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ARTÍCULOS

The Role of Academic Engagement in Students of the Music Education Major

Mercè Navarro Calafell
Universitat de Barcelona (España)
Josep Gustems
Universitat de Barcelona (España)
Caterina Calderon
Universitat de Barcelona (España)

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Abstract: Academic engagement is a fundamental concept for explaining academic performance in university students, especially in programs such as teacher training degrees, which prepare students for a highly vocational profession. Likewise, the current system for training music education teachers through the major raises some ambiguities regarding the commitment of these students. So, our objective is to compare the academic engagement and some facilitating and hindering variables of it, in students of this specialization with students from other teacher degree programs, with the aim of proposing actions that result in a greater use of these studies. For this purpose, a prospective exploratory study of a cross-sectional nature was carried out, combining descriptive and correlational methodology, with data obtained from different questionnaires. The sample consisted of 610 students from the University of Barcelona. The most significant results that differentiate both groups are, on the one hand, in the facilitating variables of academic engagement (coping strategies, and academic motivation), as well as in the hindering variables (perceived stress and psychological distress). With all of this, actions are proposed to improve and complement the tutorial action plan of music education teachers, and, consequently, improve the academic engagement of these students.
Keywords: Academic engagement; teacher training; music education; tutorial action plan; academic motivation; coping strategies

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1. Introduction

Since the implementation of the European Higher Education Area, the curriculum of the teacher education degree has undergone numerous changes in recent decades. This change has led to a restructuring of the educational system, where musical training is integrated as basic education with one or two mandatory music education subjects within the degree (Early Childhood Education, Primary Education, and double degree programs). Additionally, the introduction of the Specialization in Music Education (referred to as MEM from here on) in the Primary Education degree ensures the training of specialists in this field. According to Cuenca, Pérez, and Morales (2021), this has resulted in both quantitative and qualitative loss, transitioning from studying a specific academic specialty to a merely qualifying designation. Moreover, there has been a shift in the profile of MEM students, moving from having a qualified technical-musical profile with musical training received in music schools or conservatories to a diverse and multidisciplinary profile today. This change in student profile may have negative consequences that will impact the music teaching process in classrooms; students may face challenges in singing, playing an instrument, reading sheet music, etc., affecting the quality of their students' learning and creating a certain ambivalence in academic commitment to these studies (Oriola *et al*., 2022).

Academic engagement is a multidimensional concept positively related to the performance of students, encompassing the antecedents and consequences of how they think, feel, and behave. In this regard,

Salanova *et al*. (2010), in their predictive model of academic performance, associate engagement with a positive motivational construct consisting of vigor (behavioral dimension), dedication (emotional dimension), and absorption (cognitive dimension). This model is part of a highly practical approach reflected in the daily work of students while seeking to enhance their academic performance by describing facilitative or hindering variables of engagement, such as coping strategies, motivation, perceived stress, or psychological distress, among others (Calderon *et al*., 2023).

According to Álvaro-Mora and Serrano-Rosa (2019), the commitment represented by musical learning has repercussions on other associated emotional and cognitive factors, such as effort, intense concentration, verbal memory, executive functions (Zuk *et al*., 2014), selective attention, and brain plasticity. Along this line, other studies in university students also confirm high cognitive abilities, resulting in increased motivation and concentration, greater participation (Richmond *et al*., 2016), organization (Lyons & Bandura, 2022), enjoyment (Linnenbrink-Garcia & Pekrun, 2011), as well as an increase in intelligence quotient (Barrett *et al*., 2013; Degé *et al*., 2011; Jaschke *et al.,* 2018; Schellenberg, 2011)

On the other hand, many studies in the field of music are oriented towards the benefits associated with its practice —singing, dancing, listening, instrumental performance, among others— in individuals. Music directly influences our emotions, and as a result, its psychological effects are quite notable. Stress, anxiety, or depression are disorders that, thanks to music, can be controlled or significantly reduced (Biasutti & Concina, 2014). Although there are not many musical activities offered to students in the university environment, the tutorial function, understood as support throughout their studies, should take care to provide help to students to compensate as much as possible for elements that interfere with their education. In this regard, the tutorial action plan of universities aims to address these issues and strengthen students' commitment to their studies (González, 2008; Rodríguez *et al*., 2015). The tutorial space should not only focus on the academic-musical dimension but should also extend to addressing the personal and professional needs of students (Cremades *et al*., 2016).

In the field of teacher training, being a highly vocational profession in its daily work, there are many studies that seek to analyze commitment as a key element of professional and personal success (Hakanen *et al*., 2006). However, there are very few studies that analyze academic engagement in music students and even fewer specifically focused on those in the MEM. As these students will become the future music teachers in primary schools in our country, it is important to understand to what extent their commitment can impact their subsequent work.

2. Objective

This research aims to compare academic engagement and certain facilitating and hindering variables of engagement in MEM students with the rest of the teacher education degree students, with the purpose of proposing actions that contribute to a greater benefit from these studies.

3. Methodology

The present study is an exploratory prospective cross-sectional study that combines descriptive and correlational methodology. The chosen methodological approach falls within the quantitative paradigm.

3.1. Sample

The sample consisted of 610 students from Primary Education (47.5%), Early Childhood Education (43.6%), and double degree programs (8.9%) at the UB, throughout the academic years 2019-20 and 2020-21. Of these, 82.2% were female, and their ages ranged from 18 to 44 years old (mean of 21.3 years (SD=3.3). Regarding academic years, 33.4% were in the 1st year, 26.9% in the 2nd year, 15.4% in the 3rd year, and 24.3% in the 4th year. A total of 71 MEM students participated.

Inclusion criteria were: being enrolled in the faculty in the 1st to 4th years of the degree, having access to the grade point average, signing the informed consent, and completing the questionnaires.

3.2. Instruments

Sociodemographic data

The questionnaire included sociodemographic data of the students (age, gender, current academic year).

Psychometric tests and scales for assessing academic engagement and other associated psychological variables:

- *Utrecht Work Engagement Scale for Students (UWES-S-9)* (Schaufeli *et al*., 2002). This is a 9-item scale that assesses academic engagement, evaluating the three components of academic engagement according to the theory of these authors: vigor, dedication, and absorption. The scale asks about thoughts and feelings in the last month regarding certain statements. Each item is scored on a 7-point Likert scale. Its Cronbach's alpha is 0.91 (Serrano *et al*., 2019).
- *Brief COPE* (Perczek *et a*l., 2000). This multidimensional inventory is developed to assess different responses to stress and consists of 24 items. Its scales measure different coping strategies: problem-focused (active coping, planning, seeking instrumental social support), emotion-focused (seeking emotional social support, positive reinterpretation, acceptance, denial, turning to religion), and

less commonly used strategies (emotional venting, emotional disengagement, mental disengagement, substance use, and humor). Items are presented with four alternatives. The scale has satisfactory psychometric properties in the Spanish population, with a Cronbach's alpha ranging between 0.71 and 0.80 (Lara et al., 2013).

- *Motivated Strategies for Learning Questionnaire (MSLQ)* (Pintrich *et al*., 1993). The Academic Motivation scale consists of 12 items that capture the reasons why students continue their studies. Responses are recorded on a 7-point Likert scale with three factors: Intrinsic Motivation, Extrinsic Motivation, and Amotivation. Construct validity was tested with a correlation between the seven subscales, with values between 0.76 and 0.84 (Núñez *et al*., 2005).
- *Perceived Stress Scale (PSS)* (Remor, 2006). This is a 10-item scale measuring perceived stress over the past month. The scale has satisfactory psychometric properties in the Spanish population, with a Cronbach's alpha of 0.87 (Serrano & Andreu, 2016).
- *Brief Symptom Inventory (BSI)* (Derogatis, 1983). The symptom inventory is a brief 18-item self-report measure that assesses psychological distress. Participants specify the degree of psychological distress caused by an event in the last week using a 5-point Likert scale. The scale includes three dimensions: somatization, depression, and anxiety. Its Cronbach's alpha ranges between 0.75 and 0.88 (Calderon *et al.,* 2020).

3.3. Procedure

During the first semester of the 2019-20 academic year, paper questionnaires were self-administered at a single time in the classrooms of the Faculty of Education at UB, ensuring their correct and complete completion. In the 2020-21 academic year, due to restrictions imposed by COVID-19, online questionnaires were sent to students' email addresses and could be answered from any computer during the specified period. The Code of Good Research Practices of the University of Barcelona was followed, ensuring voluntariness, anonymity, minimal intervention, and minimal risk, as suggested by the Helsinki Declaration and the Belmont Report.

3.4. Data analysis

Descriptive analyses of the variables under study were conducted. For nominal and ordinal variables, mode, median, frequency, and percentages were used. For continuous variables, measures of central tendency (mean, median, interquartile range) and dispersion (standard deviation, variance, and range of scores) were employed. The Fisher-Snedecor F-test was used to analyze differences between groups. Prior to the analysis, the two fundamental assumptions were checked: normality and homoscedasticity. This means ensuring that the dependent variable follows a normal distribution (normality) and verifying the equality of variances (homoscedasticity) using the Levene test. Post hoc tests assuming equal variances were performed using the Bonferroni analysis, and tests assuming unequal variances were conducted using the Tamhane's T2 test. When this assumption was violated, the robust Brown-Forsythe F-test and the Games-Howell post hoc comparison test were applied. In the case of significant differences between degrees, the magnitude of these differences will be interpreted using partial eta squared (η^2), following Cohen's (1992) benchmarks: an eta squared around 0.01 (small effect size), around 0.06 (medium effect size), and above 0.14 (large effect size).

To analyze the relationship between academic engagement and facilitating and hindering variables, Pearson correlation was used. Additionally, linear regression models were employed to assess the specific contribution of academic engagement and its psychosocial variables. A significance level of $p < 0.05$ was considered statistically significant for all analyses. Statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) 23.0 for Windows (SPSS Inc., Chicago, Illinois, USA).

4. Results

Next, we will briefly describe the most relevant results obtained from applying the instruments to the sample of MEM students and other teaching degrees.

Regarding *academic engagement*, significant differences were found between degrees in the overall commitment scale and in all its subscales (vigor, dedication, and absorption). MEM students exhibit a lower level of effort, conformity, and enthusiasm towards their studies compared to other students, especially in the limited sense of vigor in academic tasks. See Table 1.

Table 1. Comparative scores between Music Education students and the rest, in academic engagement (UWES-9).

Variable	Music Education (n= 71) M (SD)	Rest (n= 539) M (SD)	F[a]	*p*
Vigor	1.9 (0.9)	2.6 (1.2)	36.22	0.001*
Dedication	3.5 (0.9)	4.2 (1.2)	31.40	0.001*
Absorption	3.2 (0.8)	3.6 (1.1)	9.62	0.002*
Engagement total	2.9 (0.7)	3.5 (1.1)	38.09	0.001*

Note: p< 0.05*
[a]As the assumption of homogeneity of variances was violated, the Brown-Forsythe F-test was applied.

Coping Strategies. The three strategies with the highest scores are active coping, emotional support, and instrumental support. Music education students stand out in positive reinterpretation, while the rest of the sample emphasizes the expression of negative emotions. The least used strategies by students were religion, substance use, and behavioral disengagement.

Significant differences were recorded in the use of some coping strategies between both groups. Students from other disciplines obtained significantly higher scores in emotional support (F= 11.80; p= 0.001, η2= 0.019), instrumental support (F= 8.748; p= 0.003, η2= 0.014), denial (F= 3.98; p= 0.046, η2= 0.007), and expression of negative emotions (F= 6.979; p= 0.008, η2= 0.011). This indicates that they more frequently employ strategies seeking emotional support, sympathy, and understanding in problem-solving. Music education students reported significantly higher scores in humor (F= 9.55; p= 0.002, η2= 0.015), meaning they use humor, such as making jokes about the stressor or laughing at stressful situations, mocking themselves to cope with the stressor. See Table 2.

Table 2. Scores on coping strategies and comparison between Music Education students and the rest (Brief COPE).

Variable	Music Education (n= 71) M (SD)	Rest (n= 539) M (SD)	F	*p*	Effect size
Active coping	3.1 (0.6)	3.1 (0.5)	0.14	0.702	---
Planification	2.2 (0.5)	2.2 (0.5)	0.30	0.580	---
Positive reinterpretation	3.0 (0.6)	2.8 (0.7)	3.641	0.057	---
Acceptation	2.8 (0.6)	2.8 (0.7)	0.307	0.580	---
Humor	2.5 (0.9)	2.2 (0.9)	9.55	0.002*	0.015
Religion	1.4 (0.5)	1.4 (0.5)	0.810	0.369	---
Emotional support	2.9 (0.8)	3.3 (0.7)	11.80	0.001*	0.019
Instrumental support	2.8 (0.9)	3.1 (0.9)	8.748	0.003*	0.014
Self-distraction	2.5 (0.8)	2.5 (0.6)	0.062	0.804	---
Negation	1.5 (0.6)	1.7 (0.7)	3.98	0.046*	0.007
Expression of negative emotions	2.8 (0.9)	3.0 (0.7)	6.979	0.008*	0.011
Substance use	1.3 (0.6)	1.2 (0.6)	1.43	0.231	---
Behavioral disengagement	1.5 (0.6)	1.6 (0.6)	3.24	0.072	---
Self-blame	2.2 (0.6)	2.1 (0.6)	2.83	0.093	---
Note: p*<0.05					

In *Academic Motivation*, all students scored high in beliefs of control, self-efficacy for learning, and intrinsic goal orientation. This indicates that, collectively, students in the sample feel they have the skills to cope with academic tasks, that their results depend on their own effort and study habits, and that their involvement in studies is motivated by intrinsic goals such as challenge, curiosity, and a desire to learn. In both groups, the lowest scores are in exam anxiety and extrinsic goal orientation, indicating that the relationship between their involvement in academic tasks and the results obtained is not oriented towards external reward, and they do not feel too much concern about exams.

Comparing both groups, students from other disciplines scored higher than Music Education students in: control beliefs (F= 9.14; p= 0.003, η2= 0.015), task value (F= 19.09; p= 0.001, η2= 0.046), and exam anxiety (F= 8.23; p= 0.004, η2= 0.013). See Table 3.

Table 3. Scores on academic motivation in Music Education students and students from other disciplines (MSLQ).

Variable	Music Education (n= 71) M (SD)	Rest (n= 539) M (SD)	F	*p*	Effect size
Intrinsic goal orientation	5.1 (1.3)	4.8 (1.3)	1.90	0.169	---
Extrinsic goal orientation	3.4 (1.4)	4.1 (1.4)	10.28	0.001*	0.017
Task value	3.5 (1.0)	4.3 (1.2)	29.09	0.001*	0.046
Control beliefs	5.0 (1.2)	5.5 (1.1)	9.14	0.003*	0.015
Self-efficacy for learning	5.0 (1.1)	5.0 (1.0)	0.057	0.812	---
Exam anxiety	3.0 (1.5)	3.6 (1.5)	8.23	0.004*	0.013
Note: p*< 0.05					

In *perceived stress*, MEM students obtain lower scores (M= 16.1, SD= 5.9) than the rest of the students (M= 17.7; SD= 5.5, F= 4.75; p= 0.030, η2= 0.008), with a moderate-sized difference. This indicates that MEM students, to a lesser extent than the rest of the students, feel less stress.

In *psychological distress*, both Music Education students and students from other disciplines have elevated scores in somatization, suggesting a certain degree of stress. Comparing both groups, students from other disciplines exhibit more symptoms of anxiety (F= 7.11; p= 0.008, η2= 0.012) than Music Education students. Students from other disciplines in our study significantly report more feelings of worry, anxiety, and feelings of inferiority or insecurity than Music Education students. See Table 4 and Figure 1.

Table 4. Scores on psychological distress in men and women (BSI-18)

Variable	Music Education (n= 71) M (SD)	Rest (n= 539) M (SD)	F	*p*	Effect size
Somatization	70.2 (5.4)	69.4 (5.8)	1.12	0.289	---
Anxiety	62.1 (5.0)	63.7 (4.7)	7.11	0.008*	0.012
Depression	64.6 (3.3)	64.7 (3.2)	0.098	0.754	---
Psychological distress	65.6 (3.7)	65.9 (3.6)	0.410	0.519	---
Note: BSI T score; *p*< 0.05*					

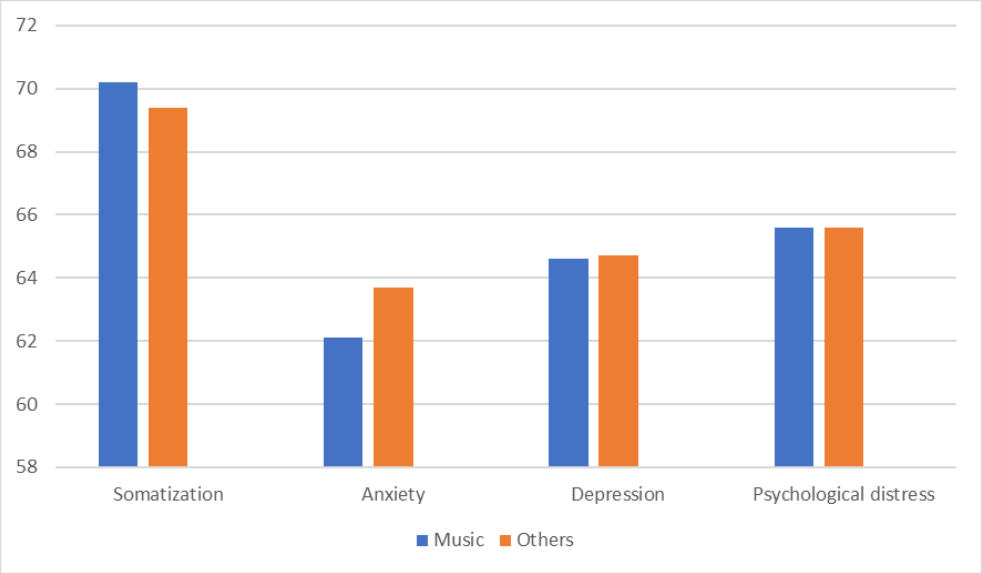

Figure 1. BSI scores of Music Education students and other degrees.

5. Discussion

As we have seen in the introduction of this study, academic engagement is constituted as a multidimensional concept integrated by many components for the personal and academic development of university students (Appleton *et al*., 2006). In relation to the aim of our study, which is to compare academic engagement and some facilitating and hindering variables in Music Education students with the rest of the teacher degree students, significant differences were found in academic engagement, coping strategies, achievement motivation, academic motivation, perceived stress, and psychological distress, with generally lower scores in Music Education students compared to students in other degrees.

Regarding *academic engagement*, Music Education students obtained notable scores, aligning with other studies on motivation and engagement, such as the work of Hernández and Lomeli (2017). However, these scores are lower in the overall scale and all its subscales compared to the rest of the students, indicating a lower level of commitment in terms of effort, conformity, and enthusiasm for their studies. This contrasts with the literature in this field, which suggests that music education has an impact on academic engagement in aspects such as effort, intense concentration, enthusiasm, optimism, curiosity, and interest (Skinner & Belmont, 1993), influencing executive functions such as memory, attention, and concentration (Ito *et al*., 2022). Ultimately, the engagement of Music Education students, while good, may be influenced by their self-assessment of their musical performance or other factors, such as the dichotomy in choosing university studies versus conservatory studies (Jones, 2009; Núñez *et al*., 2009; Ripani, 2022).

Regarding *coping strategies*, Music Education students reported significantly lower scores in instrumental and emotional support, denial, and expression of negative emotions than the rest, and obtained higher scores in humor. In this sense, Music Education students employ direct actions aimed at solving the problem,

do not deny reality in the face of a stressor, and seek the support of an adult who empathizes with their problem. The use of these strategies could be interpreted as the result of the disciplined and structured practice of these students in musical activities and subsequent constructive analysis, enabling them to approach problems, increase acceptance-resignation, and seek solutions to difficulties (López & Pérez Llantada, 2006). The disciplined and structured practice involved in learning a musical instrument strengthens brain functions, increases the volume and activity in the corpus callosum, allowing messages to travel more quickly through more diverse and creative pathways (Schlaug *et al*., 2005). In this line, research conducted by Biasutti and Concina (2014) in this field confirms that Music Education can work on and improve coping capacity, as the complexities and well-being achieved in the music classroom make it an ideal place to put this flexibility into practice.

And in the variable of *academic motivation*, the highest scores were in beliefs of control, self-efficacy for learning, and intrinsic goal orientation; that is, they feel they have the skills to cope with academic tasks, their results depend on their own effort, and their involvement in studies is motivated by intrinsic goals. These data align with studies conducted in this field, where music education is a powerful tool for developing and improving emotional competencies, such as motivation in the classroom (Bernad, 2021). This could happen because music can activate areas of the brain closely linked to emotional processing (Koelsch, 2014). Regarding intrinsic motivation in the academic domain, Hargreaves highlighted the importance of this type of motivation as a key and closely associated ingredient in the progress of music students back in 1998 (Richmond *et al*., 2016; Rickard *et al*., 2012). Other studies affirm that collective musical practice positively influences academic motivation, both for intrinsic, identity-related, and social reasons (Navarro Calafell, 2022). As for the lower exam stress reported by MEM students, it is worth considering that they are accustomed to and trained in performing oral exams, common in music studies conducted in conservatories and music schools. Therefore, these data would be consistent with those obtained with students from these types of institutions (Simoens *et al*., 2015).

In the same vein, regarding hindering variables (*perceived stress* and *psychological distress*), MEM students scored lower, indicating that they feel less stress than the rest of the students. In this line, the musical learning of MEM students throughout their academic training would explain its positive influence on their emotional states and, consequently, their lower level of stress and anxiety. That is, the regular practice of music affects emotions, providing favorable psychological effects. In the field of psychopathology and music therapy (Mora & Pérez, 2017), some studies confirm that music education can help in the treatment and reduction of disorders such as depression and anxiety. In this line, a study conducted with a group of teachers to address teacher stress and prevent burnout analyzed the stress level of those who received musical treatment (experimental group) versus a control group that did not receive it. The results determined significant differences between groups, with a significant decrease in anxiety and emotional exhaustion in the experimental group (Trallero & Oller, 2008).

In summary, the study of academic engagement of MEM students in their university education proves to be a key factor, as it will determine quality teaching in their future students, an essential goal of the education system. As we have seen, these students are clearly influenced by their musical experience, preceding their university studies in many cases. This influence affects their musical and extramusical competencies, such as engagement, stress, and coping, which will allow for better adaptation to the stressful situations they will face as teachers throughout their profession and access to it.

Finally, we will describe some limitations of this study that also emerge as future lines of research. A key factor that has hindered the collection of data - digital data- has been the impact that the period of confinement and non-face-to-face teaching has had on our university students, who were overloaded with screen work, affecting their participation. On the other hand, the sample could be expanded with students from other universities and other graduating classes, to analyze how some contextual variables could be affecting the results. It would also be enlightening to know the reasons that led them to choose MEM.

In summary, these data confirm the need to support and guide MEM students in their academic, professional, and personal development through an efficient application of university tutorial action. With this, it is hoped to train competent music teachers committed to music education.

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