Self-regulated Learning Skills in Instrument Education: A Qualitative Study

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ABSTRACT

The purpose of this study is to uncover and comprehend the current state of pre-service music teachers' use of self-regulated learning skills in instrument education, as well as the obstacles they face and the techniques they use to develop these skills throughout their instrument education. The data were obtained from participants' experiences and opinions and may be used to develop a conceptual framework concerning self-regulated learning skills and how these skills can be applied in teaching. This study reveals the importance of autonomy and co-regulation in the learning process, with a focus on teachers' roles in fostering student autonomy and giving support. Previous research has shown that self-regulation tactics can be incorporated in education to improve learners' self-regulation capacities. This study suggests that the "Individualized and Co-regulated Teaching Model in Instrument Education," a student-centered method that stresses dialogue-oriented learning, teacher-student interaction, and tailored learning needs may be appropriate for many learners. Teachers are encouraged to adopt individualized teaching orientations, allowing students to set their own learning goals and monitor their progress, as guided by this model. Furthermore, efficient communication and co-regulation between teachers and students promote self-regulation and musical development. Given the growing importance of self-regulated learning skills in the distance learning era, educational programs should focus their development and empower learners to become independent, and lifelong learners through collaborative knowledge production. The findings of this study imply that more research on the application of self-regulation skills in instrument acquisition among lower-achieving or less-experienced students is needed. Overall, this study highlights the importance of self-regulated learning skills in instrument teaching and advocates its incorporation into instructional procedures.

Key words: Self-regulated Learning, Instrument Learning, Autonomous Learning, Co-regulation

INTRODUCTION

Zimmerman (1998) defines self-regulation as "not a mental ability like intelligence, but a process of self-direction in which learners transform their mental abilities into academic skills" (p. 1). Self-regulation capacity can also be defined as the ability of learners to actively participate in their learning (Shin, 1998). Researchers working on teaching theories have conducted numerous studies on self-regulated learning processes and skills, and it has been discovered that individuals' abilities to regulate their own learning have a significant impact on academic motivation and achievement (Boekaerts & Niemivirta, 2000; Zimmerman & Schunk, 2011). Self-regulation, according to Bandura (1986), is the ability to manage and direct one's own thoughts, emotions, and behaviors. This concept includes skills like as structuring one's own learning processes, setting objectives, managing time, and leveraging resources. Self-regulation is essential for successful learning because it allows individuals to correctly manage their own learning process. In the self-regulated learning process, also known as a state of metacognition and action, the individual takes an active role in maintaining his/her own motivation, coping with problems, attaining goals, and optimizing his/her own learning capacity (Pintrich, 2005; Zimmerman, 2001). Self-regulation abilities are crucial in terms of greater learning achievement, strengthened self-efficacy, and student participation in learning, according to research in this field.

The research on self-regulated learning strategies shows us that in-depth, long-term, and independent learning processes require many cognitive, affective, and physical activities. Self-regulated learning, a process that involves different areas of the brain, encompasses many skills, including attention, focus, self-awareness, introspection, honest self-evaluation, openness to change, discipline, and responsibility (Pintrich, 2005; Zimmerman, 2001; Zimmerman, 2002). Nilson (2013) states that these components are character traits rather than cognitive abilities, and gives examples from the literature to support the notion. Burak and

Atabek (2023), for example, investigated the relationship between students' self-regulated learning behaviors related to instrument study habits and Golderg's "Big Five" personality traits (extraversion, agreeableness, emotional stability, openness to information, and taking responsibility) and discovered meaningful links between certain personality traits of aspiring music teachers, their use of self-regulated learning strategies, and the amount of practicum they completed. The conscientiousness component of their personality was found to be a major predictor of the self-evaluation and initial planning stages of self-regulated learning, whereas the openness dimension was found to be a significant predictor of the actual performance phase. Conscientiousness and openness to new experiences are personality traits that correspond to effective learning approaches that include self-regulated learning abilities (Burak & Atabek, 2023).

According to researchers who have studied this theory in depth, self-regulation is not related to measurable intelligence, but it is a characteristic that can be developed by every individual (Zimmerman & Campillo, 2003; Schraw, 1998; Schunk & Zimmerman, 1994).

The concept of self-regulation emerged from Albert Bandura's self-efficacy theory (Zimmerman & Schunk, 2004) and was later incorporated into social cognitive theory. While working with children, Bandura (1997) found that their beliefs about their own self-efficacy were determinant in self-regulating their thoughts and behaviors. Bandura (1997) emphasized that children with self-regulated learning skills are capable of acquiring more knowledge and that their sense of self-efficacy grows and develops. According to Bandura, learners can enhance their ability to regulate learning situations and build a belief in their own capabilities by interacting with individuals in their environment and accumulating successful experiences to accomplish tasks. As a result of these findings, Bandura (1986) emphasized that teachers should use three strategies in particular in developing students' learning skills: observing and monitoring their own performances, comparing and evaluating their own performances with their own personal values, measurements, and with those of the reference/model, and providing cognitive, affective, and concrete answers to these as a result of evaluating their own performances and developing confirmatory and improvement strategies for these results (Nilson, 2013). On the other hand, Nilson (2013) emphasizes that Bandura's suggestions in the context of social-cognitive learning theory are not correctly reflected in educational practices; on the contrary, practices that should develop self-efficacy and self-regulated learning skills are reflected as self-confidence development.

In the field of music, Bandura's social cognitive theory and Zimmerman's (2000) self-regulated learning model have been applied and tested in research studies. Zimmerman's (2000) cyclical model (Zimmerman & Moylan, 2009) explains the ability to self-regulate in the learning process. This model is based on social cognitive theory and assumes that learners continuously manage their own learning processes to achieve goals. The model of the theory consists of three stages: forethought, performance, and self-reflection.

The Forethought Stage includes task analysis, goal setting, strategic planning, self-motivational beliefs, self-efficacy, outcome expectations, task interest/value, and goal orientation. The second stage, the Performance Stage, includes self-regulation, task strategies, self-instruction, imagery, time management, environmental structuring, help-seeking, self-observation, and metacognitive monitoring. The final stage is the Self-Reflection Stage. In this stage, the individual evaluates himself/herself, passes his/her evaluation through a judgment process, and presents his/her reasons about his/her success or failure. This evaluation is then passed through an emotional and cognitive filter and activates new or revised learning strategies for future tasks with adaptive or defensive choices (Zimmerman & Moylan, 2009).

Studies in the literature indicate that individuals who are considered successful in achieving a goal exhibit self-regulated learning behaviors and actively participate in their own learning processes metacognitively, motivationally, and behaviorally (Zimmerman, 1990). These individuals are able to cognitively organize every stage of their learning processes, prepare appropriate environments to carry out these processes, observe and evaluate learning activities, and freely make decisions to choose the most appropriate strategies for their own learning to create environments in which they can realize them (Zimmerman & Schunk, 2011; Nilson, 2013). On the other hand, students who cannot organize their own learning and set goals are students with low academic achievement. In other words, these students have difficulties in evaluating their own abilities and learning processes; they have less self-efficacy and criticize themselves more. These students may be highly dependent on external guidance, direction, and support in their learning processes; they may need constant supervision, instruction and support from their teachers or peers. Maintaining self-regulated learning skills and conducting studies on the acquisition of these skills have become important research topics in the field of education (Schunk & Zimmerman, 1994) due to several reasons. It has been discovered that self-regulated learning skills greatly contribute to students' academic achievement and success. Students with good self-regulation skills are better able to set objectives, manage their time effectively, track their progress, and apply effective learning tools. This can result in better learning outcomes and a stronger sense of control over one's own learning process. Furthermore, through developing self-regulated learning skills, students become active, independent learners capable of taking responsibility for their own learning and adapting to different learning settings and obstacles in many facets of life.

Goal setting, strategy selection, process monitoring, self-evaluation, and correction are at the center of the self-regulated learning process (Borkowski & Muthukrishna, 1992). The process of monitoring, directing, and regulating the actions necessary for the individual to acquire knowledge and develop his/her experiences emphasizes self-determination and control (Paris & Paris, 2001; Bembenutty et al., 2015). In other words, individuals with the self-regulated learning skills described above are independent learners.

Self-regulated Learning and Instrument Education

In the field of music education, studies on how individuals set their musical goals, how they develop decision and action processes in this field, and especially how they determine self-regulated learning strategies in the processes of effective learning and instrument mastery have become popular (Varela et al., 2014; McPherson & McCormick, 1999). McPherson and colleagues (1999, 2001, 2011) reviewed dozens of studies on the learning experiences and self-regulatory and motivational components of successful musicians' and performers' development and mastery processes, emphasizing that motivation and practice quality have a reciprocal influence on each other, with self-determined motivation facilitating the implementation of self-regulatory strategies.

O'Neill and McPherson (2002) stated that individuals who are trying to master the field of instrumental education need self-determination and strategic planning skills to make decisions about when and how to practice or how to approach a technically complex and challenging repertoire. According to Hallam (2001), musicians use effective strategies in the process of mastering instrument performance. These strategies can be summarized as follows. When musicians are aware of the difficulties of the task they are concentrating on, they have the ability to identify different tactics they can use to overcome these difficulties. They are also able to observe the strategies they use to overcome the challenges and distinguish the effective ones from the ineffective ones. Finally, musicians have the ability to evaluate their outcomes in relation to their learning experiences. Recent research shows that students with self-regulation skills in instrument education achieve better results in terms of both motor skill development and conceptual learning. Therefore, looking at teaching and learning processes from a self-regulation perspective has great potential in music education, and especially in instrument education.

Mastering an instrument brings many challenges. For example, the student needs to set goals for each practice, and needs motivation to practice for a long time, to plan the phases of the practice correctly, and to control the process during practice. Moreover, these students "need to receive feedback to improve their performance, be aware of competition, and deal with their sense of insecurity and their educators' pedagogical approaches, all while developing a psychological and behavioral toolkit" (Martin, 2008, p. 241). McPherson and Renwick (2001, 2011) analyzed why many music students who experience a sense of failure decide to drop out of school and concluded that such students failed to develop methods in their learning process, failed to control the learning process, and faced problems in finding the necessary help in this process to produce strategies. The research results of McPherson and Renwick (2011) emphasize the importance of self-regulation theory to support the acquisition of musical skills and the necessity of developing them in the educational process.

Research Questions

In light of the information provided by the relevant literature, answers to the following questions were sought in this study:

1. What factors affect pre-service music teachers' motivation and acting on learning in instrument education?
2. What methods might pre-service music teachers' develop for planning and goal setting in instrument education?
3. What strategies do pre-service music teachers' use in instrument education and the evaluation of their own learning?

Importance of the Problem

This study aims to reveal and understand in depth the status of music teacher candidates' use of self-regulated learning skills in instrument education and what difficulties and strategies they need to develop these skills throughout their instrument education. In addition, this study is important in terms of examining the data obtained from the participants' experiences and opinions with a qualitative approach and creating a conceptual framework concerning self-regulated learning skills and how these skills can be developed and applied in teaching practices.

METHOD

Research Design

A case study design was used in this qualitative research. Creswell and Clark (2007) define a case study as a research method that examines an event, a situation or a phenomenon in detail and aims to conduct an in-depth analysis to understand it. Such research is usually conducted in a real-life context and aims to solve a problem or understand a situation. This study will try to understand the use of self-regulated learning skills in instrument education by 8 music teacher candidates studying in the Department of Music Education and their strategic needs and difficulties in the process of developing these skills in instrument education.

Study Group

This qualitative research was conducted with 8 students studying at a State University in Turkey, Faculty of Education, and Department of Music Education in 2023. Purposive sampling technique was used to select the students. The researcher interviewed the instrument instructors in the department and provided information about "self-regulated learning skills." These skills included sub-dimensions such as motivation and acting on learners' mobilization, planning and goal setting, strategy use, evaluation, and dependency in learning. The researcher then asked relevant educators to suggest participants who would be examples of students who exhibited self-regulated learning skills; the participants of the study were determined as such.

Data Collection Process

The first step of the data collection process consists of the studies on self-regulated learning theory in line with the review of the relevant literature. As a researcher, my first step in gathering data is to perform a thorough study of the

relevant literature on self-regulated learning theory. This literature evaluation is critical because it helps me to investigate and evaluate existing studies, theories, and scholarly works on self-regulated learning. I hope to obtain a thorough awareness of the fundamental concepts, theoretical frameworks, and various methodologies related with self-regulated learning by immersing myself in the literature. In the second stage, the interview form including 10 open-ended questions was created by the researcher by utilizing Zimmerman's (2009) Cyclical Model and the sub-dimensions of the Self-Regulated Learning Skills Scale developed by Turan (2010). Data were obtained in this way.

Data Analysis

Data were obtained in this study using a semi-structured interview form and processed using a content analysis technique. The practice of studying material contextually and identifying particular themes is known as content analysis. Saldana's (2012, p. 108) "code-to-theory model" was used in content analysis. The analytical process involves a process of interpretation and abstraction from the specific to the general, from the real to the abstract, in the order of codes, categories, themes, and theories.

In vivo coding was used in this study. In vivo coding is a technique used in qualitative data analysis. The most distinctive feature of in vivo coding is that it enables the researcher to identify and analyze important patterns and theme groups in the data from the participants' perspectives while preserving their natural language and expressions (Saldana, 2012).

During the analysis process, important statements and meanings in the data were identified and marked as "codes." The codes were then transformed into broader "categories" based on similarities and relationships. Categories were grouped by representing the main headings and common themes of the data. The researcher revealed themes through these codes and categories (Saldana, 2012). Unlike codes, "which are most often single words or short phrases that symbolically represent a datum, themes are extended phrases or sentences that summarize the manifest (apparent) and latent (underlying) meaning of data" (Saldana, 2012, p. 108).

The thematic analysis process enabled the data to be examined in detail and the meanings to be revealed to reflect the situations, needs, and difficulties of pre-service music teachers in using self-regulated learning skills in instrument education.

RESULTS

The findings obtained through content analysis of the data as a result of the interviews are presented in tables. In this analysis process, the content of the data was examined in detail and certain codes and categories were revealed, and many categories were reduced to 6 themes and 2 sub-themes. The thematic data obtained as a continuation of this effort brought conceptual and theoretical inferences.

Findings Related to the First Research Question

The interview findings related to the first research question, "What are the factors affecting pre-service music teachers' motivation and acting on learning in instrument education?" are shown below (Table 1).

Table 1 presents the findings related to the students' experiences on motivation and acting on learning during the instrument training process. After analyzing the data with content analysis, codes and categories were obtained from the data and themes were developed by the researcher to clarify the phenomenon. These themes are: (1) learning orientation with internal-external motivation and (2) teacher-student dialogue and the process of co-regulation. According to the findings, students' motivation to learn new skills and concepts is closely related to the belief that they will improve themselves. The awareness of the need to learn in order to master their instrument and the belief in the necessity of learning are among the important factors that motivate students. This belief increases their curiosity and strengthens their self-confidence. Interest and curiosity are also factors that reveal the need and motivation to learn. Students are curious about new skills and realize that they need to be responsible for developing these skills.

While encountering a new concept or skill in instrument education can arouse curiosity, excitement, and happiness in students, it can also cause them to question what they can do. Situations such as encountering difficulties or not being well motivated can distract students and prevent them from practicing regularly. Sometimes, the uncertainty caused by encountering a new concept and questioning whether they can do it and the resulting anxiety can reduce their desire to study. When students feel that they are not understood by their teachers during the learning process, they may lose their desire to study.

Students reported that a learning environment in which their ideas are valued and they can express themselves has a positive impact on the learning process. When faced with difficulties or a sense of failure, students' motivation can be negatively affected; however, with positive interaction and support from the teacher and communication between teacher and student, they are more motivated to learn.

Findings Related to the Second Research Question

"What are the methods developed by pre-service music teachers for planning and goal setting in instrument education?" are presented below under two themes, and a section of them is shown in Table 2.

"Effective time management and planning:" The findings of the study show that students create study plans and plan regular study sessions to use time effectively. Students organize their studies through daily-weekly planning, break times, and set study hours. Using time efficiently and working in a disciplined way seems to help students maintain their motivation and progress.

"Autonomous-independent learnings skills and co-regulation process:" Students are able to use their own initiative in planning and goal setting in their instrument training

Table 1. Motivation and acting on learning in instrument education

Units of Meaning (Sample Expressions)	Codes	Categories	Themes
"First of all, learning new skills and concepts makes me happy and excited because it makes me feel that I am improving, and this encourages me to study even more."	- Gaining new skills, being happy and excited	Curiosity and excitement about the new skill, desire to acquire it, desire to learn and master it	- Learning orientation with internal and external motivation
"Interest, curiosity and care are the things that reveal my need to learn. I am curious about learning and music and if I take enough care and act responsibly, I can fulfill this need."	- Curiosity and interest and willingness to learn	Being anxious about the new skill and not being engaged or motivated	
"First of all, it arouses curiosity in me, but at the same time I may be worried about whether I can do it or not because I encounter a new concept."	- Curiosity and anxiety, fear of not being able to do it	Belief that the new skill will lead to improvement in his/her instrument	
"...when what I am studying is difficult or I am not well motivated, I am not able to concentrate and do regular and long studies..."	- The difficulty of what I'm going to do		
"I have difficulty in practice because it doesn't happen immediately, but the theoretical subjects are very easy. Sometimes I get bored and upset because I can't do it..."	- Difficulty in implementation		
"Because I like the lesson, there are lessons that I like to study. I care about every lesson. But I do not study every lesson with pleasure."	- Loving the class and being interested in the subject		- Dialogue and co-regulation process
"I lose my desire to study when I think that I am not understood more during the learning process. ...And this decreases my motivation to study..."	- Being motivated by a desire to be understood		
"...communication, finding the opportunity to express myself in the lesson, knowing that our ideas are valued increases my interest and love for the lesson and makes me feel happy, which has a positive effect on my learning process."	- Communication and self-expression, valuing ideas		
"I am motivated if I have the belief that I need to learn...it increases my curiosity and self-confidence..."	- Belief in I have to learn		

processes and to recognize the skills they need to master and to organize them within the framework of an original and independent plan. On the one hand, students express that they need the approval and guidance of their teachers. Teachers' ideas, input, and guidance are instrumental in helping students determine their study plans and progress. Students derive strong motivation from communicating with their teachers and following their advice; receiving approval boosts their self-confidence.

Findings Related to the Third Research Question

The findings related to the third research question, "What are the status of pre-service music teachers' strategy use and evaluation of their own learning in instrument education?" are presented in Table 3.

Students express that they feel that they are successful and understand what they have learned when they play the piece smoothly and receive positive feedback from their teachers. Taking videos, getting feedback from their teachers, and monitoring and evaluating their performances are among the strategies they use to evaluate their own learning in instrument education. It is seen that students try alternative learning methods in cases where they cannot learn or want to build on their successes. They try to overcome their

deficiencies by using resources such as selective listening from platforms such as Spotify and YouTube and performing research from Wikipedia or theses. By reading, they try to relate the topics and artifacts that their teachers explain in their lessons. They also watch masterclass videos to learn from different sources and find the key points from their assignments.

Students attach great importance to listening, and listening is used extensively at every stage of the learning process. They evaluate their learning outcomes by sharing their thoughts about what they have learned or by listening to their performances. After completing the learning process, they continue to work in a motivated manner. They also try to improve themselves by endeavoring on more detailed musical studies.

This study was conducted to understand pre-service music teachers' use of self-regulated learning skills in instrument education, the difficulties they face, and their strategic needs. The data obtained were analyzed by content analysis, and Saldana's (2011, p. 108) "Code-to-Theory Model in Qualitative Research" was applied. The analysis process followed the order of code, category, theme, and theory, and was adapted through a process of interpretation and abstraction from specific to general and from real to abstract (Saldana, 2011; Strauss & Corbin, 1998). In this conceptualization

Table 2. Planning and goal setting in instrument education

Units of Meaning (Sample Expressions)	Codes	Categories	Themes
"...I create a study plan to use time effectively."	- Using time well	Work plan	- Effective time management and planning
"...as I progress, I realize the skills I need to practice or the concepts I need to learn, then I decide with my teacher according to the situations appropriate to my level and we try to apply them."	- I realize what I need to implement - My teacher and I decide	Awareness of needs	- Autonomous-independent learning skills and co-regulation process
"I can realize my deficiencies and what I need in the basic studies I do to improve my technique on my instrument. At the same time, I can determine my needs according to the guidance of my teacher and the functioning in the literature."	- I realize my shortcomings - I can identify my needs		
"I am not exactly the determinant of this, because I need to get the approval of the teacher whose course I am taking, and I need to hear his/her ideas and contributions to me. After I get this approval, some things can be determined with the guidance of my course teacher."	- I need to hear what my teacher has to offer me		
"I have difficulty when I do not pay enough attention and do not practice regularly."	- Irregular work and strain		
"I do my technical training two-three times a week in planned sessions so that I can progress without getting tired and injured. I plan my training according to my school and class hours. My workouts are on average 1 hour work - 30 hours break and I take care to do 3 sets. If necessary, I can increase it by sacrificing my sleep hours."	- I set planned study sessions		
"...I make progress more easily as long as I start studying systematically and keep it going."	- I work systematically		
"In the learning process, I start learning when my teacher shows me and I imitate him/her, or I also practice by listening to a piece."	- I model my teacher		
"I am not exactly the determinant of this, because I need to get the approval of the teacher whose lesson I am taking, and I need to hear the ideas and contributions he/she will add to me. After I get this approval, some things can be determined with the guidance of my course teacher."	- I get the teacher's approval		

Sub-Theme 1: Learning orientation with internal and external motivation
Sub-Theme 2: Dialogue and co-regulation process

Sub-Theme 3: Effective time management and planning
Sub-Theme 4: Autonomous-independent learnings skills and co-regulation process

Sub-Theme 5: Alternative ways of learning
Sub-Theme 6: Self- and collective assessment methods

Theme 1: Individualized teaching orientation

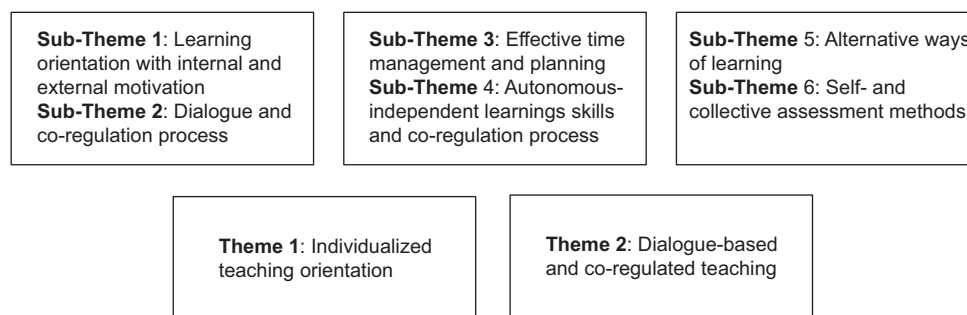**Theme 2**: Dialogue-based and co-regulated teaching

Figure 1. Individualized and co-regulated teaching model in instrument education

process, the codes and categories obtained from the data were reduced to six themes, and these themes were reduced to two sub-themes and finally to a single theory and a model construction (Figure 1).

DISCUSSION AND CONCLUSION

The findings of this study emphasize the significance of self-regulated learning skills in instrument education. Students who possess these skills demonstrate motivation, curiosity, and a sense of responsibility towards their learning. A sense of autonomy, which allows them to create their own learning objectives and take ownership of their learning, is crucial to their musical development. Additionally, these students practice co-regulation by seeking out resources and support from teachers in the goal setting and planning processes. According to Evans (2015), autonomy has a motivational role in the application of self-regulated learning techniques in music. It emphasizes how crucial the social environment is, as well as how teachers should encourage student autonomy. Co-regulation is the negotiation and coordination of autonomy support between teachers/peers and students, according to Hadwin et al. (2018). The study also highlights the value of encounters in which teachers provide

Table 3. Identifying strategies and evaluating their own learning in instrument training

Units of Meaning (Sample Expressions)	Codes	Categories	Themes
"When I learn, I put it into practice. I know that I am successful when I play that piece smoothly and in accordance with everything, and I also enjoy playing it, that is very important.of course, the comments of my teacher."	- Practice	Assessment of learning through provision	Alternative ways of learning
"If I can get positive feedback from my teachers while performing a piece, I feel that I am successful."	- Teacher's comment is important	- Receive feedback	Self- and collective assessment methods
"I record my performance and watch or get teacher's feedback."	- Self-monitoring and listening	- Discovering new ways to learn and master	
"When I don't learn, I try other ways and try to understand."	- I'll try different ways - Developing new methods	- Research and resource use	
"At the end of the studies, if I feel incomplete about the subject I am studying, I try to find different study disciplines and methods..."	- Recognizing shortcomings, trying to find new ways		
"Spotify for listening, YouTube for watching, Wikipedia for research.I also study theses if I can find them for details."	- Experimenting with new sources and pathways		
"I read written books related to my field, for example the history of opera. I visualize the topics my teacher talks about in the lessons and try to relate them while I am working or listening to a piece."			
"I watch masterclass videos."			
"I start by listening. I listen a lot. Listening is present at every stage of the process. Then I come to the technical part."	- I listen and watch examples and imitate them, learn from them much		
"...I look at the output of what I have learned. This can be even during a conversation where I share my thoughts on any topic."	- Evaluating the outcome		
".when I cannot do certain things, I think that I am lacking in this subject and I start reading, researching or listening to new things related to the subject."	- Listening and observing - Very much listening, imitating, watching and listening to myself		
"I listen first and then play it myself. I listen to the piece on youtube."			
"To learn, I constantly practice, read and try to find the key point of the subject I am trying to learn."	- Examining the details		

assistance above and beyond what students are currently capable of receiving. Situated learning views have lately expanded theories and models of self-regulation to interactive and dynamic learning circumstances where shared knowledge production and cooperation arise. Self-regulated learning serves as a foundation for investigating more social kinds of regulation, such as co-regulation and shared regulation (Hadwin et al., 2018).

Students also demonstrate their ability to experiment and learn using various learning styles, such as formal and informal methods of practicing or skill mastering with their instruments, and to employ both solo and group evaluation strategies. Instructor or peer feedback is vital for students' self-improvement since it allows them to judge their own performances.

Previous research has "provided concrete evidence that [self] regulation strategies may be embedded within instruction" (Osman & Hannafin, 1992, p. 88). According to McCombs (1989), instructional interventions can enhance or replace current capacity. This indicates that education can be planned in such a way that it not only imparts knowledge but also cultivates learners' self-regulation skills. Educators can empower students to take responsibility of their learning, set objectives, monitor their progress, and make appropriate adjustments to improve their academic performance by introducing self-regulation tools into the instructional process.

The results of the current research led to the development of the "Individualized and Co-regulated Teaching Model in Instrument Education" (Figure 1), a systematic methodology that emphasizes student-centered education, dialogue-oriented learning, and teacher-student interaction. This paradigm emphasizes teamwork, communication skills, and individual learning needs to produce meaningful and effective learning experiences. The following guidelines are primary to this teaching model:

1. Individualized Teaching Orientation: Teachers should take a student-centered approach that allows students

to determine their own learning goals, work on projects that interest them, and guide the learning process. Giving students options in repertoire selection and learning approaches can boost motivation. Students should be encouraged to define and monitor their own learning objectives, developing independence and self-assessment.

2. Dialogue-based and Co-regulated Teaching: Effective communication between teachers and students is critical for understanding students' ideas, opinions, and learning requirements. Creating a supportive learning environment in which students can freely express themselves fosters self-management and musical development. Teachers should give resources, information, and direction to help students develop self-management abilities. Feedback should be supplied to aid in self-evaluation and to offer methods for growth.

Self-regulated learning skills are becoming increasingly important in an era of easy access to information and the requirement for self-directed learning. Individuals guiding their own learning, setting objectives, and modifying tactics have become increasingly important as a result of the COVID-19 pandemic and distance learning. As a result, educational programs and instructional methods should stress the development of self-regulated learning skills and encourage independent learning.

McCombs (1989) contends that instructional interventions have the ability not only to supplement but potentially replace existing capacities. His work suggests that educators can construct learning settings that support the development of self-regulation abilities, providing students with the tools they need to achieve academically through intentional and targeted instructional approaches. Further research may concentrate on lower-achieving or less-experienced students in instrument learning to investigate their use of self-regulation abilities.

Finally, in today's information and technology-driven environment, self-regulated learning skills are critical in the context of lifelong learning. Educational programs should promote the development of these skills and provide individuals with the tools they need to become self-directed learners through shared knowledge construction and collaboration.

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