

The Impact of Self-Assessment with Goal Setting on Students' Motivation: Results of a Study on Primary School Students in Greece

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Abstract

The primary objective of this study is to investigate the contribution of self-assessment with goal setting (SAGS), which was implemented with the self-directed learning (SDL) approach, to the development of learning motivation in the context of language teaching to sixth-grade students in primary schools. An experimental design was used in the research, with 2 groups: experimental and control. The research was conducted in public primary schools in Rhodes for 6 weeks (from the beginning of March 2022 to the middle of April 2022). The research sample included a convenience sample consisting of 163 students. The control group consisted of 78 students, and the experimental group consisted of 85 students. According to the findings, students in the experimental group developed a desire to learn after the implementation of SAGS. The comparison between the control group and the experimental group revealed a statistically significant difference in the mean scores of the Motivated Strategies for Learning Questionnaire (MSLQ). Specifically, the mean MSLQ scores of students in the experimental group were higher than the mean MSLQ scores of students in the control group.

Keywords: goal-setting, language, motivation, primary school, self-assessment, self-directed learning

1. Introduction

Students' experience of assessment influences their approach to learning. Also, through the focus on self-assessment practices, the importance of learner participation in assessment practices has been noted (Bourke, 2016). A study of the relevant literature reveals the need for both students and teachers to become more literate in assessment, not only to address potential dissatisfaction with assessment but also to make assessment more effective and efficient (Price et al., 2012; Smith et al., 2013; Lubbe et al., 2021). Besides, assessment literacy is a key professional requirement of education systems (DeLuca et al., 2016; Lubbe et al., 2021).

At the same time, assessment practices in the 21st century need to be revised and redesigned to promote self-directed learning and assessment literacy. Assessment literacy includes, among other things, the development of self-assessment skills (Lubbe et al., 2021), while self-assessment is an important component of self-directed learning, which was originally developed in the field of adult education (Nor & Saeednia, 2009). Specifically, the implementation of self-assessment through self-directed learning is an approach where teaching and learning are student-centred and allow the student to take control of their own learning process (Sosibo, 2019). According to Pintrich (2000) and Clift (2015) there is a need for teachers to promote self-regulated learning directly by explicitly teaching metacognitive strategies.

The study of the relevant literature shows that there is no research investigating the effect of self-assessment with goal setting (SAGS) using the educational method of self-directed learning (SDL) on students' motivation. This study aims to fill this gap. Specifically, the present research aims to investigate the contribution of SAGS, which is implemented through the educational method of SDL, in developing learning motivation in the context of language teaching to sixth-grade students in primary school. Therefore, the findings of this study are expected to contribute to highlighting the role of SAGS in primary education and whether its implementation can have positive effects on learning motivation. Specifically, this research attempts to highlight the role of SAGS as an effective teaching strategy and to confirm the dynamic contribution of goal-setting theory to learning motivation. Furthermore, the findings are expected to demonstrate that self-directed learning can be applied to children, such as sixth-grade students. In addition, the findings of this study are expected to demonstrate that primary school students' ability in self-directed learning can be developed through teaching learning processes and strategies (Van Deur, 2017). Moreover, the findings of this study are expected to prove that metacognitive strategies can be taught to primary school students and that, in particular, students can be taught self-regulation. Also, this research attempts to adapt the process of SAGS to a known model of SDL, which will constitute the educational intervention and which is an innovation of this study. Furthermore, by

providing a framework for the implementation of the SAGS, this study is expected to contribute to enhancing assessment literacy, as research participants are expected to become more literate in assessment. Moreover, the tools with which the teacher got involved throughout the research and the process of self-assessment can motivate teachers to use these tools and implement this form of assessment, which is so far a not so familiar process for many teachers in terms of its implementation and its results.

2. Theoretical Approach

2.1 Student Self-Assessment: a Conceptual Approach

Student self-assessment in education involves a wide variety of mechanisms and techniques through which the student describes and assesses the quality of learning processes and their products (Panadero et al., 2016). Student self-assessment is seen as a process that students work on to self-regulate their learning. Self-regulation refers to the control one exercises over one's thoughts, actions, emotions, and motivations through personal strategies to achieve one's goals (Panadero & Alonso-Tapia, 2013). It is therefore an active learning process that involves setting learning goals and identifying the approaches and resources needed to achieve those goals, as well as responding to feedback to enhance the final learning outcomes (Ng, 2016).

2.2 Self-Assessment with Goal Setting

SAGS involves self-assessment, which involves comparing current performance with the goal (Schunk, 1990). Goal setting is a process by which students are guided on the next steps in their learning, while metacognitive strategies help students to achieve their learning goals. The five principles of the goal-setting theory in Locke and Latham (1990, as cited in Clift, 2015), who are considered the founders of this field, are (a) clarity; (b) challenge; (c) commitment to the goal, which is reinforced by self-efficacy; (d) feedback which individuals need in order to monitor their progress; and (e) task complexity. The relevant literature argues that goal setting can enhance autonomy and competence, thereby influencing students' intrinsic motivation and abilities, and is a tool for students to actively engage in their learning (Clift, 2015).

2.3 Self-Directed Learning

Self-directed learning (SDL) is a humanistic approach in which teachers act as facilitators. In this context, active learning is encouraged and responsibility for learning is extended to the learner. In addition, it promotes children's ability to make good choices, to determine their choices and to be responsible for their decisions. According to Robinson and Persky (2020), in SDL, the learners set goals, determine how their progress will be assessed, determine the structure and sequence of activities and timetable, identify resources, and seek feedback. It is worth mentioning that the first step in learning to self-direct one's learning is the ability to self-regulate one's learning activities and task performance (Jossberger et al., 2010). In order to understand SDL, several models have been proposed (Nor & Saeednia, 2009). One of these models is Mok and Cheng's (2001) model, presented in Figure 1, on which the educational intervention of this research was based.

2.4 Motivation

Motivation refers to anything that causes or compels a person to act (Costaridou-Euklidi, 2012), influences behaviour, and is, therefore, one of the most fundamental learning factors. Specifically, learning motivation can be either intrinsic or extrinsic, depending on whether the impetus for a particular behaviour, action, or choice is derived from intrinsic or extrinsic factors, respectively. Extrinsic ones originate from the external environment, whereas intrinsic ones originate from the individual (Cafetzopoulou, 2015). The objective of teachers is to increase students' intrinsic motivation so that they actively participate in the educational process (Konstantinou X.I. & Konstantinou I.X., 2017). The motivation of children in school is acknowledged as a significant factor that contributes to their school adaptation (Guay et al., 2005).

2.5 Student Self-Assessment and Motivation Research

In Greek higher education, self-assessment has been shown to increase motivation (Pournias, 2009). On the other hand, in secondary education in Greece, self-assessment has contributed to increasing motivation in physics learning (Nikou & Economides, 2016), whereas in primary education, self-assessment has increased students' English learning motivation (Chalkia, 2012; Anastasiadou, 2013). Furthermore, the positive effects of self-assessment on motivation have been observed in other structures and are associated with the teaching of English as a second language (Heidarian, 2016).

Internationally, self-assessment has contributed to the improvement of motivation in secondary education in English (Dalala, 2014), and in physical education (Peyton, 2017).

Moreover, Black and William (1998) and Kavaliauskiene (2004) argued that the process of self-assessment should be implemented in language teaching since it enhances students' motivation. Focusing on writing, research demonstrates that self-assessment increases students' motivation (Birjandi & Tamjid, 2010; Dalala, 2014; Anastasiadou, 2013; Heidarian, 2016).

2.6 SAGS and Motivation Research

Yan et al. (2020) noted an increase in motivation in English and history, as well as in mathematics in primary education, where SAGS was implemented (Clift, 2015). Moreover, because SAGS involves goal setting, research indicates that goal setting enhances students' motivation (Madden, 1997; Cunningham et al., 2000; Andriessen et al. 2006; Smithson, 2012; Rowe et al., 2017). On the contrary, recent research by Sides and Cuevas (2020) revealed that goal setting has no effect on the motivation of primary school students.

2.7 SAGS and SDL Research

In terms of investigating SAGS in combination with SDL, the literature identified research on self-assessment and SDL but no research examining SAGS with SDL. Specifically in higher education, Hung (2009) investigated how self-assessment could be used by two students learning English as a foreign language when they write in their own electronic portfolio. According to the main findings students applied a range of writing, cognitive, memory, and metacognitive self-assessment strategies to approach specific writing tasks and the collection of electronic portfolios promoted students' self-assessment practice and, thus, encouraged self-directed language learning. Also, in higher education, Martínez et al. (2020) examined whether online self-assessment improves students' performance. Based on the main findings, online self-assessment can help students take on an active role in their learning process, improve their performance, promote self-directed learning, and develop metacognitive skills. Furthermore, in secondary education, Yu (2013) investigated how self-assessment can facilitate self-directed learning. Based on the findings, students who participated in the self-assessment activities gained more benefits than those who did not, and additionally noted that many of the elements of self-directed learning are found in the students' self-assessment task. In addition, self-assessment tools help students reflect on their learning and have a positive effect on metacognition and self-directed learning.

2.8 Critical Review of Relevant Literature

In conclusion, the study of the relevant literature review shows a gap in the examination of the influence of self-assessment on students' motivation in language learning and a dearth of studies examining the implementation of SAGS in Greek primary schools. Furthermore, with regard to the investigation of SAGS in combination with learning motivation, most of the studies refer to only goal setting as an examined variable and its effect on learning motivation, while there are fewer studies that examine self-assessment with the theory of goal setting, i.e., SAGS. Finally, the study of the literature regarding SAGS and SDL led to the identification of studies that have examined self-assessment in relation to SDL, but these are few, while no research was identified that links SAGS with SDL or proposes a teaching intervention that applies SAGS in the context of SDL.

3. Method

3.1 Purpose

The main purpose of this research is to investigate the contribution of SAGS, which is implemented with the self-directed learning (SDL) method, to improving the quality of the educational process in the context of language teaching to sixth-grade students in primary schools. Specifically, the purpose of this study is to determine whether the implementation of SAGS within the SDL educational method can contribute to the development of learning motivation. In this context, an SDL educational scenario utilising SAGS was designed, implemented, and evaluated.

3.2 Research Questions

Following are the research questions posed and the attempts to answer them:

First Research Question: Can the implementation of SAGS, which is implemented using the SDL educational method, contribute to the development of sixth-grade students' motivation in the context of language teaching?

Second Research Question: Is there a statistically significant difference between the level of motivation of sixth-grade students who participated in the implementation of SAGS in language teaching and those who did not?

3.3 Null Hypotheses

Alternatively, the research's null hypotheses are as follows:

H_01 : The implementation of SAGS, which is implemented with the SDL educational method, does not contribute to the development of sixth-grade students' motivation in the context of language teaching.

H_02 : There is no statistically significant difference between the level of motivation of sixth-grade students who participated in the implementation of SAGS in language teaching and those who did not.

3.4 Sample

The students who participated in the research came from five public primary schools in the island of Rhodes (Greece), specifically from 10 sixth-grade classes, and the teachers ($N = 10$) of PE70 teacher specialization who supported this research did so voluntarily. In detail, the sample consisted of 163 students, who were divided into two groups. The control group consisted of 78 students from 5 classes of the sixth-grade, and the experimental group consisted of 85 students from 5 classes of the sixth-grade. Additionally, from the 163 students who participated, there were 83 girls and 80 boys.

3.5 Instruments

Flowchart. The flow chart was used as a diagrammatic representation to identify the steps in writing a topic and was intended to facilitate the students' writing in the experimental group. Specifically, the flowchart had at the top the development title of the topic that the students were asked to write about and follow in order to help them structure their writing and follow a proper order of development.

Cause and Effect Diagram, or Ishikawa (Cause and Effect Diagram) or Fishbone. The Cause and Effect Diagram, or Ishikawa or Fishbone, can be used to represent the learning outcome or goal we want to achieve and the ways in which it can be achieved (Bocala et al., 2014). The Fishbone can show the necessary elements that a work must meet in order to be successfully completed. In this case, the work concerned the written texts that the students were asked to produce, while this particular diagram was used by the experimental group. Specifically, in terms of the items included in the diagram, these relate to grammatical and syntactic rules for each chapter taught to the students

Brainstorming. The brainstorming method helps to encourage individuals to express their views freely and creatively (Giannaros, 2008) and was used by the teachers and students in the experimental group to jointly identify the quality criteria that the students' work should meet. These criteria relate to the following: a) responsiveness of the written text to the purpose for which it is produced, b) correct use of punctuation, c) correct spelling, d) correct use of many different words, e) comprehensible writing, f) clear writing.

Self-assessment worksheet with goal setting. The self-assessment worksheet with goal setting was made and used by Clift (2015) in her doctoral research and, with the necessary adaptations, was used for the needs of this research. It consisted of three parts. Part I was a list of learning objectives. The objectives were written in friendly and understandable language for students. Part II consisted of two short questions, "What am I good at?" and "What do I need to work on more in relation to writing?", while Part IIIA consisted of the goal-setting framework, where the students in the experimental group were asked to answer the question, "What should I do next?" Finally, in Part IIIB, students were asked to set two learning targets for their next writing task.

Weekly self-assessment questionnaire. The weekly self-assessment questionnaire is an adaptation of the instrument used by DeMent (2008) in her doctoral research. Specifically, students in the experimental group were asked to answer any four of seven questions provided and engaged in a process of reflection on the writing they had done within a week.

Worksheet with guiding questions. The worksheet with guiding questions was used by Kim (2015) in her research, which was conducted in a secondary school mathematics class. It was modified to be used for the purposes of this study. In detail, students in the experimental group were asked to answer guiding questions after completing a writing task. Specifically, students were asked to identify areas in which they performed well and areas in which they needed improvement. In addition, the worksheet with the guiding questions was also completed by the teachers as they provided feedback to each student individually.

Resources worksheet. Students in the experimental group were asked to locate and write about the appropriate resources they could use in order to get help for their writing, such as their dictionary, diagrams, language book, etc. A similar worksheet was used by Ashworth (1983), who investigated self-directed learning in primary school.

Goal-setting chart. The goal-setting chart was used by the students in the experimental group to set their goals for their writing. A similar chart was used by DeMent (2008) in her doctoral research.

Specifically, the goal-setting chart consisted of the following three categories: a) organization, b) conventions, and c) style. Each category consisted of several objectives, and students selected one objective from each category at a time in order to work on it.

Motivated Strategies for Learning Questionnaire

A questionnaire was used to investigate the effect of SAGS on motivation. Pintrich et al. (1991) used the Motivated Strategies for Learning Questionnaire (MSLQ) to measure the dependent variable of motivation. Specifically, specific scales from the fully structured questionnaire developed by Pintrich et al. (1991) were used. Clift (2015) also employed these scales in her investigation of the effect of SAGS on elementary students' motivation in mathematics. The questionnaire included 43 7-point Likert scale questions. In detail, it consisted of two scales. The first scale consisted of 22 questions regarding the motivation and attitudes of students. The second scale consisted of 21 questions regarding learning strategies and study skills. To determine the reliability of the internal consistency of the questionnaire, Cronbach's alpha was calculated and found to be $\alpha = .905$, which is considered to be very reliable given that the internal consistency of the questionnaire should be at least $\alpha > .70$.

3.6 Research Procedure

The research procedure involved five phases, which are analysed below. In the first phase, the educational intervention and the research instruments were designed. In the second phase, February 2022, a pilot survey was conducted with 19 sixth-grade students from a primary school class on the island of Rhodes in order to test the instruments that were to be used so that they could be improved if necessary. In the third phase, training was provided to the teachers who participated in the research regarding the implementation of the educational intervention. In detail, the teachers in the experimental group received training on the design and implementation of SAGS in language teaching, while the control group did not receive similar training. A special training guide on student self-assessment was created for the purposes of the training. In the fourth phase, the educational intervention was applied to the students of the experimental group. Specifically, the quasi-experimental design was chosen. Before the research was conducted, parents' written consent was requested in order for their children to participate in the research. The intervention lasted six weeks (early March to mid-April 2022), and both groups received language instruction seven hours per week. During the study, the researcher had very frequent contact with the teachers by phone, email, and in person, with strict compliance with COVID-19 protocols. In addition, the researcher visited schools in order to participate in the interventions and supervise the students' self-assessment procedures. In the last and fifth phase, the intervention was evaluated in terms of its ability to contribute to the development of learning motivation in the context of language teaching to sixth-grade students in primary schools.

3.7 Data Collection Procedure

Data was collected in two phases: once before the intervention and once after the intervention was completed. Specifically, the researcher collected material from all teachers and discarded any materials collected from students who did not participate in the research. It should be noted that the pretest as well as the posttest were alphanumerically coded and each teacher knew only the alphanumeric code of their own students in the classroom who participated in the research.

3.8 Statistical Methodology

Descriptive and inferential statistical analysis was carried out in order to analyse the research data. A significance level of $p < .05$ was used for all analyses to determine if the null hypotheses could be rejected. Confidence limits were set at 95%. All analyses were performed with the statistical program IBM SPSS Statistics 25. In addition, the Microsoft Excel program was also used, in which the data was entered before being transferred to the IBM SPSS Statistics 25 statistical program for processing for analysis.

A goodness-of-fit test was performed using a statistical criterion to test if the data followed the normal distribution. Specifically, Kolmogorov-Smirnov (K-S) was used because the sample size was $N=163 < 50$. This criterion and Lilliefors' correction was used to test the null hypothesis that the shape of the distribution of the data in this study does not differ from the normal distribution (Roussos & Tsaousis, 2011). Since the data did not follow a normal distribution, non-parametric criteria were applied to test the statistical hypotheses, while parametric criteria were applied to obtain information related to means and standard deviations. For the equivalence test, a test of the statements related to the pretest for the level of motivation was performed and addressed to the students of the experimental and the control group. In this case, the nonparametric Mann-Whitney/U test was applied. The results showed that the control and experimental groups were equivalent in motivation based on the pretest ($U(85,78) = 3064.000, p = .404$).

In order to test H_{01} , the non-parametric Wilcoxon Signed-Rank Test was applied, while the related t-test samples, which are the parametric analogue of the Wilcoxon Signed-Rank Test, were used to obtain information on means and standard deviations. In this case, the level of motivation of the experimental group was tested before and after the experimental treatment. Moreover, the non-parametric Mann-Whitney U test was applied to test H_{02} .

In order to obtain information regarding means and standard deviations the t-test for independent samples, which is the parametric analogue of the Mann-Whitney U test, was utilized. In this case, the level of students' motivation in the control and experimental groups was compared. Finally, ranks were calculated because the distribution function of the data was not normal. Significant information was obtained from the ranks regarding the number of students who did or did not show improvement or remained stable in the two groups (control and experimental) as regards to the dependent variable (the level of students' motivation, as measured by the MSLQ).

3.9 Phases of the Educational Intervention

The educational intervention of this research was based on the model of self-directed learning in Mok and Cheng (2001) and the phases of the educational intervention are presented in detail below.

Phase 1: Prior. In this phase the teacher discussed with the students skills that are very important such as autonomy, organisation, discipline, self-assessment, and the importance of students accepting feedback and reflecting. In this way it prepared them for the process of self-assessment (Ministry of Education of Ontario, 2007).

Phase 2: Plan. In this phase, the students discussed with the teacher their learning objectives in relation to writing. Setting objectives helps students to be motivated and to think that the objectives are known and achievable, and it is very important to formulate the objectives in a positive way.

Phase 3: Learn. In this phase, teachers encouraged students to make use of anything that could help them in the production of their written text. Before each writing activity, the teacher presented to the students a visual representation (fishbone diagram) of the necessary grammatical or syntactic phenomena for the production of written language in each chapter of language. Furthermore, the flowchart was presented to the students. The flowchart showed the stages of production of the writing topic. Based on the above, the students together with the teacher determined the resources for achieving the objectives (e.g., a dictionary, use of grammatical and syntactic rules, flow charts, etc.) and completed the resources worksheet with the teacher's help. Furthermore, students were trained to apply common quality criteria to all their writing and were encouraged to participate in the development of these criteria. These criteria emerged through the brainstorming technique. In addition, the goal-setting chart was provided in this phase, where students selected goals in terms of writing which were linked to the quality criteria and which they felt they needed to work on.

Phase 4: Monitor. In this phase students were given a writing production topic and asked to develop it and make use of what they had learned, i.e., to use the material (diagrams, quality criteria, dictionary, etc.). In addition, after completing their work, they were asked to assess it and reflect on the learning objectives they had set. Specifically, in this phase students completed (a) Part I, II, and IIIA of the worksheet of SAGS; (b) the worksheet with guiding questions; and (c) were asked to answer the weekly self-assessment questionnaire.

Phase 5: Outcome. After completing phase 4, students presented the learning outcome, i.e., the produced written text, and in phase 6 they received feedback from both their peers and their teacher.

Phase 6: First order feedback. After students completed Parts I, II, and IIIA of the worksheet of SAGS in a previous phase, they participated in goal-setting meetings where they worked together in groups or pairs and were supervised by the teacher. Based on the meeting and self-assessment, each student completed Part IIIB of the worksheet of SAGS, where they had to set two learning goals for their next assignment. In this phase, the teacher collected and provided written feedback on the worksheet of SAGS completed by each student and suggested improvements where needed. Furthermore, the teacher also completed and gave the students the worksheet with guiding questions. After the first feedback, phases 3, 4, and 5 were repeated in order to improve the students' learning strategies and behaviours or to acquire learning strategies and behaviours that they did not have before.

Phase 7: Second order feedback. The second feedback leads to a repetition of the whole intervention in case no desired improvement has been observed in the students' cognition, metacognition, and motivation. In this phase, the posttest was given in order to see at the end of the intervention if there were any changes in learning motivation, as measured by the MSLQ.

4. Results

4.1 Comparison Between the Pre- and Post-test Levels of Sixth-Grade Students' Motivation Who Participated in the Implementation of SAGS in Language Teaching

Table 1 demonstrates that there was a non-statistically significant increase in student motivation in the experimental group ($Z = -1.650$, $p = ns$). Therefore, the null hypothesis (H_0) cannot be rejected.

Then, since the MSLQ consists of two scales (the scale concerning students' motivation and attitudes and the scale concerning learning strategies and study skills), more detailed data on the motivation of the experimental group students are provided separately for each scale. The ranks of the MSLQ scale pertaining to the motivation and attitudes of the experimental group students are displayed in Table 2. Moreover, Table 3 presents the ranks for the MSLQ scale related to the learning strategies and study skills of students in the experimental group.

4.2 Comparison of the Level of Motivation Among Sixth-Grade Students Who Participated in the Implementation of SAGS in Language Teaching and Those Who Did Not Participate

Table 4 demonstrates that there is a statistically significant difference in the level of motivation between the experimental and control groups, as measured by the MSLQ ($U=2477.000$, $p=.005$). Therefore, the null hypothesis (H_02) is rejected. The posttest motivation levels of the experimental group, as measured by the MSLQ scores ($M = 5.33$, $SD = 0.91$, $n = 85$), were higher than those of the control group ($M = 4.94$, $SD = 0.87$, $n = 78$).

5. Discussion

The findings of the present study show that the implementation of SAGS has a positive effect on students' motivation since students in the experimental group scored higher on the MSLQ ($M = 5.33$, $SD = 0.91$, $n = 85$) in the posttest compared to the pretest ($M = 5.19$, $SD = 0.81$). Specifically, the majority of students in the experimental group (53%) either increased (48%) or maintained (5%) their motivation and study skills based on the MSLQ scale, while a smaller proportion demonstrated a decrease (47%). Then, in terms of the results related to the MSLQ scale for learning strategies and attitudes, the greater majority of students in the experimental group (64.7%) either improved (62.4%) or maintained (2.3%) their learning strategies and attitudes, while a much smaller percentage (35.3%) showed a decrease. Comparing the level of motivation between the experimental group and the control group uncovered a statistically significant difference ($U=2477.000$, $p=.005$). In the posttest, students in the experimental group scored a higher mean ($M=5.33$, $SD = 0.91$, $n = 85$) than those in the control group ($M=4.94$, $SD = 0.87$, $n = 78$). This finding is consistent with other research indicating that students who used self-assessment increased their motivation (Chalkia, 2012; Anastasiadou, 2013; Dalala, 2014; Clift, 2015; Nikou, & Economides, 2016; Peyton, 2017; Yan et al., 2020). In the present study, specifically, students in the experimental group were asked to self-assess their language skills, particularly their writing, and this led to an increase in their motivation. This result is consistent with other studies that have demonstrated the positive effect of self-assessment on students' motivation in writing (Birjandi & Tamjid, 2010; Anastasiadou, 2013; Heidarian, 2016). In addition, Black and William (1998) and Kavaliauskiene (2004) argued that one of the reasons for incorporating self-assessment in language teaching is that it increases students' motivation, which is confirmed by the results of the present study that proves the positive impact of the self-assessment process on language learning.

Furthermore, students who participated in the implementation of SAGS were able to assess the quality of their work and, as a result, had a clearer understanding of the learning outcomes they were pursuing, which increased their learning motivation (Yu, 2013). Clift (2015) demonstrated that SAGS has a positive effect on students' motivation. In addition, the findings of the present study are in line with previous research indicating that goal setting increases students' motivation (Madden, 1997; Cunningham et al., 2000; Andriessen et al., 2006; Smithson, 2012; Rowe et al., 2017). On the other hand, the findings of the present study contradict those of Sides and Cuevas (2020), who concluded that goal setting had no impact on the motivation of primary school students.

In addition, the findings of the present study demonstrate that metacognitive strategies can be taught to primary school students. Specifically, this research is consistent with the findings of other related research papers, where teachers used goal setting to teach self-regulation to students (Peters, 2012; Clift, 2015). More specifically, in the present study, the implementation of SAGS to students involved a number of processes (clarity of learning objectives, student engagement in monitoring the learning process, and reflection on the final product or learning outcome) that contributed to students learning to use self-regulation strategies and enhanced their ability to learn. The contribution of these processes to self-regulation and enhanced learning is also noted by other researchers (Nicol & McFarlane-Dick, 2006; Brown & Harris, 2013; Panadero & Alonso-Tapia, 2013). Through the implementation of the SDL educational method, the students of the experimental group increased their motivation.

Therefore, self-directed learning can be applied to children such as the sixth-grade elementary school students who participated in the intervention despite the fact that it was originally developed for adult education (Nor & Saeednia, 2009). The primary school students' competence in self-directed learning can be developed through teaching effective teaching strategies (Van Deur, 2017), such as SAGS, and can positively affect their motivation.

These findings can be used in the wider reference population of the survey. The findings of this research contribute to highlighting in detail the contribution of SAGS to the educational process. This has implications for both teachers and

primary school students. It is important for teachers to adopt SAGS and for the students to engage with it through a specific and planned process followed in the intervention, utilizing its specific educational model and teaching materials. By focusing on the teaching materials of the present intervention, namely the tools used by teachers and students, this research provides new tools for sixth-grade language-teaching, which contribute to the development of learning motivation.

6. Conclusions

Based on the findings of this research and the above analysis, the following conclusions can be drawn. SAGS implemented with the SDL educational method in the context of language teaching to sixth-grade students contributed to the development of learning motivation. Specifically, the findings of the study revealed that the implementation of SAGS had a positive effect on the motivation of experimental group students, as measured by the MSLQ scales. Most students in the experimental group either increased or maintained their motivation and study skills. Furthermore, the greater majority of students either maintained or improved their learning strategies and attitudes.

The comparison between the control group and the experimental group revealed a statistically significant difference in the mean scores of the MSLQ, which measured the level of students' motivation. In particular, it was observed that after the implementation of SAGS, the mean MSLQ scores of students in the experimental group were higher than those of students in the control group.

Regarding the theoretical implications of the research, it is noted that the findings of the present study support the theory of self-directed learning and contribute to enriching the literature with a learner-centred teaching intervention that teachers can use to promote students' self-directed learning. Moreover, primary school students can be taught metacognitive strategies, and therefore, it is important for teachers to provide students with opportunities to develop such strategies that contribute to their self-regulation through SAGS. In addition, the research has practical implications for those involved in education such as the Ministry of Education etc. In particular, schools need to help students acquire skills necessary for life and become more literate in assessment. However, in order to do this, it is necessary that students and teachers have the time needed to implement innovative self-assessment educational interventions. In addition to time, it is important for the educational stakeholders involved to ensure that primary teachers are trained in teaching interventions related to student self-assessment.

Finally, regarding the training of teachers, the writing of a training guide on self-assessment is also considered important. The training guide, which was formulated for the training of the teachers participating in this research, is a very useful material, which could be the basis for the Institute of Educational Policy of Greece to formulate a training guide on student self-assessment.

Limitations of this study include the choice of a quasi-experimental study (Rovai et al., 2014; Clift, 2015) as there was a possibility that the groups were not equivalent, which would pose a threat to internal validity (Creswell, 2012). In order to avoid and reduce this threat, a pretest-posttest design was used. Another limitation relates to threats that may arise during the experimental process and are linked to the research procedures. One potential threat to internal validity relates to the fact that participants in the experiment may become familiar with the measurements and may remember the responses in controls made at a later time. To avoid this threat, outcomes were measured only at the beginning and end of the intervention and after a total of six weeks had passed. Finally, an additional limitation of this study is geographical, as the research was limited to schools located on the island of Rhodes.

As a suggestion for further research, it would be interesting to investigate the effect of SAGS on other sixth-grade subjects, such as history, mathematics, geography, and physics. In addition, it is also necessary to qualitatively investigate student self-assessment with a quantitative approach in order to triangulate the results and to investigate the effect of self-assessment in relation to variables such as the self-regulation and self-esteem of primary school students.

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Tables and Figures

Figure 1. Self Directed Learning Model
Source: Yu (2013)

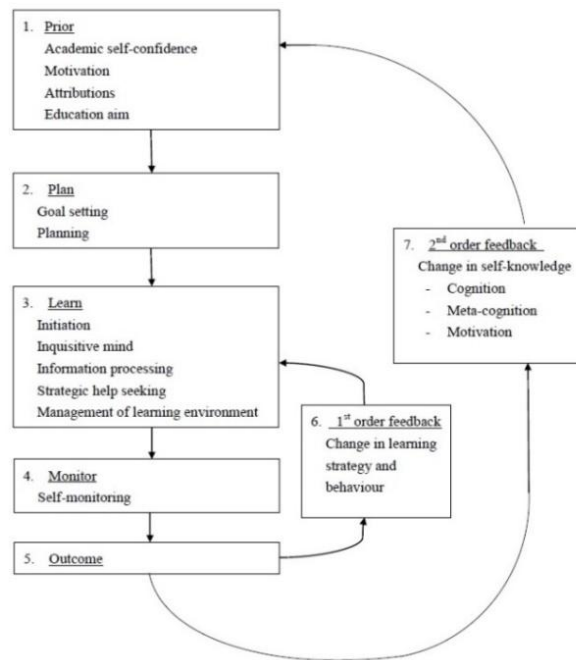


Table 1. The Level of Motivation of the Experimental Group Students Before and After the Intervention

Group	Pretest				Posttest				Statistical significance	
	M	SD	Mdn	Range	M	SD	Mdn	Range	Z	p
Experimental (n=85)	5.19	0.81	5.30	3.77	5.33	0.91	5.28	4.17	-1.650	.099

M=Mean; SD=Standard Deviation; Mdn=Median

Table 2. The Ranks for the MSLQ Scale Pertaining to the Motivation and Attitudes of the experimental Group

		N	Mean Rank	Sum of Ranks
Scale of motivation and attitudes	Negative Ranks	40 ^a	39,93	1597,00
	Positive Ranks	41 ^b	42,05	1724,00
Experimental group (n=85)		4 ^c		
Total		85		

a. Scale of motivation and attitudes after the intervention < Scale of motivation and attitudes before the intervention

b. Scale of motivation and attitudes after the intervention > Scale of motivation and attitudes before the intervention

c. Scale of motivation and attitudes after the intervention = Scale of motivation and attitudes before the intervention

Table 3. The Ranks for the MSLQ Scale Pertaining to Learning Strategies and Study Skills of Students in the Experimental Group

		N	Mean Rank	Sum of Ranks
Scale of learning strategies and study skills	Negative Ranks	30 ^a	41,57	1247,00
	Positive Ranks	53 ^b	42,25	2239,00
Experimental group (n=85)		2 ^c		
Total		85		

a. Scale of learning strategies and study skills after the intervention < Scale of learning strategies and study skills before the intervention

b. Scale of learning strategies and study skills after the intervention > Scale of learning strategies and study skills before the intervention

c. Scale of learning strategies and study skills after the intervention = Scale of learning strategies and study skills before the intervention

Table 4. The Motivation Levels of Students in the Experimental and Control Groups Before and After the Intervention

Group	Pretest				Posttest				Statistical significance	
	M	SD	Mdn	Range	M	SD	Mdn	Range	U	p
Experimental (n=85)	5.19	0.81	5.30	3.77	5.33	0.91	5.28	4.17	2477.000	.005
Control (n=78)	5.09	0.84	5.23	4.05	4.94	0.87	5.01	3.77		

M=Mean; SD=Standard Deviation; Mdn=Median