Psychological Topics, 32 (2023), 1, 105-124
Original Scientific Paper UDC: 159.9:78
https://doi.org/10.31820/pt.32.1.6 159.947.5.072-057.87(497.11)

Self-Determination Theory Perspective on Motivation and Solo Performance among Students in Higher Music Education in Serbia

Blanka Bogunović[1], Olja Jovanović[2], Nataša Simić[3], and Dejana Mutavdžin[1]

[1] University of Arts in Belgrade, Faculty of Music, Belgrade, Serbia
[2] University of Belgrade, Faculty of Philosophy,
Department of Psychology and Center for Teacher Education, Belgrade, Serbia
[3] University of Belgrade, Faculty of Philosophy, Institute of Psychology, Belgrade, Serbia

Abstract

Motivation is highly important for participation in musical activities and musical achievement. In the context of higher music education (HME) in Serbia, we sought to examine the relationship between students' solo performance opportunities and two key components of the Self-Determination Theory (STD) – basic psychological needs (Competence, Relatedness and Autonomy) and motivational regulation styles (Amotivation, External, Introjected negative, Introjected positive, Identified, Intrinsic). The convenient sample of 197 HME students (performing modules; M_{age} = 23.88, SD = 3.4) completed two inventories: Basic Psychological Needs Satisfaction and Frustration Scale (BPNSFS; Chen et al., 2015) and Relative Autonomy Index Questionnaire (RAI-SRQ; Sheldon et al., 2017); they also provided data on the frequency of solo performances during HME. The results indicate that our participants' basic psychological needs are highly met, with the need for Relatedness being significantly less satisfied and the need for Autonomy significantly more frustrated than the remaining two needs. The motivation for participation in music activities in our sample could be described as predominantly autonomous – Identified or Intrinsic. Fulfilment/frustration of basic psychological needs and motivational regulation styles predicted the likelihood of public solo performances, with Amotivation and External motivation being significant predictors. Our findings suggest that students with higher external motivation for participation in musical activities are more likely to have solo performances. In line with STD's postulates, our findings are seen as a reflection of the dominant approaches to music education in Serbia, and are discussed as such.

Keywords: self-determination theory, basic psychological needs, motivational regulation style, solo performance, higher music education

Introduction

Studies addressing the psychological features of music students indicate that, besides musicality, students' motivation represents the factor that

✉ Blanka Bogunović, Faculty of Music, University of Arts in Belgrade, Kralja Milana 50, 11000 Belgrade, Serbia. E-mail: *blankabogunovic@fmu.bg.ac.rs*

predominantly influences their performance and decisions related to continuing or ceasing their career in music (Freer & Evans, 2018; MacIntyre et al., 2018; McPherson & O'Neill, 2010). Intrinsic motivation is a consistent part of the empirically based theoretical model encompassing development from abilities to competencies to expertise and beyond to artistry in the domain of music (Subotnik et al., 2016). The importance of motivation for musical achievement has been confirmed with empirical findings from different country contexts, including the Serbian context. Namely, the studies show that, in the frame of the three-stage specialist music education for gifted in Serbia (Nogaj & Bogunović, 2015), motivation is the best predictor of musical achievements, followed by musical abilities, personality traits and environmental influences, such as family music stimulation, parental engagement, cultural and educational family setting. This is the case starting from the early beginnings of music education for gifted students (Bogunović, 2010; Radoš et al., 2003) and throughout adolescence (Bogunović, 2009).

Adequate motivation also contributes to psychological well-being and resilience when faced with challenges, such as competitive social and professional environments and uncertain career that musicians are faced with (Alessandri et al., 2020; Bennett & Stanberg, 2006; Deci & Ryan, 2008; Evans & Bonneville-Roussy, 2016). Therefore, sustaining and improving music students' motivation to practice and enhance their musical skills is one of the most relevant goals in music education. The purpose of the present study was to connect performance achievements to the core motivational processes reflected in the Self-Determination Theory (SDT), which is currently one of the most influential frameworks for studying motivation in psychology and to apply it in higher music education (HME) in the Serbian context.

Solo vocal-instrumental performance is perhaps the most representative mode of achievement since this type of performance requires investment and persistence over a long period of time in order to reach the highest levels of musical skills. In addition, those students who possess the highest expertise and musicality, as well as the psychological (e.g., intrinsic motivation, perseverance, confidence, charisma) and social (e.g., collegiality, risk-taking) skills necessary for expertise and artistry, are selected for public solo performances (Subotnik & Jarvin, 2005). So, it is worthwhile to investigate the motivational profile and needs that drive those with the highest accomplishments and to see what we can learn from that. Public solo performances usually refer to a vocal-instrumental solo performance, a solo with piano or orchestra accompaniment, and a solo recital.

Self-Determination Theory

The Self-Determination Theory represents a macro theory combining several mini-theories, Basic Psychological Needs and Organismic Integration Theory being the most relevant for music education and performance. According to the Basic

Psychological Needs theory, people strive to satisfy three innate, universal needs: Competence, Relatedness, and Autonomy (Hagger et al., 2006; Ryan & Deci, 2002). The need for Competence implies the desire to be competent and effective in acting in one's own habitat. The need for Relatedness concerns the desire to interact and connect with others, gaining a sense of closeness and acceptance. The need for Autonomy reflects a sense of free will and choice, as opposed to the feeling of being controlled by external forces (Deci & Ryan, 2000). Personal and social factors influence the degree to which the three needs are met (Quested et al., 2018; Ryan & Deci, 2000).

Organismic Integration Theory suggests that the sources of regulation involved in behaviours relevant to these needs lay on a continuum from external to internal regulation (Deci & Ryan, 2000, see Table 1), implying that human beings move through stages of development towards greater self-ownership (Sheldon et al., 2017). External motivation or External regulation implies that individuals engage in actions due to external rewards, requirements or pressures, and social norms, suggesting the highest level of external perceived locus of causality.

Introjected regulation has primarily extrinsic origin but implies that the person accepts the external requirements as something they should adhere to. Based on Assor et al. (2009) distinction between *striving to approach self-worth* versus *striving not to lose self-worth*, Sheldon et al. (2017) showed that we can differentiate between Positive introjection when a person strives to prove herself worthy, and Negative introjection, when a person strives to avoid guilt and feeling of incompetence. Identified regulation represents a bridge towards intrinsic forms of regulation because the person values the behaviour to be performed, understands its importance and identifies with that behaviour and no self-induction is needed. It is specific because it is still an extrinsic motivation (i.e., it is not done out of enjoying the experience itself), but nevertheless, it is also an autonomous motivation because there is full internal commitment to doing the behaviour. Finally, Intrinsic regulation represents a self-determined, internal desire to engage in an activity due to personal interest and curiosity. When intrinsically regulated, people's emotional quality of the experience is the most positive, with genuine interest, enjoyment and inherent satisfaction (Reeve, 2015). Although we can have all these motivations simultaneously, recent studies support a single-peak hypothesis, suggesting that we all have the predominant motivation type (Sheldon et al., 2017).

SDT connects the extrinsic-intrinsic continuum to the basic needs by suggesting that "when people's basic psychological needs are satisfied ... they are more autonomously motivated to work, and when their basic needs are thwarted, they are controlled or amotivated" (Deci & Ryan, 2014, p. 28). In line with this, intrinsic motivation proved to be consistently associated with higher academic achievement (Taylor et al., 2014).

Table 1

The Relative Autonomy Continuum According to SDT (Adapted from Deci & Ryan, 2000)

Motivation type	Low self-determination				High self-determination	
	Amotivation	Extrinsic				Intrinsic
Regulation style	Not regulated	External regulation	Introjected regulation	Identified regulation	Integrated regulation	Intrinsic regulation
Locus of causality	Impersonal	External	Somewhat external	Somewhat internal	Internal	Fully internal
Underlying processes	Incompetence, Lacks control	External rewards and punishment	Internal rewards and punishment	Personal importance	Synthesis with self, congruence	Enjoyment, satisfaction

Self-Determination Theory in the Domain of Music

Since Evans (2015) presented a conceptual overview of the SDT application to music learning, a number of studies tested this theory in the context of music education (e.g., Creech et al., 2013; Deci & Ryan, 2000; Krause et al., 2019; Lombas & Esteban, 2018; Milyavskaya & Koestner, 2011). Therefore, we now know that musicians are closer to the self-determined end of the continuum in the field of music, with intrinsic motivation reaching almost the maximum levels and thus being higher than in the general population of individuals of the same age (MacIntyre et al., 2018; Taylor et al., 2014). Similarly, students report high levels of needs satisfaction, with Autonomy typically being slightly lower than Competence and Relatedness (Freer & Evans, 2018, 2019).

Evans (2015) postulated that despite the engagement and effort that external regulation can elicit at the beginning of practising music, learning based primarily on external motivators can lead to avoidance, shame, and guilt over time and therefore be harmful to students (Bakker, 2005; Evans, 2015; Küpers et al., 2014). Further studies confirmed that the fulfilment of psychological needs and intrinsic motives plays an essential role in maintaining the motivational system (Evans & Bonneville-Roussy, 2016; Freer & Evans, 2018; MacIntyre et al., 2018); furthermore, the intrinsic desire to learn paths to increased learning effort, which leads to the development of perceived higher competence, which in turn increases the desire to learn (MacIntyre et al., 2018). In contrast, decreases in Autonomy, Competence, and Relatedness typically lead to students' decisions to give up music study and music performance, as well as to a lower sense of well-being (Alessandri et al., 2020; Evans et al., 2013). These findings have important implications for practice, particularly for music education and teachers, and indicate that schools and universities should promote a climate conducive to students' needs (see, e.g., Bonneville-Roussy et al., 2013; Freer & Evans, 2019). They also call for further application of SDT and closer examination of its relationship to music student achievement.

The Present Study

In the absence of studies linking SDT to the performance of HME students in Serbia, we were interested in investigating two key components of SDT in relation to musical performance. Our analysis was driven by the following research questions: (1) To what extent does the HME in Serbia supports students' basic psychological needs? (2) Which motivational regulatory styles related to engagement in music are present among HME students in Serbia? and (3) How do HME students' basic psychological needs and motivational regulatory styles relate to their musical performance? We postulated these research questions with the knowledge that these two features of SDT are closely related, as motivation is internalized to the extent that basic psychological needs are met. In addition, we wanted to discuss the results in relation to need satisfaction (or frustration) and self-regulation in the context of the research findings from other contexts.

Method

Participants

The convenience sample included 197 fourth-year bachelor (93; 47.4%) and master (104; 52.6%) music students studying different performance modules (Table 2). The age of the students ranged from 19 to 45 years (M_{age} = 23.88, SD = 3.4), and almost all students (98.9%) had learned an instrument prior to enrolling in the university programme as part of the three-stage specialist music education ($M_{years\ of\ playing}$ = 14.3, SD = 3.8).

Table 2

Structure of the Sample Regarding Performing Modules

Performing module	Number of students
Piano	47
String instruments	60
Wind instruments	27
Guitar	11
Accordion	8
Solo singing	24
Conducting	4
Poly-instrumental module	16
Total	197

Data Collection

Participants completed the Relative Autonomy Index Questionnaire (RAI-SRQ; Sheldon et al., 2017) and the Basic Psychological Needs Satisfaction and Frustration Scale (BPNSFS; Chen et al., 2015; Van der Kaap-Deeder et al., 2020), both adapted for a musical setting. In the general instruction, it was pointed out that items refer to the participants' dealing with music. In BPNSFS, every statement started with 'When I learn or play music...' and in RAI-SRQ 'I am dealing with music because...'.

The RAI-SRQ includes 24 items to which participants responded by indicating the extent to which the items describe themselves, with one indicating that the item does not describe the participant at all and seven indicating that it accurately describes the participant. We calculated scores for each subscale of motivational styles separately. All subscales, except for the External motivation subscale ($\alpha = .54$), had satisfactory internal consistency – Cronbach's α ranged from .70 to .84.

The BPNSFS consists of 24 items organized in six subscales describing satisfaction and frustration with the fulfilment of basic psychological needs: Autonomy Satisfaction ($\alpha = .63$), Autonomy Frustration ($\alpha = .75$), Relatedness Satisfaction ($\alpha = .72$), Relatedness Frustration ($\alpha = .59$), Competence Satisfaction ($\alpha = .77$), and Competence Frustration ($\alpha = .86$). Participants answered the questions on a 5-point response scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

The initial translation was undertaken independently by two experts in the field of music and psychology, both residing in Serbia and fluent in English. Subsequently, two translations of the original scale were discussed and resolved by consensus. The review process did not indicate any problems with the comprehension of the items; however, words or phrases were added implicating the context of music education or profession where needed.

Data on student musical performance (public performances of various prestige levels and competitions) were collected ex-post factum using a 20-question inventory created by the first author (Bogunović, 2010). Based on an expert review of the data findings, we selected the frequency of solo public musical performances during HME as the best indicator of musical achievement.

Data were collected for three consecutive academic years (2017/2018, 2018/2019, 2019/2020) in the psychology course during class time using a paper-pencil format questionnaire. Students completed the questionnaires as part of their course requirements. Ethical approval was obtained from the Faculty of Music in Belgrade Ethics Committee, No. 01-248/23.

Data Analysis

After performing descriptive statistics, data were analyzed using binary logistic regression. Scores on the RAI-SRQ and BPNSFS subscales were predictors, and experience with solo musical performances as a binary variable was a criterion variable.

Results

Description of Basic Needs Satisfaction, Motivational Regulation Styles and Music Achievements

Research in recent years has shown that the absence of psychological need satisfaction does not necessarily imply need frustration (Chen et al., 2015). Therefore, we presented our results separately for basic psychological need satisfaction and frustration. As can be seen in Table 3, HME students in our sample showed high levels of satisfaction and low levels of frustration for all three basic psychological needs. However, the results of two repeated measures ANOVAs indicate that there was a statistically significant difference in both satisfaction $F(2, 159) = 5.964$, $p = .003$, and frustration $F(2, 159) = 95.057$, $p < .001$, between different needs. Follow-up comparison shows that satisfaction of the need for Relatedness is significantly lower than satisfaction of the need for Competence, $p = .002$, and the need for Autonomy, $p = .033$. On the other hand, the frustration of the need for Autonomy proves to be significantly higher than the frustration of the need for Competence, and Relatedness, both at the level $p < .001$.

Table 3

Descriptive Statistics for Fulfilment and Frustration of Basic Psychological Needs (BPNSFS) in the Sample

Subscales	*M*	*SD*	*Skewness*	*Kurtosis*
Autonomy Satisfaction	4.21	0.61	-0.89	-0.46
Autonomy Frustration	2.79	0.87	0.08	-0.55
Relatedness Satisfaction	4.06	0.71	-0.59	-0.03
Relatedness Frustration	1.95	0.75	0.46	-0.67
Competence Satisfaction	4.28	0.64	-0.82	0.25
Competence Frustration	2.01	0.97	0.79	-0.33

Next, we were interested in the kind of motivation for participation in musical activities HME students show. As seen in Table 4, the students' motivation can be predominantly described as autonomous, i.e., Identified or Intrinsic.

Table 4

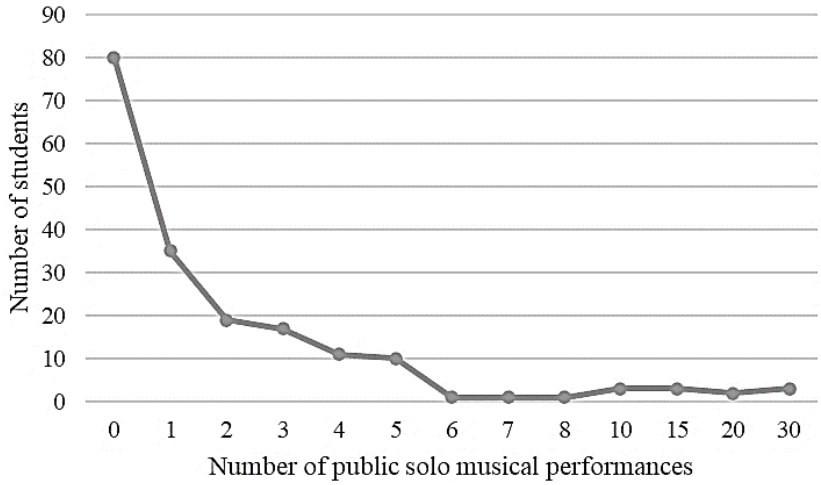
Descriptive Statistics for Motivational Regulation Style in Music Context among Music Students in the Sample (RAI-SRQ)

Subscales	*M*	*SD*	*Skewness*	*Kurtosis*
Amotivation	1.79	1.14	1.67	1.96
External	1.50	0.71	1.86	4.07
Introjected negative	2.33	1.39	1.18	0.75
Introjected positive	4.04	1.62	-0.20	-0.83
Identified	6.16	0.98	-1.58	2.48
Intrinsic	6.53	0.78	-2.49	6.91

Finally, we analysed the solo musical performance of HME students participating in the study. The results show that students in our sample differ in the number of public solo performances they had during their school years at HME, ranging from 0 to 30 (Figure 1). The number of solo musical performances could vary due to differences in musical expertise. However, contextual factors could also influence it, such as faculty support for solo performance participation, type of musical instrument, and/or opportunities for solo performance. For further statistical analyses, we described the musical performance of students from our sample as a binary outcome - at least one (53.8%) or no (40.6%) public solo musical performance during their HME, while 5.6% of students did not provide the answer to this question.

Figure 1

Number of Public Solo Music Performances among Students in the Sample



Basic Psychological Needs and Motivational Regulation Styles as Predictors of Solo Music Performance

Correlational analyses showed that satisfaction of basic psychological needs is positively associated with autonomous forms of motivation, i.e. Identified and Intrinsic, and negatively with Amotivation and Extrinsic forms of motivation. The opposite is true for the frustration of basic psychological needs (Table 5).

Table 5

Correlation Coefficients between Fulfilment or Frustration of Basic Psychological Needs and Motivational Regulation Styles

	1	2	3	4	5	6	7	8	9	10	11	12
1. Autonomy Satisfaction	–	-.18*	.46**	-.37**	.50**	-.37**	-.51**	-.17*	.06	.22**	.40**	.49**
2. Autonomy Frustration	–	–	-.21**	.51**	-.25**	.44**	.29**	.35**	.25**	.14	-.04	-.11
3. Relatedness Satisfaction	–	–	–	-.45**	.33**	-.19*	-.26**	-.10	. 02	.18*	.36**	.32**
4. Relatedness Frustration	–	–	–	–	-.39**	.44	.35**	.35**	.23**	.10	-.15	-.18*
5. Competence Satisfaction	–	–	–	–	–	-.67**	-.44**	-.21**	-.08	.09	.35**	.40**
6. Competence Frustration	–	–	–	–	–	–	.47**	.20*	.13	.03	-.25**	-.22**
7. Amotivation	–	–	–	–	–	–	–	.43**	.06	-.06	-.45**	-.57**
8. External	–	–	–	–	–	–	–	–	.42**	.22**	-.05	-.21**
9. Introjected negative	–	–	–	–	–	–	–	–	–	.37**	.22**	.10
10. Introjected positive	–	–	–	–	–	–	–	–	–	–	.48**	.29**
11. Identified	–	–	–	–	–	–	–	–	–	–	–	.66**
12. Intrinsic	–	–	–	–	–	–	–	–	–	–	–	–

*$p < .05$, **$p < .01$.

A binary logistic regression was performed to ascertain the effects of types of motivation and fulfilment of basic psychological needs on the likelihood that HME students will have public solo performances. The regression model was statistically significant $\chi^2(12) = 22.35$, $p = .034$, and explained 17.7% of the variance in public solo musical performances. The model correctly classified 68.8% of cases.

Table 6

Logistic Regression Results Using Solo Performance as the Criterion Variable

	B	*S.E.*	Wald	*df*	*p*	Odds ratio
1. Autonomy Satisfaction	-0.200	0.390	0.263	1	.608	0.819
2. Autonomy Frustration	-0.007	0.252	0.001	1	.997	0.993
3. Relatedness Satisfaction	0.117	0.306	0.146	1	.702	1.124
4. Relatedness Frustration	-0.095	0.323	0.086	1	.769	0.909
5. Competence Satisfaction	0.578	0.420	1.894	1	.169	1.782
6. Competence Frustration	0.109	0.280	0.153	1	.696	1.116
7. Amotivation	-0.475	0.237	4.022	1	.045	0.622
8. External	0.861	0.345	6.210	1	.013	2.365
9. Introjected negative	-0.138	0.154	0.798	1	.372	0.871
10. Introjected positive	-0.048	0.131	0.132	1	.717	0.954
11. Identified	0.333	0.270	1.526	1	.217	1.396
12. Intrinsic	0.034	0.359	0.009	1	.924	1.035
Constant	-4.115	2.921	1.985	1	.159	0.016

Note. B – unstandardized beta; *S.E.* – standard error for the unstandardized beta; Wald – Wald Chi-Squared test.

Only Amotivation and External motivation were associated with an experience in public solo musical performing (Table 6). The regression analysis shows that Amotivation is a negative predictor of the chosen music achievement criteria. At the same time, External motivation proved to be a positive predictor of music performance achievement, suggesting that there is a higher chance that students with higher levels of external motivation will have more experience with solo performances.

Discussion

In this paper, we use the SDT as a theoretical lens to examine the relation between HME students' motivation for participation in music activities and their solo music performance in the specific context of the HME in Serbia. Although humanistic in nature, SDT recognizes the importance of the environment, which could either facilitate or hinder the satisfaction of basic psychological needs and individual sense of volition and initiative, influencing engagement and performance

of a person in diverse domains, including music (Valenzuela et al., 2018). Therefore, the findings will be discussed as a reflection of dominant approaches to music education in Serbia rather than as a result of our participants' relatively stable individual traits.

Since the SDT postulates that a person's innate tendency towards psychological growth is promoted by environments that provide the satisfaction of psychological needs for Autonomy, Competence and Relatedness, firstly, we were interested in exploring to what extent the HME in Serbia supports students' basic psychological needs. Descriptive statistics from this study reveal that HME students have relatively high levels of needs satisfaction, which is in line with previous findings; the only difference in comparison to previous studies (e.g., Freer & Evans, 2018, 2019) is that HME students' need for Relatedness is less satisfied in comparison to the need for Competence and Autonomy. Since the items partially capture a sense of Relatedness with the music community, we could assume that participation of students, particularly undergraduate students, in the music community still could be described as legitimate peripheral participation (Lave & Wenger, 1991). This can be explained by the curricula of HME, an already recognized factor in previous studies conducted in Serbia. Namely, the HME in Serbia focuses on individual classes and an individualized approach to learning, typical for specialist music education, providing limited opportunities for social interaction and bonding among students. Students are oriented towards themselves and the enhancement of their musical skills while practising for long hours in solitude (Hallam et al., 2021; Kemp, 1996), which could result in lower levels of Relatedness among HME students. In the aftermath, music students tend to end their studies with low self-actualization (only 28% report full talent development), which even leads to the feeling of 'hidden underachievement' in a group of (relatively) successful young musicians (Bogunović et al., 2012).

On the other hand, the study shows that the need for Autonomy is more frustrated than the remaining two needs, which is in line with previous findings of Bogunović et al. (2012) suggesting that HME in Serbia does not meet the expectations of students concerning the opportunities for aesthetic and artistic development and attitude supporting creative approach to music performance. Description of the HME in Serbia as non-supportive for students' autonomy can also be found in a qualitative study of highly gifted musicians who experienced radical acceleration in music education in Serbia (Jovanović et al., in press). The participants in the study portray their education as highly structured and focused on developing performing skills. Although this kind of music education allows students to quickly become recognized as excellent music performers (Folkestad, 2017), at the same time, it fails to develop an autonomous and creative approach to music. Permanent pressure on technical skills enhancement and sustaining continuity in high interpretative standards while working in the frame of a relatively conservative educational framework often clashes with the spontaneous creative expression of musical ideas and the need to present them to the audience (Bogunović et al., 2012).

Therefore, young musicians must pursue excellence rather than originality, as proven in other studies (Folkstad, 2017; Jovanović et al., in press). Consequently, after completing music education, musicians experience a freedom they do not know how to use.

This leads us to our second question, to what extent does the HME in Serbia promote students' sense of volition and initiative regarding participation in music activities? Namely, from the SDT perspective, Autonomous motivation expresses an essential personal commitment to music-related activities in contrast to Extrinsic motivation, where participation in music activities is not a reward on its own (Sheldon et al., 2017). The previous research suggests that through participation in music education, students could develop autonomous motivation, and music becomes an integral part of students' self-concept (Bogunović, 2017; Hallam, 2014; Holland & Lachicotte, 2007; Jovanović et al., 2021; Spychiger, 2017). A similar pattern could be recognized in our findings, where HME students report high levels of enjoyment in music performance and a desire to express themselves through playing an instrument or singing.

Autonomous (Identified or Intrinsic) motivation for participation in music-related activities is recognized among HME students in different country contexts (Evans & Bonneville-Roussy, 2016; McPherson & O'Neill, 2010; Miksza et al., 2016); however, students in our study seem to be even less extrinsically and more intrinsically motivated than their international counterparts (MacIntyre et al., 2018). This can be understood as a consequence of the challenging music environment in Serbia due to socioeconomic instability and low investments in culture (see, e.g., Obradović, 2018; Draft of the Strategy of development of culture in the Republic of Serbia for the period 2020-2029). So, the rationale for choosing music in Serbia is presumably of inner nature. What certainly represents a source of intrinsic motivation in a frame of Serbian specialist music education is an early choice of music as a profession and long-term commitment that grew into a musical identity, which is deeply entangled with their identity (Lamont, 2017).

The correlations between the fulfilment or frustration of basic psychological needs and motivational regulation styles support Evans's (2015) statement that motivation is internalized to the extent that basic psychological needs are fulfilled. Namely, the satisfaction of basic psychological needs is positively correlated with autonomous forms of motivation, i.e. Integrated and Intrinsic, and negatively correlated with Amotivation and extrinsic forms of motivation. The opposite is true for the frustration of basic psychological needs. These results show that motivation and music identity are interdependent. On the one hand, motivation contributes to the development of musical identity (Hallam, 2014), while musical identity motivates engagement in music (Holland & Lachicotte, 2007; Lamont, 2017). These results give an important contribution to the confirmation of the SDT since they confirm the inner consistency of the concept in the new, professionally and culturally specific sample.

Our third question captures the relationship between needs satisfaction/ frustration, motivational regulation styles and solo musical performance. The findings show that Amotivation is a negative predictor of solo performance achievement, which is expected if we have in mind that Amotivation can be explained as a state in which the person acts but without an intention and expectations of success (Deci & Ryan, 2014). That means that HME students who feel they lack control over their behaviour or intentions in the domain of music have a lower chance of solo appearances.

On the other hand, external motivation proved to be a positive predictor of music achievement. External regulation implies that individuals engage in actions because of external rewards, requirements or pressures, and social norms. It implies that the person accepts the external requirements as something they should adhere to (Deci & Ryan, 2000). Referring to these statements, we may understand that music students in our sample are at the end of their HME, and they naturally think of their future steps. They may see the frequency of solo performances as beneficial for further excelling in a professional musical career and employability in the labour market. More solo performances mean recognition, grants, competitions, applications for orchestra auditions, references for further education, and engaging patrons, which in the end, is the realistic picture of the professional musical field and a road to building up the career. So, the question is, what is the payoff for solo performances? Obviously, not only inner satisfaction. On the other hand, we may have in mind that HME is the last stage of the traditionally oriented music education system that focuses on technical perfection and high standards of musical interpretation, which in turn emphasizes the need for the development of high musical skills and proficiency levels of performance expertise, and solo performances are the 'moments to prove it'. The professional milieu of the music world is also very much competitive, where solo performances have the highest rank in the group of public performance achievements, and it could be that they become the goal *per se*.

Considering that the study shows that only Amotivation and Extrinsic motivation are significant predictors of music achievements among HME students, we would like to critically reflect on the experience with solo performances as an indicator of music achievement. The binary dispersion of the music performance achievement should be interpreted from the perspective of the HME in Serbia, where it was detected. Namely, the result indicates that almost half of the music students who play an instrument have no solo performance during their study time. This is surprising since the music curriculum is oriented towards the education and nurturing of a young artist, and demands and expectations are closely related to advancing in solo performing. Though we assume that these students play publicly in various other available formats (chamber ensembles, orchestras, smaller local performances), or they do not perform publicly at all, or they were not in the 'top' group.

The explanations for this result could be given from different angles: it is the result of natural, spontaneous selection since solo performing asks for high expertise; students learned their 'weak and strong' points (Subotnik et al., 2016) and built up the realistic picture about their possibilities; students may have lost their enthusiasm and interest in music profession; and there are not so many opportunities to play solo. Not to forget the 'conservatory atmosphere' where tensions caused by competitive surroundings or possibly problematic relations with the major teacher can hamper students' development (Gaunt, 2010). Moreover, a student may have their own choices other than a solo career. All these reasons do not mean that students are not interested in music at all and that music activities are not fulfilling for them. It means that at the end of the day, music students start thinking about how to put their intrinsic interest and enjoyment in music activity into the context of reality.

The results of another study in a similar Serbian sample (Bogunović & Mirović, 2014a), help us to gain an insight into students' reasoning as to solo performance and how this influences their decision about further professional career after graduation. Namely, the solo performance career was the first choice for 'only' 37% of students due to affinity towards the scene and playing music in front of an audience, desire for personal development and self-actualization, creative and emotional expression, and space for individuality and independence. In contrast, the other group of students (35%) was referring to a great amount of stress and stage fright, lack of self-confidence, not being able to enjoy performances, not finding oneself in it, not being ready to practice, lack of perspective, insecure earnings, "stiffness". Some of these reasons can explain the detected Amotivation in our sample. This bipolar attitude of music students concerning different education aspects keeps repeating in several studies (Bogunović et al., 2012; Bogunović & Mirović, 2014a, 2014b), and is probably caused by the diverse personal experiences of music students during their HME.

It is clear that long-term experience in music education, on one side, and professional perspective that is in front of the young musicians, on the other, are the main factors of musical achievements at the end of the third stage of music education for the gifted. It is confirmed that psychosocial variables play an essential role in the manifestation of giftedness, so we assume the externally motivated achievements may be a consequence of the fact that giftedness reflects the values of immediate (musical) society and is typically manifested in actual outcomes that are domain-specific (Subotnik et al., 2011).

The limitations of our study lie mostly in the low Cronbach's α for External motivation subscale (α = .54) and Relatedness Frustration (α = .59), which asks for reserve in interpreting results related to these scales, and certainly suggests a replica of the study. Next to that, the convenience sample is not completely coherent. It covers a rather broad and diverse group of music performers where some of them (e.g., contrabass, some of the brass wind instruments) have fewer opportunities to play solo performances considering the nature of the instrument. So, participants are

not on an equal footing regarding opportunities for solo performance. Consequently, the second limitation is the binary nature of the measure of public solo performance, which does not allow nuanced differences among HME students. On the other hand, it provides space for interesting insights into the nature of HME and students' rationales and perspectives. We are left wondering if the solo performing frequency is rather the measure of social skills of the student and/or major teacher than the result of the inner motivation strivings. Therefore, in future research, more diverse achievement measures should be introduced.

Conclusion

The part of results concerning the relatedness of basic psychological needs and motivation regulation styles to the experience of vocal or instrumental solo performance during study time strongly confronts the 'myth' of the artist being inspired by the divine need to 'enchant' the audience. However, some results suggest that HME students in Serbia study in a context that nurtures individual high achievements and excellence and less interpersonal relationships and connectedness. It seems that confirmed satisfaction of Competence, Relatedness and Autonomy through musically motivated behaviour is not the decisive factor for solo performance achievements and that music students look through the external rewarding benefits of their public performances. The findings present the grounds for valuable reflections about the curricula of HME innovations, music educational outcomes and self-actualization of young musicians.

References

Alessandri, E., Rose, D., & Wasley, D. (2020). Health and wellbeing in higher education: A comparison of music and sport students through the framework of Self Determination Theory. *Frontiers in Psychology*, *11*, 566307. https://doi.org/10.3389/fpsyg.2020.566307

Assor, A., Vansteenkiste, M., & Kaplan, A. (2009). Identified versus introjected approach and introjected avoidance motivations in school and in sports: The limited benefits of self-worth strivings. *Journal of Educational Psychology*, *101*(2), 482–497. https://doi.org/10.1037/a0014236

Bakker, A. B. (2005). Flow among music teachers and their students: The crossover of peak experiences. *Journal of Vocational Behavior*, *66*(1), 26–44. http://dx.doi.org/10.1016/j.jvb.2003.11.001

Bennett, D., & Stanberg, A. (2006). Musicians as teachers: Developing a positive view through collaborative learning partnerships. *International Journal of Music Education*, *24*(3), 219–230. https://doi.org/10.1177/0255761406069646

Bogunović, B. (2009). Motivation and personality traits of adolescent musicians. In D. Talevski (Ed.), *First international scientific conference Gifted and talented creators of the progress (theory and practice)* (pp. 330–335). University of Sv. Kliment Ohridski.

Bogunović, B. (2010). *Muzički talenat i uspešnost* [*Musical talent and successfulness*] (2nd ed.). Fakultet muzičke umetnosti i Institut za pedagoška istraživanja.

Bogunović, B. (2017). Mentalni sklop i postignuća studenata muzike [Mindset and music students' achievements]. In M. Petrović (Ed.), *Zbornik radova sa Pedagoškog foruma scenskih umetnosti – U potrazi za smislom i doživljajem u muzičkoj pedagogiji* (pp. 160–173). Fakultet muzičke umetnosti.

Bogunović, B., Dubljević, J., & Buden, N. (2012). Muzičko obrazovanje i muzičari: Očekivanja, tok i ishodi [Music education and musicians: Expectations, course and outcomes]. *Zbornik Instituta za pedagoška istraživanja*, *44*(2), 402–423. https://doi.org/10.2298/ZIPI1202402B

Bogunović, B., & Mirović, T. (2014a). Professional competencies of musically gifted at the end of higher education in music arts. *Research in Pedagogy*, *4*(1), 11–25. http://research.rs/wp-content/uploads/2015/01/02-Bogunovic-Mirovic-ENG.doc.pdf

Bogunović, B., & Mirović, T. (2014b). Visoko obrazovanje muzički darovitih: Studentske procene kompetencija nastavnika [Higher education of the musically gifted: Students' estimation of teachers' competencies]. *Primenjena psihologija*, *7*(3), 469–491. https://doi.org/10.19090/pp.2014.3.469-491

Bonneville-Roussy, A., Rentfrow, P. J., Xu, M. K., & Potter, J. (2013). Music through the ages: Trends in musical engagement and preferences from adolescence through middle adulthood. *Journal of Personality and Social Psychology*, *105*(4), 703–717. https://doi.org/10.1037/a0033770

Chen, B., Vansteenkiste, M., Beyers, W., Boone, L., Deci, E. L., Van der Kaap-Deeder, J., Duriez, B., Lens, W., Matos, L., Mouratidis, A., Ryan, R. M., Sheldon, K. M., Soenens, B., Van Petegem, S., & Verstuyf, J. (2015). Basic psychological need satisfaction, need frustration, and need strength across four cultures. *Motivation and Emotion*, *39*, 216–236. https://doi.org/10.1007/s11031-014-9450-1

Creech, A., Hallam, S., McQueen, H., & Varvarigou, M. (2013). The power of music in the lives of older adults. *Research Studies in Music Education*, *35*(1), 87–102. https://doi.org/10.1177/1321103X13478862

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Deci, E. L., & Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being across life's domains. *Canadian Psychology / Psychologie canadienne*, *49*(1), 14–23. https://doi.org/10.1037/0708-5591.49.1.14

Deci, E. L., & Ryan, R. M. (2014). The importance of universal psychological needs for understanding motivation in the workplace. In M. Gagné (Ed.), *The Oxford handbook of work engagement, motivation, and self-determination theory* (pp. 13–32). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199794911.013.003

Draft of the Strategy of development of culture in the Republic of Serbia for the period 2020-2029. (2020). Official gazette of the Republic of Serbia. https://otvoreniparlament.rs/uploads/akta/Predlog%20Strategije%20razvoja%20kulture%20Republike%20Srbije%20od%202020.%20do%202029.%20godine.pdf

Evans, P. (2015). Self-determination theory: An approach to motivation in music education. *Musicae Scientiae*, *19*(1), 65–83. https://doi.org/10.1177/1029864914568044

Evans, P., & Bonneville-Roussy, A. (2016). Self-determined motivation for practice in university music students. *Psychology of Music*, *44*(5), 1095–1110. https://doi.org/10.1177/0305735615610926

Evans, P., McPherson, G. E., & Davidson, J. W. (2013). The role of psychological needs in ceasing music and music learning activities. *Psychology of Music*, *41*(5), 600–619. https://doi.org/10.1177/0305735612441736

Folkestad, G. (2017). Post-national identities in music: Acting in a global intertextual musical arena. In R. Macdonald, D. J. Hargreaves, & D. Miell (Eds.), *Handbook of musical identities* (pp. 122–136). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199679485.003.0007

Freer, E., & Evans, P. (2018). Psychological needs satisfaction and value in students' intentions to study music in high school. *Psychology of Music*, *46*(6), 881–895. https://doi.org/10.1177/0305735617731613

Freer, E. G., & Evans, P. (2019). Choosing to study music in high school: Teacher support, psychological needs satisfaction, and elective music intentions. *Psychology of Music*, *47*(6), 781–799. https://doi.org/10.1177/0305735619864634

Gaunt, H. (2010). One-to-one tuition in conservatoire: The perceptions of instrumental and vocal students. *Psychology of Music*, *38*(2), 178–208. https://doi.org/10.1177/0305735609339467

Hagger, M. S., Chatzisarantis, N. L. D., & Harris, J. (2006). From psychological need satisfaction to intentional behavior: Testing a motivational sequence in two behavioral contexts. *Personality and Social Psychology Bulletin*, *32*(2), 131–148. https://doi.org/10.1177/0146167205279905

Hallam, S. (2014). Motivation to learn. In S. Hallam, I. Cross, & M. Thaut (Eds.), *The Oxford handbook of music psychology* (2nd ed., pp. 479–492). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780198722946.013.2

Hallam, S., Papageorgi, I., Varvarigou, M., & Creech, A. (2021). Relationships between practice, motivation, and examination outcomes. *Psychology of Music, 49*(1), 3–20. https://doi.org/10.1177/0305735618816168

Holland, D., & Lachicotte, W. Jr. (2007). Vygotsky, Mead, and the new sociocultural studies of identity. In H. Daniels, M. Cole, & J. V. Wertsch (Eds.), *The Cambridge companion to Vygotsky* (pp. 101–135). Cambridge University Press. https://doi.org/10.1017/CCOL0521831040.005

Jovanović, O., Altaras Dimitrijević, A., Mutavdžin, D., & Bogunović, B. (in press). The lived experience of radical acceleration in the biographical narratives of exceptionally gifted adult musicians. In B. Bogunović, R. Timmers, & S. Nikolić (Eds.), *Psychological perspective on musical skills and experiences: Research in the Western Balkan and Western Europe*.

Jovanović, O., Mutavdžin, D., Protulipac, A., & Bogunović, B. (2021, May 13–16). *From music-and-I to music-in-me: Changes in motivation for music engagement and learning over time* [Paper presentation]. XXVII Scientific conference Empirical studies in Psychology, Faculty of Philosophy, University of Belgrade, Belgrade, Serbia.

Kemp, A. E. (1996). *The musical temperament: Psychology and personality of musicians*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780198523628.001.0001

Krause, A. E., North, A. C., & Davidson, J. W. (2019). Using Self-Determination Theory to examine musical participation and well-being. *Frontiers in Psychology*, *10*, 405. https://doi.org/10.3389/fpsyg.2019.00405

Küpers, E., van Dijk, M., McPherson, G. E., & van Geert, P. (2014). A dynamic model that links skill acquisition with self-determination in instrumental music lessons. *Musicae Scientiae*, *18*(1), 17–34. https://doi.org/10.1177/1029864913499181

Lamont, A. (2017). Musical identity, interest, and involvement. In R. MacDonald, D. J. Hargreaves, & D. Miell (Eds.), *Handbook of musical identities* (pp. 176–196). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199679485.003.0010

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* Cambridge University Press. https://doi.org/10.1017/CBO978051181535

Lombas, A. S., & Esteban, M. Á. (2018). The confounding role of basic needs satisfaction between self-determined motivation and well-being. *Journal of Happiness Studies*, *19*(5), 1305–1327. https://doi.org/10.1007/s10902-017-9874-x

MacIntyre, P. D., Schnare, B., & Ross, J. (2018). Self-determination theory and motivation for music. *Psychology of Music*, *46*(5), 699–715. https://doi.org/10.1177/0305735617721637

McPherson, G. E., & O'Neill, S. A. (2010). Students' motivation to study music as compared to other school subjects: A comparison of eight countries. *Research Studies in Music Education*, *32*(2), 101–137. https://doi.org/10.1177/1321103X10384202

Miksza, P., Tan, L., & Dye, C. (2016). Achievement motivation for band: A cross-cultural examination of the 2×2 achievement goal motivation framework. *Psychology of Music*, *44*(6), 1372–1388. https://doi.org/10.1177/0305735616628659

Milyavskaya, M., & Koestner, R. (2011). Psychological needs, motivation, and well-being: A test of self-determination theory across multiple domains. *Personality and Individual Differences*, *50*(3), 387–391. https://doi.org/10.1016/j.paid.2010.10.029

Nogaj, A. A., & Bogunović, B. (2015). The development of giftedness within the three-level system of music education in Poland and Serbia: Outcomes at different stages. *Journal of the Institute of Educational Research*, *4*(1), 153–173. https://doi.org/10.2298/ZIPI1501153N

Obradović, S. (2018). Creating integration: A case study from Serbia and the EU. In C. de Saint-Laurent, S. Obradović, & K. Carriere (Eds.) *Imagining collective futures: Perspectives from social, cultural and political psychology* (pp. 237–254). Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-319-76051-3_12

Quested, E., Thøgersen-Ntoumani, C., Uren, H., Hardcastle, S. J., & Ryan, R. M. (2018). Community gardening: Basic psychological needs as mechanisms to enhance individual and community well-being. *Ecopsychology*, *10*(3), 173–180. https://doi.org/10.1089/eco.2018.0002

Radoš, K., Kovačević, P., Bogunović, B., Ignjatović, T., & Ačić, G. (2003). Psychological foundations of success in learning music at elementary school age. In R. Kopiez, A. Lehmann, I. Wolther, & C. Wolf (Eds.), *Proceedings of the 5th triennial conference of the European society for the cognitive sciences of music (ESCOM)* (pp. 416–419). Hanover University of Music and Drama.

Reeve, J. (2015). *Understanding motivation and emotion* (6th ed.). John Wiley & Sons.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68–78. https://doi.org/10.1037/0003-066X.55.1.68

Ryan, R. M., & Deci, E. L. (2002). Overview of self-determination theory: An organismic-dialectical perspective. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 3–33). University of Rochester Press.

Sheldon, K. M., Osin, E. N., Gordeeva, T. O., Suchov, D. D., & Sychev, O. (2017). Evaluating the dimensionality of Self-determination theory's relative autonomy continuum. *Personality and Social Psychology Bulletin*, *43*(9), 1215–1238. https://doi.org/10.1177/0146167217711915

Spychiger, M. B. (2017). From musical experience to musical identity. Musical self-concept as a mediating psychological structure. In R. MacDonald, D. J. Hargreaves, & D. Miell (Eds.), *Handbook of musical identities* (pp. 267–287). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199679485.003.0015

Subotnik, R. F., & Jarvin, L. (2005). Beyond expertise: Conceptions of giftedness as great performance. In R. J. Sternberg & J. E. Davidson (Eds.), *Conceptions of giftedness* (2nd ed., pp. 343–357). Cambridge University Press. https://doi.org/10.1017/CBO9780511610455.020

Subotnik, R. F., Jarvin, L., Thomas, A., & Maie Lee, G. (2016). Transitioning musical abilities into expertise and beyond: The role of psychosocial skills in developing prodigious talent. In G. E. McPherson (Ed.), *Musical prodigies: Interpretations from psychology, education, musicology, and ethnomusicology* (pp. 279–293). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199685851.003.0011

Subotnik, R. F., Olszewski-Kubilius, P., & Worrell, F. C. (2011). Rethinking giftedness and gifted education: A proposed direction forward based on psychological science. *Psychological Science in the Public Interest*, *12*(1), 3–54. https://doi.org/10.1177/1529100611418056

Taylor, G., Jungert, T., Mageau, G. A., Schattke, K., Dedic, H., Rosenfield, S., & Koestner, R. (2014). A self-determination theory approach to predicting school achievement over time: The unique role of intrinsic motivation. *Contemporary Educational Psychology*, *39*(4), 342–358. https://doi.org/10.1016/j.cedpsych.2014.08.002

Valenzuela, R., Codina, N., & Pestana, J. V. (2018). Self-determination theory applied to flow in conservatoire music practice: The roles of perceived autonomy and competence, and autonomous and controlled motivation. *Psychology of Music*, *46*(1), 33–48. https://doi.org/10.1177/0305735617694502

Van der Kaap-Deeder, J., Soenens, B., Ryan, R. M., & Vansteenkiste, M. (2020). *Manual of the Basic Psychological Need Satisfaction and Frustration Scale (BPNSFS).* Ghent University, Belgium.

Received: January 6, 2023