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EXPLORING TEACHER BELIEFS AND PRACTICES TO ENHANCE SELF-REGULATED LEARNING IN GOVERNMENT SCHOOLS IN MALDIVES

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Abstract:
This study explored how teachers perceive self-regulated learning (SRL) and their beliefs through a mixed-methods approach. The Self-Regulated Teacher Beliefs Scale (SRLTBS) was administered to 49 teachers in Fuvahmulah City and Laamu Atoll schools to gauge their views on SRL. Five of the 49 participating teachers were selected based on specific criteria for further observation and interviews. The questionnaire responses showed that teachers had a moderately positive attitude toward SRL but lacked comprehension in certain areas, such as SRL planning stages, goal setting, and methods to stimulate students' self-motivation. The classroom observations and interviews revealed that while teachers could articulate effective SRL teaching strategies, these ideas were not consistently implemented in the classroom. Teachers' actions promoted SRL during learning monitoring, but weaknesses were noted in the planning and assessment phases. Triangulating these findings highlights the link between positive beliefs and more comprehensive SRL application, yet gaps in planning and evaluation suggest a need for targeted professional development. Also, most teacher behaviors that supported SRL were implicit rather than explicitly teaching the required skills.

Keywords: self-regulated learning (SRL); Self-regulated Teacher Beliefs Scale (SRLTBS); teacher beliefs; teacher attitudes; classroom practices

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1. Introduction

In the Maldivian education system, teachers are pressured to ensure students are well-prepared for competitive examinations. Understanding the beliefs and practices of teachers regarding self-regulated learning in Maldivian schools is essential to improving the quality of education. Over the past decade, the Maldives' educational system has undergone significant development, with the implementation of the Outcomes-Based School National Curriculum in 2015 leading to the creation of the Key Stage system. According to (MOE & MOHE, 2019), the reorganization allowed teachers more flexibility and freedom in teaching curriculum throughout the Key Stages. The new curriculum is divided into five key stages, from the foundation stage to key stage 5, each emphasizing different skills and abilities (Di Biase, 2018).

The Maldives' educational vision is to prepare every child for life and to achieve this, the National Curriculum Framework (NCF) was adjusted to include key competencies. These competencies include practicing Islam, understanding and managing oneself, thinking critically and creatively, relating to others, making sense, living a healthy life, using sustainable practices, and using technology and media. These competencies are the foundation for lifelong learning and employability in an ever-changing environment (Di Biase, 2018). The reforms aim to help students see themselves as competent learners who understand that success results from work and strategy rather than chance (Shiyama, 2021).

This study aims to investigate the beliefs and practices of teachers regarding students' self-regulation in Maldivian schools. Despite the growing importance of SRL in improving students' academic performance and engagement, little is known about how teachers in Maldives government schools promote SRL among their students. Therefore, this study aims to identify the factors that facilitate or hinder the promotion of SRL among Maldives government school students by examining teachers' beliefs and practices related to SRL.

2. Theoretical Framework

Zimmerman's model of self-regulation serves as the theoretical framework for this study of teacher beliefs and understanding of SRL and practices of SRL. As depicted in Figure 1, Zimmerman's model of self-regulation consists of three phases: forethought, performance, and self-reflection (Schunk & Ertmer, 1999). The forethought phase involves goal setting and strategic planning, the performance phase includes implementing strategies and self-observation, and the self-reflection phase encompasses self-evaluation and adaptation of strategies for future tasks (Schunk & Ertmer, 1999). This cyclical nature of self-regulation is essential for effective learning and skill acquisition.

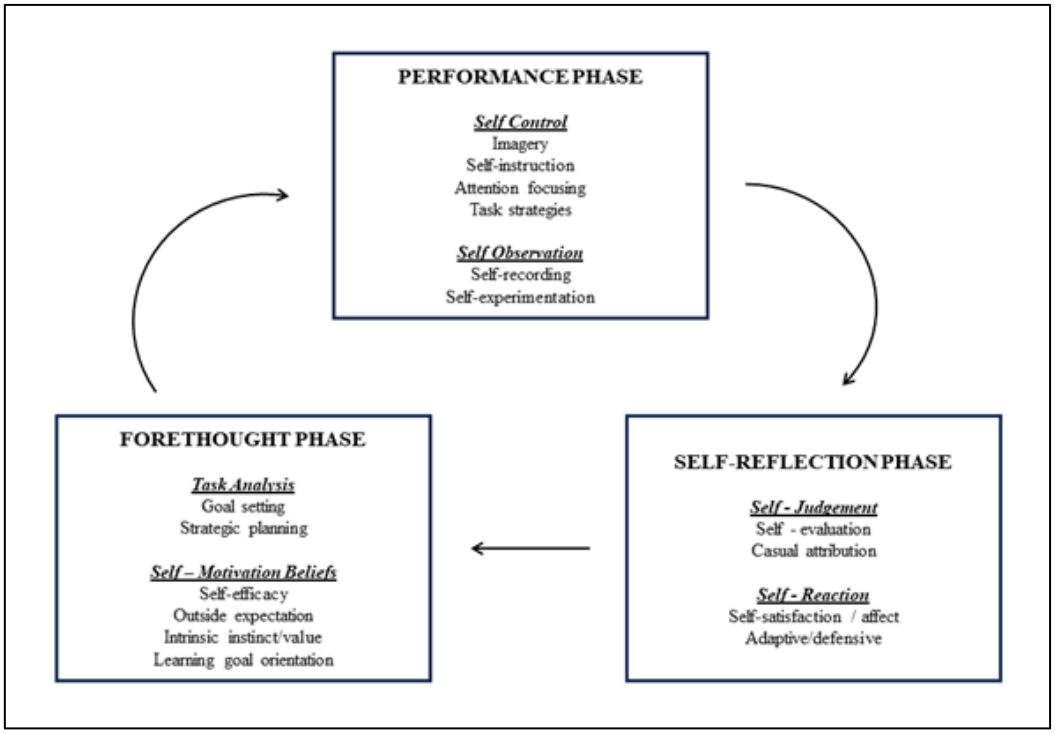

Figure 1: Zimmerman's Model of Self-regulated Learning

3. Research Method

When studying how teachers in Maldivian government schools approach their students' self-regulation, deductive and inductive research methods were utilized (Saunders & Lewis, 2019). This study also employs the pragmatic paradigm to evaluate the connections between the research variables. The research questions required objective and subjective data to gather the necessary data, which was collected through the Self-Regulated Learning Teacher Belief (SRLTB) questionnaire, interviews, and observations of teachers' experiences. Lastly, this correlational-comparative study used mixed methods, incorporating qualitative and quantitative data to explore the relationship between theories on perception, knowledge, and classroom practices.

This research focused on the government schools in the Maldives, as they have different curriculums compared to community and private schools. In total, 459 schools in the Maldives educate almost a quarter of the country's population (Ministry of Education, 2020). Of these, 213 are government schools, some of which only offer primary education, while a few have higher secondary education. Therefore, the data collected includes teachers from those schools to understand the teachers' beliefs and knowledge about self-regulated learning in Maldivian government schools.

Invitations to participate in this research were sent to various schools based in Fuvahmulah and Laamu Atoll. Ultimately, three schools from Fuvahmulah and one from Laamu Atoll agreed to get involved. Altogether, 49 teachers filled out the online survey, giving a response rate of 49%.

3.1 Demographic Data

The survey questionnaire was sent to 100 active teachers electronically for this survey. 49 teachers responded, making it a 49% response rate. Of the total respondents, 17% (equivalent to 25 teachers) decided to participate in an interview. Therefore, a sample of five was picked from the pool of 25 teachers. The sample consisted of all female participants (n = 49). Table 1 shows that the teachers varied in age; 19 were below 35, 22 were between 35 and 45, and 8 were above 45. Half of the teachers who participated, 50%, held a master's degree or a comparable qualification. Participants from various disciplines answered the questionnaire and volunteered for the interview; these disciplines included creative arts, mathematics, science, English, and social studies.

Table 1: Demographic Data

Item	N	Percentage (%)
Gender		
Male	4	8%
Female	45	92%
Age		
Below 35	19	39%
Between 35-45	22	45%
Above 45	8	16%
Highest Degree		
Bachelor's Degree	18	36%
Master's Degree	25	50%
Doctorate Degree	0	0%
Other	6	12%

All the interview and observation participants had five years or more of teaching experience; one was in their fifth year, one in their seventh, and another in their twenty-second. The remaining two teachers had between 10 and 16 years of teaching experience. Of the two teachers, Teacher 1 and Teacher 4 taught English, math, science, and social studies to their respective classes. Teacher 3 was teaching mathematics to grade seven students. Teacher 4 and Teacher 5 were English teachers, whereas Teacher 1 taught grade one, and Teacher 2 taught grade four. Participants for the interview and observations were selected based on willingness to participate, completion of questionnaires, and at least 5 years of teaching experience.

3.2 Data Collection Instruments

The research utilized three distinct data collection instruments: the Self-Regulated Learning Teacher Belief Scale (SRLTBS) Questionnaire (Appendix 1), an interview guide (Appendix 2), and an observation checklist (Appendix 3).

Firstly, the SRLTBS Questionnaire, adapted from Lombaerts *et al.* (2009) and refined by Spruce & Bol (2015), assessed educators' beliefs concerning the incorporation of self-regulated learning (SRL) within classroom environments. Aligned with the study's objectives, this questionnaire scrutinized SRL components such as problem-solving, goal

setting, self-monitoring, and self-evaluation. Its robust psychometric properties were evident, boasting high internal consistency (Cronbach's alpha = 0.93) and commendable concurrent validity.

Secondly, an interview guide, founded upon Zimmerman's Self-Regulated Learning (SRL) model and previously employed by Spruce & Bol (2015), was tailored to gauge teachers' convictions and practices regarding SRL in Maldivian government schools. This guide embraced the three essential SRL phases: Planning, Monitoring, and Evaluating. Significantly, the guide intentionally excluded metacognition for teachers' learning as it only explores teachers' beliefs and practices of SRL.

Lastly, the observation checklist, meticulously designed in line with Zimmerman's SRL model, evaluated 5 teacher behaviors aimed at nurturing students' self-regulated learning. Categorized into the Planning, Monitoring, and Evaluating phases, these behaviors were assigned scores ranging from 0 to 4, allowing for a comprehensive assessment of the extent of their implementation. This scoring system provided valuable insights into teachers' classroom practices, enriching the overall understanding of self-regulated learning dynamics.

3.3 Data Analysis

The demographic information gathered from the questionnaires was subjected to descriptive analysis, which helped organize and present the data in a tabular format. Furthermore, the responses to the questionnaire items were also analyzed using descriptive statistics to provide a more detailed and informative summary of the data.

An inductive approach was used to analyze the qualitative data collected from the interviews. A content analysis was employed to identify topics, categories, and patterns from the field notes and interview transcripts. The researcher started by reading and re-reading the interview data to identify topics. These topics were then developed into categories, and the data was coded based on these categories.

During the observation, teachers were monitored for 35 class periods, and their actions were recorded using an observation instrument. The focus was on how teachers encouraged their students to plan, monitor, and evaluate their learning. Additionally, field notes were maintained for each class period or lesson, and data from these notes were classified according to the phases of self-regulated learning (SRL) as presented in Zimmerman's model for SRL. Finally, the observation documents were reviewed for patterns in alignment with Zimmerman's model to gather data from interviews.

4. Results

Teachers' perceptions of self-regulated learning (SRL), their understanding of how to teach SRL, and their classroom experiences with self-regulation were all gathered and analyzed as part of this mixed-methods study. Results, both qualitative and quantitative, are presented by the study topic. The Self-Regulated Learning Teacher Belief Scale results are included in these conclusions (SRLTBS). Additionally, information gathered from five

teacher interviews provides light on teachers' subject matter expertise and instructional strategies.

4.1 Teacher Beliefs About Self-regulated Learning

This study's primary aim was to investigate teachers' beliefs regarding self-regulated learning. The data was gathered using the SRLTBS, a ten-item scale to measure teacher attitudes. In addition, participants were asked to answer the questions using a Likert-style scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Table 2: Descriptive Data for Each Item

Item	Mean	SD
Self-regulated teaming makes students evaluate their learning approach better.	3.59	0.57
Pupils should be able to make decisions about the sequence and duration of their learning activities more often.	3.31	0.80
Students should be able to decide when they work on an assignment more often.	3.22	0.77
A self-regulated environment makes it easier to consider students' experiences and interests.	3.57	0.61
Students can determine what they want to learn.	3.10	1.05
Each student should be allowed to regulate their learning.	3.63	0.67
Self-regulated learning is practicable in primary education.	2.98	0.82
Self-regulated learning provides students with a more thorough preparation for their transition to secondary education.	3.57	0.61
Self-regulated learning leads to a more efficient collaboration between students.	3.52	0.62
Students have the required self-discipline to take responsibility for their learning in primary school.	3.10	0.94

The averages for the items lie between 2.67 and 3.73, with 3 being a neutral score. The lowest score was for item 7, "Self-regulated learning is practicable," below 3 (M = 2.98). This implies that teachers consider SRL significant, yet they doubt whether they can put SRL into practice in their classrooms.

The second lowest mean items fall into items 5 and 10, Students can determine what they want to learn (M = 3.10), and Students have the self-discipline to take responsibility for their learning in primary school (M = 3.10). Item 5 has the most significant standard deviation suggesting a range of teacher perceptions about students' readiness to self-regulate at the primary school level. Items 7 and 10 target similar concepts and, interpreted together, suggest teachers question student readiness to self-regulate in primary and secondary school.

Item 6, "Allowing students to control their learning," had the highest mean rating of 3.63, demonstrating that educators think self-regulated learning is significant and pupils should be allowed to manage it. The means for the remaining items varied from 3.22 to 3.59. Therefore, comprehensive data implies that the participants have a positive attitude toward the significance of self-regulated learning for students. Nonetheless, there was inconsistency amongst the teachers regarding student readiness to self-regulate and whether it is feasible to employ self-regulated learning in classrooms.

4.2 Classroom Practice

4.2.1 Interviews

Five teachers were interviewed to understand their knowledge of self-regulated learning and their ability to explain it to their students. The interviews consisted of eight questions focused on planning, monitoring, and assessing learning. The answers provided were then measured using the rubric developed by Spruce and Bol in 2015. For example, the question from the interview targeting knowledge of SRL came at the end of the interview; responses that incorporated knowledge of planning, monitoring, and evaluation were awarded higher scores, while those that touched on just one of these components or none were given lower scores.

Table 3: Teacher Scores for Knowledge of SRL

Teacher	Planning	Monitoring	Evaluation	Total
Teacher 1	0	1		1
Teacher 2	1	1	1	3
Teacher 3	1	2	0	3
Teacher 4	1	1	1	3
Teacher 5	1	2	3	6
Mean	**0.8**	**1.4**	**0.7**	**3.2**

Teacher 5 was the only person who could explain SRL thoroughly, including the steps for every action. Other individuals struggled to grasp the concept or only focused on one aspect of SRL. Teacher 5's thorough explanation earned her a rating of 6.

> "*When I speak to my students, I encourage them to reflect on their interests and set achievable goals based on their passions. Then, we create a plan to help them reach those objectives together. Throughout their learning journey, I urge them to self-assess and determine if they have genuinely absorbed the material. Finally, I advise them to monitor their accuracy rate and decide if they are satisfied with their performance. If they are not, it's a sign that they must practice more and review the material again*."

Teacher 5's response received a good rating as she gave a comprehensive account of the student's self-initiated actions throughout the learning process, covering everything from planning to evaluation. Moreover, she mentioned specific methods for her subject, English, recognizing that although some self-regulated learning skills are transferable, they must be tailored to the specific topic or task.

In contrast, Teacher 1, a first-grade teacher, received a score of one for her response as she did not provide any information.

> "*Um, self-regulated learning? Self-regulated learning refers to staying aware of your assignments and creating an inquiry to learn something. It is an effective way to enhance your learning experience...*"

Teacher 1 did not provide any specific techniques for monitoring during the learning activity, only advising to stay aware of the assignment. Additionally, she did not touch upon evaluating the learning process in her explanation of self-regulated learning.

As a result, the survey responses for these questions varied regarding the teachers' ability to integrate the three phases of SRL into their explanation of the concept. The remaining fifteen interview questions focused on the teachers' implementation and employment of SRL in their classrooms. The respondents mentioned that they utilized SRL tactics, although not everyone could explain what those tactics were. Consequently, the teacher's feedback on using SRL for organizing a learning event is discussed here.

4.2.2 Planning

According to the feedback received from teachers, they appear to possess knowledge about various methods to inspire their students to plan their work before a lesson. A few commonly suggested ideas were found when asked about aiding students in organizing their tasks. These include utilizing an evaluation at the end of a project as a means of goal setting and Planning, assessing the students' existing knowledge and identifying areas of improvement, and dividing an enormous task into smaller segments - commonly referred to as "chunking" by several teachers. Table 6 displays the diverse goals and planning techniques teachers use while teaching.

Table 4: Summary of Teacher Explanation of Classroom Practice Targeting Planning

Strategy	**Teacher**
Goal setting	
Establish learning intentions and success criteria.	Teacher 1, Teacher 2, Teacher 3, Teacher 4, Teacher 5
Develop success criteria	Teacher 4, Teacher 5, Teacher 3
Planning	
Activate prior knowledge	Teacher 1, Teacher 2, Teacher 3, Teacher 4, Teacher 5
Create steps	Teacher 3, Teacher 4, Teacher 5

Teachers discussed their methods of engaging students in different activities during an educational event. Teacher 3 presented a compelling argument for aiding students in the planning process. She recounted her experience teaching a lesson on narrative writing in the English language, explaining that they set a clear learning objective and a title. Then, the students were tasked with outlining the necessary steps and establishing the criteria for success.

Teacher 4 and Teacher 5 consciously tried to break down larger tasks into smaller, more manageable ones. However, Teacher 3 was the only team member who could provide specific details about classroom activities and schedules, while Teacher 4 and Teacher 5 contributions were more general. For instance, Teacher 4 stated that:

"*I think students must establish success criteria for individual activities rather than relying on a single objective*"

Teacher 1 and Teacher 2 provided no input on dividing the task into smaller steps. According to Teacher 5, to succeed in an assignment, students must clearly understand the end goal before commencing it.

"*Every student should receive clear learning objectives and evaluation criteria to enable them to set their own goals and work towards meeting the desired outcome*."

During the discussion, the participants emphasized the importance of expanding their knowledge regarding their students' learning needs and verifying their existing knowledge before commencing any educational activity. Teacher 4, a math teacher for sixth-grade students, highlighted the significance of identifying her students' needs, ensuring that they are met, and creating awareness amongst students so that they can take necessary steps to help themselves. She explained that she assesses students' learning styles, whether visual, auditory, tactile, or sensory-motor, before the commencement of the academic year to make them aware of their requirements. Furthermore, she employs diverse teaching approaches to cater to different learning styles, enabling students to understand and identify what works best for them.

On the other hand, Teacher 1 believed that considering the students' needs and past knowledge was crucial when creating a learning activity. To illustrate her point, she recommended a specific method, typically relying on either concept maps or brainstorming during her classes.

"*Umm, I usually begin a unit by using concept mapping or brainstorming techniques to help my students identify gaps in their understanding. Once the unit is complete, we revisit the map to ensure all the necessary information is covered. Depending on the length of the unit, we may also revisit the map during the process to reinforce our understanding*."

During the learning process, some teachers like Teacher 2, Teacher 3, Teacher 4, and Teacher 5 found encouraging students to remember what they already know is beneficial. Teacher 5 highlighted this significance, while the others created activities to aid in the process.

Moreover, teachers emphasized determining success criteria for each activity, which was a goal. They mainly focused on learning intentions and success criteria set for their classes. The objectives set for the class or assignments served as success criteria for the students. However, none of the teachers mentioned students setting their learning intentions.

4.2.3 Student Self-motivation

During the final phase of the interview, the educators were asked to share the methods they used to encourage self-motivation among their students. Again, the teachers found it challenging to respond concisely as their answers varied. Table 7 provides an overview of their responses.

Table 5: Summary of Teacher Explanation of Methods They Used to Encourage Self-motivation

Strategy	**Teacher**
Choice in assignments	Teacher 4, Teacher 5
Relating to real-life situations	Teacher 1, Teacher 2, Teacher 3, Teacher 4
Sharing time	Teacher 1, Teacher 2, Teacher 3
Positive reinforcement	Teacher 2, Teacher 3. Teacher 5

During the teacher discussion, it became evident that specific topics were frequently discussed. As a result, the teachers were able to provide examples of strategies that could be used to enhance students' self-motivation. These approaches included giving students a choice in their work, connecting the learning to real-world contexts, incorporating prior knowledge, allocating time for review and reinforcement, and incentivizing positive behavior.

Teacher 3 and Teacher 4 talked about using student selection as a means of motivation. Teacher 3 recounted a scenario where she gave her students the freedom to choose themselves.

> "*…I offered the children three options for their project – a PowerPoint presentation, a booklet, or a scrapbook. Most chose the PowerPoint or booklet, while some were enthusiastic about creating their unique project….*"

Teacher 1, Teacher 2, and Teacher 3 proposed a "sharing time" in the classroom, where students can share their life stories, and the teacher can inspire them with motivational tales. The teachers believe that sharing time can help students appreciate their abilities.

Additionally, Teacher 1 and Teacher 2 agreed that relating classroom topics to real-life examples is beneficial. Teacher 1 used the example of teaching fractions to explain that students are more engaged when they understand how the lesson can be applied in the real world.

Teacher 4 and Teacher 5 have found that students are more motivated to learn when they see how the subject matter applies to their lives. However, the teachers' attempts to provide examples of these connections were not always effective in increasing student motivation. Teacher 5 shared that her approach of linking the subject matter to real-world relevance lacked specificity but still resulted in higher interest from students. All the teachers agreed that motivating students is a challenge, with Teacher 2 acknowledging that she does not have a good answer.

4.2.4 Monitoring

Teachers were questioned about the ways they assist their students in monitoring their learning during the interviews. The results showed that they employed various tactics, including rubrics, checklists, discussion, cooperative and peer-supported learning, time management techniques, providing feedback, and asking questions. Table 8 provides a summary of these results.

Table 6: Summary of Teacher Explanation of Classroom Practice Targeting Monitoring

Strategy	**Teacher**
Questioning	Teacher 1, Teacher 2, Teacher 3, Teacher 4, Teacher 5
Group Discussion	Teacher 1, Teacher 5
Individual Task	Teacher 2, Teacher 4 , Teacher 5
Rubrics/checklists	Teacher 1, Teacher 2, Teacher 3, Teacher 5

During the discussion, the teachers shared various methods to encourage students to monitor their learning. One of the techniques that they all highlighted was the use of questioning. For instance, Teacher 2 elaborated on her approach, where she guides students through resolving confusion by asking them questions. In addition, she stated that when some students express that they do not understand, she talks them through it. Teacher 2 shared, *"I assist my students in identifying at which point they lost their understanding in the text. Then, we read that passage, and I allowed them to read it aloud. I actively listen and then quiz them on their comprehension. My role is to guide them through any difficult text sections*." Teacher 3 explained that through questioning, she helps students understand their gaps in knowledge by guiding them. Other teachers also shared that they use scaffolding of questions to assist students in identifying what they know and what they do not know.

The teachers confirmed their endorsement of students using checklists and rubrics to track their advancement in learning activities. Teacher 1 gave an instance of her teaching approach, where she employs a "star" problem-solving technique for her elementary math students.

> "*I utilize a star that aids in problem-solving, with each point signifying crucial aspects to consider. This includes whether I have incorporated illustrations, descriptive words, numerical data, sentences, equations, charts, tables, or other organizing techniques. Additionally, have I discussed the issue with a partner*," explained Teacher 1.

4.2.5 Evaluation

When asked about ways to promote student self-evaluation and satisfaction after completing a learning task, the teachers provided several strategies. Writing and peer feedback were commonly mentioned, as well as feedback from the instructor, questioning, discussion, and opportunities to showcase completed work. Additionally, the teachers mentioned encouraging their students to feel proud of their learning achievements.

Table 7: Summary of Teacher Explanation of Classroom Practice Targeting Evaluation

Strategy	**Teacher**
Self-evaluation	
Self-marking/peer marking	Teacher 2, Teacher 4, Teacher 5
Questioning	Teacher, Teacher 2, Teacher 3, Teacher 4, Teacher 5
Discussion	Teacher 3, Teacher 4, Teacher 5
Satisfaction	
Comparison of previous tasks	Teacher 2, Teacher 3, Teacher 4
Display students work	Teacher 1, Teacher 2, Teacher 5
Questioning	Teacher, Teacher 2, Teacher 3, Teacher 4, Teacher 5

All the teachers reported using informal questioning to encourage reflective thinking about their work or performance. Teacher 3 provided an example of how she does it in her English writing class:

> "*I usually ask my students if they are happy with their writing and how they feel about it. I want them to evaluate themselves. It is usually an open-ended subjective question because it is a personal issue*." said Teacher 3.

Teacher 1, a 1st-grade teacher, also talked about similar informal conversations regarding the evaluation of learning and process:

> "*I try to talk to kids a lot one-on-one, and I have a lot of private conversations with kids. I try to talk to every student daily, but it is not always possible. However, I would say that I talk to 75% of my students in a one-on-one setting, maybe not big conversations, but I try to say something to someone every day, and often that will be an evaluative thing*."

Furthermore, teachers also highlighted the importance of displaying students' work to allow them to compare their work with their peers and evaluate their satisfaction with the learning outcome. Teacher 2 provided more details on this.

Teacher 2 explained:

> "*Gallery walks are always good when students can put up their work displays and have others walk around it and write down their assessment of what different students did. This changes their assessment of their actions because they compare themselves to others. So, it is not punitive, but in a, 'Oh wow, I would never have thought of that' kind of way*."

Teacher 5 also emphasized the importance of displaying student work to help them evaluate their satisfaction after a learning event. However, her suggestions for implementing this strategy in her classes did not include a formal process.

The findings of the teacher monitoring revealed that teachers have a good understanding of activities to support student monitoring of learning. However, the

findings of goal setting and evaluating learning events exposed a lack of knowledge among teachers.

4.2.6 Observations

Each teacher was observed during 35-minute class periods, and their actions that promoted metacognition and self-regulated learning were recorded using an observation protocol. The protocols used for the five teacher observations and evidence supporting each rating can be found in the Appendix. Table 10 shows the average scores for teachers and observations. The teachers were rated on a scale of 0 (not observed) to 4 (robust application), with the highest possible mean score being 4. The averages for the entire sample for observations one and two are also listed.

Table 8: Teacher Observation Means

		Section 1	**Section 2**	**Section 3**
No	**Name**	**Planning**	**Monitoring**	**Evaluation**
1	Teacher 1	2.25	3.00	1.67
2	Teacher 2	2.33	3.00	1.42
3	Teacher 3	2.00	3.50	2.00
4	Teacher 4	2.00	3.50	1.50
5	Teacher 5	2.00	3.50	1.33
	Mean	2.12	3.30	1.58

Upon examination of the averages from the classroom observations, a clear pattern emerged. Teachers demonstrated frequent actions to encourage self-regulated learning during the monitoring phase of learning events (mean = 3.3). However, they were less likely to demonstrate actions to encourage self-regulated learning during the planning (mean = 2.12) and evaluation (mean = 1.63) stages of learning events during the observed class periods. Across teachers and observations, the evaluation stage was the least practiced. The following is a more detailed account of teacher actions for each phase.

4.2.7 Planning

Teachers demonstrated less frequent actions in encouraging planning, goal setting, and evaluation than monitoring. For example, most teachers set a learning intention and success criteria at the beginning of the lesson, either verbally or by writing it on the board. However, no teachers encouraged students to set their own goals for the class or learning event, relying on teacher-generated goals.

Teachers provided instructions on required resources but did not engage students in discussing them. Students had internalized routines for various activities requiring resources by the second quarter of the school year. There was no evidence of teachers expecting students to maintain a written record of their activities. Instead, teachers used teacher-prescribed questions or activities. For example, Teacher 5 used a checklist as a scaffold to stimulate student thinking but needed to clarify that it was not a framework for the final product.

In summary, teachers focused more on monitoring than planning, goal setting, and evaluation. They provided learning intentions and success criteria, but students were not involved in goal setting or resource discussion. Teachers used teacher-prescribed methods and activities rather than expecting written records from students.

4.2.8 Monitoring

Teachers employed various strategies during the tracking phase of activities to motivate student self-regulation. They used time reminders, such as setting timers, to keep students focused on task objectives or assessments. The questioning was frequently used to ensure students' comprehension of tasks and track their progress. Teachers also encouraged students to discover and instruct themselves, directing them to relevant resources or providing task-specific methods. Finally, they emphasized individual approaches that work best for students, whether reading the entire passage or answering question by question.

4.2.9 Evaluation

Evaluation at the end of learning events received little time during observations, with an average score of 1.58 out of 4. Teachers did not explicitly reference the class learning intention and success criteria. However, some teachers led reviews or asked questions about the lesson to assess student understanding. Reflection was mainly focused on the content studied, not the learning process.

Three teachers discussed strategies and actions for upcoming activities. Teacher 3 provided feedback on the need for more practice, while Teacher 2 encouraged students to share problem-solving strategies and reflect on their approaches.

Teachers praised students for their actions during class, but none directly connected student effort to outcomes or addressed student satisfaction with learning outcomes. Overall, evaluation and reflection were limited, with more emphasis on content and less on the learning process and student satisfaction.

4.2.10 Triangulation of the Findings

After analyzing these findings, it is clear that there is a disconnect between teachers' theoretical understanding of self-regulated learning (SRL) and its practical implementation in the classroom. This inconsistency in beliefs is reflected in variations in teachers' ability to explain different aspects of SRL during interviews and observations. Although providing support to students during the learning process is essential, there is still room for improvement in effectively integrating planning and evaluation strategies into teaching practices.

5. Discussion

Research suggests that self-regulation is a crucial aspect of academic success in students (Memon *et al.*, 2022; Papageorgiou & Africa, 2022; Yan, 2019). However, as this study area

grew, concerns arose about whether teachers were adequately equipped to help students develop self-regulated learning skills. Therefore, this research investigated teachers' beliefs, knowledge, and classroom application of self-regulated learning.

The findings are based on research questions, discussing teacher beliefs, knowledge, and classroom practice in self-regulated learning. In addition, the Self-Regulation Teacher Belief Scale (SRLTBS) and teacher interviews were used to interpret the results, and they were compared to previous research on these topics. Finally, the chapter concludes by discussing the study's limitations, suggesting areas for future research, and outlining the implications for practice.

5.1 Teacher Beliefs about Self-regulated Learning

According to the results of the SRLTBS survey, teachers have a slightly positive perception of the importance of self-regulation. Most of the responses to the questions were higher than the neutral point on the scale. However, there was a significant difference in teachers' opinions regarding student readiness for self-regulation. This was reflected in a high standard deviation score of 1.05 for that question. The difference in opinions could be because the teachers were from primary and secondary schools. The primary teachers may have been more theoretical in their responses, while the secondary teachers may have been more practical, reflecting on their recent experiences (Dignath *et al.*, 2008; Soliman & Alenazi, 2017).

According to the data collected from the SRLTBS, many primary and secondary school teachers responded similarly by writing "Depends on the student" and "Strongly depends on the student" respectively. This observation is further supported by the qualitative data gathered from the interviews. For example, one primary school teacher stated, "*It depends on the student*" while a secondary English teacher said, "*It strongly depends on the student*." Similar findings were reported by (Perry *et al.*, 2020), who identified a recognition among teachers that student self-regulation capacities vary greatly.

During interviews, several teachers were questioned about their difficulties while incorporating self-regulation in their classrooms. They pointed out that a key factor impacting students' self-regulating ability was their developmental stage. For instance, Teacher 3 commented on the issue of goal setting, saying, *"I believe that primary school students are not developmentally ready for setting goals. Although some of them may be, most are not. Their goals and impulse control are often at odds*."

Teacher 4 stated that primary school students might not be fully capable of self-regulating, and she believes that adults often do much thinking for them. However, she said, "*They will not do that without. They do not self-regulate very much*." Teacher 5 also mentioned that age determines a student's readiness to accept and reflect on feedback. Similarly, Teacher 3 noted that in 8th grade, students are aware of their deficiencies but not their strengths, so it is essential to identify their talents. Such insights align with the findings of (Karlen *et al.*, 2020) on age-related variations in students' self-regulation understanding.

In the field of self-regulation, it has been acknowledged for some time that students vary in their ability to self-regulate at different ages. Research has also highlighted an age-related component to the quality of student engagement in self-regulated learning. Studies such as those conducted by (Brandmo *et al.*, 2020; Duncan & Garcia, 1993; Tsiakala, 2019) have found that primary school students often require external support from adults to effectively self-regulate.

However, research conducted by Dignath *et al.* in 2008 has shown that even young children can self-regulate. More recently, Hendawi (2019) challenged the belief that young children cannot self-regulate. The study further indicates a difference in teachers' opinions regarding students' self-regulating readiness. Teachers may recognize developmental differences, but the limited response choices may not have allowed them to express their nuanced opinions. This could be a contributing factor to the discrepancy in teacher responses.

5.2 Classroom Practice

The study also analyzed how teachers apply self-regulated learning (SRL) through teacher interviews and classroom observations. The interviews revealed teachers' strategies and activities to promote SRL in their students during the Planning, Monitoring, and evaluation phases. While some of these techniques align with recognized methods for encouraging self-regulation, like using exemplars or allowing students to evaluate themselves and their peers, the study found that these strategies were not consistently implemented in practice, especially during learning activities' planning and evaluation phases. These findings align with the observations of (Spruce & Bol, 2015), whose research underscored the gap between intended and actual practices in promoting self-regulated learning. Despite recognized techniques, translating these strategies into consistent classroom implementation remains challenging (Kramarski, 2017). Teachers provided a detailed account of their classroom practices, sharing several effective techniques to promote student reflection and evaluation after completing a task. These included informal questioning, group discussions, and self and peer marking, which various research studies have supported. In addition, reflective writing and peer review/cooperative learning have also been valuable (Laka, 2020; Latipah *et al.*, 2021; Pantiwati & Husamah, 2017)

All five teachers who were interviewed confirmed that they establish lesson objectives for their students by either displaying learning intentions and success criteria on the board or sharing them orally. However, during their interviews, students were not given any opportunities to set their own learning goals, despite Teacher 3 and 5 emphasizing the significance of student personal goal setting. Interestingly, this finding resonates with the study conducted by (Pintrich, 2000), which underscores the significance of fostering student autonomy in goal-setting to enhance their engagement and self-regulation.

Furthermore, teachers faced difficulty explaining how they would promote student self-motivational beliefs to enhance their learning. Even those who mentioned

methods such as cooperative learning, drawing connections to prior knowledge, and providing choices in assignments or activities did not consistently implement them during the observed lessons. Teacher 1, Teacher 2, Teacher 3, and Teacher 5 all mentioned using group or peer work to improve students' self-efficacy. This concurs with (Perry *et al.*, 2020) research, which highlights the positive impact of collaborative learning experiences on students' sense of competence and self-assurance.

Additionally, Teacher 3 and Teacher 4 highlighted the importance of connecting learning to real-world experiences to spark student interest and self-motivation. This observation aligns with the findings of (Perry *et al.*, 2020; (Ryan & Deci, 2020), who emphasize the importance of creating authentic and relatable contexts to foster students' intrinsic motivation and engagement.

Moreover, Alenezy *et al.* (2022) & Linde *et al.* (2022) research found that teachers trained in cooperative learning and metacognitive questioning had better student outcomes than those trained in cooperative learning alone. Many teachers highlighted the importance of cooperative learning and teacher-led questioning in evaluating student work and building self-efficacy. Although they did not make a direct connection, their statements align with the research findings.

The teachers claimed to use different techniques for promoting reflection among students. However, upon observation, only informal questioning and showcasing of students' work were noticed in all classes. Teacher 1, Teacher 4, and Teacher 5 described their informal strategies for encouraging reflection and evaluation. This was also reflected in the personal approach of the teachers. Only a handful of them mentioned using formal methods for reflection and evaluation, and most relied on their intuition and capacity to apply their newfound knowledge to assess learning.

During the monitoring stage of a learning event, teachers displayed more actions promoting student self-regulated learning (SRL) compared to the planning and evaluation stages. However, these actions were limited to questioning, time management, and attention focusing and were initiated by the teachers, not the students. In an interview, Teacher 5 mentioned that while these actions may not necessarily be metacognition, they can still encourage the process of metacognition by helping students internalize the process and reflect on their progress. This observation aligns with findings from previous research by (Aminah *et al.*, 2018), who also noted that teachers play a prominent role in guiding students' metacognitive processes during the monitoring phase. Similarly, (Spruce & Bol, 2015) highlighted that teacher-initiated actions during the monitoring stage can act as stepping stones for students' metacognitive awareness and skills development.

However, as Teacher 5 pointed out, most teachers' actions to promote SRL were not explicitly stated. The researcher found a need for more direct instruction in SRL techniques, previously highlighted in research by (Karlen *et al.*, 2020), who noted that strategy teaching is primarily implicit rather than explicit. Despite researchers calling for direct instruction of these skills, such as (Pintrich & Zusho, 2002), supportive learning environments and explicit strategy teaching are still uncommon. Instead, teachers should

provide direct explanations about SRL, offer multiple curriculum opportunities that foster SRL, and set positive examples of self-regulated learners for their students to learn from.

Researchers have identified essential self-regulated learning (SRL) aspects for classroom implementation, but teachers face challenges implementing them effectively. In interviews, some teachers expressed frustration about their ability to teach SRL due to concerns about student readiness and finding adequate time and space in the curriculum. This suggests a gap between what researchers have observed as essential and what teachers can implement in the classroom. Chan *et al.* (2023) also identified several limiting factors affecting students' ability to learn independently online. E-learning platforms, teacher characteristics, and student factors were highlighted as significant contributors to this limitation.

Teachers must deal with the effects of policies on various aspects of their classroom instruction, not just self-regulated learning. For example, as per (Bol, 2004), teachers have confessed to giving low-cognitive demand, conventional tests that resemble the state-mandated tests their students must take. These challenges and others that may not have been expressed can affect their capacity to include self-regulation and metacognition instruction in their teaching practices.

5.3 Implications for Practice

The research has highlighted the crucial requirement for specialized professional development programs that can address the gaps in teacher knowledge and practices related to self-regulated learning (SRL). To bridge the gap between teachers' positive beliefs and the practical implementation of SRL, a focused approach is recommended, with emphasis on practical strategies for planning and evaluation. These targeted programs should delve into the nuances of SRL, providing teachers with concrete tools and methodologies that they can apply in their classrooms.

Effective integration of self-regulated learning (SRL) into classrooms requires targeted professional development and collaborative efforts among teachers. Professional Learning Communities (PLCs) play a vital role in providing a platform for teachers to work together, share insights, and solve problems collectively. Collaborating across disciplines is equally important as it allows teachers from different subjects to bring diverse perspectives and innovative approaches.

In order to ensure a successful implementation of self-regulated learning (SRL) practices, ongoing coaching or mentorship is an essential component of the recommended comprehensive approach. It is crucial to provide individualized support tailored to the unique needs of each teacher, as every educator has their own strengths and challenges when it comes to incorporating SRL practices into their teaching methods. One effective method for modeling best practices is by integrating opportunities for teachers to observe and learn from experienced educators or instructional coaches. This can be achieved through a variety of means, such as classroom observations, one-on-one coaching sessions, or even virtual learning environments.

It is crucial to ensure that teachers are effectively implementing self-regulated learning (SRL) strategies in their classrooms. One way to do this is by establishing regular check-ins or follow-up sessions. These sessions provide a dedicated space for teachers to discuss the progress they have made in implementing SRL strategies, and assess the impact that these strategies have had on their students' learning outcomes. During these sessions, it's important to address any emerging challenges that teachers may be facing in implementing SRL strategies. This could involve discussing specific scenarios or situations where the strategies did not work as intended and brainstorming possible solutions to overcome these challenges.

The recommended approach to enhancing the education system is focused on cultivating a culture of continuous improvement. This goal is achieved by implementing a range of strategies that recognize and appreciate the efforts of teachers, while also providing them with opportunities for professional development and feedback. Among the integral components of this approach are regular feedback loops, which enable teachers to reflect on their teaching practices and make necessary adjustments. This process of reflection and adjustment is essential to the sustained improvement of the education system.

Another important component of the recommended approach is acknowledging and celebrating the successes of teachers. Teachers who are recognized for their achievements, whether through awards, public acknowledgment, or inclusion in professional development showcases, are more likely to persist in their efforts and continue to improve their teaching practices. This contributes to an environment of sustained improvement that benefits not only teachers but also students and the education system as a whole. By creating a culture of continuous improvement and recognizing the efforts of teachers, we can work towards a brighter future for education.

6. Limitations

Several limitations are pertinent to this study. Firstly, the sample size of teachers was small, confined to Fuvahmulah City and Laamu Atoll. While offering valuable insights into these teachers' perceptions, the findings might lack generalizability to a broader educator population. Secondly, the data obtained from the Self-Regulated Teacher Beliefs Scale (SRLTBS) relied on self-report measures, potentially introducing bias and social desirability effects. This could influence result accuracy. Lastly, time constraints during the study may have curtailed the depth and duration of classroom observations and interviews, possibly limiting a comprehensive understanding of the teachers' self-regulated teaching practices and beliefs.

7. Suggestion for Further Research

Future research should include a diverse group of teachers from various locations and educational levels to understand better how teachers implement self-regulated learning.

Longitudinal studies can track changes in teachers' beliefs and practices related to SRL. Specific interventions targeting areas where teachers may have limited comprehension of SRL can provide evidence-based approaches to improve SRL pedagogy. Cross-cultural studies can highlight cultural influences on teaching approaches. Investigating the link between teachers' SRL beliefs and practices and student success can provide empirical evidence supporting the integration of SRL practices in educational settings.

8. Conclusion

This study explored teachers' understanding and beliefs about self-regulated learning (SRL) and how they apply it in the classroom. A group of 49 teachers completed a questionnaire, and five teachers were chosen for observation and interviews. The findings indicate that teachers have some awareness of SRL but have gaps in their knowledge, particularly in goal setting and evaluation. Teachers hold moderately positive beliefs about SRL, but there is variation in their perceptions of students' readiness for self-regulation. Observations and interviews revealed that teachers mainly promote SRL during the monitoring phase, but deficiencies exist in the planning and evaluation stages. In addition, teachers face challenges in implementing SRL due to student readiness and time constraints. Providing professional development opportunities, such as in-service training, could enhance teacher practice of SRL and benefit students' academic performance.

Conflict of Interest Statement
The authors declare no conflicts of interest.

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