Proceedings of the International Conference on Education Vol. 8, Issue. 1, 2022, pp. 107-112

ISSN 2424 - 6700 online
DOI: https://doi.org/10.17501/24246700.2022.8109

APPLICATION OF SELF-REGULATION IN PIANO LEARNING

Dong S and Gedvilienė G*

Education Academy, Vytautas Magnus University, Lithuania

Abstract: Self-regulated learning is a process in which the learner may create suitable learning goals and drive himself or herself, with or without the assistance of the teacher, to actively apply learning techniques and attain the learning objectives. It is not only an active involvement process, but also a long-term and consistent capacity. This study integrates self-regulation learning theory with piano learning, expounds on the significance of self-regulation learning capacity in piano learning, and suggests a training strategy. According to the self-regulation learning theory, the psychological mechanism of piano learning self-regulation is investigated, 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 experiment was conducted. Innovatively integrates the feedback form of self-regulated learning into piano learning, and establishes a scoring standard according to the international piano performance evaluation rules. Independent T-test analysis was performed on the obtained results. The result is remarkable. It is expected that the training program of self-regulation learning ability in piano learning improves students' piano learning performance better than the ordinary piano learning mode. This research can improve the efficiency of piano learning and contribute to the promotion of piano education.

Keywords: piano learning, self-regulated learning, music performance, education

Introduction

Under the influence of COVID-19, online education has become a popular teaching method. Piano teaching is no exception, compared with traditional classroom teaching modes, online piano teaching has many advantages, including flexibility and accessibility, allowing students to study at any time(Montes, Bedmar, and Martin 1993). For teachers, teaching is more flexible, students can selectivity learning under teachers' guidance, including independent choice of learning time, learning resources, and self-assessment.(Paz and do O 2017) Network online learning model makes learning space and time more convenient, but there will be some drawbacks because the online model will also reduce the interaction and communication between students and teachers. (Antonuccio-Delogu and Silk 2010; Paz and do O 2017; Summitt and Weidner; Ballo et al. 2021)In Online education, learners need to provide and structure and decide when and how to participate in the course content, effective management time, and adhere to learning. At the same time, require students to have their own learning process have appropriate learning strategies, but also need to know their ability, reasonable planning of learning routes, monitoring and adjusting learning process task assignments.(Dos Santos and Gerling 2011; Marzoli et al. 2021; Montes, Bedmar, and Martin 1993; Pike 2017a; Foubert, Collins, and De Backer 2017) That is, the efficient learning piano in the online environment needs to rely on students' metacognitions. Self-regulating learning (SRL) is the key to the success of an online

*Corresponding Author's Email: genute.gedviliene@vdu.lt

learning environment.(Xu and Jaggars 2014). Through literature reading, we learned that traditional piano teaching can ensure the quality of teachers' courses and accurately evaluate students' learning results, while online piano education is still in its early stages.(Dumlavwalla 2017). Although teachers can fully manage the courses, they also face many problems, such as music courses, especially piano courses. (Peynircioglu et al. 2014; Comeau et al. 2019; MacIntyre and Potter 2014; Porta et al. 2018; Spinelli et al. 2017)Most of them need one-to-one classes, and students have individual differences. Self-learning ability, control ability, and the length of time for exercise after class are different. (Pike 2017b; Lorenzo et al. 2015; dos Santos 2018; Suzuki and Mitchell 2022). The piano students highly preferred to memorize because it helps boost confidence, focus, and interpret the music well. During practice, certain memorization strategies such as separation of hands, repetition, singing of the melody, and listening to recordings were used to perform by memory. However, the process of being able to perform by memory takes a lot of hard work and discipline. Therefore, it is recommended for students and teachers to work together in the learning and memorization process.(Wilson et al. 2022)In this work, we design a self-regulated learning scheme and apply it to piano teaching, and evaluate the effectiveness of the scheme through experiments.

Methodology

Research aims

To investigate if it is possible to improve performance by adding the self-regulated learning element into piano learning.

Experimental variable

The experimental independent variable is whether the self-regulated learning method is used in piano learning. The experimental group use the self-regulated learning plan and the common teaching plan to learn, while the control group only use the common teaching plan.

The experimental dependent variable is the student's final grade. Grades will be assessed in three parts:

A. Playing technique and integrity

B. Musical expression and style

C. Reading and rhythm

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

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

In each class, the teacher will grade the students' grades according to the above formula. Students will also rate themselves before class, and students do not need to do data analysis for scoring.

Conditional control

Control group: Implemented the common piano teaching mode, namely demonstration, explanation, feedback, explanation and feedback. Teaching various learning strategies (including time planning and management strategies and reading music/sight-reading strategies); after-school piano learning that is not aimed at students Do training; the teacher grades the students, but does not inform the students of their grades, conceals the students' grading behavior, and evaluates them orally according to the evaluation mode of ordinary piano lessons.

Experimental group: Implement the training plan of self-regulation learning ability, that is, on the basis of demonstration, explanation, feedback, explanation and feedback, intentionally stimulate students' interest in learning, guide students to make correct attributions, pay attention to the use of demonstration learning strategies, and inform strategies Scope of application, help students analyze the recorded form, help students specify specific learning goals; use the self-regulated learning cycle mode for training for students after school piano learning; let students know the behavior of teachers' scoring and inform 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 practice period of the whole program is expected to be 8 weeks. In addition to classroom teaching, the control group's after-school piano learning was trained on time planning and management ability training in the first 4 weeks, and the students were trained on the skills of reading music/writing style in the last 4 weeks. Students fill in the corresponding record sheets every day and every week, and evaluate their scores every week so as to compare them with the actual scores, analyze the learning effect and formulate the next learning goals. The total score is calculated with the help of the teacher. The scores are not analyzed and calculated as experimental data, but are only used by students for their own comparison. The data processing software is SPSS22.0

Result and discuses

We use quantitative analysis methods to test whether self-regulated learning theory is effective for piano education.First, I counted the total scores of the first week and analyzed them. The specific results are shown in Table 1. Through the data in Table 1, it is not difficult to find that the academic

performance of the two groups of students is basically the same in the first week. The statistical results show that p>0.05, that is, there is no 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 shows the difference in the total scores of the two groups of students in the last week. P = 0.001<0.05. This shows that there is a significant difference in the scores of the two groups of students. This is a positive result, showing that our theory is valid in practical applications. This result shows that the introduction of self-regulation theory into piano education can improve the efficiency of piano learning. Students promote the efficiency of learning through self-regulated learning methods, and achieve a higher level of piano performance in the same amount 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

By studying the theory of self-regulated learning, we have developed a new teaching model and applied it in piano education. An instructional program based on self-regulated learning was designed and an 8-week experiment was conducted. Students who use this program to learn piano music perform significantly better than those who use the normal study program. Quantitative analysis was used to analyze the students' comprehensive scores, and the differences in the learning results of the

two groups of students were compared.Statistical data demonstrate the validity of the experiment. It is expected that our method can promote the development of piano teaching in the future and contribute to the education industry.

Reference

Antonuccio-Delogu, V., and J. Silk. 2010. "Active galactic nuclei activity: self-regulation from backflow." Review of. Monthly Notices of the Royal Astronomical Society 405 (2):1303-14. doi: 10.1111/j.1365-2966.2010.16532.x.

Ballo, A., A. D. Grasso, G. Palumbo, and T. Tanzawa. 2021. "Charge Pumps for Ultra-Low-Power Applications: Analysis, Design, and New Solutions." Review of. Ieee Transactions on Circuits and Systems Ii-Express Briefs 68 (8):2895-901. doi: 10.1109/tcsii.2021.3070889.

Comeau, G., V. Huta, Y. Y. Lu, and M. Swirp. 2019. "The Motivation for Learning Music (MLM) questionnaire: Assessing children's and adolescents' autonomous motivation for learning a musical instrument." Review of. *Motivation and Emotion* 43 (5):705-18. doi: 10.1007/s11031-019-09769-7.

dos Santos, R. A. T. 2018. "Ways of using musical knowledge to think about one's piano repertoire learning: three case studies." Review of. *Music Education Research* 20 (4):427-45. doi: 10.1080/14613808.2018.1463979.

Dos Santos, R. A. T., and C. C. Gerling. 2011. "(Dis)Similarities in music performance among self-regulated learners: an exploratory study." Review of. Music Education Research 13 (4):431-46. doi: 10.1080/14613808.2011.632085.

Dumlavwalla, Diana. 2017. "Transitioning from traditional to online piano lessons: Perceptions of students, parents and teacher." Review of. *MTNA e-Journal* 8 (3):2.

Foubert, K., T. Collins, and J. De Backer. 2017. "Impaired Maintenance of Interpersonal Synchronization in Musical Improvisations of Patients with Borderline Personality Disorder." Review of. *Frontiers in Psychology* 8:17. doi: 10.3389/fpsyg.2017.00537.

Lorenzo, A. G., R. O. Ruiz, E. V. Gea, and O. G. Ortiz. 2015. "Validation of Two Measurements Instruments to Assess Motivational Beliefs and Performance Strategies in the Processes of Memorization in Piano Performance." Review of. *Revista Electronica De Leeme* (36):31-48.

MacIntyre, P. D., and G. K. Potter. 2014. "Music motivation and the effect of writing music:A comparison of pianists and guitarists." Review of. *Psychology of Music* 42 (3):403-19. doi: 10.1177/0305735613477180.

Marzoli, I., A. Colantonio, C. Fazio, M. Giliberti, U. S. di Uccio, and I. Testa. 2021. "Effects of emergency remote instruction during the COVID-19 pandemic on university physics students in Italy." Review of. *Physical Review Physics Education Research* 17 (2):18. doi: 10.1103/PhysRevPhysEducRes.17.020130.

Montes, R., M. Bedmar, and M. S. Martin. 1993. "EMG BIOFEEDBACK OF THE ABDUCTOR POLLICIS BREVIS IN PIANO PERFORMANCE." Review of. Biofeedback and Self-Regulation 18 (2):67-77. doi: 10.1007/bf01848108.

Paz, A. L., and J. R. do O. 2017. "Arts pedagogy as life's norm-making: Technologies of the self and the production of musical genius in Portugal (end of the 19th to the begging of the 20th century)." Review of. *Educar Em Revista* (66):19-36. doi: 10.1590/0104-4060.53649.

Peynircioglu, Z. F., B. J. Brandler, T. J. Hohman, and N. Knutson. 2014. "Metacognitive judgments in music performance." Review of. *Psychology of Music* 42 (5):748-62. doi: 10.1177/0305735613491999.

Pike, P. D. 2017a. "Exploring self-regulation through a reflective practicum: a case study of improvement through mindful piano practice." Review of. *Music Education Research* 19 (4):398-409. doi: 10.1080/14613808.2017.1356813.

———. 2017b. "Self-regulation of teenaged pianists during at-home practice." Review of. *Psychology of Music* 45 (5):739-51. doi: 10.1177/0305735617690245.

Porta, A., R. Maestri, V. Bari, B. De Maria, B. Cairo, E. Vaini, M. T. La Rovere, and G. D. Pinna. 2018. "Paced Breathing Increases the Redundancy of Cardiorespiratory Control in Healthy Individuals and Chronic Heart Failure Patients." Review of. *Entropy* 20 (12):19. doi: 10.3390/e20120949.

Spinelli, R., N. Magagnotti, E. Jessup, and M. Soucy. 2017. "Perspectives and challenges of logging enterprises in the Italian Alps." Review of. *Forest Policy and Economics* 80:44-51. doi: 10.1016/j.forpol.2017.03.006.

Summitt, N. L., and B. N. Weidner. "Characteristics of expert vocalists' practice." Review of. *International Journal of Music Education*:12. doi: 10.1177/02557614211063996.

Suzuki, A., and H. F. Mitchell. 2022. "What makes practice perfect? How tertiary piano students self-regulate play and non-play strategies for performance success." Review of. *Psychology of Music* 50 (2):611-30. doi: 10.1177/03057356211010927.

Wilson, Elvina L., Stella E. Simanjuntak, Aera Jean S. Apalat, Nerilyn R. Beratio, Khristine Ruth F. De Gracia, Sheryl Ann B. De Dios, and Jewel B. Solidum. 2022. "Perceptions and Memorization Strategies of Piano Students Toward Piano Performance: A Phenomenological Study." Review of. 8ISC Proceedings: Arts and Education:16-25%8 2022-02-09.

Xu, Di, and Shanna S Jaggars. 2014. "Performance gaps between online and face-to-face courses: Differences across types of students and academic subject areas." Review of. *The Journal of Higher Education* 85 (5):633-59.