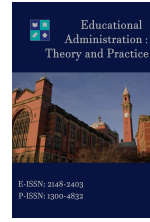




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## Practical Application and Educational Role of Chen Gang's Violin Works in Music Classrooms in Primary and Secondary Schools

Zhang Yifeng   <sup>1</sup>, Mohamad Fitri bin Mohamad Haris   <sup>2\*</sup>

	<b>Abstract</b>
<p><b>Article History</b></p> <p><b>Article Submission</b> 05 November 2022</p> <p><b>Revised Submission</b> 27 December 2022</p> <p><b>Article Accepted</b> 25 January 2022</p>	<p>The performance of musical students is an important element that plays an important role in their career development. Self-efficacy plays an important role to enhance performance. Self-efficacy is described as the judgments that individuals make about their ability to accomplish a given level of performance. Self-efficacy, when applied to musical performance, can be understood as the outcome of an individual's understanding of the musical abilities that they possess. This study aimed to identify how Chen Gang's Violin affects the educational performance of students. For this purpose, the study investigated the role of musical self-efficacy on student performance. This study also explored the mediating role of learning engagement and moderating role of teacher support. A survey method was used to collect data from 230 students from music schools in China. The study considered only those students who play Chen Gang's Violin. A Questionnaire was adopted from previous studies to measure each variable. Smart PLS 3.0 was used for data analysis. The findings of the study showed performance of music students increases when they have music self-efficacy, learning engagement, and teacher support. Further studies are required to identify other factors which play a significant role to increase student performance.</p> <p><b>Keywords:</b> Musical Self-efficacy; Student Performance; Learning Engagement; Teacher Support; Chen Gang's Violin</p>

<sup>1</sup>Dr, College of Art & Sciences, Universiti Utara Malaysia, Sintok, Malaysia, zhang\_yifeng@ahsgs.uum.edu.my

<sup>2\*</sup>Dr, College of Art & Sciences, Universiti Utara Malaysia, Sintok, Malaysia, fitriharisphd@gmail.com

## **Introduction**

Studies within the psycho-educational discipline are focusing more and more on identifying the factors that determine the achievement of success (Zarza-Alzugaray et al., 2020). It is difficult to achieve mastery in any profession, but it is considerably more difficult in music, where it is necessary to acquire a series of intricate abilities that are subsequently displayed during performances (Orejudo et al., 2021). To gain such talents and put them into practice takes a great deal of training and preparation over a long period. This is a process that requires not only the development of technical dexterity but also the capacity to manage one's learning activities and control emotional elements (Ritchie & Sharpe, 2021). It is essential to investigate the beliefs that music students have concerning their ability to prepare for and give a performance in front of other people as well as to perform themselves (Orejudo et al., 2021). This is because individual self-perceptions of ability, which researchers refer to as self-efficacy, are significantly associated with performance attainment (Zarza-Alzugaray et al., 2020).

Students' performance is defined by the amount of knowledge and skill improvement that was obtained, as well as the amount of completed homework, tests, and marks that were given by the instructor (Wu et al., 2020). The result of education is demonstrated in a student's academic performance. The degree to which a student, teacher, or institution has accomplished what they set out to do in terms of their education (Mehmood et al., 2019). A large number of researchers have identified the factors that affect students' performance at the school level, which are linked with student behavior, learning, guidance, and the stress experienced by families (Lei, Cui, & Chiu, 2018). One of the key conceptual frameworks that are used to analyze the behavior of the student in relation to the teaching and learning process is referred to as "learning engagement" (Jian, 2022). The cognitive, interpersonal, and psychological benefits of learning engagement in music education include emotional regulation, self-identity formation, and social interaction enhancement. Work engagement plays a significant role to increase student performance. Engaged students perform better compared to those who are not (Chen, 2017). The child's social development can have an effect on many other types of growth that the youngster goes through. Learning new words as a toddler, being able to resist peer pressure as a high school student, and effectively navigating the obstacles of adulthood are all things that can be influenced by a child's capacity to engage healthily with the people around her (Milteer et al., 2012). The majority of traditional Chinese music follows a set pattern. Around the second century CE, a custom was established in China of providing a narrative context for musical pieces. It is unclear whether contemporary Chinese composers are simply adhering to this age-old tradition or following the modern concert practice of providing program notes, but these composers invariably provide program notes for their compositions. This is because program notes are an essential part of the concert experience. In contrast to conventional compositions, which frequently make allusions to the surrounding environment or surroundings, program notes frequently reflect the intents and ideas of the composers. Connections to China as well as Chinese rites, instruments, and ideology may be found throughout the following selection of program notes. These references relate the works of Bright Sheng and Tan Dun to a sense of sound Cheesiness (Yang & Saffle, 2017).

Students have to excitedly anticipate and look forward to music classes, particularly those that include enjoyable and engaging activities. Students are given the chance, as well as the space, to express their feelings, cultivate their creativity, and discover their abilities through the medium of music. According to Ismail, Chiat, and Anuar (2021), taking a music lesson can help children strengthen their reading abilities while also providing them with an understanding of the fundamentals of music and the history of its development.

This study aims to identify the relationship between music self-efficacy and student performance by utilizing learning engagement as mediating variable. When students have a strong belief in their abilities, their learning engagement increases which leads to high performance (Chen, 2017). This study also utilizes teacher support as moderating variable. According to Peng, Sun and He (2022), the

support of the instructor is a direct contributor to the growth of student performance. Furthermore, students' perceptions of the support of the teacher increase students' independent learning motivation and interest in learning. The relationship between a teacher and a student can be strengthened when the teacher has support. To be more specific, instructors who assist their students show that they care and are concerned for their students, and as a consequence, the students frequently show respect to their teachers and reprobate the concern and respect shown by the teacher by adhering to the norms established in the classroom (Heo et al., 2022). Students typically respond with less respect for their teachers and fewer cooperative behaviors while in the classroom when teachers yell at students, point the finger at them, or use other harsh disciplinary methods on them (Doo & Bonk, 2020). There have been a lot of studies that have been done to investigate the connection between self-efficacy and students' performance, but there haven't been many studies that have investigated the variables that act as mediators or moderators in this connection. This study filled the literature gap by utilizing learning engagement as a mediator and teacher support as a moderator.

## Literature Review

### Musical Self-efficacy

Self-efficacy is the belief that an individual can produce creative outcomes, and it is presumed that self-efficacy motivates an individual to engage in creative activity. The belief that an individual can produce creative outcomes has been referred to as self-efficacy (Mohd.Majzub et al., 2010). Bandura (1999) proposed that an individual's ability to engage in tasks and their level of motivation are both affected by their general sense of self-efficacy. When one has a higher level of confidence in their abilities, they tend to be more hardworking and persistent (Bandura & Adams, 1977). When we talk about self-efficacy, we are referring to an individual's perception of his or her capacity to learn or carry out a task in a particular domain (Grotan et al., 2019). By the time they are in the later grades of elementary school, students have a well-developed sense of self-efficacy that is subject-specific and derives from their experiences at home, school, and with peers. This sense of self-efficacy is one of the most important factors in academic success (Jan, 2015). Students who have a high sense of self-efficacy are more likely to participate eagerly, persevere in the face of challenge, and put in more effort to achieve a goal, whereas students who have a low sense of self-efficacy are more likely to reflect on their failures from the past and put in less effort when confronted with challenging work (Bandura, 1977). The idea of self-efficacy in general was extended into the domain of music to create the concept of musical self-efficacy. It is believed that having a high level of musical self-efficacy can contribute to an individual's level of effort and persistence when pursuing musical endeavors. Therefore, having a high level of self-efficacy in one's musical abilities is beneficial to one's performance. This is because of the relationship between the two (Foulstone & Kelly, 2019). Individual self-efficacy is a significant predictor of performance, according to accumulating empirical evidence (Dogan, 2017; Honicke & Broadbent, 2016; Mulyadi et al., 2016). In addition, a meta-analysis that included forty-one separate studies discovered that there is a statistically significant correlation between self-efficacy and performance (Haase et al., 2018). In addition, the findings from two separate intervention studies have demonstrated that an individual's levels of performance improve as their sense of self-efficacy grows stronger (Alt, 2015). Students' levels of motivation and engagement in their academic work are significantly impacted by the extent to which they believe that they are capable of accomplishing the educational objectives that they have set for themselves (Mulyadi et al., 2016). High academic self-efficacy is associated with academic success (Appleton, Christenson, & Furlong, 2008), academic effort (Sakiz, Pape, & Hoy, 2012), social competence, and positive relationships with peers.

### Students' Performance

Academic performance is defined by the amount of knowledge and skill improvement that was obtained, as well as the amount of completed homework, tests, and marks that were given by the instructor (Honicke & Broadbent, 2016). The result of education is demonstrated in a student's academic performance. The degree to which a student, teacher, or institution has accomplished what

they set out to do in terms of their education (Dogan, 2017). One of the results of receiving an education is one's academic performance. We look at how many students achieved the highest possible grade throughout their academic careers. And investigate the respective roles that students, teachers, and institutions play in the accomplishment of educational objectives. Examinations and other forms of assessment, such as continuous assessment, are used to measure academic performance. The mental level of students, their intelligence, personality, interests, amount of hard work, passion, and confidence of students, as well as the motivation of teachers, teaching methodology, curriculum activities, and parent socialization, are all linked to student performance. The benefits of socialization to academic performance cannot be overstated (Alyami et al., 2021).

According to Honicke and Broadbent (2016), there are a variety of ways in which student performance can be defined and measured, including successful course completion, grades, and increased knowledge and skills. Many researchers argue the usefulness of online education by contrasting the performance of students based on standardized tests and their overall grades in the courses (Alt, 2015; Wang & Neihart, 2015; Zysberg & Schwabsky, 2021). The real learning ability of students may not always be captured by different types of assessments, such as tests, assignments and final grades, which are used by different teachers to produce wide differences (Honicke & Broadbent, 2016). On the other hand, they are used everywhere to evaluate the performance of students and are frequently regarded as reliable indicators of whether or not students have achieved the goals of the course (Suskie, 2004). Using an investigation into the efficacy of the program carried out by Miller, Chamberlain, and Seay, Bacon (2003) emphasized how important it is for students to take exams in their major fields (1991). Tests in a student's major field were found to be the most useful variable in measuring the effectiveness of marketing programs, according to the research of Hussain Bhat and Gupta (2019).

#### Learning Engagement

It is generally accepted that student engagement is a multi-dimensional construct that consists of psychological and behavioral aspects that are essential for the learning process (Dogan, 2017). According to what is stated by Mizani et al. (2022), "student engagement is the glue, or mediator, that links important contexts - home, school, peers, and community - to students and, in turn, to outcomes of interest". Engagement of students has been regarded as the single most important educational outcome because it indicates successful learning and functioning on the part of the students (Gray & Diloreto, 2016). According to the findings of researchers, the level of academic engagement of students has a direct bearing on their overall academic performance (Jian, 2022). Various typologies have been utilized to describe the level of engagement that students have in literature. According to Zepke (2015), the level of student engagement can be measured by how much effort and time students invest in the educational activities they participate in (Collaborating and Interacting).

There are two types of engagement: emotional engagement and social engagement. Emotional engagement is a term that refers to the feelings (such as interest, enjoyment, and pleasure) that are experienced when pursuing a specific topic or activity that is related to schoolwork (learning) (Dogan, 2017). Students who are emotionally engaged in the material find the subject matter interesting and enjoy the feeling of getting problems solved. According to Kahu and Nelson (2018), the relationship between emotional engagement and academic achievement is indirect. More specifically, emotional engagement is related to student participation in the classroom, and student participation is related to academic achievement (Gray & Diloreto, 2016). Emotional engagement also shows continuity over time; students who demonstrated higher emotional engagement during early school grades (first through third grade) have been shown to demonstrate improved academic performance in eighth grade when compared to students who did not demonstrate higher emotional engagement during early school grades. This improvement in academic performance was observed in comparison to students who did not demonstrate higher emotional engagement during early school grades (Hussain Bhat & Gupta, 2019). Students' participation in social activities as an integral part of their academic instruction is referred to as "social engagement" (Kahu & Nelson, 2018; Leach, 2016). Students exhibit social engagement when they actively participate in positive exchanges with peers that are connected

to the instructional content of the lesson. Those exchanges should also be relevant to the instructional content of the lesson. These conversations ought to also have some bearing on the material that is being covered in class (Hussain Bhat & Gupta, 2019). One way for a student to demonstrate social engagement is by working with his or her classmates to find a solution to a problem that has been presented in class, or by passing out instructional materials (like math manipulatives) to other students so that they can use them in their learning. Both of these activities are examples of how students can work together to solve a problem that has been presented in the classroom. Even when accounting for the student's performance in the preceding school year, (Jian, 2022) discovered that higher math grades were associated with higher levels of social engagement in fifth-grade math class (also known as task-related interaction).

#### Teachers Support

When we talk about students' perceptions that their teachers care about them and are willing to assist them in times of need, we are referring to what we mean by "perceived teacher support" (Peng et al., 2022). According to the findings of earlier studies (Chong et al., 2018; Lei, Cui, & Chiu, 2018; Liu et al., 2021), the term "teacher support" can refer to a variety of different things. Some of these things include academic support, emotional support, instrumental support, and autonomy support. The attention of researchers has typically been focused on a wide variety of strategies for providing support to educators; however, the focus of their attention has varied depending on the purposes of the studies they conducted and the participants they surveyed. The present study found that perceived teacher support included academic support, emotional support, and competence support. These three types of support were found to be related to Chinese teachers in previous research that were based on Chinese teachers (Lei, Cui, & Chiu, 2018; Pitzer & Skinner, 2017). Academic support refers to the belief that students have that their teachers care about their learning and can help them solve a problem in the process of learning; competence support refers to the belief that students have that the teacher is in favor of their participation in extracurricular activities and competitions; and emotional support is characterized by teachers' encouragement, acceptance, respect, warmth, and trust toward students. Emotional support is characterized by teachers' encouragement, acceptance, respect, warmth, and trust toward students (Martin & Rimm-Kaufman, 2015; Pitzer & Skinner, 2017).

When a teacher feels that they have support from their colleagues, it can help to strengthen their relationship with their students. To be more specific, teachers who support their students show that they care and are concerned for their students, and as a consequence, the students frequently show respect to their teachers and reciprocate the concern and respect shown by the teacher by adhering to the norms established in the classroom (Lei, Cui, & Chiu, 2018; Peng et al., 2022). Students typically respond with less respect for their teachers and fewer cooperative behaviors while in the classroom when teachers yell at students, point the finger at them, or use other harsh disciplinary methods on them (Lei, Cui, & Chiu, 2018). The level of assistance, concern, and friendship exhibited by a teacher toward their students is the standard against which the concept of "teacher support" is intended to be evaluated. The role of the instructor is of the utmost importance because it is their responsibility to create an environment in the classroom that is amenable to effective learning and the delivery of instruction. Therefore, the level of learner participation, as well as the level of classroom discipline, are important factors that influence academic achievement. Another important factor is the organization of the learning space. When we speak of "teacher support", some examples of what we mean by this phrase include the beliefs that students have that their teachers care about them, value them, and establish personal relationships with them (Lei, Cui, & Chiu, 2018; Peng et al., 2022; Zhang et al., 2018).

When students have a positive perception of their teacher, they tend to have higher levels of interest, valuing, effort, and enjoyment in their schoolwork (Pitzer & Skinner, 2017; Tang & Lam, 2014; Yu & Singh, 2018). They also tend to have a more positive academic self-concept (Martin & Rimm-Kaufman, 2015) and greater expectations for success in their academic endeavors (Zhang et al., 2018). The use of self-regulated learning strategies (Lei, Cui, & Chiu, 2018), as well as a desire to comply with classroom rules, are all positively related to the student's perception of the teacher as supportive.

Ertesvåg, (2016) found that students who perceived their teachers as supportive were more likely to ask for help with their schoolwork when they were stuck. Absenteeism and disruptive behavior in the classroom are inversely related to perceived levels of teacher support, according to research by Lei, Cui, and Chiu (2018). Research conducted by Martin and Rimm-Kaufman (2015) focused on students and teachers as partners in the classroom community.

#### Musical Self-Efficacy and Student Performance

Self-efficacy is described as the judgments that individuals make about their ability to accomplish a given level of performance (Bandura, 1986). Self-efficacy, when applied to musical performance, can be understood as the outcome of an individual's understanding of the musical abilities that they possess. That is, personal attributes or musical abilities are vital in the process of gaining musical success; nonetheless, self-efficacy emerges as an essential aspect that exerts a significant influence on each individual's way of thinking, behaving, and feeling (Zarza-Alzugaray et al., 2020). The degree to which students believe they are capable has a beneficial impact on their performance (Foulstone & Kelly, 2019).

Students need to have a high level of self-efficacy to be successful. This means having faith in one's capabilities and capabilities for learning and performance (Zarza-Alzugaray et al., 2020). Both McCombs and Marzano (1990) and Martinez-Pons (2002) separated self-efficacy into two distinct categories: the first of these was academic self-efficacy, and the second was cognitive ability. The concept of academic self-efficacy focused on a student's perception of his or her capabilities in relation to the academic responsibilities that are placed on that student. Therefore, the students have the determination to acquire these capabilities to improve their overall academic performance (Ozkal, 2019). In the body of academic research, cognitive abilities and academic self-efficacy have both been identified as well-established predictors of performance.

Students can keep their anxiety under control when they have a high degree of self-efficacy, which in turn encourages a higher level of involvement in school learning activities and, as a consequence, the accomplishment of favorable results (Sides & Cuevas, 2020). Thus, based on the above discussion, the following hypothesis is proposed:

H1: Musical self-efficacy has a significant and positive impact on student's performance

#### Musical Self-Efficacy and Learning Engagement

In the context of education, "engagement" refers to the amount of effort that students put out to attain their academic goals and perform well (Olivier et al., 2019). In the past, researchers have found that student engagement levels in education environments are positively linked to a variety of factors, including the use of course tutors (Richardson et al., 2004), the quality of technology (Webster & Hackley, 2017), and motivational factors (Bates & Khasawneh, 2007) and self-efficacy (Sun & Rueda, 2012). There has been a lot of research done on the connection between self-efficacy and active participation in a given activity. According to the findings of a meta-analysis conducted by Bresó et al. (2011), overall engagement was shown to have a substantial correlation with self-efficacy. This correlation was found after reviewing the antecedents and consequences of engagement. Additionally, treatments that attempted to improve a student's sense of their ability to succeed (Olivier et al., 2019) revealed significant effects on the student's level of involvement. Because of its significant influence on both learning and performance outcomes, self-efficacy has been the subject of a significant amount of research (Olivier et al., 2019). People's beliefs that they can produce desired effects by their actions are what constitute self-efficacy, which is defined as "people's beliefs in their capabilities to do so" (Bandura, 1997, p. vii). Furthermore, according to social cognitive theory (Bandura, 2001), a person's mental activity can be affected by their learning environment, which further helps them actively engage in academic tasks. This was found to be the case in positive learning environments. According to this point of view, the association between interaction and learning engagement may be significantly influenced by the psychological factors that are unique to each individual (for example, their confidence in their ability to learn online). Based on these impacts, it seemed as though a higher

level of self-efficacy might need to be achieved as a prerequisite for increasing student involvement. Thus, the following hypothesis was developed on the basis of the above discussion:

H2: Musical self-efficacy has a significant and positive impact on learning Engagement

Learning Engagement and Student Performance:

The level of participation that students earn makes a difference in the education they receive (Jian, 2022). Therefore, a great deal of effort has been put into researching student engagement because it is such a good indicator of students' academic success (Chen, 2018; Lei, Cui, & Zhou, 2018; Li & Baker, 2018). When it comes to predicting academic performance, engagement is one of the most important factors (Wu et al., 2020). According to the findings of researchers, the level of academic engagement of students has a direct effect on their overall performance (Gray & Diloreto, 2016; Hussain Bhat & Gupta, 2019). The success of students is directly proportional to the amount of effort put into sustaining a high level of learning engagement among students (Lei, Cui, & Zhou, 2018; Yoon et al., 2020). In addition, the research in this field has shown that active student participation in learning plays an important role as a precursor to academic success in students (Bergdahl, Nouri, Fors, & Knutsson, 2020; Chen et al., 2020; Pursel, Zhang, Jablokow, Choi, & Velegol, 2016; Yoon, Kim, & Kang, 2020). In addition, they hypothesize that the degree of engagement a student exhibits in their musical studies is a factor in the relationship between musical self-efficacy and performance. Beliefs in one's ability to succeed boost student engagement, which in turn leads to higher levels of academic achievement (Ozkal, 2019). Only a very limited number of studies have been conducted to investigate the role that self-efficacy plays in predicting emotional and social engagement in mathematics. It was found that students' levels of participation in extracurricular activities partially mediated the relationship between academic and social efficacy with peers and achievement. According to research done by Doo and Bonk (2020), there is a positive correlation between self-efficacy and engagement. Self-efficacy leads to a greater willingness to expend additional energy and effort on the completion of a task or assignment, which in turn leads to more task involvement and absorption. Students who are effective at managing their motivation by establishing personal goals for themselves are more likely to be engaged in their studies (Diseth, 2011), as a result of which they have a greater chance of being successful. According to Multon, Brown, and Lent (1991) and Robbins et al. (2004), one of the most powerful predictors of performance is the degree to which students believe in their ability to succeed. Students who are effective in their studies are those who are willing to put in a lot of effort to achieve their objectives, who are willing to try new approaches when those they initially choose do not work out, and who can deal more effectively with challenging circumstances because they can persevere and maintain the belief that they will eventually find answers to their problems and be successful. As a result, in most cases, they have good performance (Bandura, 1997). Our argument is based on the prior explanation and proposes that self-efficacy has a positive impact on engagement, which in turn has a favorable impact on student performance. As a result, we present the following hypothesis is one that we present.

H3: Learning engagement has a significant and positive impact on student's performance

H4: Learning engagement mediates the relationship between Musical self-efficacy and students' performance

Teacher support as a moderator

The performance of students is a significant indicator of the quality of their learning and can be used to measure the effectiveness of the learning process. Both in theory and practice, there is a worry over the connection that exists between the achievement of pupils and the social support they receive (Peng et al., 2022). Students' academic performance and their overall growth in the future are both improved by the degree to which they are actively engaged in their learning. The academic performance of students is greatly impacted by the role that teachers play in the classroom (Lei, Cui, & Chiu, 2018). This finding was substantiated by research carried out by Filippello et al. (2020) on a representative cross-section of adolescents living in the Italian setting. When teachers manage activities and provide feedback in a way that increases students' perceptions of their own competence,

they provide students with structure. The sense of autonomy that students have as a result of their teachers' efforts to motivate and engage them in academic activities leads to an increase in that students' perception of their own autonomy. Lastly, through involvement, teachers satisfy the students' need for relatedness by devoting time, resources, and affection to their relationships with students. This satisfies the students' need to feel like they belong (Martin & Rimm-Kaufman, 2015). The aid that is supplied to an individual using the social contacts that they maintain is referred to as social support. Students' desire to study can be bolstered when they are immersed in an environment that is conducive to social support, and this can lead to productive learning practices that improve performance (Chong et al., 2018). In a longitudinal study on adolescents, Lei, Cui, and Chiu (2018) highlighted the role played by the quality of the relationship. Peng et al., (2022) demonstrated that teachers' ability to offer constructive feedback to their students predicted the students' engagement over time. This was demonstrated by the teachers' ability to predict the students' engagement over time. It's possible that students will be more motivated to learn and feel more satisfied with their experience in school if their teachers demonstrate respect, praise, and confidence in them as individuals. The support of teachers is essential for the growth of pupils. Teachers play an important role in safeguarding their students' development, and the autonomy, emotional, and academic supports that teachers offer have a significant bearing on the academic success of their charges (Liu, Gong, Zhang, Yu, & Zhou, 2021). Multiple comparative studies have shown that students who perceive a higher level of support from their teachers have significantly higher academic achievement than students who perceive a lower level of support from their teachers (Li & Bai, 2018). Thus, nassed on the above discussion we proposed the following hypothesis:

H5: Teacher support moderates the relationship between music self-efficacy and student performance

Based on the above literature review and discussion following study framework has been developed as shown in Figure 1.

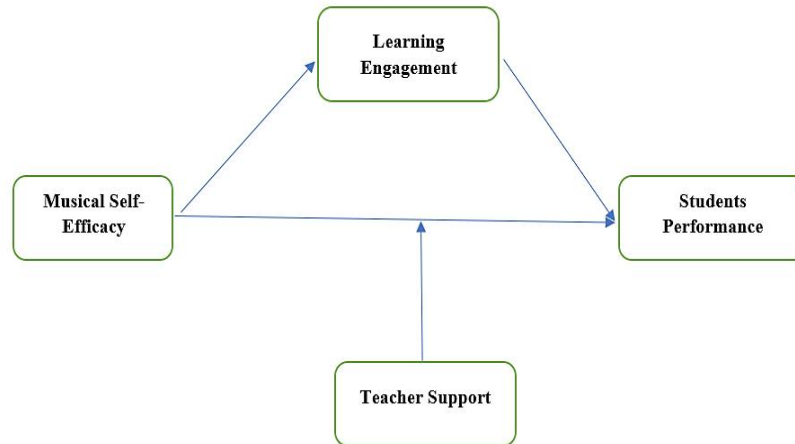


Figure 1. Conceptual Framework

## Methodology

### Approach

The current study utilized a quantitative methodology with a deductive approach, in which hypotheses were formulated and tested to determine how certain variables affected other variables.

### Population

The study's target population consisted of Chinese music students from several institutes that play Chen Gang's Violin.



### Sampling Technique and sample size

For this investigation, data collection from respondents consisted of physically distributing questionnaires and using the technique of convenience sampling. We received a total of (250) responses, which gives us a response rate of (63%) based on the total number of questionnaires that were sent out, which was approximately (400). (230) of the collected responses out of a total of 250 were valid and were used for the analysis of the data. Data were analyzed by using SmartPLS 3.0. The majority of respondents were female (65%) whereas (45%) of respondents were from the 16-19 year age group. Out of (230) respondents, (95) respondents playing violin for more than 4 years (Table 1).

Table 1. Demographic profile of the respondents

Demographic Item		Frequency
Gender	Male	92
	Female	138
Age	Less than 9 years	24
	10-12 years	58
	13-15 years	45
	16-19 years	103
No. of years of playing Violin	1-2 year	54
	3-4 years	81
	More than 4 year	95
Education	Primary School	31
	Middle School	76
	High School	123

### Measure

The questionnaire regarding the constructs was taken from the other studies and used in this one. A 10-item scale of musical self-efficacy was adopted from Zarza-Alzugaray et al., (2020). To measure student performance, 4 item scale was adopted from the measure (Ozkal, 2019). Learning engagement is measured by using a 9-item scale adopted by Mizani et al., (2022) whereas a scale adopted by Peng et al., (2022) measures teacher support. Fifteen items were used to measure teacher support. A Likert scale with five points was used to evaluate all items, with one representing "strongly disagree" and five representing "strongly agree".

### Measurement Model

The variance-based partial least squares structural equation modeling (PLS-SEM) technique was used in this work rather than other covariance-based techniques such as AMOS. The effectiveness of PLS-SEM for both types of studies (confirmatory and exploratory) is the main consideration that led to its adoption (Hair, Ringle, & Sarstedt, 2011). Covariance-based structural equation modeling (also known as CB-SEM) and partial least squares structural equation modeling (PLS-SEM) are the two distinct subtypes of structural equation modeling (SEM) (Hair, Risher, Sarstedt, & Ringle, 2019). CB-SEM is utilized for theory acceptance and rejection, whereas PLS-SEM is utilized for theory advancement and development. This is the primary distinction between the two methodologies (Bashir et al., 2021). PLS-SEM is an effective method for complex and multi-order models that do not require any special data normality assumptions. PLS-SEM is also useful for analyzing small data sets (Hair, Hult, Ringle, & Sarstedt, 2016). As a result, the PLS-SEM approach for empirical data analysis is considered for this study by utilizing Smart PLS 3.3.3 software. The outcomes of the study based on PLS-SEM are evaluated in two stages, the first of which is the model measurement, and the second of which is structural model evaluation. In the measurement model stage, the reliability and validity of

the constructs are evaluated, whereas, in the structural model stage, the relationship between the hypotheses that have been proposed is investigated. The "t" statistic and the values associated with "p" are utilized to determine whether or not a hypothesis is accepted.

#### Reliability and Validity

There are two components to the model measurement outcomes: model reliability and validity. To validate the model's reliability, the present study considered the values of Cronbach's alpha, composite reliability, and average variance extract (AVE) (Hair, Hult, Ringle, & Sarstedt, 2016). Table 2 displays all the values. If the values of Cronbach's alpha are greater than 0.7, then they are considered acceptable (Hair, Hult, Ringle, & Sarstedt, 2017). In a similar vein, the value of the composite reliability ought to be higher than 0.7. The values of Cronbach's alpha for the constructs of the models (musical self-efficacy, student performance, learning engagement, and teachers support) are as follows: (0.918), (0.841), (0.934), and (0.943), and the values of composite reliability for the constructs of the models are as follows: (0.931), (0.894), (0.944), and (0.951), respectively. Cronbach's alpha and composite reliability scores are all within acceptable limits, indicating that the model is reliable. For the model's convergent validity, average variance extract (AVE) values larger than 0.5 are considered appropriate. The value of AVE for all constructs (0.577, 0.678, 0.654, 0.565) is within the acceptable range as demonstrated in Table 2.

The current study's framework is based on (38) items from the four variables, as shown in Table 2. The outer loading values of each item of constructs are demonstrated in Table 2. Items are considered to be reliable if the values of outer loading are greater than 0.7 (Hair, Hult, Ringle, & Sarstedt, 2017). Fornell and Larcker, (1981) recommended that the value of AVE greater than 0.5 is also acceptable if the value of composite reliability is greater than 0.7. Table 2 shows that all items' outer loading values meet the relevant criterion.

Table 2. Construct Reliability and Validity

	<b>Items</b>	<b>Outer Loading</b>	<b>Cronbach's Alpha</b>	<b>CR</b>	<b>AVE</b>
Learning Engagement	LE1	0.840	0.934	0.944	0.654
	LE2	0.812			
	LE3	0.822			
	LE4	0.797			
	LE5	0.858			
	LE6	0.826			
	LE7	0.823			
	LE8	0.766			
	LE9	0.724			
Music Self-Efficacy	SE1	0.743	0.918	0.931	0.577
	SE2	0.784			
	SE3	0.712			
	SE4	0.714			
	SE5	0.717			
	SE6	0.765			

	<b>Items</b>	<b>Outer Loading</b>	<b>Cronbach's Alpha</b>	<b>CR</b>	<b>AVE</b>
	SE7	0.782			
	SE8	0.813			
	SE9	0.812			
	SE10	0.743			
Student Performance	SP1	0.842	0.841	0.894	0.678
	SP2	0.781			
	SP3	0.874			
	SP4	0.793			
Teacher Support	TS1	0.457	0.943	0.951	0.565
	TS2	0.741			
	TS3	0.749			
	TS4	0.696			
	TS5	0.773			
	TS6	0.784			
	TS7	0.803			
	TS8	0.784			
	TS9	0.811			
	TS10	0.795			
	TS11	0.738			
	TS12	0.804			
	TS13	0.785			
	TS14	0.771			
	TS15	0.708			

#### Discriminant Validity (HTMT)

To evaluate the discriminant validity of the test, we used the HTMT ratio. With the help of these tests, we can establish whether or not there is a distinction between the variables. According to Jordan and Spiess (2019), to guarantee that a variable possesses discriminant validity, the HTMT ratio value should be lower than 0.90. According to the results in Table 3, the HTMT values of constructs are less than 0.890, confirming that discriminant validity has been established in the model of this study (Figure 2).

Table 3. Discriminant Validity (HTMT)

	<b>LE</b>	<b>SE</b>	<b>SP</b>	<b>TS</b>
Learning Engagement				

	LE	SE	SP	TS
Music Self-Efficacy	0.642			
Student Performance	0.631	0.890		
Teacher Support	0.618	0.840	0.836	

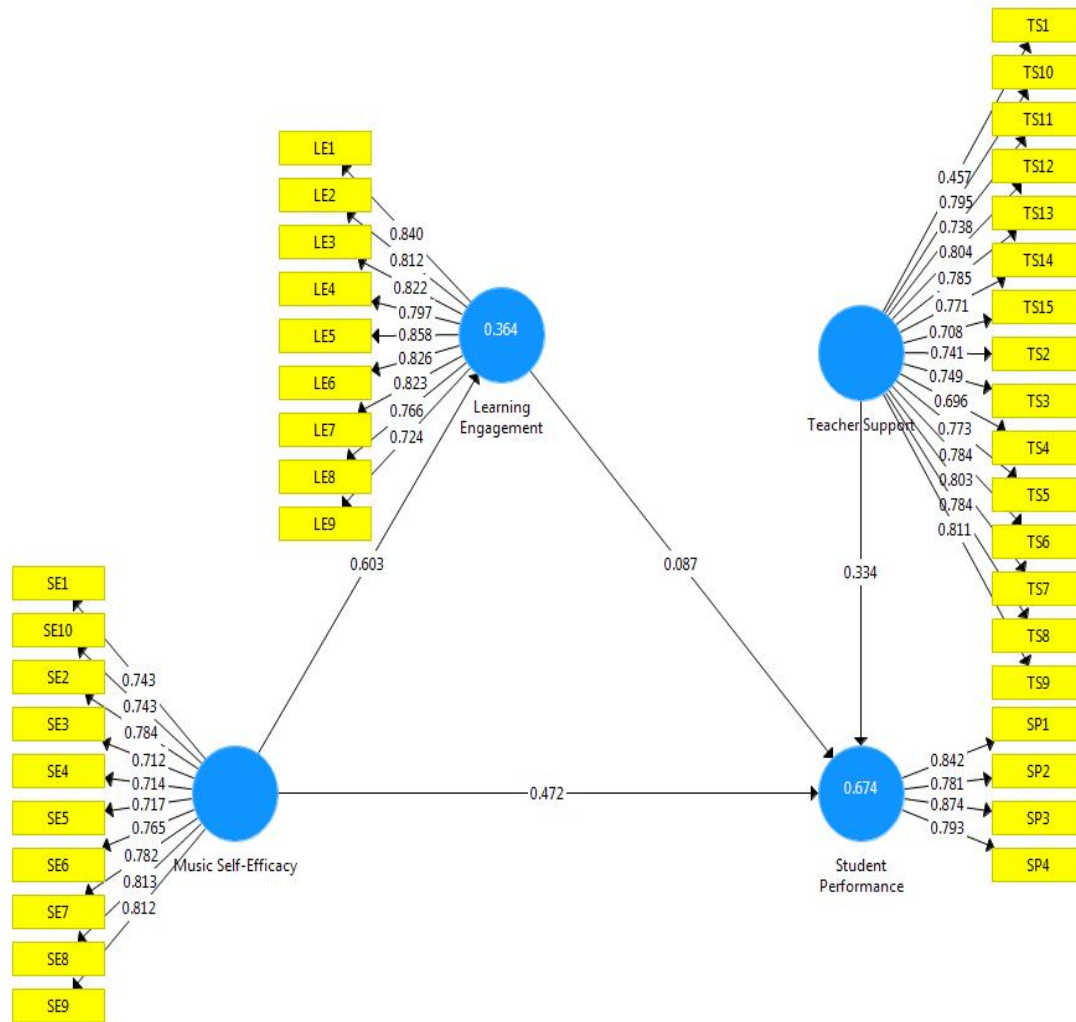


Figure 2. Measurement Model

### Hypothesis Testing

The current study's empirical inquiry is carried out by employing the bootstrapping method of 500 samples (Avotra et al., 2021; Sandra Marcelline et al., 2022; Xiaolong et al., 2021). Table 4 displays the outcomes of the direct, and indirect paths. "T" values and p-values are considered in the study for the acceptance and rejection of hypotheses. The outcomes of the hypotheses proposed by this study are shown in Table 4. The results of hypothesis 1 ( $t = 6.431, p = 0.000$ ) verified the positive relationship between musical self-efficacy and students' performance. Furthermore, the beta value of hypothesis 1 confirmed that a unit change in the exogenous variable (musical self-efficacy) resulted in a (0.472) change in the endogenous variables (students' performance). Therefore, hypothesis 1 of the current investigation has been accepted. The results of the second hypothesis ( $t = 7.842, p = 0.000$ ) revealed the presence of a positive relationship between musical self-efficacy and learning

engagement. Furthermore, the beta value of hypothesis 2 confirmed that a unit change in the exogenous variable (musical self-efficacy) resulted in a (0.603) change in the endogenous variables (learning engagement). Therefore, hypothesis 2 of the current investigation has been accepted (Figure 3). The results of hypothesis 3 ( $t= 2.101, p=0.018$ ) verified the positive relationship between learning engagement and students' performance. Furthermore, the beta value of hypothesis 3 confirmed that a unit change in the exogenous variable (learning engagement) resulted in a (0.087) change in the endogenous variables (students' performance). Therefore, hypothesis 3 of the current investigation has been accepted.

Table 4. Summary of the structural model

Constructs	Path coefficient	t-statistics	p-values
Music Self-Efficacy -> Student Performance	0.472	6.431	0.000
Music Self-Efficacy -> Learning Engagement	0.603	7.842	0.000
Learning Engagement -> Student Performance	0.087	2.101	0.018

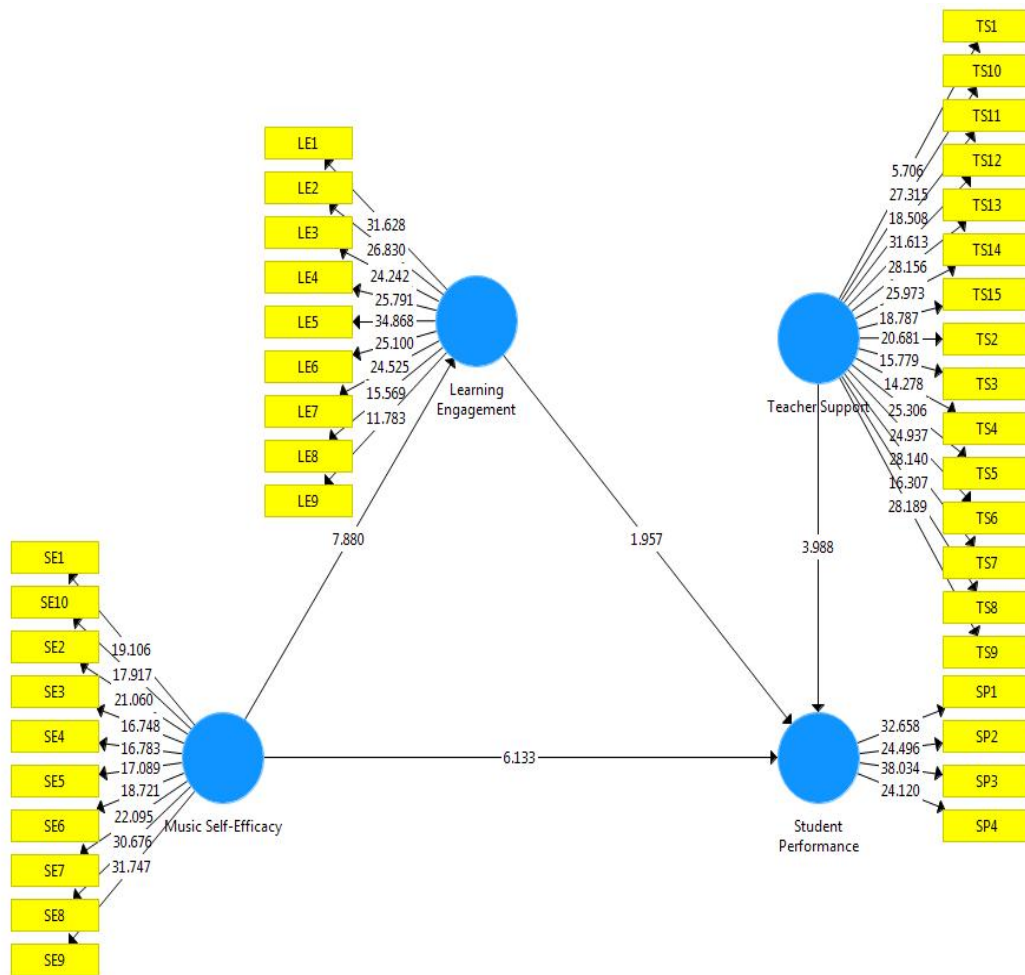


Figure 3. Structural Model

### Mediation Analysis

The role of learning engagement as a mediator in the relationship between musical self-efficacy and students' performance was also investigated. The current study assumes H4 for the empirical examination of the mediating role. The relationships between musical self-efficacy and students' performance are positively mediated, according to Hypothesis 4. As per the findings, learning engagement mediates the association between musical self-efficacy and students' performance ( $t=1.874$ ,  $p=0.031$ ). Therefore, the fourth hypothesis of this study is confirmed. Table 5 showed the result of the mediation analysis.

Table 5. Mediation Analysis

	<b>Original Sample</b>	<b>T Value s</b>	<b>P Value s</b>	<b>VAF</b>	<b>Type of Mediation</b>
SE -> LE -> SP	0.052	1.874	0.031	38%	Partial

### Moderation analysis

The fifth hypothesis stated that a significant moderating role in the relationship between students' musical self-efficacy and their performance is played by the support that teachers provide. An interaction term was used to measure the moderating effect of teacher support. The findings of the analysis confirmed that teacher support is a significant moderator in the relationship between musical self-efficacy and student performance ( $t= 1.655$ ,  $p= 0.049$ ). Thus, H5 is also accepted. Figure 4 and Table 6 show the moderating effect of teacher support.

Table 6. Moderation Analysis

	<b>Original Sample</b>	<b>T Values</b>	<b>P Values</b>
MSE x TS -> Student Performance	0.051	1.655	0.049

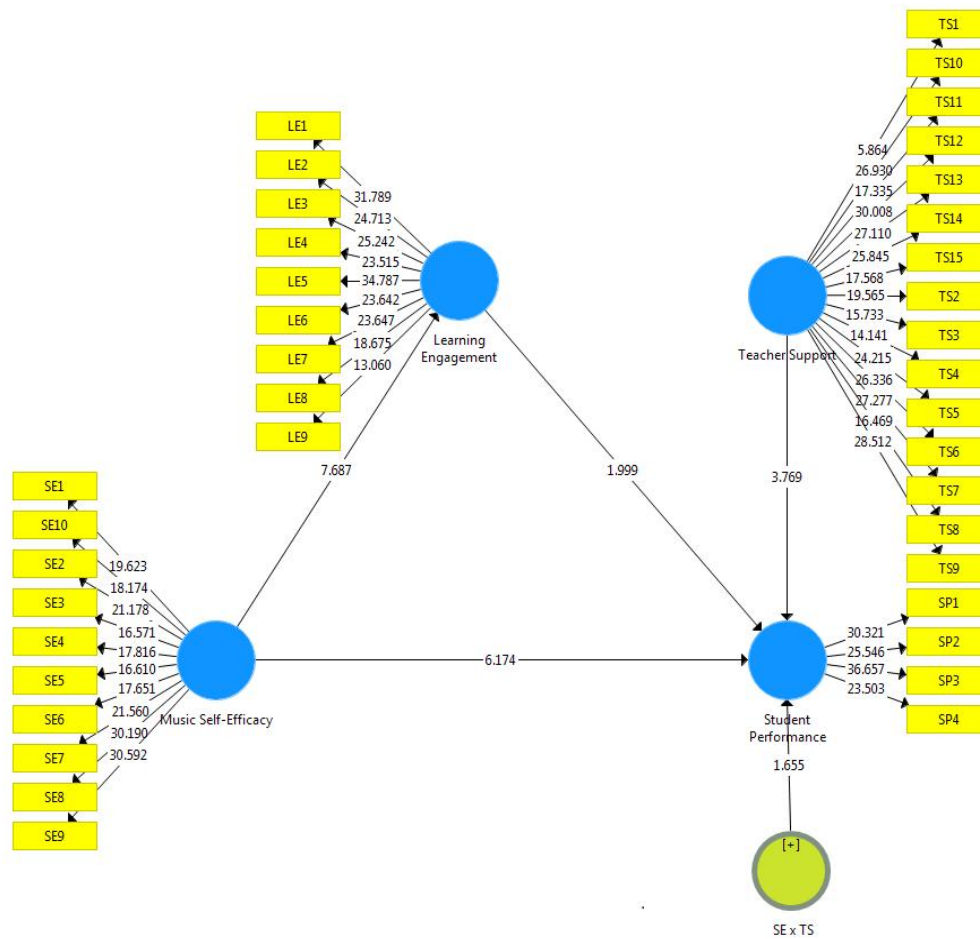


Figure 4. TS as a moderator between LE and SP

### Discussion

The study aimed to investigate the relationship between musical self-efficacy and students’ performance. To achieve this objective, data was collected from those students who play Chen Gang’s Violin.

The finding of the study stated that there is a significant and positive relationship between musical self-efficacy and students’ performance. It means the performance of students increases when they have a strong belief in their ability to play the violin. This finding is also confirmed by the study of (Zarza-Alzugarayet al., 2020) who stated that a significant and positive relationship exists between musical self-efficacy and student performance. Another study conducted by Foulstone and Kelly (2019) also confirmed that the relationship between self-efficacy and student performance is positive and significant. The findings of our study also align with the findings of previous studies. Thus H1 is accepted.

Another objective of the study was to find the relationship between musical self-efficacy and learning engagement. The engagement of students increases with an increase in self-belief. The findings of the study confirmed a significant and positive relationship between musical self-efficacy and learning engagement. This finding is also supported by the study done by Wu et al., (2020) who confirmed a positive and significant relationship between self-efficacy and learning engagement. The engagement of students increases when they have a strong belief in themselves (Dogan, 2017). These studies are in the support of our hypothesis. Thus, H2 is also accepted.

The third objective of the study was to determine the relationship between learning engagement and student performance. If students are more engaged in their learning activities then they perform better (Bergdahl et al., 2020). A study conducted by Hussain Bhat and Gupta, (2019) stated that a significant and positive relationship exists between learning engagement and student performance. Performance of students increases as they get more engaged in their work. The finding is also in the line with previous findings which showed a significant and positive relationship between learning engagement and students' performance, Thus H<sub>3</sub> is also accepted.

When students have a strong belief in their abilities, their engagement increases, and due to an increase in engagement, they perform better (Ozkal, 2019). This confirms the fourth hypothesis of the study which stated that learning engagement mediates the relationship between musical self-efficacy and students' performance. Dogan, (2017) also confirmed that when students have a strong belief in their own capabilities they get more engaged in their work, and due to this their performance increases. This study also in the support of our fourth hypothesis which showed that the relationship between musical self-efficacy and student performance is mediated by learning engagement. Thus, H<sub>4</sub> is also accepted.

Teacher support is an essential element to increase the performance of students. If the teacher is supportive then the student will perform better and if the teacher is not supportive then the performance of the student will decrease (Chong et al., 2018). Teachers play an important role in safeguarding their students' development, and the autonomy, emotional, and academic supports that teachers offer have a significant bearing on the academic success of their charges (Liu, Gong, Zhang, Yu, & Zhou, 2021). This statement is in support of our fifth hypothesis, which stated that the relationship between musical self-efficacy and students' performance was moderated by the presence of teacher support.

## Conclusion

Psychoeducational studies are focused more on success factors. Mastering any career is difficult, but it's especially difficult in music, where intricate skills are demonstrated during concerts. It is vital to undertake an examination into the views that music students have concerning their abilities to prepare for and give a performance in front of other people as well as to perform themselves. This study looked at factors affecting music students' performance. The study examined the link between musical self-efficacy and student performance. This study examines how learning engagement moderates the link between musical self-efficacy and student performance. Students who play Chen Gang's violin provided the data. Self-efficacy affects music students' performance, the research found. Learning engagement and teacher support strengthen this link.

A major limitation of the study is generalizability. This study only included those students who play Chen Gang's Violin. In subsequent research, additional musical instruments might be taken into account to broaden the applicability of the findings. Another limitation of the study is that it used a survey method to measure the performance of musical students. The future researcher can use experimental techniques to collect the data. Moreover, this study used learning engagement as a mediator and teacher support as a moderator. Other mediating and moderating variables, such as parental support, peer support, and motivation, can be considered in future research.

This study contributed to the literature by exploring the relationship between musical self-efficacy and students' performance by using learning engagement as a mediator and teacher support as a moderator. This study will help the educational institute to find out how they can increase the performance of their students. Moreover, this study will also help the students and teacher to identify factors that are beneficial to increase the relationship between teacher and student which leads to better performance.



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