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Achievement Goal Orientations and Self-regulated Learning Levels among Pre-service Music Teachers: A Comparative Study

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ABSTRACT

This study examines how 2×2 Achievement Goal Orientations (AGO) relate to Self-Regulated Learning (SRL) levels in pre-service music teachers, considering variables that influence these orientations. The research found that female pre-service music teachers showed higher achievement orientations than males, especially in Learning-Approach and Learning-Avoidance Orientations. Different grade levels and study habits also impacted these orientations. Students who studied more displayed greater Learning-Approach Orientation and SRL. Females had higher SRL scores, particularly in Planning, Goal Setting, and Strategy Use. Academic achievers showed more positive orientations and lower Learning Dependency. These insights can guide interventions and support systems for pre-service music teachers, enhancing learning outcomes and teacher education programs.

Key words: Self-regulated Learning, Achievement Goal-orientation, Music Education, Instrument Education

INTRODUCTION

Motivation is a powerful internal process that guides and influences human behavior. In the field of education, it is regarded as an important factor affecting students' learning and academic achievement. Motivation theories help us understand why people engage in certain behaviors, why they strive toward certain goals, and why they avoid certain goals (Dweck, 1999; Dweck & Molden, 2005). Motivation (Schunk et al., 2008) is also the process of initiating and maintaining goal-directed action. Schunk's definition assumes that learners set objectives and use cognitive processes such as planning and monitoring, and behaviors such as perseverance and effort, to achieve those goals (Schunk, 2012, p. 346). Motivation, like learning, is inferred through behavioral indices such as verbalizations, task choices, and goal-directed behaviors rather than being observed directly. In short, motivation is a concept that explains why people behave the way they do (Schunk, 2012).

Motivated students employ more effective learning strategies, invest increased effort, and adopt superior learning methods. Fixed mindset students often feel disheartened by challenges due to perceived lack of control (Schunk, 2014). This leads to reduced self-efficacy, negatively affecting learning (Schunk, 1995; Schunk & Zimmerman, 2006). Conversely, growth mindset students persist in the face of challenges, adapting strategies, seeking help, consulting resources, and engaging in self-regulation (Dweck, 2006; Zimmerman et al., 1994, 1998; Zimmerman et al., 1992).

To explore these concepts further, it is essential to understand how achievement goal orientations (AGO) and self-regulated learning (SRL) are interconnected, as they play significant roles in providing support to students' social and emotional needs and enhance their academic achievement (Pintrich & Schunk, 2002; Schunk, 2012). By delving into these learning theories, educators can gain insights into the internal impulses and motivations of students, while also utilizing various strategies to foster their motivation and maintain their interest in the learning process. By effectively teaching students about AGO and SRL, educators can encourage them to utilize these concepts as effective learning strategies, leading to further academic success.

Achievement Goal Orientation and Self-regulation in Learning

Understanding motivation is crucial for learning theories and models because it is one of the most fundamental elements affecting students' learning processes. AGO and SRL have been the most important theories of learning and motivation in educational research. Achievement goal orientations reflect the attitudes and approaches of students in their efforts to achieve goals. Motivation is goal-directed behavior instigated and sustained by people's expectations concerning the anticipated outcomes of their actions and their self-efficacy for performing those actions (Bandura, 1986, 1997). Research shows that motivated students tend to

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have learning-focused goal orientations, i.e., they focus on improving their learning processes (Bandura, 1986; Pajares, 1996; Schunk & Zimmerman, 2006). Educators, by understanding the role of motivation, can develop appropriate strategies and methods to improve students' learning experiences and support them more effectively.

From a socio-cognitive perspective, students exhibit competency behaviors driven by underlying success goals (Nicholls, 1989; Wigfield & Cambria, 2010). These goals structure beliefs about task value, effort, success causes, and emotional responses (Kaplan & Maehr, 1999), creating an organizational framework (Anderman et al., 2002). Achievement motivation theorists (Ames, 1992; Dweck, 1986; Nicholls, 1984; Nichols, 1989; Urdan, 1997) have discussed why distinct goals lead to diverse patterns and task choices, focusing on motivation nature over quantity (Anderman & Wolters, 2006, p. 72). For instance, equally motivated students may complete tasks for different reasons and attributes (Ames, 1992; Dweck, 1999; Dweck & Leggett, 1988). The achievement goal theory categorizes goals into learning (task) and performance (ego-related or talent) goals. Learning-oriented students aim to develop skills, seeking mastery, while performance-oriented individuals aim to showcase talent, striving for excellence (Ames, 1987, p. 127).

SRL is a dynamic and constructive process in which learners set goals and then actively try to monitor, regulate, and control their cognition, motivation, and behavior as guided and influenced by their goals and the context in which they find themselves (Zimmerman, 1986, 2000).

These SRL tasks play a significant role in moderating the relationship between individuals and their environment, as well as their overall achievement. This definition aligns with previous models of SRL (Butler & Winne, 1995; Zimmerman, 1989, 2000). SRL encompasses various strategies, each of which may be suitable for pursuing different goals. Overall, the 2×2 framework of learning goals and SRL are interrelated, with learners' chosen goal orientations influencing the strategies they employ to regulate and control their learning process, leading to potential success and achievement in their educational pursuits.

Schunk (2012) defines self-regulation as choosing between behaviors for delayed, greater rewards. Prioritizing behaviors, creating cues, self-instruction, and performance monitoring are involved. Self-recording behavior frequency and self-reinforcement are common. Core "sub-processes are self-monitoring, self-instruction, and self-reinforcement," collectively enhancing self-regulated learning for goal achievement (Zimmerman, 2000, p. 15). The achievement goal literature examines factors behind pursuing goals in different contexts (Pintrich & Schunk, 1996). Integrating the reasons for task pursuit merges achievement motivation concepts with self-regulated learning models. Meece (1994) notes motivation's "what," "why," and "how" combine, influencing self-regulation processes. For instance, learners motivated to excel in a subject direct monitoring toward progress cues (Meece, 1994), and use cognitive strategies like deeper processing to enhance learning and success. Understanding motivation's interaction with self-regulated learning optimizes learning and performance outcomes.

Achievement Goal Orientation and Self-regulated Learning in Music Education

There has been increased interest in the field of music education research on how effective music learners develop their musical goals in their education, and how they decide and act on the processes of self-regulated learning strategies (McPherson & McCormick, 1999; McPherson & Zimmerman, 2011; Varela et al., 2016). McPherson and colleagues (1999, 2001, 2011) reviewed a large body of research on the learning experiences and self-regulatory and motivational components of successful musicians' and performers' development and mastery processes, highlighting the reciprocal influence of motivation and practice quality. Mastering an instrument is undoubtedly challenging, requiring individuals to make strategic choices about when and how to practice to tackle technically demanding repertoires (O'Neill & McPherson, 2002). To excel in instrumental education, musicians need self-determination and effective planning abilities.

According to chunk (2001), successful musicians employ specific strategies to become proficient at their instruments. The key to their progress is being honest with themselves about the challenges they face and the tasks at hand. By recognizing the strategies they use to overcome difficulties, they can identify the most effective ones (Hallam, 2001). Furthermore, musicians benefit from comparing their performances to their learning experiences. Recent studies have shown that students who can self-regulate during their instrument lessons make significant gains in both physical skill acquisition and intellectual understanding. In essence, fostering self-awareness and strategic learning approaches can lead to greater success in mastering an instrument (Hallam, 2001; Nielsen, 2008; O'Neill & McPherson, 2002; Osborne et al., 2021).

Approaching music education, especially instrument education, from a self-regulation perspective offers significant potential. Learners must effectively manage various aspects of their practice, including organizing practice phases, maintaining process control, and sustaining motivation for extended periods (McPherson & Renwick, 2001, 2011). McPherson and Renwick's research delved into the reasons why some music students who feel like they've failed choose to drop out of music school. They discovered that these students struggled to develop effective learning methods, control their learning processes, and employ suitable strategies owing to a lack of accessible support (Martin, 2008, p. 241). Feedback to improve performance, raises awareness of competition, and addresses feelings of insecurity and was found to be essential for these students. McPherson and Renwick's (2011) findings underscore the significance of self-regulation theory in fostering musical skill acquisition and the necessity of nurturing it throughout music instruction. By incorporating self-regulation principles, music educators can empower their students to overcome challenges and develop into proficient musicians.

Furthermore, the theory of achievement goal orientations has been a focal point in numerous music-related studies, demonstrating its significance in enhancing music education

(Burwell & Shipton, 2011; Campbell et al., 2011). Emerging as a valuable instrument, the theory of achievement goal orientations has offered insights into the engagement, performance, and motivations of both students and aspiring music educators within music learning experiences. The empirical insights drawn from this theory hold the potential to pinpoint effective strategies for boosting student engagement and motivation. The idea of achieving goal orientations has proven to be a viable foundation for comprehending students' engagement and motivation in the learning process within the scope of this study. The effectiveness of the 2×2 Achievement Goal Orientation model has been substantiated by diverse research across North American and international contexts (Anderman & Patrick, 2012). This theory continues to serve as a focal point in educational research, focusing on the enhancement of classroom practices and overall learning understanding.

Instrumental students (McPherson & McCormick, 1999; Miksza, 2012; Nielsen, 2004, 2008) and elementary/middle school children (Smolej Fritz & Peklaj, 2011; Leon-Guerrero, 2008; McPherson & Renwick, 2001) are the primary subjects of research on self-regulated learning in music education. However, research on self-regulation abilities in pre-service music teachers is limited (Ersozlu et al., 2017; Boon, 2020).

Addressing this gap is crucial, shedding light on how self-regulated learning impacts academic and musical achievements in music education. Prospective music educators must develop strong learning methods to enhance their expertise (Van Eekelen et al., 2005). Recent research reveals a link between teachers' self-regulation and their ability to guide students (Randi, 2004), underlining the importance of teachers' self-regulated learning in effective instructional practice. Highlighting the educational imperative articulated by Bembenutty (2006), Dembo (2001), and Randi (2004), it becomes clear that aspiring educators must actively cultivate self-regulated learning skills. These skills are not only essential for their personal growth but also for their eventual effectiveness in teaching. The purpose of this research was to answer the following questions based on what was found in the existing literature:

1. To what extent do prospective music teachers' achievement orientations and self-regulated learning skill levels vary based on factors such as gender, grade levels, practice time, and recent instrument exam scores?
2. How does the interplay between students' goal orientations and their capacity for self-regulated learning manifest itself, as observed within the context of music education?

The Purpose of the Current Study

The purpose of this study is to gain a thorough understanding of how pre-service music teachers use SRL skills. The study sheds light on significant elements that may affect students' learning experiences by examining potential differences in AGO and SRL skill levels based on various factors like gender, grade levels, practice time, and instrument exam scores. Additionally, this study explores the relationship between students' goal orientations and their self-regulated learning levels. Overall, this study has the potential to offer insightful information about the difficulties and necessary approaches for fostering SRL skills in students learning processes.

METHOD

Research Design

This study is a quantitative research conducted in a survey model, and aims to make generalizations about the entire population by examining either the entire universe or a representative sample taken from the population (Karasar, 2002).

Study Group

The survey included 336 music education students (195 females and 131 males) enrolled in three music education departments at public institutions in Turkey for the 2019-2020 academic year. This study's participants were chosen by convenience sampling. There were 28.0% freshmen, 22.6% sophomores, 23.5% juniors, and 24.1% seniors in the sample.

Data Collection Process

Two scales were used to gather data for this study: the 2×2Achievement Orientations Scale (AGOS) and the Self-regulated Learning Scale (SLLS).

The 2×2 Achievement Goal Orientations Scale (AGOS) was developed by Akın (2006) to assess the achievement orientations of university students. It employs a 5-point Likert-type scale and comprises four dimensions: Learning-Approach, Learning-Avoidance, Performance-Approach, and Performance-Avoidance Orientations. The alpha internal consistency coefficients for the sub-dimensions of the scale range between.92 and.97, and the test-retest reliability coefficients range between.77 and.86.

The Self-regulated Learning Scale (SRLS) was developed by Turan and Demirel (2010) to determine students' SRL skills. It is a 5-point Likert-type scale consisting of four sub-dimensions and 41 items: Motivation and Acting for Learning, Planning, Strategy Use and Evaluation, and Learning Dependency. The Cronbach Alpha Coefficient for the Sub-scales was found to be.88.,91.,83.,76, and.91 for all items, respectively.

Data Analysis

The data from the 2×2 Achievement Orientations Scale and the Self-regulated Learning Scale showed Skewness and Kurtosis values within the range of (±2), indicating that the data follow a normal distribution. As the data are suitable for a normal distribution, parametric tests were used. As such, to examine the difference between two parametric groups, a t-test was used, and to investigate the difference among more than two groups, an ANOVA test was employed for data analysis. Correlation analysis was also conducted to evaluate the relationships between the scales.

RESULTS AND DISCUSSION

Comparison of Achievement Orientations Scale Means

In order to compare the 2×2 achievement orientations of music teacher candidates according to their gender, a t-test for independent groups was conducted and the results are given in Table 1.

When the t-test results given in Table 1 were examined, significant differences were found in favor of females between the mean scores of Learning-Approach Orientation (t=2.27, p=.03), Learning-Avoidance Orientation (t=2.382, p=.02) and 2×2 Achievement Orientations Scale Total Score (t=2.021, p=.04). It was observed that female students had higher mean scores in Learning-Approach Orientation, Learning-Avoidance Orientation and 2×2 Achievement Orientations Scale Total Score than male students. On the other hand, no significant difference was found in Performance-Approach (t=-.2178, p=.828) and Performance-Avoidance Sub-scales (t=1.766, p=.078) according to gender.

One-way analysis of variance was used to compare the 2×2 achievement orientations of pre-service music teachers according to their grade levels, and a post-hoc test was used to compare the groups whose variance analysis results were significant and the results are given in Table 2.

According to the results of the analysis of variance, statistically significant differences were found between the averages of the Learning-Approach Orientation (F=3.281, p=.021) and Performance-Approach Orientation (F=2.835, p=0.038) sub-scales according to the grades of the students. According to the results of the post-hoc tests, the difference for the Learning-Approach Orientation Sub-scale was between the 1st and 2nd grades. The average of 1st graders is higher than the average of 2nd graders. In the Performance-Approach Orientation sub-scale, the differences are between grades 1 and 2 and grades 1 and 4. The averages of 2nd and 4th graders are higher than those of 1st graders.

The comparison of music teacher candidates' 2×2 Achievement Orientations according to their study periods was made by one-way analysis of variance, and the comparison of the groups whose variance analysis results were significant was made by a post-hoc test. The results are given in Table 3.

The results of the analysis of variance conducted to compare the achievement orientations according to the length of service showed a significant difference only in the Learning Approach Orientation Sub-scale. The differences between the averages of the other sub-scales according to the practice hours were not found to be significant. Post-hoc results conducted to determine differences between groups for the Learning Approach Orientation sub-scale are presented in Table 4.

According to the post-hoc results in Table 5, there are significant differences between the 1st group in favor of the other groups, the 2nd group in favor of the 6th group, the 3rd group in favor of the 6th and 7th groups, the 4th group in favor of the 6th group, and the 5th group in favor of the 6th and 7th groups. According to this, as their working hours increase, the mean scores of students› Learning-Approach Orientation sub-scale increase, as well. In particular, the mean of those who work 3 hours or more is the highest, while the mean in Learning-Approach Orientations of students who do not practice regularly is lowest.

Table 1. Comparison of the averages of 2×2 achievement goal orientations according to gender

Gender	N	Learning-Approach Orientation		Learning-Avoidance Orientation		Performance - Approach Orientation		Performance - Avoidance Orientation		2×2 Achievement Orientations Scale Total Score	
		M	SD	M	SD	M	SD	M	SD	M	SD
Female	195	32.58	4.66	17.64	3.74	18.32	6.04	16.03	5.23	84.57	14.19
Male	131	31.34	5.53	16.6	4.01	18.49	6.11	15.06	4.55	81.50	13.40
T		2.27		2.382		-0.218		1.766		2.021	
p		0.03*		0.02*		0.80		0.09		0.04*	

Table 2. Comparison of 2×2 achievement goal orientations averages according to grade levels

Grade Levels	N	Learning-Approach Orientation		Learning-Avoidance Orientation		Performance -Approach Orientation		Performance -Avoidance Orientation		2×2 Achievement Orientations Scale Total Score	
		M	SD	M	SD	M	SD	M	SD	M	SD
1st Year	94	33.21	4.54	17.21	4.12	16.93	5.72	14.61	5.07	81.96	13.07
2nd Year	76	30.82	5.82	17.66	3.78	19.36	6.56	16.39	5.00	84.22	16.23
3rd Year	79	31.76	5.02	17.16	4.11	18.15	6.15	15.56	5.01	82.63	13.90
4th Year	81	32.02	4.78	16.73	3.56	19.05	5.75	16.15	4.67	83.95	13.01
F		3.281		0.742		2.835		2.249		0.498	
p		0.021*		0.527		0.038*		0.083		0.684	
Differences		1 and 2				1 and 2 1 and 4					

Table 3. Comparison of the averages of 2×2 achievement goal orientations according to practice hours

Practice Hours	N	Learning-Approach Orientation		Learning-Avoidance Orientation		Performance-Approach Orientation		Performance-Avoidance Orientation		2×2 Achievement Orientations Scale Total Score	
		M	SD	M	SD	M	SD	M	SD	M	SD
1. Not Working Regularly	33	28.73	5.48	16.27	4.86	17.94	5.77	14.91	5.317	77.85	15.30
2. 0-30 Min.	36	32.22	5.05	17.61	3.37	20.03	6.18	16.61	5.16	86.47	14.72
3. 1 hr	104	31.63	5.02	17.14	3.59	17.93	5.91	15.92	5.08	82.63	13.60
4. 1.5 hrs	25	32.00	4.01	16.12	4.09	16.40	4.69	15.56	4.60	80.08	10.58
5. 2 hrs	59	31.71	4.45	17.29	3.79	19.36	6.33	16.32	4.31	84.68	13.39
6. 3 hrs	41	34.80	4.25	17.88	4.08	18.88	6.58	14.95	5.68	86.51	14.82
7. 4 hrs and over	27	34.44	5.41	17.93	4.19	17.56	6.31	14.07	4.24	84.00	13.81
F		6.07		1.07		1.40		1.17		1.91	
p		0.00*		0.38		0.21		0.32		0.08	

Table 4. Comparison of 2 × 2 achievement goal orientations according to practice time

	(I) Practice Time	(J) Practice Time	Mean Difference (I-J)	Std. Error	Sig.
Achievement Orientations	1	2	-3.49*	1.17	0.003
		3	-2.91*	0.97	0.003
		4	-3.27*	1.29	0.011
		5	-2.98*	1.05	0.005
		6	-6.08*	1.13	0.000
		7	-5.72*	1.258	0.000
	2	6	-2.58*	1.11	0.020
	3	6	-3.17*	0.89	0.000
		7	-2.81*	1.047	0.008
	4	6	-2.80*	1.23	0.023
	5	6	-3.09*	0.99	0.002
		7	-2.73*	1.134	0.016

Table 5. Comparison of 2×2 achievement orientations averages according to the most recent instrument exam scores

Final Exam Scores	N	Learning-Approach Orientation		Learning-Avoidance Orientation		Performance-Approach Orientation		Performance-Avoidance Orientation		2×2 Achievement Orientations Scale Total Score	
		M	SD	M	SD	M	SD	M	SD	M	SD
1. 0-69	37	30.49	4.35	16.81	3.71	17.97	6.30	15.70	5.45	80.97	12.87
2. 70-80	72	31.08	5.33	16.71	3.64	18.14	5.72	16.36	5.25	82.29	13.13
3. 81-90	100	32.30	4.24	17.76	3.59	18.72	5.93	15.98	4.78	84.76	13.35
4. 91-100	92	33.37	5.17	17.11	4.37	18.37	6.43	14.68	4.72	83.53	14.52
F		4.629		1.225		0.197		1.802		0.884	
p		0.004*		0.301		0.898		0.147		0.450	
Difference		4 and 1 4 and 2									

The results of the analysis of variance comparing the means of the 2×2 Achievement Orientations Scale according to the most recent instrument exam scores of the music teacher candidates are given below. According to the results of the analysis, the difference between the averages in the Learning-Approach sub-scale was found to be significant. The post-hoc test for this sub-scale showed a significant difference between the 4th group and the 1st and 2nd groups in favor of the 4th group. In other words, the Learning-approach Orientation of high-achieving students is higher than that of low-achieving students.

Comparison of Self-regulated Learning Scale Means

In order to compare the self-regulated learning scale averages of pre-service music teachers according to their gender, a t-test for independent groups was conducted and the results are given below (Table 8).

As a result of the t-test, significant differences were found between the mean total scores (t=2.878, p=.004) and the mean sub-scale scores in Planning and Goal Setting (t=2.927, p=.004) and Learning Dependency (t=-2.865, p=.004). These differences were in favor of female students. On the other hand, the differences between the mean scores in Motivation and Acting for Learning (t=1.238, p=.217) and Strategy Use and Evaluation sub-scales were not significant.

A one-way analysis of variance was used to compare the self-regulated learning scale mean scores of pre-service music teachers according to their grade levels, and no significant differences were found between the total and sub-scale mean scores (MALF, f=1.948, p=.122, PGS, f=.438, p=.726, SUE, f=1.965, p=.119, LD, f=1.987, p=.116, SRLST, f=.722, p=.54). These results show that the self-regulation scale scores of pre-service music teachers are equivalent according to their grades.

A comparison of pre-service music teachers' 2×2 achievement orientations according to practice time was also given a one-way analysis of variance. A comparison of the groups whose variance analysis results were significant was made by a post-hoc test, and the results are given in Table 6.

According to the results of the analysis of variance, significant differences were found between the mean scores of the total scale (f=4.571, p=.000), Motivation and Acting for Learning (f=3.399, p=.003), Planning and Goal Setting (f=4.437, p=.000), and Strategy Use and Evaluation (f=5.700, p=.000) sub-scale scores of pre-service music teachers.

According to Table 7, the results of the analysis of variance revealed significant differences in the mean scores in Motivation and Acting for Learning Sub-scales between groups 6 and 7 and groups 1, 3, and 5. This indicates that students in groups 6 and 7 had higher mean scores compared to the other groups. As their practice time increases, students' Motivation and Acting for Learning scores also increases.

Furthermore, significant differences were found in the mean scores in Planning and Goal Setting, as well as Strategy Use and Evaluation Sub-scales between groups 6 and 7 and groups 1 and 2, as well as between group 6 and groups 3, 4, and 5. For both sub-scales, the mean scores of groups 6 and 7 were higher than the mean scores of the other groups. As practice time increases, students' scores in Planning and Goal Setting, as well as Strategy Use and Evaluation, also increases.

Finally, when considering practice time, significant differences were observed in the mean scores of self-regulated learning between students in group 1 and students in groups 2, 3, 4, and 5, as well as between students in group 6 and students in groups 2, 3, 4, and 5. Students in group 1 had lower mean scores in self-regulated learning compared to the others. Conversely, students in group 6 had higher mean scores than students in groups 2, 3, 4, and 5.

In summary, the study found significant differences in Motivation and Acting for Learning, Planning and Goal Setting, Strategy Use and Evaluation, and Self-regulated Learning total scores among different groups based on practice time. Students with longer practice time tended to have higher motivation, more active learning behavior, better Planning and Goal Setting skills, enhanced Strategy Use and Evaluation, and higher self-regulated learning scores compared to those who practice less (Table 9).

When assessing the self-regulated learning (SRL) scores of pre-service music teachers in relation to their most recent instrument exam scores through analysis of variance, notable distinctions emerged. Particularly, significant differences were identified in the scores in Planning and Goal Setting as well as in the Learning Dependency sub-scales. Subsequent post-hoc tests conducted to ascertain the means within these sub-scales unveiled a noteworthy contrast between the 4th group and the 2nd and 3rd groups. These findings underscore that the Planning and Goal Setting scores of high-achieving students surpassed those of their low-achieving counterparts, while conversely, the Learning Dependency scores of low-achieving students exceeded those of high-achieving students.

In essence, these outcomes reveal an intriguing trend: as last exam scores ascend, so do Planning and Goal Setting scores, illustrating a positive correlation. Conversely, Learning Dependency scores exhibit an opposing relationship, and rise as academic achievement declines.

Table 6. Comparison of self-regulated learning scale averages according to practice time

Practice Hours	N	Motivation and Acting on Learning		Planning and Goal Setting		Strategy Use and Evaluation		Learning Dependency		Self-Regulated Learning Scale Total Score	
		M	SD	M	SD	M	SD	M	SD	M	SD
1. Not working regularly	31	27.42	4.92	29.19	5.58	67.68	13.30	18.68	5.78	142.9677	24.98
2. 0-30 Min.	34	28.89	3.22	29.97	6.06	73.38	9.45	20.09	6.43	152.32	16.00
3. 1 hr	98	28.30	4.09	30.74	5.57	73.37	10.23	19.86	5.40	152.27	18.90
4. 1.5 hrs	24	28.75	3.19	31.63	4.34	73.42	7.77	18.92	4.17	152.71	12.80
5. 2 hrs	57	28.04	4.018	30.40	5.96	73.19	10.65	19.86	4.69	151.491	19.53
6. 3 hrs	41	30.51	3.68	34.56	4.39	81.17	9.25	18.22	6.30	164.46	14.93
7. 4 hrs and over	27	30.52	3.75	32.78	4.11	76.63	10.37	17.85	4.55	157.78	16.93
F		3.399		4.437		5.700		1.075		4.571	
p		0.003*		0.000*		0.000*		0.377		0.000*	

Table 7. Post-hoc results according to practice time

	(I) Practice Time	(J) Practice Time	Mean Difference (I-J)	Std. Error	Sig
MAFL	1	6	-3.09*	0.938	0.001
		7	-3.10*	1.04	0.003
	3	6	-2.22*	0.73	0.003
		7	-2.22*	0.86	0.010
	5	6	-2.48*	0.81	0.002
		7	-2.48*	0.92	0.007
PGS	1	6	-5.37*	1.28	0.000
		7	-3.587*	1.41	0.012
	2	6	-4.597*	1.25	0.000
		7	-2.81*	1.38	0.043
	3	6	-3.82*	0.99	0.000
	4	6	-2.94*	1.38	0.034
	5	6	-4.16*	1.10	0.000
SUE	1	2	-5.70*	2.56	0.026
		3	-5.69*	2.12	0.008
		4	-5.74*	2.80	0.041
		5	-5.52*	2.30	0.017
		6	-13.49*	2.45	0.000
		7	-8.95*	2.71	0.001
	2	6	-7.79*	2.39	0.001
	3	6	-7.80*	1.92	0.000
	4	6	-7.75*	2.65	0.004
	5	6	-7.98*	2.11	0.000
SRLTS	1	2	-9.36*	4.57	0.042
		3	-9.30*	3.79	0.015
		5	-8.52*	4.11	0.039
		6	-21.50*	4.38	0.000
		7	-14.81*	4.85	0.002
	2	6	-12.14*	4.27	0.005
	3	6	-12.20*	3.42	0.000
	4	6	-11.76*	4.73	0.014
	5	6	-12.97*	3.77	0.001

Table 8. Comparison of self-regulated learning scale averages according to gender

Gender	N	Motivation and Acting on Learning		Planning and Goal Setting		Strategy Use and Evaluation		Learning Dependency		Self-regulated Learning Scale Total Score	
		M	SD	M	SD	M	SD	M	SD	M	SD
Female	189	28.96	3.61	31.93	5.00	74.95	9.60	20.02	5.33	155.86	16.67
Male	124	28.44	4.59	30.08	6.12	72.79	12.20	18.29	5.47	149.60	21.69
T		1.115		2.927		1.743		2.781		2.878	
p.		0.266		0.004*		0.082		0.006*		0.004*	

Table 10 shows the correlations between pre-service music teachers' AGO scores and SRL scores. The correlations ranged between 0.72 (LAp-SUE) and -0.15 (LAp- LD). The highest correlations were observed between LAp and SUE (.72), LAp and MAFL (.70), LAp and SRLTS (.70), and Lap and PPGS (.63). Moderate relationships were found between AGOTS and SRLTS (.54), LAv and SRLTS (.52), SUE, AGOTS and LAv (.43), AGOTS and MAFL (.41), LAv and MAFL (.40), PGS, LAv and AGOTS (.39), and LD, PAp and AGOTS (.33). Low correlations were found between Lav and LD (.26), SRLTS, PAp and, PAv (.18). The relationships between PAp, PAv and MAFL, PGS, and SUE were not found to be significant.

Table 9. Comparison of self-regulated learning scale scores according to the most recent instrument exam scores

Final Exam Scores	N	Motivation and Acting on Learning		Planning and Goal Setting		Strategy Use and Evaluation		Learning Dependency		Self-Regulated Learning Scale Total Score	
		M	SD	M	SD	M	SD	M	SD	M	SD
1. 0-69	32	28.38	3.56	30.09	5.07	72.94	8.82	19.97	5.66	151.38	15.43
2. 70-80	68	28.448	4.19	29.65	6.42	72.16	11.10	20.44	5.85	150.69	20.22
3. 81-90	96	29.008	3.68	32.04	4.81	75.16	10.08	20.28	5.36	156.48	17.021
4. 91-100	92	29.148	3.96	31.67	5.24	74.85	10.61	18.00	4.85	153.66	18.46
F		0.630		3.332		1.417		3.855		1.552	
p		0.596		0.020*		0.238		0.010*		0.201	
Difference				4-2-3				4-2,3			

Table 10. Relationships between 2×2 achievement orientations and self-regulated learning

	Motivation and Acting for Learning (MAFL)	Planning and Goal Setting (PGS)	Strategy Use and Evalutaion (SUE)	Learning Dependency (LD)	SRL Total Score (SRLTS)
Learning-Approach (LAp)					
r	0.70	0.63	0.72	-0.15	0.70
p	0.000	0.000	0.000	0.006	0.000
Learning-Avoidance (LAv)					
r	0.40	0.39	0.43	0.26	0.52
p	0.000	0.000	0.000	0.000	0.000
Performance-Approach (PAp)					
r	0.06	0.09	0.09	0.33	0.18
p	0.258	0.108	0.119	0.000	0.001
Performance-Avoidance (PAv)					
r	0.05	0.04	0.04	0.48	0.18
p	0.418	0.443	0.531	0.000	0.002
AGO Total Score (AGOTS)					
r	0.41	0.39	0.43	0.33	0.54
p	0.000	0.000	0.000	0.000	0.000

DISCUSSION AND CONCLUSION

This study examined the 2×2 Achievement Goal Orientations (AGO) and Self-Regulated Learning (SRL) levels of pre-service music teachers in relation to various variables.

The AGO scores of female students were higher than those of male students in terms of both the total scale score and Learning-Approach and Learning-Avoidance Orientations. Conversely, female students had higher total scores on the SRL scale, as well as on the sub-scales in Planning and Goal Setting, Strategy Use and Evaluation, and Learning Dependency. These findings suggest that, on average, female students demonstrated higher levels of self-regulated learning, learning-approach orientations, learning-avoidance orientations, as well as planning and goal-setting abilities and strategy use and evaluation skills in comparison to their male counterparts in the study. The higher scores of female students on the Learning Dependency sub-scale suggest a greater inclination among them to seek guidance and support from others when confronted with learning challenges. While this could imply reliance on external assistance, it also signifies that female students are more at ease with seeking help and engaging in collaborative efforts to enhance their learning experiences. Anguiano's (2006) study also highlighted gender differences, with male students underperforming compared to females and perceiving the class climate more negatively. These gender-related observations provide valuable insights for understanding the challenges and motivations experienced by male students in music education settings.

In terms of long-term goals, there are significant gender differences. For example, "female students are significantly more likely to target teaching in public schools than male students" (Schmidt et al., 2006, p. 150). These findings show researchers that the near and long-term goals of music education undergraduates need to be better understood" (pp. 150–51). Researchers have argued that even though music education can involve competitive elements, the students being studied tend not to prioritize or emphasize competitiveness as a major factor for achieving success. In other words, the students' orientation towards success is not primarily driven by a competitive mindset, which aligns with the nature of their chosen profession in music education

where collaboration and teaching skills are more crucial than overt competition (Davis, 2006; Bennett & Stanberg, 2006; Stegman, 2007; Parkes & Jones, 2011; Henry, 2015).

In summary, the above-mentioned studies collectively emphasize the gender-related disparities in self-regulated learning, learning orientations, and career goals within the context of music education. Their findings offer insights into the challenges faced by male students and the diverse motivations that guide students' choices in their experiences. Researchers and educators in this field should consider these insights when developing strategies to promote inclusivity, address challenges, and enhance the learning experiences of all students.

In this study, the researchers observed trends in the learning and performance orientations of first-year students and beyond. First-year students exhibited higher Learning-Approach Orientations, while 2nd and 4th-year students displayed higher Performance-Approach Orientations compared to their first-year counterparts. Additionally, the study found that students who dedicated more time to practicing had higher levels of Learning-Approach Orientations compared to those who spent less time. The present study builds upon and extends Schmidt›s (2005, 2007) research on grade-level differences in motivation and learning goal orientation in instrumental music by including adult participants who were college music students. Schmidt's findings suggested that older students generally exhibited higher scores on intrinsic or learning orientations, whereas younger students were more inclined towards competitive, performance, and failure-avoidance orientations.

In contrast, the current study aimed to investigate how these motivational patterns and goal orientations might manifest themselves among college music students, including adults. The hypothesis was that the grade level variable involving adult participants could potentially reveal distinct patterns in motivation and goal orientation compared to those observed in younger students. The findings of the current study are consistent with research conducted by Anguiano (2006), which showed that as students progress in their education they tend to become less goal-oriented, hold more negative views about music teachers and the learning climate, and experience a decrease in motivation to pursue music. Nonetheless, more research is needed to determine if motivation tendencies are consistent throughout graduate student populations, learning climate, learning styles and teachers' orientations.

The results of this study revealed a significant correlation between students' practice hours and their levels of (SRL), Motivation and Taking Action for Learning, Planning and Goal Setting, and Strategy Use and Evaluation sub-scales. Specifically, students who practiced for three hours or more per day exhibited higher levels of SRL and motivation compared to those who practiced less. These findings align with previous research conducted by Schmidt (2005), which also identified a positive association between learning approaches and the amount of time dedicated to practice. Schmidt's earlier study has provided an effective framework for understanding student participation and motivation in music learning.

Students of instrument education (Schmidt, 2005) and undergraduate music education majors (Schmidt et al, 2006) appear to favor intrinsic orientations over performance orientations. Students' self-reports of practice time and teachers' ratings of achievement and effort were found to be significantly influenced by intrinsic-learning orientations, although students' performance was not. By creating collaborative and learning-focused environments, educators can help nurture students' internal motivations, which have been shown to positively impact their achievements, from the time they begin their musical experiences to their ultimate successes.

In addition, students with high achievement had higher levels of Planning and Goal Setting and Strategy Use and Evaluation sub-scales, but lower levels on the Learning Dependency sub-scale. When comparing students based on their most recent instrument exam scores, it was found that successful students had higher Learning-Approach Orientations than students with low achievement. SRL and achievement level are found to be positively connected (Zimmerman & Martinez-Pons, 1986). Kitsantas (2002) discovered that high-achieving college students employed more SRL methods before, during, and after taking exams than lower-achieving individuals. Furthermore, the former group utilized more unique techniques, and high-achieving students' frequency of strategy use varies depending on semester phases (Nandagopal & Ericsson, 2012). Low-achieving students, on the other hand, appear to lack metacognitive abilities since they tend to overestimate their knowledge (Koriat and Bjork, 2006). This is consistent with the observation that they do not optimize their learning behaviors based on previous results (Hacker, Bol, Horgan, & Rakow, 2000).

Kitsantas (2002) discovered that higher-achieving college students used more SRL approaches before, during, and after tests than lower-achieving students. Furthermore, the former group used more distinctive strategies, and the frequency of strategy utilization by high-achieving students fluctuates depending on semester stages (Nandagopal & Ericsson, 2012). Low-achieving students, on the other hand, appear to have a lack of metacognitive abilities because they overestimate their knowledge (Koriat and Bjork, 2006).

The examination of the relationship between students' goal orientations and their self-regulated learning abilities revealed several notable findings. High correlations were observed between the Learning-Approach sub-scale scores of the AGO Scale and the Motivation and Acting for Learning, Planning and Goal Setting, Strategy Use and Evaluation sub-scales of the SRL, as well as the total scores of the SRL. These results indicate a strong positive connection between a learning-oriented goal orientation and effective self-regulated learning behaviors. Students who exhibited a higher inclination towards approaching learning tasks also demonstrated greater motivation to learn, adeptness in planning and setting goals, strategic utilization and evaluation of learning strategies, and overall higher levels of self-regulated learning proficiency. Soltaninejad (2015) established that achievement goal orientations play a pivotal role in determining learning strategies. Consequently, several studies in academic achievement have embraced a student-centered approach. Prior research has consistently

underscored that music students lean towards learning-oriented and intrinsically motivated behaviors. Furthermore, when students perceive their teachers as fostering a learning-oriented approach, they become more eager to succeed, and experience heightened motivation.

Meece et al. (1988) found that students emphasizing learning-oriented goals tend to engage in active cognitive participation characterized by self-regulation activities (e.g., reviewing incomprehensible material). Intrinsic motivation positively correlates with goals that emphasize learning and understanding. Schunk and Rice (1991) discovered that combining a process goal with progress feedback towards the goal of mastering a strategy enhances self-efficacy and skill development more effectively than process and product goal conditions. These findings suggest that progress feedback enhances the efficacy of learning goals, particularly for students who lack confidence or proficiency. They underscores the need for music teachers to employ a diverse array of strategies that establish a nurturing learning environment and positive orientations towards learning and achievement. In light of this, varying motivational orientations warrant the application of diverse techniques.

The interplay between learning-oriented and performance-oriented goals offers profound insights for educators, guiding them to design targeted interventions that foster autonomous learning strategies and bolster students' self-regulated learning proficiencies. By comprehensively understanding students' motivational orientations, educators can tailor their approaches to enhance engagement, empower students to navigate challenges, and ultimately promote a deeper comprehension of the subject matter. This interplay holds immense significance for prospective music teachers and their professional development. As aspiring educators in the field of music, understanding the dynamics of achievement goal orientations and their impact on learning strategies can offer a strategic advantage in promoting effective teaching and student success. Moreover, the emphasis on feedback and progress assessment emphasized in this research can guide music teachers in structuring their pedagogical methods to enhance students' confidence, motivation, and overall competence.

In conclusion, the insights gleaned from this research not only contribute to the academic discourse surrounding achievement goals and self-regulated learning but also offer practical implications for educators in the music domain. The fusion of theory and practice presented here underscores the significance of aligning instructional approaches with students' motivational orientations, thereby fostering an environment conducive to effective learning, skill development, and a lifelong passion for music education.

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