Research Article

Self-regulated Learning Strategies Use in an Asian High School EFL Context

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Abstract

Objective: This study investigated the self-regulated learning (SRL) strategies employed by high school EFL learners in the Asian high school context and the associations between SRL strategies and their academic achievements.

Methods: A total of 6 students in Taiwan with different academic performances participated in this study to elicit their self-learning experiences and self-regulated strategy use. The data were analyzed using the grounded theory approach by undergoing three stages: open, axial, and selective coding. The comparisons among the data and categories were repeated until no new properties or relationships emerged during the analysis, ensuring theoretical saturation. In the final selective coding stage, two themes emerged from the data sets: (1) degree of teacher directing (2) higher and lower achievers’ SRL strategies use.

Results: With different degrees of teacher directing, the pattern of using SRL strategies between higher and lower achievers was revealed. Higher achievers were found to be more autonomous in adopting SRL strategies. Although lower achievers also adopt some SRL strategies, they tend to use surface cognitive strategies, including repetitive rehearsal and rote memorization, instead of deep ones, such as elaboration and organization. Furthermore, in terms of self-consequence, the result also showed that only higher achievers would reward themselves after accomplishing a certain goal and resume their learning. As for low achievers, they tend to give up learning and lose motivation after rewarding themselves.

Conclusion: The findings showed that EFL participants’ SRL strategy use varied in response to the self-learning context. Pedagogical implications for future research and how EFL teachers can promote students’ SRL strategy use and English teacher training are discussed.

Keywords: self-regulated learning, self-regulated learning strategy use, EFL learning achievement, EFL Asia learning context
1 INTRODUCTION

In recent decades, the role of self-regulated learning (SRL) in students’ academic performance and life-long development has obtained more attention\(^2\). Zimmerman et al.\(^3\) defined SRL as a cyclical and dynamic process where learners have a clearer idea about their learning and can better transform mental abilities into academic skills in the pursuit of learning goals. Self-regulated learners tend to proactively adopt a broad spectrum of SRL strategies, such as planning, monitoring, adjusting, and critical thinking strategies, which help promote their learning efficiency and academic success.\(^4\) Zimmerman\(^5\) contended that efficient SRL strategies may facilitate achievements in the academic areas when learners are engaged in a cluster of internal processes that promote adjustments to their knowledge, motivation, behavior, and context. Researchers proposed that self-regulated learners are more likely to succeed academically and be more optimistic about their future, highlighting the importance of SRL for lifelong learning.\(^6\)

Recently, SRL has been a focus in many countries’ educational policies and reforms in order to develop student-centered instructional approaches\(^7\). Self-regulation has even been regarded as a 21st-century skill.\(^8\) Therefore, many schools seek to empower students to become self-regulated learners in the recognition that, in this ongoing fast-changing era, it is a core skill that enables students to monitor the quality of their work and adopt strategies to cope with new and demanding tasks.\(^9\) Different investigations in the education field have manifested the significance of students’ SRL strategies for academic success\(^10\). However, it was discovered that most students only showed a low or moderate level of SRL strategies use in EFL learning in Asian countries.\(^14,15\)

Moreover, previous studies on SRL strategy use have mainly focused on education at the tertiary level. In the field of education, self-regulated learning has a significant effect on senior high school students since they enter the transition from adolescence to early adulthood. At this time, a person has begun to think openly, flexibly, and adaptably. Early adulthood is a time when a person experiences physical and mental changes simultaneously. Self-regulation learning is one of the characteristics of early adulthood in the educational process. Zimmerman\(^16\) has claimed that efficient SRL strategies may facilitate achievements in all academic areas. Gaining insights into how EFL learners adopt SRL strategies may help teachers tackle these learners’ difficulties. However, since many previous studies focus more on the tertiary levels, little is known about the SRL strategies used by high school learners, especially those with various English language proficiency.

To bridge this research gap, the present study attempts to cast light on the self-regulated learning strategies employed by high school EFL learners in an Asian high school context and to investigate how students use SRL strategies regarding different learning achievements, and how EFL teachers’ directing may impact students’ SRL strategies use in this context. The findings of this study would contribute to a better understanding of how students use SRL strategies and further assist teachers’ classroom instructions to maximize students’ learning outcomes.

2 LITERATURE REVIEW

2.1 Self-Regulated Learning

The concept of SRL strategies sprang up in the 1980s under the influence of social cognitive theory.\(^16\) Bandura’s theory acts as an alternative to Vygotsky’s socio-culturalism and Piaget’s constructivism, which depicts learning processes as reciprocal interactions between cognition, behavior, environment, and other contextual or personal factors. Studies on SRL discuss this reciprocity with a triadic analysis of three component processes: self-observation, self-judgment, and self-reaction.\(^17\) SRL connotes a more self-directed learning experience by which a learner attempts to control these triadic factors to achieve their learning goals. Zimmerman\(^6\) developed an SRL model to elucidate how students adopt and exert specific learning strategies to acquire knowledge. For Zimmerman, learners who can regulate their learning have a clearer idea of what they are doing and can better transform mental abilities into academic skills through such self-regulatory strategies as monitoring, controlling, adjusting, self-directing, and self-reflecting. Grounded in Zimmerman’s construct, Boekaerts and Corno\(^18\) further pointed out that self-regulated learners demonstrate several distinctive characteristics. For example, they are conceived of as (a) adaptive learners with a range of self-regulative processes through which they set goals, manage resources, self-monitor, and seek feedback; (b) positive learners who sustain learning interest and show confidence in achieving learning objectives; and (c) proactive learners who know how to select the best strategies to suit their abilities, based on their self-motivational belief in their strengths and weakness.

With the purpose of cultivating students’ SRL skills to tackle demanding tasks in the future, it is necessary to understand the crucial processes involved in the self-regulation of learning. Zimmerman\(^6\) proposed that students undergo three main cyclical phases when regulating their learning. In the first phase (forethought), learners clarify and share the goals and standards to attain in a certain task. This phase involves students’ perception of the task’s affordances and constraints and their motivation arising from beliefs about learning, such as self-efficacy and outcomes.
expectancy. During the second phase (performance), learners engage with the task and monitor their learning, usually deploying planned strategies to compare their progress against standards set in the forethought phase and discover causes of learning events. In the third phase (self-reflection), learners evaluate their work and generate applicable revisions or adjustments accordingly. This includes reflecting on feedback and mentally storing ideas and concepts to use in the task. To conclude, self-regulated learners make deliberate and goal-directed efforts to adjust, adapt, or abandon their learning strategies and identify, retrieve, and seek new information for future learning.

In the field of language learning, self-regulation is emphasized as a crucial factor that sets the scene for improved language competence. SRL is important in the EFL context, as learners’ language learning is primarily restricted to classroom settings and lacks sufficient interaction opportunities. Research claims that self-regulation skills do not develop spontaneously but must be learned, and have identified SRL strategies as teachable skills that students can obtain during learning processes. One critical approach is to cater to individual students by integrating explicit instruction on SRL skills into the larger context. Several researchers have highlighted the necessity that teachers explicitly train their students in self-regulatory techniques. For example, Tseng et al. suggested English teachers should teach learning strategies clearly, activate learners’ metacognition, and enhance their self-efficacy. By using systematic instructional approaches in guiding SRL, Lam showed teachers may help students improve their capabilities by incorporating goal setting, strategy implementation and monitoring, and problem-solving tactics into the writing process. Chen et al. noted that higher achievers in language learning tend to manipulate various SRL strategies. This implies that language teachers may encourage learners to take advantage of these strategies and enrich underachievers’ awareness of using them.

2.2 Self-Regulated Learning Strategies and Academic Achievement

As many studies have paid attention to the significant associations between SRL strategies and academic achievement. Self-regulated learning training programs enhance university students’ academic performance, self-regulated learning strategies, and motivation. Calls for promoting learners’ SRL strategies are not accidental. In a meta-analysis of SRL by Broadbent and Poon, SRL strategies were applied to students’ efforts in a triadic loop dealing with learning performance: monitoring learning performance (self-observation), evaluating learning performance (self-judgment), and responding to performance outcomes (self-reaction). Broadbent and Poon contended that learning is not viewed as a fixed trait and will be more effective if the participant sets goals to attain academic success. If learners possess SRL strategies, they generally have better perceptions of course content and can achieve more favorable outcomes.

In recent two decades, a comprehensive set of self-regulatory strategies (i.e., metacognitive self-regulation strategies, cognitive strategies, and environment and resource management) has been widely discussed in the field of language learning. Literature has well documented that self-regulated learners manipulate a range of these components as part of their learning process to achieve successful outcomes. Self-regulatory strategies are closely tied to the executive control of cognition, which increases students’ achievement scores. EFL students with good metacognitive strategies can plan, monitor, and evaluate their learning processes, leading to more positive academic outcomes. Cognitive strategies include several sub-strategies and are classified into two types of processing strategies—surface cognitive and deep cognitive. Deep cognitive strategies (i.e., elaboration, organization, and critical thinking) improve academic achievement, whereas surface strategies (i.e., repetitive rehearsal and rote memorization) usually have negative associations with academic achievement.

Nevertheless, some researchers note that proficient learners demonstrate the integration of surface and deep cognitive strategies in promoting long-term retention of academic tasks. Another important dimension of SRL strategies, conceptualized as environment and resource management, comprises regulatory strategies that students apply deliberately to manage other resources besides cognition.

Other than the set of SRL strategies mentioned above, more dimensions were also proposed by researchers. For example, the SRL strategy dimension suggested by includes (a) time and study environment management (creating a realistic plan and organizing a congruous setting for learning); (b) effort management (coupling persistence with a concentration on learning tasks); (c) peer learning (learning from a study group or friends); and (d) help-seeking (seeking help from peers or instructors where necessary). Oxford and colleagues reported a broader range of SRL strategies, with six sub-scales: memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies, and social strategies. In the field of foreign language learning, Oxford and her colleagues’ intensive and extensive discussions on the complex nature of applying strategies in language learning have laid a groundwork for SRL strategies as they draw relatedness among self-regulation, mediated language learning, emotion, and learner autonomy. Claimed a rather long list with nine types of SRL engagements: (1) goal setting and planning, (2) record-keeping and monitoring, (3) self-consequences (i.e., students arrange rewards or punishment for themselves), (4) self-evaluation, (5) effort regulation, (6) organization and transformation, (7) rehearsal and memorization, (8)
seeking social assistance, and (9) seeking opportunities to practice English. One interesting finding derived from their study was that seven types of SRL strategies were weighed more often by learners, whereas “seeking opportunities to practice English” and “goal setting and planning” played insignificant roles in directing their effort, cognitive engagement, or academic performance.

The present study aims to bridge the research gaps by investigating how high school students in the Asian context use self-regulated learning strategies regarding different learning achievements, and how EFL teachers’ instruction may impact students’ SRL strategies use in this context.

3 METHODS
3.1 Participants
Participants in this research were students aged 15-16 years, three 10th graders and 3 11th graders, from one of the high schools in central Taiwan. At the time of data collection, their proficiency levels ranged from A2 (from TOEIC 225 to 550) to B1 (from TOEIC 550 to 785), according to the Common European Framework of Reference for Languages (CEFR). Six participants were chosen, including 3 higher achievers (HA) and 3 lower achievers (LA) according to the assessment results of participants’ monthly examination, teachers’ observations, and TOEIC proficiency levels. To protect the privacy of participants, participants are given pseudonyms. Detailed demographic information about the participants is shown in Table 1.

3.2 Context
In senior high school (Grades 10-12, ages 16-18) in Taiwan, there are usually four EFL classes of 50 min a week. At this stage, students are expected to develop a vocabulary size of 7,000 words. Before entering college, students take the General Scholastic Ability Test (GSAT). Students need to obtain high scores in these exams in order to be admitted to high-ranking universities. The exam for English in the GSAT includes tests of vocabulary, reading comprehension, discourse, cloze, translation, and composition. Furthermore, the curricula were decided by the English teaching committees formed by all English teachers. Therefore, each grade has uniform schedules, monthly exams, textbooks, self-learning materials, and workbooks. English teachers followed the schedule closely to help students achieve high scores on monthly exams.

Although the learning context in Taiwan might vary from school to school, most of the learners in high school are under great academic pressure in order to obtain desirable academic scores for application to colleges. The competitive learning context and peer pressure have led many students to attend extra learning such as cram schools after class. How students use SRL strategies in this context still needs to be investigated.

3.3 Data Collection Method
This qualitative study adopted interviews to collect detailed descriptions from the participants and used document examinations to examine the learning process.

3.3.1 Interviews
Semi-structured interviews were conducted with 6 students to elicit their self-regulated learning experiences, self-regulated learning strategies, and the possible reasons behind their use of SRL strategies. The guiding questions are shown in Table S1. Each interview lasted about 50 min, was tape-recorded, and was conducted in a quiet, well-lit high school lounge. The interview took place in students’ native language (Mandarin Chinese), the student’s first language at two stages: first, participants were asked about their EFL learning background, and learning experience. Second, questions were focused on the participants’ self-learning planning and reasons for the student’s use of SRL strategies.

3.3.2 Document Examinations
To further delve into students’ strategy use, document examinations were conducted after the student interviews. With the permission of the participants and the participants’ instructors, the researchers examined the students’ self-learning materials and individual EFL study plans. Permission to access these documents was granted by the students at the beginning of this study.

3.4 Procedures
The researchers first contacted the instructors of the chosen high school and obtained their permission to conduct the study. Then, with the assistance of the instructors, six students were chosen. Then, the researchers obtained the permission of the students and their parents to participate in this study, followed by interview arrangements. Each interview lasted about 50 min. All the interviews were conducted in Mandarin Chinese, were audio-recorded, and were then transcribed. The transcribed data was sent back to the participants for verification. The verified data was then undergone analysis. At the same time, the researchers conducted document examinations of the students’ self-learning materials and individual EFL study plans.

Teacher dimension instruction includes the teacher’s semester schedule provided for students and the way teachers direct and monitor the schedule. When a teacher has planned the learning and test calendar for students and monitors the schedule, it indicates a higher degree of teacher directing. On the contrary, when teachers do not provide the beforehand schedule and leave students with a much more flexible schedule, the teacher’s instruction is considered to be a low degree of directing.

3.5 Data Analysis
The data were analyzed using the grounded theory
Table 1. Participants’ Demographic Information

<table>
<thead>
<tr>
<th>Participants</th>
<th>Pseudonyms</th>
<th>Gender</th>
<th>CEFR Level</th>
<th>Grade</th>
<th>Achievement Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shirley</td>
<td>female</td>
<td>B1</td>
<td>11</td>
<td>HA</td>
</tr>
<tr>
<td>2</td>
<td>Jennifer</td>
<td>female</td>
<td>B1</td>
<td>10</td>
<td>HA</td>
</tr>
<tr>
<td>3</td>
<td>Vanessa</td>
<td>female</td>
<td>B1</td>
<td>11</td>
<td>HA</td>
</tr>
<tr>
<td>4</td>
<td>Howard</td>
<td>Male</td>
<td>A2</td>
<td>10</td>
<td>LA</td>
</tr>
<tr>
<td>5</td>
<td>Max</td>
<td>Male</td>
<td>A2</td>
<td>11</td>
<td>LA</td>
</tr>
<tr>
<td>6</td>
<td>Gina</td>
<td>female</td>
<td>A2</td>
<td>10</td>
<td>LA</td>
</tr>
</tbody>
</table>

4 RESULTS

Based on the assumption that learning is situated and learning strategies are derived from a learning context, this study investigated the SRL strategies used by high school EFL students in an Asian context. The results showed that these participants’ SRL strategy use varied in response to the test-oriented context. In the final selective coding stage, two themes emerged from the data sets: the degree of teacher directing and the use of SRL strategies between higher and lower achievers. The findings will be presented according to the two themes, although they are inevitably interrelated in certain aspects.

4.1 Degree of Teacher Directing

The results of this study showed that the degree of teacher directing played a crucial role in students’ use of SRL strategies in the context. The following findings will be presented in terms of both high and low degrees of teacher directing.

4.1.1 High Degree of Teacher Directing

The results show that some teachers would plan a monthly schedule with a testing calendar, including self-study materials on a scheduled timetable for each monthly examination, which resulted in high degrees of teacher directing in school. In this high-directing situation, students only need to focus on studying and stick to the schedule the teachers had planned for them. For example, both Gina and Max mentioned that their teachers had already organized the monthly schedule for them.

Excerpt 1: Gina, LA

“Every time when we finished our monthly exams, the teacher would give us a new calendar of following quizzes and tests. I think it was great because I don’t need to remember the date for each quiz by myself.”

Excerpt 2: Max, LA

“My teacher will provide us with a test schedule at the beginning of each monthly examination. Therefore, I only follow it and try to catch up with the schedule. But I failed to catch up most of the time, so my English is not really good.”

4.1.2 Low Degree of Teacher Directing

On the contrary, some teachers were reported as being more flexible. They didn’t set a rigid monthly schedule or testing calendar for the students to follow, which resulted in a low degree of teacher directing. Specifically, teachers would follow the current teaching schedule of the lesson, which provides a certain degree of freedom and flexibility in accordance with the learning pace of students. However, without a beforehand rigid schedule to follow, students were found to feel under pressure since the teacher’s flexible announcement of quizzes was relatively impromptu and urgent. Facing the situation, students started to come up with SRL strategies to cope with the lower degree of directing teaching style. Some examples are shown below.

Excerpt 3: Shirley, HA

“I found that every time when our teacher finished a new...”
lesson, there would definitely be a quiz tomorrow. I knew it was necessary for us to do the quiz, but the announcement was sudden and urgent, which made me feel heavily pressured. I believe I am not alone in my class. Many other classmates feel the same pressure.”

Excerpt 4: Jennifer, HA

“I usually make plans for my self-study because I need more time to absorb and understand the content. For example, if I have a vocabulary test on Monday, I will divide my study time allocations into three sections: Friday, Saturday, and Sunday.”

Excerpt 5: Vanessa, HA

“My 10th-grader teacher would give us a monthly schedule, but now my 11th-grader teacher just follows the schedule on a daily basis, and he will give us the test once he finishes the discussion. I know some of my classmates always forget the upcoming tests. But, for me, I always plan before the teacher announces the test time. We need to have our personal schedule because we have a lot of things to deal with.”

Excerpt 6: Vanessa, HA

“Because the sudden announcement of testing would make me anxious, I decided to plan a personal schedule for myself. I liked to plan earlier, which gave me more time to prepare for exams.”

As the above examples show, the degree of teacher directing appeared to play a role in these high school students’ SRL strategy use. If the degree is high, students might simply follow the teacher’s schedule without considering personal learning pace or other factors that might influence their learning. However, participants with lower academic achievements still failed to catch up with the learning even though the teachers had already provided them with a predetermined schedule, which might demonstrate that low achievers seemed to struggle with time management even under the teachers’ high directing plan.

When teachers adopted a lower degree of teacher directing, low achievers were reported to be less cautious of the urgent quizzes, which led to the situation that they tended to forget the quizzes. On the other hand, some high achievers appeared to be aware of their personal timetable even though the teacher had planned for them. They were triggered to use goal-setting and planning, record-keeping and monitoring, and self-evaluation strategies. By making personal learning plans based on the schedule that teachers had offered, higher achievers demonstrated self-monitoring and effort regulation in order to adjust themselves to the changes of degree in teacher direction.

4.2 Higher and Lower Achievers’ SRL Strategies Use

From the results, it is revealed that the use of students’ SRL strategies varied with their achievements. Furthermore, the use of self-consequences also differs in a self-learning environment between high and low achievers.

Higher achievers were found to use various SRL strategies. For example, students with better academic performance tended to adopt goal-setting and planning and record-keeping monitoring in the forethought phase. Besides, during the performance stage, students use SRL strategies, including both surface and deep cognitive strategies, self-consequences, effort regulation, monitoring, adjusting, and seeking social assistance. In the reflection stage, higher achievers would make use of self-evaluation strategies (Table 2).

Based on the results of our study, it is also noteworthy that high-achievers tended to adopt deep cognitive strategies during the meaning-making process. For example, SRL strategies such as elaboration, organization, and use of multimodal ways to process were identified during their self-learning process. The following excerpts from Shirley and Vanessa illustrate the use of deep cognitive strategies.

Excerpt 7: Shirley, HA

“I like to organize the words differently after I study vocabulary. For example, I will write down those words that spell similarly and try to distinguish them. I like to compare the words with each other. Besides, I will use prefix and suffix rules to help me decipher the words when I try to understand the new vocabulary.”

Excerpt 8: Vanessa, HA

“Sometimes when I need to read the article by myself, I will draw some maps, and icons to help me better understand the structure of the content. Also, I will turn to my teacher if I don’t understand the meaning when I study alone.”

On the contrary, lower achievers were found to use fewer SRL strategies and limit their SRL strategy uses mainly to surface cognitive SRL strategies, including repetitive rehearsal and rote memorization. Additionally, lower achievers showed a tendency to turn to their mother language directly to comprehend the language self-learning materials. For example, when Howard and Gina encountered new vocabulary, they tended to write down the meaning in their mother language beside the new vocabulary, which resulted in over-relying on rote memorization and rehearsal.

Excerpt 9: Howard, LA

“When I need to read a self-study magazine, I always write down the Chinese meaning under the new words I am not familiar with. Also, I like to jot down a list of words that I don’t know and study the word list for memorization from time to time.”

Excerpt 10: Gina, LA

“When I do self-study, I only write down the Chinese meaning besides the words. But, I always forget its meaning when they are put in the context.”

4.2.2 Use of Self-consequences

The results showed that both higher and lower achievers were found to use self-consequence. Self-consequences are
strategies that students reward themselves after achieving a specific goal, which demonstrates that students will encourage themselves when facing learning obstacles. Also, the participants are aware of their study condition and would stop to take a break in order to rejuvenate themselves. However, the result showed that only higher achievers would reward themselves after accomplishing a certain goal and resume their learning. As for low-achievers, they tended to give up learning after rewarding themselves. The following excerpts from Max and Jennifer embodied the different SRL strategy’s use of self-consequences.

Excerpt 11: Max, LA
When I am tired of studying English, I will listen to the music and get some rest. But I found I usually don’t have the discipline to return to study. So, I will just go to sleep. And of course, I did a poor job on the test, but I can’t help but accept it and it’s like on and on. I can’t catch up with the overwhelming studying loading.

Excerpt 12: Jennifer, HA
I will divide my final goals into several little steps. Because by doing so, I don’t stress myself out and I can feel I was ticking the boxes on the right track when deleting the things on my to-do list. That feeling is really good, giving me a sense of achievement. By the way, if I did complete the schedule, I would buy something sweet to eat, which is my comfort food!

From the abovementioned results, higher achievers would not only use a wide collection of SRL strategies but also demonstrate a diverse meaning-making process to understand new information. Although both higher and lower achievers were found to use self-consequence strategies, there was a difference between higher and lower achievers in their self-consequence strategy. Specifically, lower achievers just went to rest without continuing the learning, which was regarded as giving up during self-learning. Conversely, higher achievers showed they would reward themselves with something sweet to recognize their efforts and resume their studies.

5 DISCUSSION
The results of this study show how SRL strategies were adopted and adjusted by the EFL high school students in Taiwan in the process of responding to a test-oriented learning context. Three aspects have emerged from the data: SRL strategies use and academic performance, degree of teacher directing, and SRL strategy use in connection with reactive autonomy in East Asian contexts.

5.1 Degree of Teacher Directing and SRL Strategies
The findings of the present study showed that when facing a high degree of teacher-directing situation, low achievers tended to adhere to the predetermined schedule offered by teachers without further adjusting themselves to their personal learning situations as the ways higher achiever counterparts did to employ and orchestrate their SRL repertoire.

According to previous studies, teachers who tend to exhibit high directing behavior withhold students’ control over their own actions. Specific behaviors include providing explicit instructions for how tasks are to be performed, proposing solutions, giving students few or no choices, and put them under pressure to perform in prespecified ways. Taught by high-directing teachers, students’ self-regulation competence could become impaired. When teachers’ degree of directing is high, students might be deprived of the chance to self-regulate their own learning. Previous research claimed that requested actions might be carried out under threat of punishment. The students would choose the simplest and quickest solution without real regard to learning. This can lead to superficial ways of carrying out tasks, without ever reflecting on their significance.

On the contrary, when teachers’ directing is relatively low, it appeared to trigger students’ use of SRL strategies to deal with challenges in different contexts. In this study, when students were immersed in a lower degree of teacher directing, students appeared to arouse their awareness of SRL strategies use, including goal-setting and monitoring. According to previous studies, students who are taught by low-directing teachers develop a deeper understanding of the content, get better grades, learn more and retain the acquired knowledge longer. They also have more endurance while learning and acquire deeper and

Table 2. The Patterns of SRL Strategies Used between HA and LA

<table>
<thead>
<tr>
<th>Types Phase (First Stage)</th>
<th>The SRL Strategies of HA</th>
<th>The SRL Strategies of LA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forethought (First Stage)</td>
<td>(1) Goal setting and planning</td>
<td>(1) Stick to the predetermined schedule</td>
</tr>
<tr>
<td></td>
<td>(2) Record-keeping and monitoring</td>
<td></td>
</tr>
<tr>
<td>Performance (Second Stage)</td>
<td>(3) Surface cognitive strategies</td>
<td>(2) Surface cognitive strategies</td>
</tr>
<tr>
<td></td>
<td>(4) Deep cognitive strategies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(5) Self-consequences</td>
<td>(3) Self-consequences</td>
</tr>
<tr>
<td></td>
<td>(6) Effort regulation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(7) Monitoring</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(8) Adjusting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(9) Seeking social assistance</td>
<td></td>
</tr>
<tr>
<td>Reflection (Third Stage)</td>
<td>(8) Self-evaluation strategies</td>
<td></td>
</tr>
</tbody>
</table>

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participants use to regulate their learning correspond to the concept of reactive autonomy proposed by previous researchers.\textsuperscript{77,78}

According to researchers, two levels of autonomy exist: proactive and reactive autonomy. In terms of proactive autonomy, learners take partial or total ownership of many learning processes, such as deciding on learning objectives, selecting learning methods and materials, and evaluating progress. On the other hand, reactive autonomy does not create its own directions, but, once a direction has been initiated, enables learners to organize their resources autonomously in order to reach their goal.\textsuperscript{78} Reactive autonomy involves control over methods alone.\textsuperscript{77}

For learners in East Asian contexts, as suggested by previous studies,\textsuperscript{78,79} it is more useful to consider reactive autonomy than proactive autonomy.\textsuperscript{78} The results from this study showed the interplay among SRL strategies, autonomy, and cultural background, parallel the idea pointed out by the previous research.

5.4 Potential Implications for Educational Practice

Based on the study’s findings, some potential implications for educational practice are mentioned. First, although the high degree of teacher directing might save a great amount of time for both teachers and students in the classroom since students only follow the fixed schedule. However, planning a shared learning schedule for all students might deprive students of their learning opportunities to develop self-regulation. Therefore, if teachers emphasize the value of self-regulation and learning autonomy, teachers are encouraged to reflect upon the degree of their directing in the class. According to Benson,\textsuperscript{80} teachers sometimes need to learn when to stop teaching and organize everything for students, which might trigger the development of self-regulation.

Second, teachers are encouraged to teach their students to become self-regulated learners. By scaffolding and explicitly or implicitly integrating the SRL training in their classrooms, teachers could guide their students to learn self-regulatory processes or beliefs, such as goal-setting, strategy use, and self-evaluation. Apart from teachers’ instruction, students could also model after their parents, teachers, coaches, and peers.\textsuperscript{80}

6 CONCLUSION

Using a grounded theory approach to examine high school students in Taiwan, this study has obtained the following findings. First, students were found to employ different SRL strategies in high school contexts in response to the different degrees of teacher directing. Also, students with different academic achievements were found to adopt different SRL strategies in high school contexts.

Based on the findings of the study, the following
pedagogical implications could be considered. First, the findings showed that there is a relationship between SRL strategy use and academic performance. Therefore, high school teachers are suggested to introduce the SRL strategies higher academic achievers use to students with lower academic performances. By explicitly introducing what, when, and how to use these SRL strategies, students are likely to raise their awareness of the importance of SRL strategies and further find suitable SRL strategies to adopt. Second, based on the findings of our research, it is not necessarily beneficial to students when the degree of teachers’ directing is always high. Students become more autonomous in using SRL strategies in the lower-teacher-directing environment. Therefore, it is suggested that EFL teachers could start to find the balance between teacher regulation and learner self-regulation in instruction.

Although the study has obtained findings in SRL strategies, some limitations and suggestions for further studies are listed. In this current study, the participants selected in the study are from Taiwan only, so the results should be interpreted with caution. Further studies are recommended to investigate the relationship between cultural elements of context and their individual interaction with SRL strategies. A final direction for future study is a more in-depth investigation of students’ SRL strategy use in different learning contexts and cultural backgrounds, which would bring more global insights into the SRL strategy use.

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Conflicts of Interest
The authors declared no conflict of interest.

Author Contribution
Lin KP was responsible for conceptualization, research methodology, data collection, interviewing and writing the original manuscript; Huang SC was responsible for data analysis, review and edit the original draft.

Abbreviation List
GSAT, General scholastic ability test
HA, Higher achievers
IRR, Inter-rater reliability
LA, Lower achievers
SRL, Self-regulated learning

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