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**PARENTING STYLES AND SELF-REGULATED LEARNING IN COMPUTER USE:
EVIDENCE FROM PAKISTANI SECONDARY SCHOOL**

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Abstract

This study aimed to examine the impact of parental styles on the computer-related self-regulatory learning (SRL) of secondary school students. Qualitative data from group interviews conducted in twelve schools and interviews with twelve classroom instructors were analyzed to identify the parental styles of authoritarian and permissive parents. Additionally, data from focused group interviews with 300 students were analyzed using theme analysis to identify trends in SRL and academic achievement. Results revealed that academically motivated students, who excel set goals, planned strategies, evaluated their performance, and used coping mechanisms. Conversely, permissive parenting was found to have a negative impact on academic performance. Findings

suggest that secondary students are capable of implementing SRL-based solutions to improve academic outcomes.

Keywords: Parenting style, self-regulatory learning, secondary students, qualitative study

Introduction

Parenting style has been found to impact child academic achievement orientation. While research shows no significant differences in the best parenting approach based on demographic factors such as sex and age of parents and children [1] cultural differences [2, 3] have been found to influence parenting practices and child development. In this culture, authoritative parenting has been associated with better psychosocial adjustment and academic achievement [4, 5]. Children from authoritative families tend to exhibit higher levels of self-worth, life satisfaction, happiness [6, 7], resilience, adaptability, and coping mechanisms [8], as well as lower levels of anxiety, depression, behavioral issues, substance use, and weight-related issues .

The concept of self-regulated learning (SRL) emerged in the 1980s as a research issue and has remained important for academics and instructors for decades [9]. As the impact of technological progress on schooling is now part of the curriculum, early computer education in schools aids early career development. Secondary educators work hard to investigate factors that help pupils succeed academically, and self-regulated learning (SRL) has been found to be a critical component of academic success. SRL involves strategy, execution, and self-reflection. Students who engage in SRL assume responsibility for their education, establish objectives, and design strategies to reach them, monitor their progress, and evaluate their success to take appropriate action [10]. Higher education requires SRL as students require greater independence and accountability. Self-efficacy is predictive of test scores, and motivation and emotions of students affect exam scores. High-achieving students employ strategic thinking and actions through SRL, which enhances their clinical ability. Academic achievement has been found to be positively associated with SRL, and low-achieving students who do not employ SRL to recover from setbacks tend to fare poorly [11]

Several studies have shown that parenting approaches can have a considerable impact on self-regulated learning [12]. They have also shown that the ideal parenting style varies depending on the cultural situation. On the one hand, research primarily shows that children of authoritative parents are more likely to engage in self-regulated learning methods [13]. Students from authoritative and indulgent households used cognitive and metacognitive methods more than students from authoritarian and neglectful households [14]. Previous studies in Spain looked at the most important effect of parenting approaches on SRL during adolescence. Children with authoritative and forgiving parents used self-regulated learning processes more frequently than children with authoritarian and neglectful parents [15]. Moreover study found that students from authoritative and indulgent families outperformed students from neglectful and authoritarian families in terms of learning strategies, time management strategies, and effort, while also exhibiting significantly lower levels of academic task avoidance goals. According Tur-Porcar et al. (2019) found that authoritative and indulgent parenting style (rather than authoritarian and neglectful parenting styles) was associated with higher reported academic self-efficacy.

The impact of technological progress on schooling is now part of the curriculum because everyone is required to have it. Early computer education in schools aids early career development [16]. Secondary schools and their students must invest a significant amount of time, effort, and resources to complete a degree in a computer-related area. Secondary educators work hard to investigate factors that help pupils succeed academically [17]. Students engage in self-regulated learning when they assume responsibility for their education to attain their goals [18]. SRL exemplifies strategy, execution, and self-reflection [19]. After researching and assessing their talents, students establish objectives and design strategies for reaching those [20]. Their motivational perspectives affect goal setting [21]. During the performance phase, they carry out predetermined activities and monitor their progress. Through self-reflection, students evaluate the success of their strategies and take appropriate action [22]. Each phase's behaviors affect the subsequent phase's activities [23]. Students who do not set goals employ aimless strategies, making it harder for them to concentrate.

In this study, we examined how parenting styles influence secondary students computer-related SRL. We found that parenting styles can impact students; SRL and ultimately academic achievement.

Methodology

Sampling Criteria

The researcher employed cluster sampling as a sampling technique in this investigation (Creswell, 2014). In the current study, a focused group was arranged in the targeted school. Each group included teachers and students who voluntarily participated in the study. A total of 12 groups emerged: 4 were from southern Punjab, 4 were from central Punjab and 4 were from northern Punjab. Secondary school students participated in the study.

Data Collection and Analysis

Qualitative data were collected by using the convenience approach (Creswell, 2014) to data analysis through a structured interview technique asked by students who voluntarily participated in the study from the targeted schools. Qualitative data were collected, and investigations were conducted to identify common parenting styles in Pakistan. A clear emphasis was placed on cultural impacts on parenting styles. After the quantitative analysis, it was found that the most prevalent style of parenting in Pakistan was authoritarian parenting. This style is characterized by high expectations from parents and little to no emotional response. Parents who adopt this parenting style put great expectations on their children but do not provide any form of emotional guidance or nurturing to help the child grow and develop a healthy mentality. This style is more prevalent than the others because of the deep-rooted cultural values that are followed blindly by most people in Pakistan. This culture's history is rooted in the authoritarian parenting style, which continues to this day. To construct categories, the acquired data were first categorized and maintained appropriately. Themes and dimensions were then developed by categorizing the data into distinct categories and describing these categories in depth. The findings were discussed by relating the codes and developing the themes.

Ethical Considerations

The research ethical approval was obtained from the University of Layyah, Punjab, Pakistan and the ethical approval number is TUL-0921. The respondent was informed that the interview would be taped but that their opinions would remain anonymous and that the interview would be kept completely private. The interviewees were also informed of their right to leave the session at any moment. The responders were promised that their responses would be kept private and anonymous. Respondents were also informed that their information would be used solely for academic purposes. In an ethical manner, the data were analyzed and reported. Throughout and after the analysis, every effort was made to keep the data confidential and secure.

Results

In the focused group, as mentioned in the method section, the class coordinator teacher and students participated in the focused discussion during the interactive curriculum-based computer class setting. In the current study, thirty six secondary computer teachers were interviewed. In the first part, teachers' opinions about the parents were asked, and in the second part, multiple questions were asked by the students about their parents' interactions, learning habits, and interest in digital learning. The following objectives were formulated for the qualitative study:

1. Teachers were asked questions about their interactions with students' parents and which parenting style students were more vigilant in digital literacy/computer learning.
2. Questions were asked from the students about their parent’s attitude toward them, and students’ goals and plans toward computer learning.

Teachers’ Interview Results

Table 01 *Generated themes from the Teachers’ interviews (N=36)*

Questions	Themes
1. Which parenting style students are more vigilant in students learning?	<ul style="list-style-type: none"> • Authoritative parenting style • More concerned about their children academic performance • Strict in discipline • Encouraging their children • Fulfills the children needs
2. How permissive parenting affects the students learning?	<ul style="list-style-type: none"> • limitless independence to their children • disobedient and disorganized

Qualitative research conducted by teachers found that authoritative parents were worried about their children's well-being, particularly their academic objectives. When questioned about this, one of the teachers made a remark:

“According to teachers in Punjab's central region, authoritative parents appear to be responsible and dependable. They are deeply concerned about their children's academic performance; they

regularly visit the school to check on them and encourage them to do well in class by contributing various items such as timely payment of school fees, purchasing learning materials, and encouraging their children to work hard in class”.

In our conversation, the South Punjab region school teacher shared these concerns, saying:

“Authoritarian parents are constantly courteous, polite, responsive, and affectionate to their children, and as a result, they are always accessible to meet their academic demands, allowing their children to thrive academically and socially”.

“In the view of their children, parents that push for an authoritative parenting style are responsible and trustworthy. As a result, their children are more likely to approach parents with worries about their social growth and advancement. This can also help the child's cognitive development, which can help them succeed academically”.

During the interviews, it was demonstrated that students with authoritarian parents performed poorly academically. For instance, one teacher from the central region of Punjab stated,

“I've frequently gathered a small group of parents to discuss their children's academic performance. They do not listen to me, the teachers, or their children when they arrive; instead, they impose terms. As a result, their children's academic performance continues to decline”.

The same views were expressed by the south region of Punjab school teachers:

“Numerous parents show little regard for their children's or teachers' viewpoints, believing only what they say is correct. According to some parents, this is due to their elderly age, which enables them to exert control over what is done. This has a detrimental effect on their children's academic achievement”.

Cruelty by parents and strictness by parents were two of the subjects discussed during interviews with teachers at a school in south Punjab about the effect of authoritative parenting on academic attainment. According to the teacher's interview, an authoritarian parenting style was related to harshness. This trait was proven to be detrimental to the youngster's cerebral development. One of the teachers, for example, stated:

“Cruel parents restrict their children from communicating with them for social or academic issues. These students will not be able to compete favorably with those whose parents value independence, expressiveness, and mutual understanding. Due to their parents' unapproachable personality, the kid may be unable to approach the parent with the issue, ending in failure”.

According to the North region of Punjab school teachers, permissive parents were tolerant and allowed their children's preferences to prevail, and they employed less punishment as a corrective measure and placed fewer demands on their children.

“When their children commit acts of indiscretion, some parents frequently support them. They criticize teachers who dislike their children and accuse the school of being unnecessarily rigorous”.

The same remarks of the central region Punjab school teacher:

“When a group of students attempted to use one of the latest cell phones in the classroom, I confiscated it. Because the parent had no idea why the child had been abducted, he or she was enraged. He requested that it be returned to him. Her child's grades dropped much worse”.

Permissive parents were shown to be more liberal in regard to child care. This hands-off style of parenting may eventually jeopardize the child's intellectual growth. For instance, during one of the North region teacher interviews, one of them was required to state the following:

“Permissive parents grant limitless independence to their children, which encourage them to join the wrong firm. As a result, a child may become unruly, disorganized, and rowdy, all of which are detrimental to the child's academic development”.

Similarly, when asked to remark on the permissive parenting style and academic achievement of the child, one of the south region school teachers responded,

“Permissive parents' children perform poorly in school because they are rarely chastised, endure their bad behavior, and are frequently indulged during their childhood. A child like this will never achieve academic success”.

According to a report by central Punjab region school teachers, the permissive parenting style has an effect on academic achievement:

“In regard to resolving student disobedience, permissive parents complicate matters by sheltering their children. The majority of these instances of insubordination involve students who live in liberal households and perform poorly”.

Students Focused Interview Results

The qualitative part of the study comprised 300 students who voluntarily participated in the interviews. As a sample of the study, 100 participants were selected from each zone (Northern, Central, and Southern) of Punjab province Pakistan. As 300 students participated, of whom 148% were girls and 152% were boys. Most of the students (95%) have a B grade, while 124% have an A grade, and 81% have an A+ grade in the computer application subject. All the participants were asked questions about their parents, their learning goals, and their academic performance. Content analysis was completed by analyzing the themes of the 300 respondents. The thematic analysis revealed eight themes that describe the characteristics of secondary school students from the self-regulatory learning (SRL) and learning self-efficacy (LSE) perspective. Initially, two questions about the relevance of parenting styles were asked of the students.

Table 02 Generated themes from the Students interviews (N=300)

Themes	Question
I. Goals and Motivation	What are your goals, sources and motivation?
II. Consistency in studies	Do you have consistency in your studies?
III. Effective learning strategies	Do you use any computer learning strategies?
IV. Coping Mechanism	What do you do when you have to face any challenges in the computer- based studies?

V.	Evaluation of Performance	Do you ever evaluate your performance in academic studies?
VI.	Evaluation of parenting	Is your parents are adaptive, how do they react to your performance?

1. Goal and Motivation

To "pass out on time," students indicated that they must "pass the exam" and "not fail." They passed the exam even if they did not achieve their aim. Setting goals was justified by several pupils. It was common for students to strategize how they would reach their goals once they had been set. They planned a "structured and organized" study for today, next week, and next month. For example, the day before ward clerking, identify case categories and patients, or the day before lectures, download lecture notes. Plans were kept on the phone calendar and a paper calendar in the room. Making plans provided children with a sense of security. Pupils exploited extrinsic motivation to achieve academic success. Some students believed they could obtain medical information without pursuing a medical degree. They were determined to "prove people wrong" by none of the "negativities." The students were "assured" that they would pass the exams. They were confident in their ability to pass the examinations.

Some students aspired to work as software engineers. After graduation, the students expect to be qualified Microsoft engineers. "Someone's life is in my hands," they must study attentively. Parents were viewed by some students as "powerful motivators" and "sources of strength." It was the wish of their "parents." Some teenagers believed that achieving academic success would "make them [their parents] feel good about themselves." Students wanted to show their appreciation for their parents' affection. Other students, on the other hand, were pulled to applications because they were "interested" them. Digital learning is fun and stimulating. They believed the "digital world is interesting, full of secrets and discoveries," inspiring these students to work hard in their studies. Students' goal-setting and strategic decisions may be influenced by their sources of motivation.

The quotes from the interview transcripts related to plans, goals and motivation are as follows:

"I skim the lecture notes to get a sense of what we're going to cover that day. As a result, I do not arrive at class unsure of what I will be studying today."

"The only way for me to overcome my feelings of worry and nervousness about my academics is to plan."

"During study week, I have the impression that I know everything and can answer any question posed by my friends without hesitation" (of it when I answer). When I'm doing questions from previous years and senior questions. I can say [answer] without having to think about it, so I'm confident that I will do well (on the exam)."

"I realized that if I merely memorized it without understanding it, I would not be able to explain it to a client when they asked why it happened to the gadgets. That is why I need to understand it to better serve my customers."

"You must convince yourself that you are valued by yourself... You will become exhausted if you keep studying without taking breaks. You will wonder why I'm suffering, why I'm acting this way. Therefore, treating yourself is essential."

"I would say that my own aspirations and desire to make my parents proud are the greatest sources of inspiration for me. Each exam, I set a goal and worked diligently to achieve it. My parents have provided me with the very best, and this is my way of saying thank you."

2. Consistency in Studies

Prior to class, students received access to lecture notes. Students downloaded and scanned the lecture notes prior to class. They must do so to acquire a concept of what they will learn. Students made sure to get enough of rest before class and attended nearly all of the faculty-led sessions. Throughout the class, they "concentrated," "paid attention," and "listened carefully." "Critical points and explanations" were "noted." The importance of obtaining enough sleep and paying attention in class was justified by students. After attending lectures, students review class contents. "I reviewed the course notes and tried to comprehend everything," they said. For some kids, the memory was still "fresh."

Students "looked up extra references, materials in books, and the internet" when they were unsure. Because they "explained things easily," students used YouTube or Google/internet searches. Depending on their understanding, student notes were frequently "simplified versions of the lecture notes." Some students described how they created these notes. Taking notes helped students "organize material and make it easier to recall later, especially during study week," they said. "Consistency" was often emphasized as the most important component in students' academic success. High- performance suggestions included studying "every day" and being "disciplined." Students underlined the need to make everyday changes. Students also "prepared" for the final exam one or two months ahead of time. They went over lectures from months ago, for example.

The following are the quotes from the interview transcripts related to consistency in studies:

"I skim the lecture notes to get a sense of what we're going to cover that day. As a result, I do not arrive at class unsure of what I will be studying today."

"Knowing what you want to accomplish, such as passing the exam, and knowing how to get there." If you want to pass the exam, you should study. If you know what you want, you should be able to get it."

"Occasionally, they will approach me and ask to speak with me (but) I will respond 'later, after class.'"

"Because if I waited until the following week, I might forget what the class teacher talked about in class or misunderstand some points. While some of the (things) are not crucial, they are refreshing my recollection. Delaying it until next week would also cause a disruption in my schedule."

3. Effective Learning Strategies

Students created connections with the lecture topic rather than remembering information. They grasped the subject by "actively thinking about the meaning of the materials learned," for example. This enabled the content to be connected, applied, and stored in long-term memory. Mind maps and flowcharts were frequently utilized by pupils to visualize the relationships. People were able to better "link the dots" and "understand" after seeing the image. They built mind maps or flowcharts to summarize the points as they read the notes. In addition to understanding the topic and generating mind maps, students were expected to avoid "procrastination" or "dragging their tasks." They might have forgotten some points and felt insecure if they kept delaying their work. Furthermore, some students ranked tasks according to their significance and punctuality. Prioritization was essential because certain topics were prerequisites or interconnected with others. On their "to-do list," several pupils awarded themselves "after attaining the period's aim." They rewarded themselves for accomplishing duties by engaging in social activities or hobbies or by eating well. Self-rewards made them feel valued and prevented them from becoming burnt out while studying. Students tracked their progress using the above learning approaches by "writing down what they finished or did not finish." Some students kept track of details such as the due date and the number of revision attempts for each topic. They could tell how much time they had spent on a subject by marking it (for example, "a tick"), which served as a reference. Students used a variety of strategies to create a conducive learning atmosphere. Some students avoided using their phones during lectures, while others stayed awake by drinking water or eating snacks, or by asking friends to wake them up.

The following are the quotes from the interview transcripts related to using effective learning strategies:

"My reflection reveals that I spent too much time on this topic and neglected others, so I just go back and read the lecture notes that I did not check. I put a check once I finish (a topic) since it helps me figure out if I missed a lot of lectures or not..."

"Because it is preferable to ask than to forget and not comprehend what I'm learning." It is critical for me to understand what I'm learning. As a result, I usually email to explain or reaffirm my recollection."

"Knowing that if I am incompetent in my future employment, my future customers will suffer even more due to a lack of competent digital customers has always motivated me to learn as much as I can."

Knowing what you want to do, such as passing the exam and then knowing how to do it are two different things. If you want to pass the exam, you should study. If you know what you want, you should be able to get it."

"Because some computer teachers provide outstanding explanations that are difficult to find in textbooks." Computer instructors' less sophisticated explanations make it easier for me to remember."

4. Students Coping Mechanisms faced with Difficulties

It was not always simple to be a student. Students also made personal attempts to deal with the pressures of school. While studying, they stressed "taking breaks" and "relaxing." Some students used their study preparation time for "exercise, hobbies, or enjoyment." Students expressed how important it is to do so to manage stress. When high-achieving students were confronted with academic difficulties, they confessed their limitations and sought help from others. "Asking the lecturers" or "talking to their classmates" helped them figure things out. Students turned to their parents and friends for emotional support when they needed it. Some students would "phone their relatives and friends every day" to avoid feeling lonely. Professors and classmates were justified in assisting students. Religious support was cited by students as an enabler of high achievement. Prayers were beneficial to students of various faiths since they helped them cultivate positive ideas and focus on their schoolwork.

The following are the quotes from the interview transcripts related to students' use of coping mechanisms when they faced difficulties:

"At first, the transition was challenging for me... To cope with the stress, I became more structured and systematic in my planning of what I would study and how much time I would devote to it."

"I believe in the power of His and dua's (supplication). Because when we pray, a new spirit enters our hearts, and there are miracles. If we pray, we will be in a better mood, and it will be easier for me to concentrate..."

"Why should I waste time if it is not working?" says the narrator. As a result, I'm looking for a new way to increase my productivity. I will not receive anything if I do not try; if I try, I might improve. As a result, I will take it."

"We usually try a new restaurant every weekend." One day, we went bowling and played badminton. These have assisted me in reducing stress while still maintaining a healthy lifestyle."

"When I am consistent, I feel more confident in my abilities, which creates a virtuous circle for me to work more and accomplish better results."

"Lack of sleep causes bad feelings, which make us less productive and motivated to achieve things."

5. Evaluation of Performance

Students evaluated their learning processes using a variety of methods. They prepared for the exam by answering questions from prior exams, senior residents, and the internet. Students "expressed the ideas to others to evaluate my [their] grasp" in some circumstances. Students realized the need to assess their understanding after examining previous papers. If you are unhappy with the results, you can relearn the material. Students evaluated their understanding based on their midterm scores and decided whether to keep or adjust their learning strategies until they discovered the most successful ones.

"Rather than passing the exam, I'm going for an A or a distinction." Even if things do not go according to plan, I will be able to pass (the exam). Yes, I will constantly strive for greater heights than are needed."

"I will not know if I'm ahead or behind if I do not plan."

"I ran several tests, past papers, and online quiz assessments. "I would study more on the issue that I was not proficient at."

6. Evaluation of Parenting

When parents observed that their children's learning practices were ineffective, they were willing to adjust them. They re-evaluated their technique when they came into academic issues. They opted to "test out" or "alter" various strategies until they found ones that improved their children's academic performance. Students desire to remember, understand, and do better in the future than their parents did previously. When their children received satisfactory grades or awards or were able to answer questions from lecturers or peers, their parents were "grateful" and "happy." Students noted that their parents' and as students' "hard work" had "paid off," and that the satisfaction had "built up their confidence" as they continued along the path.

Discussion

Discussion of the Teacher Interview Results

The qualitative study findings indicate that authoritative parenting styles are characterized by high levels of support and understanding, as well as a genuine concern for the child well-being. Researchers such as Odongo et al. (2016) and Bi et al. (2018) have highlighted the importance of authoritative parenting in promoting intellectual and social development. In contrast, authoritarian parenting, characterized by strictness and cruelty, has been found to hinder a child learning process and social development [24, 25]. Permissive parenting, while initially appearing indulgent, has been linked to lower academic achievement and poor communication skills [26]. The study findings support the view that parental styles play a significant role in shaping adolescents; academic success and self-regulated learning.

Students' Interview Results Discussion

This is the first qualitative research on self-regulated learning (SRL) and learning strategies (LSE) use among Pakistani secondary school students that I am aware of. The current findings provide empirical evidence for the theoretical application of SRL, which had been lacking in the literature earlier. This evidence is important because it contributes to the development of learning theory by identifying what constitutes good and ineffective digital-based learning for secondary school students. To confirm the distinct application of SRL and LSE among students, the discussion compares past findings on high- and low-performing computer-based learning to the current findings.

Regarding computer-based subjects, high academic achievers and low academic achievers differ in their approach to goal setting and motivation. Students who excel academically are more likely to set loftier, longer-term goals (i.e., passing the exam). Even if they only demonstrate the distinctions, high-achieving pupils strive for more [27]. Recent studies corroborate Abraham and colleagues conclusion that high-achieving children are motivated to grow academically [28].

Additionally, students who excel academically are more driven than those who do not. Academic performance is contingent upon motivation. Students with high academic achievement and those with low academic achievement demonstrated significant differences in their learning strategies, study consistency, and coping mechanisms during the performance phase. Students with low academic achievement tend to memorize computer operating keys by rote [29], whereas students with high academic achievement study through associations and meaning formation.

Additionally, students with low academic achievement perceive the knowledge imparted during each lecture as disparities rather than as a totality [30]. Academically accomplished students justify the value of knowledge to apply computer information and improve memory recall. Similarly, they believe that studying computer-related material (i.e., software applications) from their first year of education would aid in their comprehension of subsequent courses and establish the framework for future practical life [30]. Additionally, it was revealed that high-achieving children appeared to use more effective learning strategies. For instance, they organize computer learning information using mind maps and effective time management to make it easier to comprehend. On the other hand, children with low academic achievement lacked organizational skill [31, 32], as evidenced by their inability to arrange information and manage their time effectively for their studies [33].

The consistency of studies revealed another distinction between learners with high academic achievement and those with low academic achievement in computer-based disciplines. Students with a high academic achievement level underlined the significance of studying continually before, during, and after classes in this poll. On the other hand, children with low academic achievement showed poor attendance [34]. Students with low academic achievement may have failed their studies as a result of a lack of preparation and effort [35]. Students who achieved greater academic achievement demonstrated greater self-efficacy during examinations as a result of their preparation, whereas students who achieved less academic achievement demonstrated decreased self-efficacy and increased anxiety during examinations, which may have influenced their academic achievement [36].

Furthermore, when confronted with difficulties, secondary school students with high academic achievement used more effective coping mechanisms than students with low academic achievement. According to current evidence, secondary students who perform academically have a more favorable attitude toward receiving assistance. They are willing to acknowledge their limitations in obtaining computer- or digital-based content and seek official support from lecturers. On the other hand, learners with low academic achievement are unwilling to seek formal assistance out.

The present study faced several limitations in terms of sample selection, data collection, and reporting of the research. This study's sample is restricted to secondary schools in Punjab province; because the researcher was unable to acquire data from other Pakistani provinces. Further reporting of data analysis was purely based on students' own perceptions, experiences, and views about their academic and parents' supportive styles.

Conclusion

This paper investigates the impact of parenting styles on the computer-related self-regulated learning of secondary school students through a qualitative research approach. Our findings suggest that authoritative parenting is the most effective style for fostering self-regulated learning in children. When parents have the authority to provide their children with proper nutrition, a safe environment, direct supervision, and management, children are better equipped to fulfill the requirements of lifelong learning and become adept at using self-regulated learning strategies. We found that students who excel are those who regularly evaluate their performance and incorporate new strategies to improve their learning outcomes. Additionally, our study supports the notion that academically motivated students are more likely to use self-regulatory learning strategies. Overall, our research indicates that secondary students have the ability to create self-regulated learning-based solutions to enhance their academic performance.

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