiety among students. These findings underline the importance of supporting social-emotional development within the school environment [25]. Concurrently, research conducted in the Republic of Moldova highlights that anxiety among school-aged children may be influenced by a myriad of social and educational determinants, including family climate, peer relationships, and experiences related to academic evaluation [20]. International empirical studies further corroborate these observations, consistently demonstrating that anxiety disorders constitute one of the most widespread mental health concerns encountered across childhood and adolescence, and may significantly impair their academic performance, social relationships, and family interactions [13]. Taken together, these findings indicate that anxiety represents a versatile psychological phenomenon molded by the dynamic interchange of individual, educational, and

social determinants. This interplay explains the growing scholarly interest in examining the mechanisms through which anxiety manifests and develops within educational contexts.

School anxiety

Within the broader landscape of anxiety research, the specialised literature draws an important conceptual distinction by identifying school anxiety as a distinct and contextually situated form of anxiety. It arises specifically within educational settings and is characterised by recurrent experiences of apprehension, psychological tension, and concern triggered by evaluative situations, academic demands, or the interpersonal dynamics that unfold within the school environment [23]. This specific manifestation of anxiety regularly surfaces as students attempt to adapt to the expectations of the learning process, to the normative structure of the school environment, and to the pressures linked to scholastic achievement. From this perspective, school anxiety is conceptualized as an intricate psychological phenomenon encompassing both fears and negative emotional reactions associated not only to learning activities but also to the social dynamics built in the educational setting [15]. Research in educational psychology provides compelling evidence that elevated levels of school anxiety may diminish students' interest in academic activities, thus narrowing their engagement with the learning process and ultimately interfering with the harmonious and balanced development of the child's personality as a whole. It is also significantly important to mention that school anxiety does not emerge in a relational vacuum, it is deeply embedded in the concrete circumstances of educational life, shaped by the nature of students' relationship with their teachers, and constituting, through these mechanisms, a critical factor in the consolidation of emotional and adaptive difficulties within the school environment [15, 23].

International research perspectives lend further weight to these observations. Empirical studies reveal that school anxiety is frequently associated with evaluative contexts and with students' perceptions of their own academic competencies [18]. Findings from research examining school anxiety indicate that elevated levels of anxiety negatively impact academic performance, learning motivation, and students' mental health and emotional stability [23]. Overall, the academic literature underlines that school anxiety embodies a multifaceted phenomenon, determined by the dynamic interaction of individual, educational, and social factors, all of which substantially influence students' capacity to adapt to the demands of the contemporary educational environment.

Learning motivation

Learning motivation occupies a position of particular significance in educational activity, as it considerably influences the initiation, direction, and maintenance of behaviors involved in the accomplishment of academic tasks. Within the context of the educational process, motivation may be conceptualized as an intricate configuration of internal and external processes that predispose students to actively participate in learning activities, invest consistent effort, and demonstrate perseverance in the pursuit of educational objectives [24]. Research in the field of educational psychology consistently demonstrates that students characterized by lifted levels of learning motivation manifest deeper cognitive engagement, employ more effective and refined learning strategies, and display a greater capacity to overcome challenges faced in academic contexts. These motivational characteristics contribute in direct and measurable ways to the attainment of higher levels of academic performance, generating through their cumulative influence on engagement, effort, and perseverance the conditions under which more favourable and sustainable educational outcomes become not merely possible but genuinely achievable for the primary school child. [21].

The scholarly literature further underlines the inherently multidimensional nature of learning motivation, which emerges from the interaction among cognitive, emotional, and contextual determinants. From this perspective, students' motivational orientation is substantially influenced by the degree to which they perceive learning activities as relevant and worthwhile, by their sense of personal competence in relation to academic tasks, and by the expectations they hold regarding their own capacity to succeed. These psychological dimensions outline both the selection of learning activities and the degree of effort invested, as well as the persistence with which they pursue and complete educational tasks [11]. Motivation may thus

be conceptualised as a dynamic system of factors that mobilise students' behaviour and orient their activity toward educational goals, thereby constituting a central explanatory construct for understanding variability in students' academic engagement and school performance.

Moreover, within the broader context of the digitalization of education, recent empirical research suggests that digital learning environments may enhance students' motivation and engagement, particularly when digital technologies are integrated through interactive and cooperative learning activities that position the learner as an active participant rather than a passive recipient of knowledge [4]. In addition, studies suggest digital tools, when purposefully integrated into educational settings, may improve both students' motivation for learning and their academic achievement by facilitating a learning process that is more flexible and better aligned with individual learning needs [14]. The specialised literature is equally careful to note, however, that the motivational effects of digital technologies on students' learning is conditional on the quality of their academic integration and the broader educative context in which the learning process unfolds [9, 22]. Recent reports from international organizations corroborate that the digital transformation of education can produce novel opportunities for fostering academic engagement and promoting the development of learner autonomy. These reports emphasize the necessity of ensuring a pedagogically grounded use of educational technologies within instructional environments [10].

Research Methods

The primary aim of the present study is to conduct a descriptive and comparative analysis of the specific characteristics of school anxiety and learning motivation among primary school students, while also examining potential differences in these variables as a function of students' gender, within the broader context of transformations generated by the digitalization of the educational process.

The research objectives are as follows:

1. To determine the level of school anxiety and learning motivation among students of primary school age;
2. To analyze gender-related differences with respect to school anxiety and motivation for learning.

Study population

The empirical study was conducted on a sample of 108 primary school students. An examination of the gender distribution indicates an equal representation within the sample, consisting of 54 girls (50%) and 54 boys (50%). Participants ranged in age between 9 and 10 years, corresponding to the developmental stage of middle childhood, a period characterized by the rapid development of cognitive competencies, the formation and consolidation of learning motivation, and the strengthening of self-concept. The participants were students enrolled in general education institutions in the Republic of Moldova, where the instructional process is organized and implemented in accordance with the national curriculum for primary education. This educational framework emphasizes both academic development and the gradual formation of socio-emotional and motivational competencies relevant to successful school adaptation.

Research instruments

The instruments employed in this study include the school anxiety subscale from the School anxiety test developed by Phillips, as well as the methodology "Study of learning motivation in students" elaborated by M. R. Ginzburg. To assess school anxiety, the study utilized the school anxiety subscale from the School anxiety test. A total of 22 specific items from the scale were considered, namely items 2, 3, 7, 12, 16, 21, 23, 26, 28, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, and 58. These items are formulated as statements to which respondents are required to provide one of two possible answers: "yes" or "no". The analysis of responses to these items allows for the determination of the general level of anxiety within the school context, thereby reflecting the student's overall emotional state in relation to experiences and activities specific to school life. Based on the processing of responses, the level of school anxiety can be classified into three categories: normal level of anxiety, elevated level of anxiety, and high level of school anxiety.

Learning motivation was assessed using the methodology developed by M. R. Ginzburg, an instrument specifically designed to identify the dominant motivational structures underlying student engagement with the academic activity and to determine their overall level of school motivation. The method consists of a set of incomplete statements accompanied by multiple response options. Students are instructed to select

three responses that best reflect the reasons why they engage in learning activities or the difficulties they encounter within the school context. The total score for learning motivation is calculated by summing the points corresponding to the responses selected by the students. Based on the obtained score, the overall level of school motivation is classified into four categories: very high level of school motivation; high level of school motivation; moderate level of school motivation; below-average level of school motivation.

The statistical processing and analysis of the collected data were conducted using the SPSS Statistics. In the first stage of analysis, descriptive statistical indicators were calculated, including the arithmetic mean, standard deviation, and minimum and maximum values, which allowed for the characterization of the levels of school anxiety and learning motivation within the investigated sample. To examine gender differences in the levels of school anxiety and learning motivation, the independent samples t-test was employed as the primary inferential statistical procedure. This analysis enabled the identification of potential statistically significant differences between boys and girls with regard to the investigated psychological variables.

Results and discussion

Analysis of the descriptive indicators reveals an overall high level of learning motivation among the primary school students in the investigated sample, with a mean score of $M = 40.63$. The observed score range of 24–48 denotes the presence of individual variations in the level of school motivation; however, an examination of the score distribution indicates a clear concentration within the upper segment of the scale, putting forward that the majority of participants demonstrate a consistently favourable orientation toward learning. Relatively moderate standard deviation ($SD = 4.16$) further suggests that although differences among students are present, they are not particularly pronounced, indicating a relatively homogeneous distribution of motivation within the examined sample. A more differentiated picture of motivational structure within the sample emerges from the categorical analysis of school motivational levels. The results indicate that 62% of students fall within the category of very high school motivation, while 32.4% of students demonstrate a high level of learning motivation. In contrast, 5 students (4.6%) exhibit a moderate level of motivation, and only 1 student (0.9%) falls below the average level of school motivation.

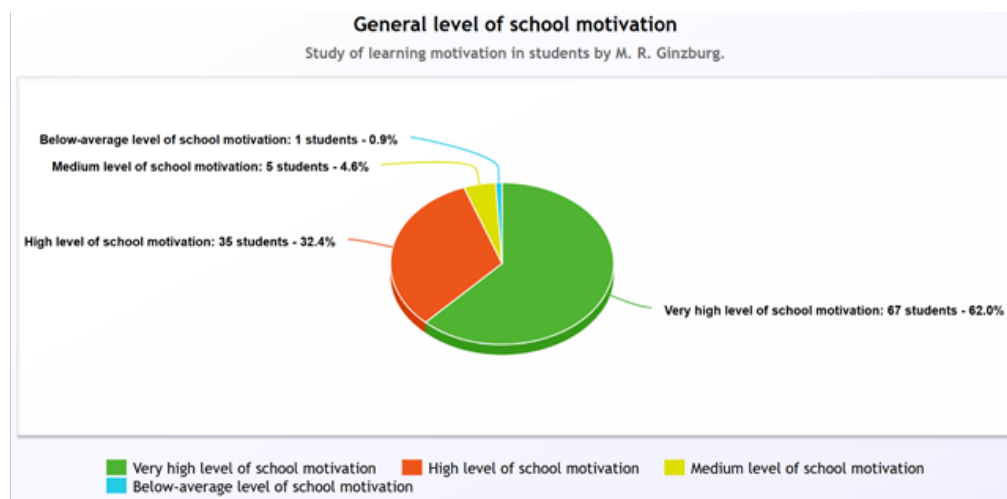


Figure 1. The distribution of students according to the overall level of learning motivation

Overall, the data indicates that the vast majority of primary school students ($N=102$, 94.4%) reveal high or very high levels of learning motivation. This finding suggests that, for children in the early years of schooling, engagement in learning activities remains an embedded and personally meaningful dimension of their developmental experience. At this developmental stage, the school environment functions not only as a primary context for cognitive development competencies but also as a significant framework for social validation and the gradual consolidation of self-concept. A graphical representation of the distribution of school motivation levels among the pupils is presented in Figure 1.

These results are consistent with contemporary research in educational psychology, which broadly delin-

states that primary school children tend to exhibit relatively high levels of motivation for academic activities. For example, the study conducted by Guay and his colleagues in 2010 [12] on a sample of 425 primary school students indicates that children of early school age commonly report high levels of intrinsic motivation and identified motivation, which indicates authentic engagement in learning activities and a personal valuing of school-related tasks. These results are consistent with the idea that, during the early years of schooling, children experience learning as an opportunity for the development of competencies and for the affirmation of their own abilities within the educational environment.

On the other hand, a complementary perspective on the motivational structure of the sample emerges from the examination of the dominant motives underlying primary school children's engagement in academic activities. In this regard, the analysis of dominant motives indicates the predominance of the position/status motive in the motivational structure of pupils ($N = 86$, 80%), which reflects their orientation toward recognition and appreciation within the school environment. This result is congruent with the psycho-pedagogical literature, which outlines that during the early school years children become increasingly sensitive to social evaluation and to their position within the peer group, while academic achievement gradually acquires a significant meaning, functioning simultaneously as evidence of personal competence and as a meaningful basis for social integration and belonging [8]. Mitrofan S. [17] further highlights that the child's position within the class collective and the associated need for social recognition constitute crucial determinants of school experience, influencing both their engagement in learning activities and the affective experiences they develop in relation to the educational environment.

Turning to the remaining motivational categories, the learning motive, understood as an intrinsic orientation toward knowledge acquisition and intellectual engagement is present among a smaller number of pupils ($N = 12$, 11.1%). Likewise, the social motive is observed among a considerably smaller number of pupils ($N = 9$, 8.3%), reflecting an orientation toward interaction and cooperation with peers within the context of school activities. The external motive, in contrast, is observed among only a single participant, an almost negligible presence within the overall motivational structure, indicating that only a very small number of pupils base their engagement in school activities on external factors, such as material rewards or external pressures ($N = 1$, 0.9%). A particularly noteworthy finding highlighted by the data analysis is the complete absence of certain types of motives, namely the grade-oriented motive and the ludic motive. The absence of the grade-oriented motive suggests that at this developmental stage, academic performance is not primarily perceived as an end in itself. Equally, the absence of the ludic motive indicates that a school activity is not predominantly experienced as play. Taken together, these absences suggest that people's motivational orientation is more meaningfully anchored in the social dimensions of academic performance, in the desire for recognition, affirmation, and a valued position within the educational community.

Descriptive analysis of school anxiety scores reveals a moderate overall level of anxiety within the sample ($M = 40.78$), suggesting that, for the majority of participating primary school children, anxiety represents a present but not overwhelming feature of their daily school experience. The observed score range, spanning from 0 to 100, indicates the presence of substantial individual differences in the intensity of school anxiety within the sample, suggesting that primary school children do not respond uniformly to the demands and evaluative situations characteristic of the educational environment, but bring to these experiences meaningfully distinct emotional profiles and coping capacities. Furthermore, the relatively high standard deviation ($SD = 21.96$) confirms the considerable variability in pupil's emotional responses to school activity, reflecting the diversity of ways in which primary school children perceive, interpret and manage evaluative situations and interpersonal interactions within the school environment.

A more comprehensive perspective on the distribution of school anxiety is displayed by the categorical analysis of anxiety levels within the investigated sample. The observed results indicate that 77 pupils (71.3%) fall within the normal level of school anxiety, which normally points to satisfactory adaptation to the demands of the educational environment. At the same time, 22 pupils (20.4%) present a heightened level of school anxiety, which may denote an elevated sensitivity to evaluative situations and to the pressure associated with academic performance. In addition, 9 pupils (8.3%) display a high level of school anxiety, a pattern that may reflect more pronounced difficulties in regulating emotional responses

to school situations perceived as demanding, evaluatively threatening, or exceeding the child's available coping resources. Thus, the results indicate that the majority of the primary school children participating in the study ($N = 77$, 71.3%) manifest a normal level of school anxiety, suggesting a relatively balanced adaptation to the demands of the educational environment. Nevertheless, the presence of a significant group of pupils who exhibit elevated or high levels of anxiety ($N = 31$, 28.7%) highlights that some children may encounter emotional difficulties in relation to evaluative situations and academic demands. The distribution of school anxiety levels among pupils is graphically illustrated in Figure 2.

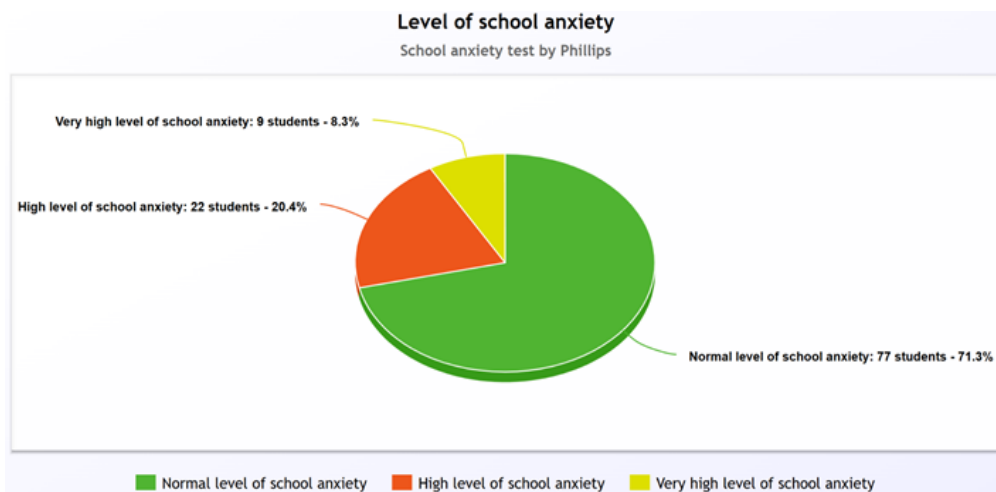


Figure 2. The distribution of school anxiety levels among primary school aged students

In order to examine whether meaningful differences in school anxiety levels exist as a function of pupils' sex, an independent samples t-test was applied. The results of Levene's test for equality of variances indicated a significant difference between the variances of the two groups ($F = 6.27$, $p = 0.014$), with the p-value being lower than the established threshold of statistical significance ($\alpha = 0.05$). The analysis of the t-test indicates the presence of a statistically significant difference between girls and boys with respect to the level of school anxiety, $t(99.44) = -2.38$, $p = 0.019$. The obtained probability value ($p = 0.019$) falls below the conventionally accepted significance threshold of $p < 0.05$, permitting the rejection of the null hypothesis and supporting the conclusion that the observed difference in school anxiety levels between male and female pupils reflects a statistically reliable group difference rather than a product of random sampling variation. The analysis of the mean values shows that female pupils report a higher level of school anxiety ($M = 45.71$, $SD = 24.11$) compared to male pupils ($M = 35.86$, $SD = 18.54$). The mean difference between the two groups is approximately 9.85 points, indicating a tendency toward a more pronounced manifestation of school anxiety among girls.

The results acquired are in line with research conducted in the Eastern European context regarding the manifestation of anxiety in children and adolescents. The study carried out by Racu I. (2011) [19] emphasizes that the majority of preadolescents manifest moderate levels of anxiety, although the data reveal statistically significant sex-based differences in the level and expression of school anxiety within the investigated sample. The findings of the study indicate that, at certain developmental stages, girls tend to display higher levels of anxiety more frequently than boys. Moreover, a comprehensive review of anxiety disorders indicates that women and girls exhibit higher prevalence rates of anxiety compared with boys and men. For example, the prevalence ratio of anxiety in the general population is approximately 1:1.7 in favor of females, suggesting a significantly higher frequency of anxiety among the female population [16]. These findings are further supported by research examining gender differences in emotional expression among children. Thus, the meta-analytic review conducted by Tracy M. Chaplin and Amelia Aldao [5] outlines that girls tend to report higher levels of fear and anxiety symptoms compared with boys, particularly in situations involving social evaluation or interpersonal relationships. These differences are further interpreted by the authors as potentially reflecting girls' characteristically greater sensitivity to the social and emotional

dimension of interpersonal interactions. In this regard, the school environment may represent a specifically relevant background for the manifestation of anxiety, as it frequently involves situations of social appraisal, peer interaction, and academic comparison, factors that may intensify experiences of worry and emotional strain among pupils.

To examine potential sex-based differences in learning motivation, the same independent samples t-test was applied. The results of Levene's test for equality of variances did not indicate significant differences between the variances of the two groups ($F = 0.97$, $p = 0.327$), the p-value being higher than the established threshold of statistical significance ($\alpha = 0.05$). The analysis of the t-test indicates that there are no statistically significant differences between girls and boys with respect to the level of school motivation, $t(106) = -0.14$, $p = 0.890$. Because the obtained probability value ($p = 0.890$) substantially exceeds the conventional significance threshold of $p < 0.05$, the null hypothesis of no sex-based difference in learning motivations is retained, the observed difference between the two groups being attributed to random sampling variation in the data rather than reflecting a genuine and replicable group difference. The analysis of the mean values substantiates this tendency, as the level of learning motivation is very similar in the two groups: male pupils recorded a mean school motivation score of $M = 40.57$ ($SD = 4.42$), while female pupils recorded a mean of $M = 40.69$ ($SD = 3.92$). The results obtained are closely aligned with research in the field of educational psychology, which indicates that pupils in primary education commonly manifest relatively high levels of motivation for academic activities. For example, the study conducted by Guay et al. (2010) [12] shows that children of early school age exhibit high levels of academic motivation and active engagement in learning activities. The specialized literature suggests that gender differences in academic motivation may nonetheless emerge as early as primary education; however, these differences tend to manifest primarily in preferences for particular school subjects rather than in the overall level of motivation for learning [8].

Conclusions

The results of the present study highlight that, during the formative period of early schooling, school anxiety and learning motivation constitute two important and interrelated psychological dimensions for understanding how children perceive, experience and respond to the demands of the contemporary educational environment. The obtained data indicate that the majority of the investigated pupils display high or very high levels of learning motivation, suggesting a positive orientation toward school activities and a consistent engagement in the completion of academic tasks. The identified motivational structure further reveals a clear predominance of the position/status motive, reflecting the central importance of social recognition and peer validation within the class group at this stage of development.

With regard to school anxiety, the findings reveal a moderate overall level, with most pupils demonstrating normal levels of anxiety, which suggests a relatively balanced adaptation to the demands of the school environment. Nevertheless, the presence of a significant group of pupils who exhibit elevated or high levels of school anxiety indicates the need for increased attention to the emotional dimension of the school experience, particularly in relation to evaluative situations, performance pressure, and social integration within the class group. The comparative analysis according to sex revealed the existence of statistically significant differences in the level of school anxiety, with girls reporting higher scores than boys, whereas no significant differences were identified between the two groups in terms of learning motivation. These findings suggest that emotional and motivational variables do not develop in an identical manner and therefore require differentiated approaches in educational and psycho-pedagogical practice. Overall, the study contributes to a deeper understanding of the affective and motivational characteristics of primary school pupils and underscores the importance of developing balanced, supportive, and pedagogically adapted educational contexts, including under conditions of digitalization, that simultaneously foster engagement in learning and the emotional well-being of children.

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Presented: 27.02.2026

Reviewed: 30.04.2026

Accepted for publication: 20.05.2026