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From the Theory of Self-Regulated Learning to the Exploration of Self-Regulated Learning Action Research

[1]Guan Jinxing, [2]Liu Zhifeng and [3]Guo Xiuying

[1]School of Education, Zhaoqing University, Zhaoqing, Guangdong, China
[2]Graduate Institute of Learning and Instruction, National Central University, Taoyuan, Taiwan
[3]Taoyuan Municipal Fu-Dan Elementary School, Taoyuan, Taiwan

Corresponding Author: Guan Jinxing

Abstract

Self-regulated learning embodies students' autonomy in learning and their rich vitality, making it an indispensable learning method in the 21st century. In the future, the goal of school education will be to cultivate students who are innovative, critical thinkers and can adapt to a rapidly changing society. The shortcomings of traditional education have become apparent, and integrating self-regulated learning into school education can effectively address these deficiencies. By analyzing and organizing theories of self-regulated learning, it is evident that self-regulated learning methods can be taught, with teachers playing a guiding and supportive role. A Taiwanese elementary school mathematics teacher implemented a nine-week self-regulated learning program in the classroom. The teacher used quantitative and qualitative analyses to evaluate students' academic achievements and observe changes in their learning attitudes. Action research demonstrated that, even within the highly structured context of school education, self-regulated learning could fulfill academic requirements and promote students' self-education and self-management, as well as collaboration between teachers and students and among peers. The Freinet free writing curriculum offers an effective pathway for incorporating self-regulated learning into school education.

Keywords: Self-regulated learning, theory to practice, free writing

Introduction

Self-regulated learning is a critical topic in contemporary educational research. It is a learning ability that every student must master, especially in the aftermath of the 2020 "school closures without stopping learning" initiative, where students worldwide faced online learning challenges. The disparity between self-regulated learning skills and passive learning abilities has become increasingly apparent. Self-regulated learning grants students autonomy and vitality, encouraging them to approach learning with thought and connection. In contrast, passive learning fosters repetition and compliance, where students rely on rote memorization to meet exam requirements, which is considered sufficient to complete learning tasks. The 21st century is characterized by rapidly evolving information technology. Historically, learning primarily occurred in schools; however, modern learning pathways are ubiquitous and ever-changing. Society now demands students who are critical thinkers, innovators, and capable of adapting to a technologically advanced era. The future will be dominated by autonomous learners.

The study of self-regulated learning is well-developed, with abundant literature from both Western and Eastern scholars exploring its theoretical frameworks. This paper aims to organize and analyze relevant theories of self-regulated learning, investigate its significance in school education, and examine its practical applications through action research conducted in a fourth-grade mathematics classroom in Taiwan. The study explores how self-regulated learning can be implemented in school education, evaluates its effectiveness and challenges, and identifies strategies to localize theoretical concepts into practical solutions by addressing the core of self-regulated learning and the realities of educational challenges.

A Promising Future: Education 4.0 and Self-Regulated Learning

In January 2020, the World Economic Forum (World Economic Forum, 2020) [15] introduced the concept of future schools in the context of Industry 4.0, outlining a new

educational paradigm. Amidst the transformative era of automated production and value creation, education stands at a critical juncture where both learning content and methodologies must adapt. Within this framework, eight key features are identified as hallmarks of high-quality education.

The Education 4.0 framework envisions future schooling that meets the demands of children in an evolving world (World Economic Forum, 2020) [15]. Changes in learning content should encompass both technological and humanistic elements to address growing economic and societal needs. Simultaneously, transformations in learning methods must focus on fostering innovation and collaboration. The content-related priorities are as follows:

1. **Globalization:** Emphasizing content that nurtures a broader understanding of the world and encourages active participation in the global community.
2. **Innovation and Creativity:** Developing learning materials that foster creativity, including complex problem-solving, analytical skills, and diverse ideas.
3. **Technological Application:** Incorporating content to build digital competencies, such as programming, technological accountability, and the use of digital tools.
4. **Interpersonal Relationships:** Highlighting emotional intelligence and social education, including empathy, collaboration, communication, leadership, and social awareness.

In terms of learning methodologies, the following four aspects are emphasized

1. **Personalized and Self-Regulated Learning:** Transitioning from standardized education models to personalized systems tailored to individual learner needs and pacing.
2. **Inclusive and Collaborative Learning:** Ensuring accessibility for students with varying needs and fostering collaboration among them.
3. **Problem-Based and Cooperative Learning:** Shifting from process-focused learning to project-based and problem-solving group activities to prepare for future collaborative work environments.
4. **Lifelong and Learner-Driven Learning:** Moving from passive learning systems to self-motivated, lifelong learning frameworks where individuals continuously refine skills based on personal needs.

As globalization and technological advances rapidly reshape human living spaces and work environments, the effects on labor and economic disparity become increasingly evident. Primary and secondary education must play a pivotal role in preparing future global citizens and workforce participants by creating more inclusive, cohesive, and productive learning environments. The Fourth Industrial Revolution poses new challenges and demands for education. Current mainstream education systems remain heavily influenced by the needs of the First and Second Industrial Revolutions, which emphasized standardized production and the training of uniform talent for repetitive tasks (Galor & Moav, 2005) [5]. However, the Third and Fourth Industrial Revolutions, with their emphasis on automation and innovative value creation, have introduced transformative shifts in economics

and human resource development (Schwab, 2016) [9]. The pressing question now is whether education systems are prepared to address the human resource challenges posed by the ongoing industrial revolution. In the future, nearly half of the workforce will occupy jobs that do not yet exist, requiring skills that current educational models may not provide. As technology evolves, human creativity and learning ability will emerge as the primary drivers of productivity (World Economic Forum, 2016) [14]. In this landscape, self-regulated learners with lifelong learning capabilities will take the lead, while the gap between active and passive learners will widen. The future belongs to those who can learn autonomously.

Theoretical Analysis: The Essence of Self-Regulated Learning

Before analyzing the concept of self-regulated learning, it is essential to examine the origins of autonomy. Initially a political concept, autonomy was later adopted in psychology, where it is considered one of the three basic psychological needs of human beings. Fulfilling these needs fosters personal growth and well-being (Deci & Ryan, 1995) [3]. Wall (2003) [13] stated: "An autonomous person can chart their own course in life, expressing their individuality according to self-aware plans, selecting from a wide range of legitimate options the pursuits they wish to engage in, and determining what is valuable and worthwhile to understand the meaning of their life". From this perspective, an autonomous individual exercises control over their life, sets goals based on self-awareness, selects suitable, interesting, and valuable tasks from various options, and thus discovers the meaning of life. Autonomy does not imply that learners act without direction or restraint. Autonomous individuals require specific abilities, including goal setting, method selection, metacognitive self-management, and willpower to persevere. Autonomy is not simply proactive behavior or blind forward motion; it involves the necessary competencies to achieve goals. Autonomous individuals operate in diverse environments, evaluate their circumstances, choose appropriate methods, and reflect on their progress to maintain persistence and accomplish their objectives.

Development of Self-Regulated Learning

In the 19th century, learning was perceived as a form of training; failure was attributed to intellectual deficits or lack of effort. By the early 20th century, educational progressivists such as John Dewey, Edward Thorndike, and Maria Montessori began embracing individual differences among students. They adopted diverse approaches to modify curricula to accommodate these variations. By the late 20th century, metacognition and social cognition research emerged. Metacognition scholars argued that students often struggled because they lacked self-awareness regarding their learning weaknesses and were unaware of how to correct them. Social cognition scholars emphasized the significant role of others in developing children's abilities. Teachers' demonstrations and guidance in goal-setting were found to be effective for learning (Zimmerman, 2002) [19]. These developments gradually inspired researchers to conceptualize theoretical models of self-regulated learning, focusing on the dynamics of classroom learning processes.

The meaning and application of self-regulated learning

Self-regulated learning refers to the demonstration of autonomy during the learning process. American scholars Zimmerman and Schunk emphasized that self-regulated learning encompasses active construction and learning strategies (Zimmerman & Schunk, 2001) [20]. While learners must possess ability and motivation, they also need strategies such as goal setting, method application, self-monitoring, self-assessment, and metacognition. Social learning psychologists describe the self-regulated learning process in three cyclical phases: (1) the forethought phase, involving task analysis and self-motivation; (2) the performance phase, including self-control and self-observation; and (3) the self-reflection phase, which focuses on self-judgment and self-reaction.

Self-regulated learning occurs in a self-guided process where learners transform ideas into learning skills. It is an active, intentional effort rather than a passive reaction to instruction. Self-regulated learning is driven by goals, where learners' thoughts, emotions, and behaviors align with achieving those goals (Zimmerman, 2000) [18]. Learners monitor their behaviors based on set objectives, enhance their efficiency, and reflect to further refine their learning strategies. Such learners are aware of their strengths and weaknesses and allocate time, resources, and energy to their learning goals (Zimmerman, 2002) [19]. Students who set achievable goals for themselves demonstrate rapid progress in self-regulated learning. Those with proximal goals outperform their peers with distant or undefined objectives, experiencing enhanced self-efficacy and interest in initially unappealing activities (Bandura & Schunk, 1981) [1].

A review of self-regulated learning theories highlights the concept of goals as its core. To achieve goals, the skills underpinning self-regulated learning can be summarized into eight key elements:

1. Setting specific, proximal goals.
2. Selecting effective strategies to achieve goals.
3. Monitoring performance selectively for signs of progress.
4. Adjusting physical and social contexts to align with goals.
5. Managing time efficiently.
6. Self-evaluating methods used.
7. Attributing results to causal relationships.
8. Developing methods to adapt to future challenges.

Traditionally, autonomy in learning has been associated with individual, self-reliant, and solitary efforts. However, self-regulated learning is not limited to isolated, closed-off approaches. Instead, it enables learners to leverage diverse resources within their environment and interact effectively with society (Smith, 2003) [11]. Self-regulated learning is not exempt from internal or external influences, nor is it merely superficial independence. Autonomous learners possess both the capability and willingness to make decisions and act independently or collaboratively, adapting to societal life and assuming responsibilities. Research indicates that self-regulated learning can be taught and is instrumental in enhancing student motivation and achievement (Schunk & Zimmerman, 1998) [22]. Self-regulated learning is not synonymous with complete independence; seeking help during the learning process is integral to its success. Particularly for elementary students, the development of self-regulated learning skills is closely tied to effective teaching practices (Liu, 2014) [7].

In primary and secondary education, self-regulated learning holds significant promise. It aligns with modern curriculum reform and the objectives of fostering core competencies. Through interaction with teachers and peers, students can learn self-regulated learning methods, including goal setting, strategy application, creative thinking, and self-assessment. Globally, numerous self-regulated learning practices are being implemented. A notable example is the flipped classroom model, which emerged in 2007 when two chemistry teachers in Colorado aimed to address student absenteeism. By recording PowerPoint presentations with voiceovers and uploading the videos online, they enabled students to engage in self-directed learning outside the classroom. In-class time was then utilized for interactive activities and resolving difficulties encountered during self-study (Bergmann & Sams, 2012) [2]. This approach shifted the traditional teacher-centered paradigm to a student-centered model, leveraging technology to facilitate pre-class preparation, encourage classroom interaction, and support struggling students through individual guidance.

Another exemplary self-regulated learning reform is the Anji Play program in Zhejiang Province, China, which began in 2002 as a preschool curriculum emphasizing learning through play. This program uses authentic play as a learning mechanism, where any environment can become a learning space. Children spend at least 90 minutes daily in outdoor play using materials like ladders, buckets, and climbing structures. Whether indoors or outdoors, children freely choose activities, explore, and learn independently. After exploration, they share their discoveries and experiences, expressing themselves through various formats such as drawings, verbal communication, or demonstrations. Children adjust their play pace autonomously, directing their learning process. In this model, the teacher's primary role is to support rather than direct the play. Teachers closely observe and document children's interactions and exploration, providing appropriate materials to address difficulties encountered (Hundr ED, 2019) [6]. Anji Play is a quintessential example of self-regulated learning and aligns with John Dewey's educational philosophy: "The justification and reasonableness of progressive education lies in emphasizing the importance of learners' participation in forming learning objectives, which in turn guide their activities during the learning process" (Dewey, 2015/1938) [4]. Preschool children effectively accomplish learning tasks through self-regulated learning, raising the question of how similar practices can be implemented in primary and secondary education classrooms.

Case Study Insights: Action Research on Self-Regulated Learning in Mathematics at a Taiwanese Elementary School True learning occurs when students actively construct their knowledge rather than passively receiving or mimicking information. This case study examines the implementation of self-regulated learning in a mathematics classroom at a Taiwanese elementary school, reflecting on the practical effects and challenges of integrating this approach.

Research Background
In traditional mathematics teaching, teachers often rely on repetitive lectures, and students passively receive information. This method typically emphasizes rote memorization and mechanical imitation of mathematical reasoning, which impedes the development of students' logical thinking abilities and is a significant factor in the inefficiency of mathematics instruction and student failure (Pei & Zhang, 2005) [8].

This issue is prevalent in many mathematics classrooms. The homeroom and mathematics teacher of a fourth-grade class at a public elementary school in northern Taiwan noticed that traditional lecture-based teaching methods struggled to engage students and accommodate their diverse needs. Students lacked a sense of inquiry and problem awareness, and group discussions often veered off-topic, focusing on unrelated matters.

To address this issue, the teacher initiated an action research project on self-regulated learning during the first semester of fourth grade. The study incorporated pre-tests, post-tests, goal setting, curriculum integration, and reflective practices to foster self-regulated learning. The teacher conducted quantitative analyses of students' academic achievements and actively observed the process to support students in building their personal learning trajectories. Additionally, interviews were conducted to understand changes in students' learning attitudes.

Research Process
The experimental class consisted of 22 fourth-grade students from a public elementary school in northern Taiwan. Starting after the midterm exam, the teacher and students collaborated on implementing self-regulated learning in mathematics. The learning content included textbook units on integer operations (Unit 6), fractions (Unit 7), measurements of capacity and weight (Unit 8), decimals (Unit 9), and statistical graphs (Unit 10). Students were grouped heterogeneously based on their academic performance, learning behaviors, and personalities, with each group comprising 4–5 members. To maximize peer learning opportunities, group members were reshuffled after each unit based on their progress. The entire self-regulated learning program lasted nine weeks.

Since this was the students' first experience with self-regulated learning, the teacher initially introduced the method during a midterm review session. However, students felt overwhelmed and unsure of how to proceed when granted significant autonomy. Although self-regulated learning was new to the students, it is not equivalent to solitary learning. Research indicates that self-regulated learning can be taught and that its implementation can enhance students' motivation and performance (Schunk & Zimmerman, 1998) [22]. Consequently, the teacher employed a phased approach, introducing self-regulated learning elements incrementally based on students' readiness through five key strategies: motivation, ability, method, goal setting, and reflection. Throughout the process, the teacher continuously adjusted the curriculum to ensure students gradually mastered self-regulated learning and applied it to their mathematics studies.

1. **Motivation:** The teacher encouraged students to connect mathematics lessons with real-life applications,

fostering a sense of necessity and relevance. By offering students autonomy in their learning process, the teacher effectively boosted their willingness to engage with the material.

2. **Ability:** Through classroom observations, assignments, and test performance, the teacher held discussions with students to help them understand their strengths and areas for improvement. Guidance was provided on adjusting their learning methods and setting appropriate learning directions.

3. **Method:** During the first half of each mathematics session, students could choose their preferred learning method, such as independent textbook study or discussions with peers or the teacher. They tailored their approach to their personal learning styles and the difficulty of the content. In the second half of the session, the teacher addressed less familiar concepts through class-wide discussions and curriculum integration.

4. **Goal Setting:** Before each learning unit, students completed a pre-test and set individual goals for the unit. Having clear goals gave students direction and increased their interest and motivation to learn. After completing the unit, students took a post-test to evaluate whether they achieved their goals, adjusted their learning approach, and set new, more suitable goals for the next unit.

5. **Reflection:** The teacher allocated time in each class for students to reflect on their learning process. Pre-tests and post-tests were used to help students assess their learning outcomes. Additionally, students maintained "math journals" to record their insights, reflections, and learning experiences. These practices cultivated a habit of continuous self-monitoring and evaluation.

Research Results and Discussion
The Effectiveness of Self-Regulated Learning in Achieving Educational Goals and Tasks
At the elementary school level, self-regulated learning has proven effective in enabling students to achieve educational objectives and complete assigned tasks. Evidence from unit test scores and the pre-and post-test results of self-regulated learning units demonstrates that students can competently grasp and apply this approach.

Table 1: Average Scores on Mathematics Unit Tests

Teaching Method	Average Scores on Unit Tests	Average
Lecture-Based Teaching	U1: 91.1	
	U2: 84.9	
	U3: 81.5	
	U4: 83.4	
	U5: 76.9	83.55
Self-Regulated Learning	U6: 77.8	
	U7: 90.5	
	U8: 87.5	
	U9: 86.5	
	U10: 83.1	85.06

Units 1–5 were taught using traditional lecture-based methods, with an average score of 83.55. Units 6–10 incorporated self-regulated learning, resulting in a slightly higher average score of 85.06. These results indicate that

students can complete learning tasks effectively and achieve strong academic performance using self-regulated learning methods.

Statistical Analysis of Pre- and Post-Test Results for Self-Regulated Learning Units

Table 2: Statistical Analysis of Pre- and Post-Test Results
(*$p<.05$, $p<.01$, *$p<.001$)

Unit	Test Type	Mean	SD	t-value	df	p-value
Unit 7	Pre-Test	73.00	19.47	-4.379	21	.000
	Post-Test	89.63	10.55			
Unit 9	Pre-Test	64.50	16.52	-9.379	21	.000
	Post-Test	92.77	7.02			
Unit 10	Pre-Test	85.13	14.74	-2.133	21	.045
	Post-Test	90.59	9.54			

The pre- and post-test results for the self-regulated learning units reveal significant improvements in student performance, with all comparisons achieving statistical significance. These findings underscore the capability of elementary school students to engage in self-regulated learning effectively. Students successfully constructed their learning pathways, achieved instructional objectives, and demonstrated the practical feasibility of self-regulated learning even within the constraints of an exam-oriented education system. Although the structured curriculum in schools is highly controlled, teachers can design diverse learning objectives and incorporate various teaching methods into the existing framework. This approach provides students with a rich learning experience, fostering engagement, autonomy, and academic success.

Self-Regulated Learning Enhances Student Engagement and Innovative Thinking

During the nine-week self-regulated learning program, teachers observed a noticeable diversification in students' learning methods and thought processes. Students' notes and assignments reflected the uniqueness and variety of their thinking.

When reviewing students' textbooks, a significant change became apparent starting from Unit 6. While the notes from the first five units were almost identical across students, containing the same calculations, answers, and key points, the notes from Unit 6 onwards began to exhibit individual differences. Previously, the teacher led the class, explained the problem-solving processes, and highlighted key concepts, which students merely transcribed. As the teacher noted, these were essentially "students writing the teacher's notes."

However, with the introduction of self-regulated learning in Unit 6 (fractions), students were given more time to learn in ways suited to their individual styles. This shift resulted in notes that revealed each student's unique thought process. Some students meticulously documented their reasoning, others used personalized symbols, and some employed color-coded systems. Others noted multiple problem-solving methods. These variations in note-taking highlighted the distinctive thought patterns of each student. Similarly, assignments became increasingly diverse, showcasing a variety of problem-solving approaches. Many students even developed their own methods for solving problems

(Teacher's Work Journal).

After the introduction of self-regulated learning, students began taking responsibility for their learning, engaging in more thoughtful and creative ways. Equipped with the teacher's guidance on self-regulated learning strategies, students were able to explore more content independently. Knowledge was no longer confined to what the teacher provided; students actively sought out new information. The sense of achievement derived from independently acquired knowledge further motivated them. Self-regulated learning breathed new life into the mathematics classroom—students began thinking critically, taking ownership of their learning, learning from peers, and devising solutions collaboratively. Many students expressed enthusiasm for this new teaching approach.

In interviews, students shared their positive experiences. One student (Z-001) remarked, "Before the midterm, we just listened to the teacher's lectures. There wasn't any opportunity to explore or figure out how to solve problems ourselves. I like the new way of learning. It gives us more chances to challenge ourselves".

Another student (T-003) rated their pre-midterm learning experience, characterized by lecture-based teaching, as 7 out of 10. They felt it was limited to listening to the teacher's explanations without knowing alternative methods from their peers. After incorporating self-regulated learning, the student rated their experience as 9 out of 10, noting that they could think independently before class, listen to classmates' ideas, and collaborate on problem-solving. "If I understand something, I do it myself first. If I don't, I discuss it with my classmates to figure out the solution", they said. For instance, when struggling with the use of parentheses in Unit 6, they sought help from classmates and online learning resources, ultimately mastering the concept. They added, "I like the current teaching style. I can think independently, discuss with classmates, and finally learn from the teacher's explanation. Combining classmates' and the teacher's methods helps me decide which approach is better, so I can think differently next time".

Another student (F-006), a high achiever, noted that the self-regulated learning approach allowed them to learn more-not only from the teacher's methods but also from their peers' unexpected and creative approaches. "Previously, the teacher's lectures made me sleepy, and sometimes I didn't even want to attend math class. Now, I don't dislike it as much. With the new teaching style, I can learn to solve problems myself and discuss them with classmates", they said.

These reflections highlight how self-regulated learning fosters engagement, independent thinking, and collaborative problem-solving, providing students with a more dynamic and meaningful learning experience.

Math Journals as a Tool for Enhancing Self-Regulated Learning and Reciprocal Teaching

In the action research on self-regulated learning, one assignment that stands out is the use of math journals. As part of the self-regulated learning curriculum, the teacher introduced math journals at the conclusion of each unit. The purpose was to help students monitor their learning processes and review the unit's key concepts. The math journals included content learned in class, questions about

the curriculum, reflections, insights, and learning summaries. The format and content were left open-ended, allowing students to express themselves in their own styles. This resulted in unique assignments that provided the teacher with valuable insights into each student's learning process and thought patterns.

Math journals are a concrete method for teaching students how to take ownership of their learning. By maintaining math journals, students develop the ability to monitor their learning processes, set goals, create plans, select learning methods, and evaluate outcomes. This reflective process helps students build self-monitoring skills and fosters the emergence of self-regulated learning. The journals operationalize the tasks of self-regulated learning by applying Zimmerman's concept of the "performance phase," which emphasizes self-observation as a critical component of self-regulation.

Self-regulated learning involves metacognitive processes where individuals reflect on, control, and regulate their cognitive activities to achieve their learning goals. It unfolds in three stages: planning, performance, and self-reflection. However, self-regulated learning is not innate; it requires guided instruction and repeated practice. Over time, students learn from experience and gradually become independent learners. The math journals designed by the teacher provided students with a structured way to regularly assess their learning progress, reflect on successes and failures, and refine their strategies. By integrating metacognitive elements, these journals helped students monitor and reflect on their learning processes and achieve their goals.

This exercise also highlights the importance of teacher guidance in fostering self-regulated learning.

"At the beginning, many students were uncertain about what to write in their math journals. Their previous assignments followed fixed formats and content, and the open-ended nature of the math journals gave them a lot of room for creativity, which initially left them confused. Through demonstrations and reminders, I guided them to write about the challenges they faced in their learning process, how they resolved problems, or what they excelled at during self-regulated learning. They could also reflect on their understanding of math problems or set goals for their learning. Over time, their journals began to flourish. Some reflected on their learning process, others noted difficult problems and sought help, and some even used drawings to document their learning journeys. These unique assignments revealed the diverse thinking and creativity of each student" (Teacher's Work Journal).

The math journals exemplify how teachers can guide students to develop metacognitive skills. This approach is akin to the unique learning experiences provided at an experimental public school in San Diego, where teachers intentionally cultivated metacognition by encouraging students to share their failures and write reflective journals (Zou, 2020) [21]. Similarly, math journals enable students to actively evaluate the effectiveness of their learning behaviors. Through this type of training, most students learn to independently manage their learning, monitor their progress, and adjust their strategies accordingly.

The Taiwanese teacher's implementation of self-regulated learning provides several important insights. Even within a highly controlled curriculum structure, diverse teaching methods can invigorate the classroom and provide students with a richer sense of agency and choice. Although the students did not have complete autonomy in selecting learning content, the integration of self-regulated learning into the classroom gave them opportunities to experience autonomy and take responsibility for their learning. This shift-from passive reception to active exploration-demonstrates the vitality of school education when self-regulated learning is embraced. Furthermore, students learned various methods for engaging in metacognitive processes and constructing their learning trajectories, equipping them with skills that extend beyond the classroom.

Practical Challenges: Free Writing in Freinet Schools, France

The math journal activity in the self-regulated learning case study provided a new mode of teacher-student interaction and allowed students to reflect on and monitor their learning processes. This exercise exemplifies the beginning of self-regulated learning. Among schools that use writing as a central tool for fostering self-regulation, the Freinet schools in France stand out. Known for their emphasis on "collaboration" and "self-regulated learning", these schools view free writing as the cornerstone of their pedagogy. Vergnioux (2015) [12] highlights its foundational importance, stating that "free writing directly addresses the core problems of traditional education and has consistently been recognized as essential in numerous educational innovations".

In 1920, Célestin Freinet, a Public School teacher in France, observed the uninspiring learning atmosphere and poor educational outcomes in his classroom. Faced with students displaying learned helplessness in a high-pressure, competitive environment, Freinet began reforming his teaching methods. He replaced traditional lectures in French with "school printing" workshops, where students collaboratively chose themes or wrote about self-selected topics in any format. They then discussed their work and published their writings (Xu, 2018) [17]. This marked the beginning of the free writing curriculum.

Today, Freinet schools continue to embrace free writing. Students are allotted self-regulated learning periods during which they may engage in individual or group activities, such as reading and editing French texts, writing prose, practicing poetry, conducting mathematical research, drafting reports in social sciences, designing natural science experiments, or creating artistic scripts. Free reading and writing are tailored to the students' interests, learning pace, and style. Students choose texts to read, select their own writing topics, and express themselves in diverse formats, including poems, songs, drawings, sculptures, dances, musical performances, or hybrid forms (Xu, 2018) [17].

Although free writing permits significant flexibility, it is not entirely unstructured. Students must adhere to standards of grammatical precision, word accuracy, and originality. The core principle of free writing is communication-between students, between students and teachers, and between students and the world. Through free writing, students express themselves and share their life experiences. Peers provide mutual encouragement, while teachers offer timely assistance and feedback without assigning grades. Freinet

believed that qualities such as understanding, intelligence, creativity, and artistry cannot be quantified. Assigning grades, he argued, risks reducing learning to rote memorization and turning students into passive recipients of the "correct" answers from textbooks or teachers. Such an approach stifles critical thinking and diminishes students' engagement with themselves, others, and the world (Xu, 2013) [16].

Free writing can occur at any time and in any subject, serving as a bridge between students' learning, their personal experiences, and their interactions with teachers, peers, and the wider world. Students use their life stories to connect course content with their observations, allowing teachers to understand each student's unique experiences and challenges. These writings are published in school magazines, a collaborative effort between students and teachers. Together, they discuss content, refine language expression, correct grammatical errors, and ensure textual coherence. While preserving each student's originality and the profound human depth of their texts, teachers help students polish their work for clearer and fuller expression. This iterative process of refinement and experimentation deepens students' understanding of knowledge and enhances their writing skills.

Free writing also fosters collaborative learning among students. In free writing sessions, students present their work to their peers, who listen attentively, offer encouragement, and provide constructive suggestions. Feedback may include advice on vocabulary precision, grammatical accuracy, spelling corrections, and other textual improvements (Xu, 2018) [17].

The practice of free writing not only promotes active learning but also strengthens collaborative relationships between teachers and students as well as among peers. It breathes life into education by integrating students' personal experiences with the curriculum, simultaneously enhancing their communication skills. The tangible outcomes of free writing have led to impressive achievements: since 2000, Freinet schools have consistently demonstrated strong literacy performance in national evaluations.

In an increasingly complex and rapidly changing world, learning must transcend the mere storage of knowledge. Schools must prepare students to adapt to future challenges, face difficulties independently, and thrive as lifelong learners who love learning. Self-regulated learning reflects the essence of education-it emphasizes individual growth, self-monitoring, and self-management. The hope lies in blending theory and practice to discover locally relevant strategies for integrating self-regulated learning into school education.

Author Biography

Guan Jinxing, female, born in 1987 in Xiangxiang, Hunan Province, is an Assistant Researcher at the School of Education, Zhaoqing University. Her primary research area focuses on learning theories.

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