



## The Influence of Self-Regulated Learning in Piano Learning

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### Abstract

Self-regulated learning is a process in which the student sets appropriate learning goals for himself or herself and drives himself or herself, with or without the support of the teacher, to actively use learning approaches and achieve the learning objectives. The psychological mechanism of piano learning self-regulation is investigated according to the self-regulation learning theory, and a plan for cultivating students' piano self-regulation learning ability is proposed based on four aspects of students' cognition, motivation, behavior, and learning situation, and piano students from 16 music schools are chosen. An 8-week trial was carried out. Integrates the feedback form of self-regulated learning into piano learning in an innovative way, and sets a scoring standard based on international piano performance assessment regulations. The acquired results were subjected to an independent T-test analysis.

Keywords: Self-Regulation, Piano Education, Piano Performance, Educational Method.

### Introduction

Online education has become a popular teaching approach as a result of COVID-19. Online piano training provides numerous advantages over traditional classroom teaching techniques, including flexibility and accessibility, allowing students to study at any time (Montes, Bedmar, and Martin 1993). Teaching is more flexible for instructors, and students may selectively study under the direction of teachers, including autonomous choice of learning time, learning resources, and self-assessment. (Spinelli et al. 2017) Learners in online education must offer and organize their own framework, as well as select when and how to participate in course content, manage their time effectively, and adhere to learning objectives.

At the same time, students must have their own learning process with acceptable learning techniques, but they must also be aware of their own abilities, reasonable planning of learning routes, monitoring and altering learning process task assignments. (Dos Santos and Gerling 2011; Foubert, Collins, and De Backer 2017; Pike 2017; Marzoli et al. 2021). That is, an effective online piano learning environment must rely on students' metacognitions. In this paper, we build a self-regulated learning scheme, apply it to piano teaching, and assess the scheme's effectiveness using experiments.

### Experiment

#### Experimental aims

To see if it is feasible to increase performance by incorporating self-regulated learning into piano lessons.

#### Experimental variable

The experimental independent variable in piano learning is whether the self-regulated learning approach is utilized. To learn, the experimental group employs both the self-regulated learning plan and the common teaching plan, whereas the control group employs simply the common teaching plan.

The final grade of the student is the experimental dependent variable. Grades will be assigned in three categories:

- A. Playing technique and integrity
- B. Musical expression and style
- C. Reading and rhythm

The final grade 'S' is calculated by the formula,

$$S=0.4A+0.3B+0.3C$$

Conditional control

The control group used the standard piano instruction method of demonstration, explanation, feedback, explanation, and feedback. Teaching multiple learning tactics (including time management and management strategies, as well as reading music/sight-reading skills); non-academic after-school piano lessons Do training in which the instructor scores the students but does not notify them of their grades, conceals the students' grading behavior, and evaluates them orally in accordance with the evaluation manner of typical piano lessons.

Implement the training plan for self-regulation learning ability, that is, intentionally stimulate students' interest in learning, guide students to make correct attributions, pay attention to the use of demonstration learning strategies, and inform strategies on the basis of demonstration, explanation, feedback, explanation and



feedback. Scope of application, assist students in analyzing the recorded form, assist students in specifying particular learning goals; utilize the self-regulated learning cycle mode for training for students after school piano playing; tell students of their grades;

It is planned that 8 people will learn a piece of music at the same time, 4 people in the control group and 4 people in the experimental group, 4 people in each male and female. The four songs are:

Joseph Haydn: sonata in F Major Hob. XVI,23;

G.F.Handel Wilhelm Kempff, Musik des Barock und Rokoko Nr.13 Menuett g-moll;

Chopin Nocturne Op.72 No.1 in E minor;

Debussy: Arabesque No.1.

The four pieces are of similar length, but with different styles, which allows for a wider range of data and more accurate results.

### Experiment process

The entire curriculum is scheduled to include an 8-week practice time. In addition to classroom instruction, the control group's after-school piano learning was taught on time management and management skills in the first four weeks, and the children were trained on reading music/writing style in the last four weeks. Every day and every week, students fill out the related record sheets, and every week, they review their scores in order to compare them to the real results, analyze the learning effect, and develop the next learning goals. The overall score is computed with the assistance of the teacher. The scores are not examined and generated as experimental data, but are solely used for student comparison. The data processing software is SPSS22.

### Result and discuses

First, I tallied and assessed the first week's total scores. Table 1 displays the specific outcomes. It is not straightforward to conclude from the statistics in Table 1 that the academic performance of the two groups of students is essentially the same in the first week. The statistical results demonstrate that  $p > 0.05$ , indicating that there is no statistically significant difference between the two.

**Table 1** Independent sample t-test of the total score of piano learning in the first week of the two groups of students

#### Group Statistics

	group	N	Mean	Std. Deviation	Std. Error Mean
scoreFirstweek	Control Group	16	72.644	1.7328	.4332
	Experimental Group	16	72.269	1.5636	.3909

#### Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means
		F	Sig.	t
scoreFirstweek	Equal variances assumed	.239	.628	.643
	Equal variances not assumed			.643

**Table 2** displays the difference in overall scores between the two groups of students in the previous week.  $P = 0.001 < 0.05$ . This demonstrates that the scores of the two groups of pupils varied significantly. This is a favorable finding that demonstrates the validity of our theory in real-world applications. This finding indicates that incorporating self-regulation theory into piano teaching can increase the efficiency of piano learning. Students use self-regulated learning strategies to increase learning efficiency and reach a greater level of piano performance in the same period of time.



**Table 2** Independent T-test analysis of the eighth week total scores of the two groups of students

**Group Statistics**

	group	N	Mean	Std. Deviation	Std. Error Mean
scoreEighthweek	Control Group	16	75.944	1.6737	.4184
	Experimental Group	16	82.394	2.9634	.7409

**Independent Samples Test**

		Levene's Test for Equality of Variances		t-test for Equality of Means
		F	Sig.	t
scoreEighthweek	Equal variances assumed	12.862	.001	-7.581
	Equal variances not assumed			-7.581

**Conclusion**

We devised a novel teaching model and implemented it in piano education after researching the principle of self-regulated learning. A self-regulated learning instructional program was developed, and an 8-week experiment was carried out. Students who utilize this approach to learn piano music outperform those who follow the standard study program. Statistical results indicate the experiment's validity. It is hoped that our technique will help to advance piano teaching in the future and contribute to the education business.

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