Research Article

Musical Genre Preferences among School Students: The Role of the Family Background and Musical Instruments Learning

Norbert Szabó[1,2], Fanni Földi[3,4], Tun Zaw Oo[1,2],
Gábor Csizmadia[1], and Krisztián Józsa[1,3] (iD)

Abstract
The study presents the results of research that examines the popularity of videos representing four different musical styles among students aged 9–19 ($N = 1159$). The measuring instrument was a self-developed online questionnaire that explores students' musical genre opinions based on four types of music videos: street music, rock music, classical music, and folk music. In relation to the musical pieces, we inquired about background aspects, with a specific focus on engagement in instrument presentations and the viewing of music programs. We analyze the data considering the context of learning a musical instrument and attitudes toward instrument training and family background. Findings show that the perception of genres varies significantly between students who play instruments and those who do not, as well as based on their family background. Among the seven groups of students, encompassing both instrument learners and non-learners, a distinct pattern emerges those who neither learn nor have a desire to learn an instrument exhibit notably lower fondness for musical compositions. Furthermore, significant differences are apparent among the students based on the educational level of their parents. The implication of this study lies in its revelation of how instrument training and parental education significantly shape students' musical opinions, underscoring the need for targeted interventions to enhance music education experiences and enrich young individuals' musical tastes.

Keywords
Music education, musical genres, school age, learning to play instruments, family background

Introduction

Music holds significant importance in the lives of young individuals, serving as a crucial avenue for them to express the emotions and sensations they encounter on a daily basis (Lorenzo-Quiles et al., 2020). The rhythms of music, both offline and online alongside concert attendance, have become integral to the experiences of countless young people. Musical behavior is influenced by one's favored musical choices. These preferences not only determine the type of music an individual is inclined to enjoy but also impact their physical responses, the duration of their listening sessions, and the function music is likely

[1] Institute of Education, Hungarian University of Agriculture and Life Sciences, Kaposvár, Hungary
[2] MTA-MATE Early Childhood Research Group, Kaposvár, Hungary
[3] Institute of Education, University of Szeged, Szeged, Hungary
[4] Bárczi Gusztáv Faculty of Special Needs, Eötvös Loránd University, Hungary

Corresponding author:
Krisztián Józsa, Institute of Education, University of Szeged, 30–34 Petőfi Sándor sgt. Szeged, 6722, Hungary; Institute of Education, Hungarian University of Agriculture and Life Sciences, Kaposvár, Hungary.
Email: jozsa@sol.cc.u-szeged.hu

Data Availability Statement included at the end of the article

to serve in various circumstances (Ferrer et al., 2013). Musical preference refers to the musical inclination that can be interpreted as a tendency or a liking towards a particular genre of music (Soares-Quadros et al., 2023). Musical preference is also the enduring or intermittent attraction or aversion to various genres and forms of music (Lorenzo-Quiles et al., 2020).

Research indicates that these preferences are influenced by psychological, socioeconomic, educational, religious, and additional elements (Bourdieu, 2010; Garrido, 2014; Soares-Quadros et al., 2023). Individual's preferences can also be influenced by their level of expertise (Liang & Willemsen, 2023). As people gain more experience, they may progressively cultivate specific preferences. Moreover, musical inclinations are shaped by personality and other sociodemographic factors such as age and gender (Herrera et al., 2018). Begic and Begic's (2022) study also highlighted the important contribution of music educators and parents in understanding and nurturing adolescents' musical preferences, particularly with a focus on high-quality music.

International studies consistently underscore a preference for popular music, with folk and classical genres often assuming secondary roles in the melodic landscape of students (Brittin, 2014; Reić Ercegovac et al., 2017; Vidulin, 2020). This exploration carries pedagogical significance, bridging the divide underscored by Isbell's (2007) research, which illuminates the disconnection between school curricular materials and students' favored musical genres. Therefore, our comprehensive study delves into students' perceptions across diverse musical genres, seeking to unravel how individual backgrounds, parental education, and attitudes toward musical instrument learning intricately interweave to shape the popularity of these auditory realms.

Literature Review

Musical Styles and Musical Genres

There are theoretical and terminological distinguishes in *genre* and *style* concepts. In 1989, Meyer defined the style as "…a replication of patterning, whether in human behavior or in the artifacts produced by human behavior, that results from a series of choices made within some set of constraints" (Meyer, 1989: 3). The musical style is the most abstract element, comprising purely inner-musical elements, such as rhythm, pitch, and harmony (Elflein, 2010; Moore, 2012; Tizón & Martín, 2020) and the interpretational features, such as playing methods, agogic, sound, and timbre (Hantschel & Bullerjahn, 2016). Dickinson (1965: 3) also defined the musical style as "The individual essence of a work of art which gives it its identity. This identity is the result of a distinctive conjunction of components, coupled with distinctive emphasis among the components."

In turn, the musical genre was defined by Fabbri as "A set of (real or possible) events" (Fabbri, 1982: 52) rather than a predetermined template for creating meaning. According to Fabbri, the generic rules concern formal, semiotic, behavioral, social, and economic aspects. These generic rules form recognizable sets that we perceive as distinct musical genres. Musical *genres* are human-made labels designed to categorize musical compositions. They are also defined by the shared traits among the pieces belonging to a particular genre, commonly associated with factors such as instrumentation, rhythmic patterns, and harmonic elements in the music (Tzanetakis & Cook, 2002). Musical *genres* lack precise definitions and fixed boundaries, evolving through intricate interactions involving the public, marketing, historical influences, and cultural factors (Siebrasse & Wald-Fuhrmann, 2023). One study (Sturm, 2013) argues that "genre" is one of the most significantly used descriptors in music and a significant portion of tags in the Million Song Dataset are genres. Hantschel and Bullerjahn (2016) compared the theoretical and terminological terms of *style* and *genre,* and interpreted that *genre* can be seen as a subset or particular instance of *style.*

Many studies at the current age (e.g., Kamalnathan et al., 2019; Schäfer & Sedlmeier, 2010; Na & Agnhage, 2013) have employed the terms *musical genres* and *musical styles* interchangeably, treating them as synonymous. The current study also applied the musical genres and musical styles interchangeably.

Listening to Music and Musical Preference

Active and passive forms of listening to music are an important part of our daily lives, regardless of age, gender, or geographic location. The ever-widening spread of digitalization has a double effect on the habits of listening to music. On one hand, it provides the content and the technical background for its delivery to the user and its playback, and on the other hand, it directly or indirectly shapes the taste and musical preferences of the individual. Recommendation systems for music services help to attract and increase interest and can reinforce existing music styles (Soares-Quadros et al., 2023). Services specialized in streaming music content (e.g., Spotify, YouTube Music, Apple Music, Amazon Music) offer us additional relevant contents that match the listening habits of users. The number of subscribers to these service providers is constantly increasing. Between 2019 and 2021, the number of people paying monthly or annual fees for music content increased from 341 million to 487 million. Due to their operation, these online platforms have a huge amount of data regarding both music styles and music listening habits. Soares-Quadros et al. (2023) highlight the importance of studying algorithms, which would provide an opportunity to learn about music preferences and consumption habits. From a research point of view, the question "How many records do you have at home?" is becoming less and less relevant. since this no longer gives a realistic picture of young people's music listening habits. The situation is similar with questions related to musical styles, since their number has swollen to a huge value today.

The literature distinguishes between the concepts of musical preference and taste. Hargreaves et al. (2015) developed a model to explain the two concepts, which has three main elements: (1) the person (age, gender, cultural group, musical training), (2) the music (structure, style, complexity, popularity), and (3) listening situation (work, leisure, entertainment). To measure music preference, the dimensions of strength and type are distinguished. Strength refers to the extent to which a particular style or piece is liked, type refers to which styles of music are preferred. A verbal and aural preference can also be distinguished. In assessing acoustic preference, we gauge the subjects' level of liking for a genre by showcasing a particular instance. In the case of verbal measurement, participants are prompted to contemplate a musical style or composition and provide their evaluation (Upadhyay et al., 2016).

The preference of different musical genres can be traced back to the newborn age. Newborn children respond positively to the music they heard in the womb (Ullal-Gupta et al., 2013). Early childhood is characterized by the acceptance of most musical styles; however, this openness decreases with age (Hargreaves et al., 2015; LeBlanc, 1982; Madsen & Geringer, 2015) and popular music styles increasingly come to the front of interest (Brittin, 2014). The preference for classical music decreases (Reić Ercegovac et al., 2017; Vidulin, 2020). Adolescents' music preferences become more stable with age (Delsing et al., 2008) and they prefer popular music styles (Hargreaves et al., 2003). Adolescents show a preference for vocal pop music over instrumental music performed they are familiar with. Children's commitment to popular music is primarily manifested in listening to music (Hargreaves et al., 2003; Lamont et al., 2003; North et al., 2000). Artificial intelligence or recognition algorithms such as *k*-nearest-neighbor (k-NN) or support vector machine (SVM) are increasingly used to determine different musical styles, the investigation of which has already been scrutinized by several scientific studies (Ali & Siddiqui, 2017; Patil & Nemade, 2017; Prabavathy et al., 2020). The work of Tzanetakis and Cook (2002) is considered to be the pioneer of automatic music genre classification systems (Mandel & Ellis, 2005). These organizing and analyzing programs also help the research of musical works stored on digital platforms.

Various groupings and categorizations of musical genres or styles appear in the international literature. In addition to folk music, which can be considered the most ancient, the category known as "serious" music in Hungarian (art or classical music), avant-garde and experimental music, the collective term "light music" Hungarians use for popular or entertainment music, as well as musical styles related to different religions (Borthwick & Moy, 2004; Fabbri, 1982).

The Role of Family Background in Musical Activities

The role of the family is of great importance in other areas, but it is even more evident in the development of musical talents (Shuter-Dyson, 1985). The family background is also a significant predictor in children's musical self-concept and motivation (Janurik et al., 2023). In the literature, parental contribution is defined along two dimensions. By parenting style, we mean the effect of the parental attitude and value system on the child, in which parental behavior is expressed in the emotional atmosphere created by the parent (Darling & Steinberg, 1993). This can include the parent's expression of opinion in the context of different musical styles, songs, concerts, or the implementation of musical activities performed by the parent at home, and their attitude towards performing musical activities. Parenting practice is linked to specific behaviors related to the child's socialization, which can be demonstrated in the support of practice at home, parental participation in the child's music lessons or concerts. The more aware a parent is of their child's abilities, the better the child will perform (Miller et al., 1991).

There may be different forms, levels and depths of parent involvement. These may be related to:

- creating the necessary conditions for learning music (providing a high-quality music school and music teacher, purchasing an own instrument, sheet music, music stand, music CD/DVD);
- the easiest possible access to learning music (the parent helps getting to the music school or the teacher comes to the house);
- providing an undisturbed environment for home practice (an own room for practice, peace and quiet);
- access to musical experiences outside the music school (listening to music at home together, listening material suggested by the parent);
- access to concert experiences (visiting the opera or concerts together).

Parents who play instruments themselves preferred to participate in shared musical activities by listening to music rather than an instrumental performance (Davidson et al., 1996). Musical preference is also formed by early parental influences. The study carried out by Serbun and DeBono (2010) consists of listening to tracks selected from parents' favorite performers and favorite styles. The students had to complete a questionnaire as well, which focused on parental care and support. According to the results, the more caring and supportive the parents appeared in the description, the more the children preferred the parents' favorite performers and songs. The parents affect their children's musical preferences (Pettijohn et al., 2010).

Relatively few studies have so far focused on the comparison of music listening habits of musical instrument learners and non-learners. In their small sample study, Valero-Cantero et al. (2020) pointed out several differences.

Aims and Research Questions

The purpose of the research is to reveal the opinion of students aged 9–19 about musical genres. This study addressed the following research questions.

RQ1: Is there a difference in students' perception based on their attitude towards musical instrument learning and their family background?

RQ2: What is the relationship between liking music genres and background factors?

Method

Sample

In the current study, 1159 students aged 9–19 from Hungary participated, with 618 girls and 541 boys. The participants in this study have an average age of 13.80 years ($SD = 2.21$). The majority of students, 764 in total, are in primary schools (grades 1–8), whereas the remaining 359 students are in secondary schools (grades 9–12). From the point of view of learning to play musical instruments, we defined seven subgroups within two main groups. Among the students who are not currently learning to play an instrument, we classified those who do not even want to start learning an instrument in group one, so they presumably have a more negative attitude from this point of view. The second group included those who do not learn to play an instrument because they do not have the opportunity to do so. We do not know whether they would learn if they had, so we assumed a neutral attitude about them. Those in the third group do not study, but they want to. Their attitude towards learning an instrument can be assumed to be more positive. The fourth group included those who stopped learning the instrument. We do not have information on why they ended their musical instrument studies, we therefore only assume that the discontinuation is related to a more negative attitude towards learning to play a musical instrument. The students classified in groups 5, 6, and 7 all study to play instruments, the only difference is the location of the classes. In all three groups, we assume a positive attitude towards learning to play an instrument, but we reserve the possibility that different questions may attract different answers. These differences may be due to the fact that learning to play an instrument at home shows differences from music school classes in several aspects. Since this is not the central question of our study, we would like to draw attention to only a few of them. In the school music lesson, learning to play the instrument is tackled in a group form, primarily based on the curriculum related to the music school subject (mainly with a focus on folk music), under the guidance of a teacher who does not (necessarily) have the specialized diploma required to teach the given instrument. In music school conditions, instrument training takes place in the framework of individual lessons, under the guidance of a teacher with a specialized qualification, and the curriculum

is given in detail by instrument-specific textbooks. Learning a musical instrument at home is the least "regulated." This does not necessarily mean inferiority in quality compared with the other two forms of learning, but it is likely that this is where the greatest quality deviation is found both in the curriculum and in the person of the teacher. This is especially true if there is a personal presence of the teacher and the learning is not realized in some form of autodidactic.

From seven subgroups, we classified the students into two main groups according to the attitude and motivation towards learning to play musical instruments.

- One of the main groups (neutral or rather negative attitude towards learning to play an instrument) included those who, when asked whether they learn an instrument, answered as follows:
- no, and would not like to, either (hereinafter, group 1);
- no, for having no opportunity (hereinafter, group 2);
- quit (hereinafter, group 4).

The second main group (rather positive attitude towards learning to play an instrument) included those who answered the question, "Do you learn to play an instrument?" as follows:

- no, but would like to (hereinafter, group 3);
- yes, in music class (hereinafter, group 5);
- yes, at home (hereinafter, group 6);
- yes, in music school (hereinafter, group 7).

Parents' education was divided into three groups. Regarding education, 158 mothers completed their primary education, 719 achieved secondary education, and 282 pursued tertiary education. For fathers, 143 completed primary education, 790 attained secondary education, and 226 received higher education. When examined by gender and age categories, there is no noteworthy contrast in parental educational levels. For the clarity, participants and related groups are described in Table 1.

Measurement Tool and Procedure

Initially, we asked parental permission to involve their children in our research project. Participation in this study is entirely optional and confidential, and participants have the freedom to withdraw at any point. Once we obtained their consent, we proceeded to collect the necessary data for our research. This data collection involved the use of a questionnaire specifically designed to assess musical instrument learning and playing, with one component dedicated to evaluating musical excerpts. For data collection, we used an online interface platform, where we placed four videos showing different styles. Each video, lasting half a minute, featured performance methods distinct from traditional concert experiences. To enhance the musical

Table I. Frequency of participants and related groups.

Participants	Number	Percentages (%)
Total participants	1159	100%
Gender	-	-
Boys	541	46.68%
Girls	618	53.32%
Participants from primary schools	764	65.92%
Participants from secondary schools	395	34.08%
Groups by characteristics (would like to play musical instruments?)	-	-
1. No, would not like to	354	30.54%
2. No, it is not possible	113	9.75%
3. No, but would like to	189	16.30%
4. Stopped	208	17.95%
5. Yes, in singing and music lessons	63	5.43%
6. Yes, at home	106	9.14%
7. Yes, in music school	126	10.87%
Groups by learning instruments	-	-
1. Instrument learner	675	58.24%
2. Instrument non-learner	484	41.76%
Mother's education	-	-
Primary	158	13.63%
Secondary	719	62.04%
Tertiary	282	24.33%
Father's education	-	-
Primary	143	12.34%
Secondary	790	68.16%
Tertiary	226	19.50%

experience, we selected popular and familiar melodies within the age group, performed by young musicians. After providing a detailed description of each video, we highlighted specific performance features distinguishing them from one another. The first musical segment features a carpet piano on which the performers play a short and stripped-down version of Hoagy Carmichael's *Heart and Soul*. The piano is one of the best-known musical instruments, and this "work" is one of the favorites of beginner pianists due to its popularity and easy technique. One of our goals with the video was to show a new form and way of playing of this instrument, which can be new and attention-grabbing for students. The musical experience of the video is also enhanced by the fact that the performers play the instrument as if they were dancing to the music. The video also shows children queuing up to try this device.

Instrument: electric piano. *Instrumentation*: solo. *Sound*: homogenous (only instrumental). *Performing apparatus*: trio. *Musical style*: classic popular music. *Year of publication of the original piece of music*: 1938. *Venue of production*: street. *The (assumed) purpose of the performance*: to entertain others. Video hereinafter referred to as street music (SM).

The second piece is a musical part of a movie that is still very popular today, Harry Potter (Hedwig's theme). The composer is John Williams, whose name is associated with the music of other highly successful films such as Star Wars, Jurassic Park, E.T., or Schindler's List. The musical excerpt shown in the video is part of a Hungarian classical music talent show. The solo performer is a 12-year-old flutist girl accompanied by a symphonic orchestra. A pre-recorded interview revealed that many of the children learning the instrument choose and ask to learn this piece.

Instrument: acoustic instruments of a symphonic orchestra. *Instrumentation:* instrumental soloist + orchestra. *Sound:* heterogeneous (instrumental only). *Performing apparatus:* great orchestra. *Musical style:* classical (art) music. *Year of publication of the original piece of music:* 2001. *Venue of production:* stage of a TV studio. *The (assumed) purpose of performance:* entertaining others, contest production. *Video hereinafter referred to as:* classical (or art) music (CM).

The third piece of music is one of the productions of the City Rocks project, where the video mainly features children who play different instruments (guitar, bass guitar, and drums) and sing the song *Neked könnyű lehet* (It may be easy for you) by the band Republic. This flashmob-like production is a community experience that aims to promote rock music and making music together, from young children to adults, from professional performers to amateur musicians.

Instrument: vocal, electric and acoustic instruments. *Instrumentation:* singer + band. *Sound:* heterogeneous (vocal and instrumental). *Performing apparatus:* classic rock band instrumentation, originally chamber orchestra in terms of the number of musicians, expanded to full orchestra in its current form. *Musical style:* classic rock. *Year of publication of the original piece of music:* 2006. *Venue of production:* outdoor stage (and surrounding space considering the number of performers). *The (assumed) purpose of performance:* entertaining themselves and others, promotion of Hungarian music. *Video hereinafter referred to as:* rock music (RM).

In the last video, the students could again see a performance of a talent show. The five-member folk band of young people presents their production entitled *Sárközi mulatság* (Festival in Sárköz), without vocals on different types of tamburas (tambura bass, tambura viola, first tambura, and first bass tambura).

Instrument: acoustic folk instruments. *Instrumentation:* chamber orchestra. *Sound:* heterogeneous (instrumental only). *Performing apparatus:* quintet (chamber orchestra). *Musical style:* folk music. *Year of publication of the original piece of music:* unknown. *Venue of production:* stage production. *The (assumed) purpose of performance:* entertaining themselves and others, contest production. *Video hereinafter referred to as:* folk music (FM).

The students had to evaluate the musical pieces on a scale of 1–5. We added supplementary questions to the

videos: Would you like to try (carpet) piano playing? Do you watch talent shows or classical music shows? Would you take part in a community music production? For this question, we processed only the answers of those who do not learn to play an instrument (possible answers: 0 = no, 1 = yes). Have you ever been to an instrument presentation? (Possible answers: 1 = no and would not like to, 2 = no because don't know such a place, 3 = no, but would like to, 4 = yes.) There were also questions about the students' background: gender, age, attitude to going to school, and subject attitudes.

Results

Preference of Musical Genres

Regarding the total sample, the students liked the street music the best out of the four videos ($M = 4.01$, $SD = 1.03$), with the rock music following ($M = 3.97$, $SD = 1.03$), and the classical music coming next ($M = 3,51$, $SD = 1,19$). The folk music performance received bottom score ($M = 3.50$, $SD = 1.17$). The differences between the averages of video likes are significant based on the repeated measures analysis of variance (Wilks' lambda = .78, $F(3) = 106.13$, $p < .01$, $\eta^2 = .22$). There is no significant difference between the assessment of classical music and folk music ($p > .99$), neither is there a significant difference between the assessment of street music and rock ($p > .99$). Out of the four videos, classic rock and classic pop, as we categorized them, were significantly more popular than classical (art) music or folk.

Based on the questions attached to the music videos, 56% of the students have already been to an instrument presentation, 10% have not, but would like to go, 14% have not been to an instrument presentation because they

do not know such a place, and 20% have not been and do not want to either. A total of 64% of students watch talent shows and 22% classical music programs. A total of 72% of the students would try the carpet piano, which the students could see in the street music video.

Correlations of Music Genres Preferences among Groups

The popularity of the four pieces of music has a moderately strong correlation with each other. The closest correlation is between folk music and classical music, whereas the least correlation can be found between classical music and rock music (Table 2).

The correlations of the popularity of rock music ($z = 3.27$, $p < .01$) and the correlations of the popularity of classical music ($z = 4.24$, $p < .01$) are not as strong as the rest of the musical excerpts. The correlation between rock music and street music is stronger than the correlation between rock music and classical music ($z = 2.72$, $p < .01$), and the correlation between rock music and folk music is also stronger ($z = 1.88$, $p < .05$). When analyzing the correlations of classical music, we can see that the correlation between classical music and rock music is weaker than the correlation between classical music and street music ($z = 3.30$, $p < .01$) and the correlation between classical music and folk music ($z = 4.48$, $p < .01$). The correlation of folk music with street music and rock music do not differ from each other, but show significantly weaker correlation values than the correlation between folk music and classical music ($z = 2.90$, $p < .01$). The correlation between rock music and classical music is weaker than their comparison with other musical styles (Table 3).

We were able to show a weak relationship in the responses obtained for background questions about watching music programs and possible music-related activities. However, the correlation of participation in musical productions with the three background questions is of different strength. It is weaker with watching talent shows than with trying the carpet piano ($z = 2.23$, $p < .01$) and weaker with watching classical music programs ($z = 1.73$, $p < .05$).

Instrument Learner and Non-Learner Students

In Table 4, we can see the perception of groups separated on the basis of instrument training. The students receiving

Table 2. Correlations between the popularity of each musical piece.

	Street music	Rock music	Classical music	Folk music
Street music	-	0.39**	0.41**	0.36**
Rock music		-	0.29**	0.36**
Classical music			-	0.45**
Folk music				-

Table 3. Correlations of following music programs and students' music-related activity.

	Trying the carpet piano	Watching talent shows	Watching classical music programs	Taking part in community music programs
Trying the carpet piano	-	.18**	.16**	.22**
Watching talent shows		-	.14**	.13**
Watching classical music programs			-	.20**
Taking part in community music programs				-

Table 4. Differences in the music perception between students receiving or not receiving instrument training.

| Music types | Receives instrument training | | | | | | | ANOVA | |
	(1) *M (SD)*	(2) *M (SD)*	(3) *M (SD)*	(4) *M (SD)*	(5) *M (SD)*	(6) *M (SD)*	(7) *M (SD)*	*F*-value	*p*-value
SM	3.78 (1.10)	4.10 (0.88)	4.17 (0.94)	4.10 (0.94)	4.11 (1.12)	3.92 (1.10)	4.23 (0.99)	5.49	<.01
RM	3.71 (1.12)	3.99 (0.96)	4.14 (0.97)	3.83 (1.01)	4.16 (1.10)	4.20 (0.82)	4.41 (0.83)	10.90	<.01
CM	3.11 (1.23)	3.66 (1.09)	3.75 (1.12)	3.58 (1.11)	3.94 (0.98)	3.49 (1.23)	3.85 (1.17)	12.02	<.01
FM	3.29 (1.17)	3.51 (1.18)	3.74 (1.13)	3.33 (1.16)	3.62 (1.11)	3.58 (1.16)	3.83 (1.13)	5.97	>.05

Note. ANOVA, analysis of variance; SM, street music; RM, rock music; CM, classical music; FM, folk music.

instrument training are from the groups 3, 5, 6, and 7, and the students who are not receiving instrument training are from the groups 1, 2, and 4. The students' opinions formed on all four music pieces, the street music ($F = 5.49$, $p < .01$), the rock music ($F = 10.90$, $p < .01$), the classical music ($F = 12.02$, $p < .01$), and the folk music ($F = 5.97$, $p < .01$) differ significantly from each other.

We found significant differences in the perception of street music within the group of students who do not learn to play an instrument. Those who do not even want to receive instrument training like this video less than other students in the subcategory who do not play instruments or those who go to music school. The members of groups 1 and 3 of those who do not learn to play an instrument form the two endpoints of our assumed instrument training attitude dimension. We found a significant difference between the two groups in the attitude to street music, rock music, and classical music. Group 1 had the lowest mean scores for all styles in the entire sample, whereas group 3 had the highest among "non-instrument" students. The average results of group 3 do not differ significantly from those of the instrument-learning students in any of the styles. Those who want to learn to play an instrument prefer rock music significantly more than those who stopped learning to play an instrument. Group 1 likes classical music less compared with all other groups except for those who learn to play an instrument at home. Within the "non-instrument" group, those who have stopped learning to play an instrument and who do not even want to play an instrument like folk music significantly less than those who do not have the opportunity to do so. No difference can be shown in the preference of instrument-learning students for different styles.

The perception of the musical pieces within each group also differs significantly. The first group are students who do not learn to play an instrument and do not want to. Only the scores of street music and rock music show no difference ($p = .07$), but there is a difference in the attitudes to the other videos (Wilks' lambda = .76, $F(3) = 36.22$, $p < .01$, $\eta^2 = .24$). In contrast to the result obtained for the entire sample, the order of preferences for musical styles in this group is also different, as the classical music video is less liked than all the others. Those who do not learn to play an instrument because they do not have the opportunity to do so also judge the musical pieces differently (Wilks' lambda = .76, $F(3) =$

11.43, $p < .01$, $\eta^2 = .24$), but the perception of rock music does not differ from that of street music ($p > .99$) and classical music ($p = .06$), or the perception of classical and folk music ($p > .99$). A deviation from the results of the entire sample was also found in this sample, since the popularity of the classical music video does not differ from the popularity of rock music and street music. Those who want to learn to play an instrument also have different opinions regarding the individual musical pieces (Wilks' lambda = .81, $F(3) = 14.83$, $p < .01$, $\eta^2 = .19$), except in their attitude to street music and rock music ($p > .99$) and classical and folk music ($p > .99$). The ratings of each video are different for students who have stopped learning to play an instrument (Wilks' lambda = .69, $F(3) = 31.22$, $p < .01$, $\eta^2 = .31$). For those who learn to play an instrument in school music classes, the perception of street music does not differ from rock music ($p > .99$) and classical music ($p > .99$), the perception of rock music does not differ from that of any of the videos (Wilks' lambda = .79, $F(3) = 5.41$, $p < .01$, $\eta^2 = .21$). Students learning to play an instrument in school music classes, similarly to those who do not learn an instrument because they do not have the opportunity, equally like the classical music, the street music, and the rock music videos. The repeated analysis of variance shows significant differences between the opinions of students learning to play an instrument at home (Wilks' lambda = .73, $F(3) = 12.86$, $p < .01$, $\eta^2 = .27$). Student opinions about street music do not differ from the attitude to rock music ($p = .15$) and folk music ($p = .13$), and there is no significant difference between the perception of folk music and classical music ($p > .99$). It was only in this group that it was shown that the score given for the folk music video was the same as the street music and rock music video. Students learning to play an instrument at a music school also have different opinions about the individual musical pieces (Wilks' lambda = .78, $F(3) = 11.71$, $p < .01$, $\eta^2 = .22$). Music school students view street music and rock music similarly ($p = .28$), just like classical music and folk music ($p > .99$). Taking into account that the core of the music school's instrumental curriculum consists of Hungarian folk songs for beginners, and excerpts from classical music pieces for advanced students, it is questionable why their popularity is lower compared with street music and rock music styles.

Table 5. Comparison of background factors between the groups of students learning or not learning to play instruments.

| Groups of Students | Learn to play an instrument | | | | | | | ANOVA | |
	Group (1)	Group (2)	Group (3)	Group (4)	Group (5)	Group (6)	Group (7)	*F*-value	*p*-value
Trying the carpet piano	0.57	0.81	0.84	0.77	0.71	0.74	0.81	10.91	<.01
Talent show	0.58	0.61	0.71	0.67	0.73	0.65	0.65	2.15	>.05
Classical music	0.14	0.14	0.29	0.20	0.29	0.29	0.37	7.43	<.01
Like to participate in production	0.15	0.35	0.52	0.35	0.48	0.45	0.69	29.22	<.01

With three background questions, we wanted to obtain information on whether the students would actively participate in some kind of musical activity. Questions related to the videos such as trying the carpet piano ($F = 10.91$, $p < .01$), watching talent shows ($F = 2.19$, $p < .4$) and classical music programs ($F = 7.43$, $p < .01$) and participation in musical productions ($F = 29.23$, $p < .01$) also received significantly different responses in the groups (Table 5).

Watching talent shows is the least typical of those students who do not play instruments at all and do not want to, either. They watch such programs significantly less ($F = 39.93$, $p < .01$, $t = -3.01$, $p < .01$) than those who do not play an instrument but would like to ($M = 0.71$, $SD = 0.46$) and less ($F = 20.34$, $p < .01$; $t = -2.19$, $p < .05$) than those who quit learning to play an instrument ($M = 0.67$, $SD = 0.47$), and also less ($F = 38.45$, $p < .01$; $t = -2.38$, $p < .05$) than those who take instrument training at school music classes ($M = 0.73$, $SD = 0.45$).

The results of our study showed a difference in the attitude towards the school subject music ($F = 26.55$; $p < .01$) depending on the student's attitude towards learning to play an instrument, and whether they play or played an instrument. Students who do not play an instrument and do not want to ($M = 2.78$, $SD = 1.31$) like music classes the least of all groups. Those who do not play an instrument because they do not have the opportunity ($M = 3.56$, $SD = 1.17$) also like music classes significantly less than those who attend a music school ($M = 4.12$, $SD = 1.18$). Those who want to learn to play an instrument ($M = 3.66$, $SD = 1.18$) like music classes significantly more than those who quit instrument lessons ($M = 3.25$, $SD = 1.41$), but less than those who go to music school ($M = 4.12$, $SD = 1.18$). Those who have stopped learning to play an instrument ($M = 3.25$, $SD = 1.41$) prefer the subject significantly less than those who learn to play an instrument in school music classes ($M = 3.87$, $SD = 1.20$) and those who take instrument training at home ($M = 3.86$, $SD = 1.25$) and those who attend a music school ($M = 4.12$, $SD = 1.18$).

Family Background

We performed an analysis of variance based on the mother's educational attainment. There is no significant difference between the attitude to street music ($F = 0.38$, $p = .68$), rock music ($F = 2.16$, $p = .12$) and classical

Table 6. Differences of musical genres among students (who are not motivated to receive musical training and who are interested in receiving it) based on mother's education levels.

Music genres	Mother's education	Mean	SD	*p*-value
Students who are not motivated to receive instrument training				
Street music	Primary	3.98	1.09	>.05
	Secondary	3.90	1.01	
	Tertiary	3.79	1.10	
Rock music	Primary	3.74	1.19	>.05
	Secondary	3.60	1.04	
	Tertiary	3.74	1.12	
Classical music	Primary	3.21	1.38	>.05
	Secondary	3.28	1.02	
	Tertiary	3.08	1.21	
Folk music	Primary	3.55	1.27	<.01
	Secondary	3.38	1.12	
	Tertiary	3.07	1.22	
Students who are interested in receiving instrument training				
Street music	Primary	4.31	0.93	>.05
	Secondary	3.91	1.18	
	Tertiary	4.15	0.87	
Rock music	Primary	4.09	1.08	>.05
	Secondary	4.07	0.92	
	Tertiary	4.12	0.98	
Classical music	Primary	3.78	1.33	>.05
	Secondary	3.87	0.93	
	Tertiary	3.53	1.15	
Folk music	Primary	3.97	1.06	>.05
	Secondary	3.72	1.06	
	Tertiary	3.70	1.18	

music ($F = 2.29$, $p = .10$) among the students based on the mother's qualification. The perception of folk music is more positive for children of mothers with primary education ($M = 3.37$, $SD = 1.21$) than for children of mothers with higher education ($M = 3.65$, $SD = 1.18$). Based on fathers' education, there is no significant difference in the score given to street music ($F = 1.46$, $p = .23$), rock music ($F = 0.63$, $p = .53$), and folk music ($F = 1.41$, $p = .24$) in his assessment. There is a significant difference in the perception of classical music (but the post-analysis did not yield results).

Among students who are not motivated to receive instrument training, there is a significant difference in the perception of folk music based on the mothers' education ($F =$

5.47, $p < .01$). Children of parents with a college degree ($M = 3.07$, $SD = 1.22$) liked this musical piece less than children whose parents attained primary ($M = 3.55$, $SD = 1.27$) or secondary ($M = 3.38$, $SD = 1.12$) education (Table 6). There is no significant difference in the scores given to street music ($F = 1.15$, $p = .35$), rock ($F = 0.39$, $p = .68$), and classical music ($F = 0.19$, $p = .82$). Among students who are interested in learning to play an instrument, the mothers' education does not generate significant differences in the perception of street music ($F = 1.07$, $p = .34$), rock ($F = 0.92$, $p = .40$), classical music ($F = 2.49$, $p = .08$), and folk music ($F = 0.39$, $p = .68$). From the result, we can conclude that students' musical preference is more influenced by the commitment to learning to play an instrument and the musical experiences gained from it than by parental background.

Students who are not interested in learning musical instruments prefer folk music to varying degrees based on their fathers' education, similar to their mothers' education ($F = 3.11$, $p = .045$) (Table 7). Children of fathers with higher education degrees preferred the folk music piece less ($M = 3.10$, $SD = 1.26$) than children of fathers with primary education ($M = 3.50$, $SD = 1.23$). Children of fathers with college degree who are interested in learning musical instruments ($M = 3.94$, $SD = 1.10$) have a more

Table 7. Differences of musical genres among students (who are not motivated to receive musical training and who are interested in receiving it) based on father's education levels.

Music genres	Father's education	Mean	SD	p-value
Students who are not motivated to receive instrument training				
Street music	Primary	3.95	1.12	>.05
	Secondary	3.91	0.98	
	Tertiary	3.75	1.16	
Rock music	Primary	3.72	1.05	>.05
	Secondary	3.70	1.10	
	Tertiary	3.77	1.10	
Classical music	Primary	3.05	1.23	>.05
	Secondary	3.27	1.28	
	Tertiary	3.03	1.21	
Folk music	Primary	3.50	1.16	<.01
	Secondary	3.44	1.05	
	Tertiary	3.10	1.19	
Students who are interested in receiving instrument training				
Street music	Primary	4.39	0.89	>.05
	Secondary	4.03	1.01	
	Tertiary	4.18	0.90	
Rock music	Primary	4.03	1.18	>.05
	Secondary	4.09	0.96	
	Tertiary	4.18	0.98	
Classical music	Primary	3.35	0.98	<.05
	Secondary	3.64	1.17	
	Tertiary	3.94	1.10	
Folk music	Primary	3.88	0.98	>.05
	Secondary	3.51	1.10	
	Tertiary	3.36	1.10	

positive opinion of the classical music video ($F = 0.44$, $p = .51$; $t = -2.51$, $p < .05$) than children of fathers with secondary education ($M = 3.64$, $SD = 1.17$).

In trying out the carpet piano ($F = 0.09$, $p = .92$), watching talent shows ($F = 2.03$, $p = .13$), watching classical music programs ($F = 2.99$, $p = .05$) there is no significant difference. Based on the videos, participation in similar productions ($F = 4.61$, $p < .05$) differs between the sub-samples based on the mother's education: children of mothers with higher education were more likely to participate ($M = 0.45$, $SD = 0.50$) than the children of mothers with secondary education ($M = 0.35$, $SD = 0.48$).

We received similar results based on the fathers' education. There are significant differences in trying the carpet piano ($F = 1.65$, $p = .19$), watching talent shows ($F = 0.02$, $p = .98$) and watching classical music programs (the post-analysis did not yield results though). Based on the videos, participation in similar productions ($F = 4.83$, $p < .01$) differs among the sub-samples generated on the basis of the fathers' education: children of fathers with a college degree are more motivated to take part ($M = 0.46$, $SD = 0.50$) than children of fathers with secondary certificates ($M = 0.35$, $SD = 0.48$).

During the analysis of the background questions, based on the mother's educational level, we found no significant difference in trying out the carpet piano ($F = 0.88$, $p = .42$), in visiting the instrument demonstration ($F = 1.94$, $p = .14$), in watching talent shows ($F = 1.14$, $p = .32$) and classical music programs ($F = 0.99$, $p = .37$) among children who are not interested in learning to play an instrument. There is also no significant difference among children interested in learning a musical instrument in trying the carpet piano ($F = 0.92$, $p = .40$), visiting the musical instrument presentation ($F = 2.98$, $p = .052$), the talent show ($F = 1.80$, $p = .17$) and watching classical music programs ($F = 1.48$, $p = .23$).

Based on the father's education, the opinions of students who are not interested in learning to play an instrument are the same for trying the carpet piano ($F = 0.62$, $p = .54$), participating in an instrument presentation ($F = 1.04$, $p = .35$), in watching talent shows ($F = 2.53$, $p = .08$) and classical music programs ($F = 1.34$, $p = .26$). Children of fathers with higher education interested in taking instrument training ($M = 3.56$, $SD = 0.88$) showed motivation to participate in the instrument presentation to a greater extent ($F = 7.14$, $p < .01$) than those of fathers with primary education ($M = 2.99$, $SD = 1.30$) and children of fathers with secondary education ($M = 3.21$, $SD = 1.08$).

Regarding the education of the mother, the differences between boys and girls are significant (Table 8). The analysis of mothers with primary education indicated that girls ($M = 4.27$, $SD = 0.89$) prefer street music ($F = 3.38$, $p = .07$; $t = -2.74$, $p < .01$), more than boys ($M = 3.83$, $SD = 014$), with rock music ($F = 0.19$, $p = .67$; $t = 0.89$, $p = .38$), classical music ($F = 2.03$, $p = .16$; $t = -0.46$, $p = .64$), and folk music ($F = 0.27$, $p = 0.61$; $t = 0.05$, $p = .96$) showing no significant difference in their perception. Children of mothers with secondary education have the same opinion about folk

music ($F = 1.79$, $p = .18$; $t = 0.04$, $p = .92$). Boys prefer street music performances ($F = 29.04$, $p < .01$; $t = –6.69$, $p < .01$), rock music ($F = 34.74$, $p < .01$; $t = 2.61$, $p < .01$) and classical music ($F = 3.26$, $p = 0.07$; $t = -6.14$, $p < 0.01$), less than girls. Comparing the results based on the mothers with college degree we can see that the girls' opinions formed on each video track are more positive than boys'. Neither the street music ($F < 7.23$, $p < .01$; $t = –4.92$, $p < .01$), nor rock ($F = 0.84$, $p = .36$; $t = –2.31$, $p < .05$), nor classical music ($F = 4.73$, $p < .05$; $t = –3.86$, $p < .01$), nor folk music ($F = 0.71$, $p = .40$; $t = –2.19$) succeeded in pleasing the boys.

The daughters of fathers with primary education gave more positive feedback on street music ($F = 5.34$, $p < .05$; $t = –3.19$, $p < .01$) and classical music ($F = 1.80$, $p = .18$; $t = –2.31$, $p < .01$) than sons. We found no difference in the perception of rock ($F = 0.67$, $p = .42$; $t = 0.75$, $p = .45$) and folk music ($F = 0.48$, $p = .49$; $t = 0.00$, $p > .99$). Regarding secondary education, only the opinions formed about folk music are the same ($F = 3.08$, $p = .08$; $t = –1.75$, $p = .08$), whereas street music ($F = 23.61$, $p < .01$; $t = –6.43$, $p < .01$), rock ($F = 29.57$, $p < .01$; $t = –2.53$, $p < .05$), and classical music ($F = 4.55$, $p < .05$; $t = –5.57$, $p < .01$) proved more attractive for girls. For children of fathers with

Table 8. Gender differences of musical genres based on mother's education levels.

Music genres	Gender	Mean	SD	*p*-value
Mother's education: primary level				
Street music	Boys	3.83	1.14	<.01
	Girls	4.27	0.89	
Rock music	Boys	3.99	1.13	>.05
	Girls	3.83	1.07	
Classical music	Boys	3.49	1.32	>.05
	Girls	3.58	1.21	
Folk music	Boys	3.66	1.15	>.05
	Girls	3.65	1.21	
Mother's education: secondary level				
Street music	Boys	3.73	1.13	<.01
	Girls	4.23	0.92	
Rock music	Boys	3.88	1.07	<.01
	Girls	4.06	0.94	
Classical music	Boys	3.35	1.15	<.01
	Girls	3.65	1.08	
Folk music	Boys	3.52	1.11	>.05
	Girls	3.46	1.09	
Mother's education: tertiary level				
Street music	Boys	3.74	1.13	<.01
	Girls	4.23	0.78	
Rock music	Boys	3.83	1.19	<.05
	Girls	4.04	0.86	
Classical music	Boys	3.10	1.19	<.05
	Girls	3.72	1.06	
Folk music	Boys	3.51	1.21	>.05
	Girls	3.53	1.12	

college degree and likewise with secondary education, only the perception of the folk music performance shows no difference ($F = 0.01$, $p = .91$; $t = 0.62$, $p = .54$), whereas street music ($F = 11.00$, $p < .01$; $t = –4.97$, $p < .01$), rock ($F = 1.17$, $p = .28$; $t = -2.23$, $p < .01$), and classical music ($F = 4.61$, $p < .05$; $t = –3.21$, $p < .01$) were less pleasing to boys.

Discussion and Conclusion

The results of our study provide valuable insights into the relationship between students' attitudes towards musical instrument learning, their family background, and their preferences for different music genres. In our research, we used an online questionnaire to examine students' perceptions of certain music genres. The questionnaire included four videos of different musical styles. The research questions aimed to explore differences in perception based on attitude and background, as well as the relationship between music genre preferences and background factors.

The findings from the study provide strong evidence that there is a significant difference in students' perception of musical genres based on their attitude towards musical instrument learning. Students' attitudes toward learning to play musical instruments were categorized into different groups, and their preferences for different music genres were analyzed accordingly. This aligns with the work of Korošec et al. (2022), who found that individuals with positive attitudes towards music education tend to have a broader appreciation for various music genres. The connection between attitude and genre preference can be attributed to the cognitive and emotional engagement fostered by musical training (Ok & Erdal, 2015). In addition, the study reveals that family background, as indicated by parents' educational attainment, also influences students' perception of certain musical genres. This finding resonates with the research by Bullerjahn et al. (2020), which highlights the role of parental influence in shaping musical preferences among young individuals. Children often inherit musical tastes and attitudes from parents, and this influence can extend to the genres they enjoy (Kreutz & Brünger, 2012).

Furthermore, the results of our study provide insights into the relationship between students' likes of music genres and various background factors. Notably, the analysis reveals significant differences in genre preferences based on students' instrument training and their willingness to engage in musical activities. These findings are consistent with prior research (Arriaga-Sanz et al., 2016; Brown & Knox, 2017), which found that individuals involved in music-related activities, such as playing an instrument or attending concerts or live performances, tend to have more diverse themes (experience, engagement, novelty, and practical) and eclectic music preferences. Engagement in musical activities exposes individuals to a wider range of genres and fosters a deeper understanding and appreciation for different styles. The study also investigated gender differences in music genre preferences. Interestingly, there were variations in preferences based on gender, particularly

among students of different parental educational levels. Girls from families with higher education showed more positive attitudes towards street music, rock music, and classical music, whereas boys had lower preferences for these genres. This gender-based discrepancy might be influenced by societal norms, peer influences, and exposure to different cultural elements.

Musical training, knowledge, or musical experience influence listening to music (Arriaga-Sanz et al., 2016), which was also supported by our research. There is a significant difference in the perception of genres between students who play instruments and those who do not, as well as based on their family background. In the seven groups of students who learn and do not learn to play an instrument, it is clear that those students who do not learn and do not want to learn to play an instrument gave significantly lower feedback on their preference of the musical pieces. Students receiving training on an instrument liked the videos significantly more, which is also supported by the literature. International research confirms that students studying music are interested in more musical genres (Mendiković Đukić et al., 2020).

Overall, we can conclude that musical preference is influenced by students' interest in learning to play an instrument. There are significant differences between the students based on their parents' educational attainment, but we could not clearly prove the influence of the parents on the perception of musical styles. Overall, we can conclude that music preference is influenced by the age and gender of the students. The results of our study can be of feedback value for music education and instrument training, which is based on a core material of folk music and classical music, since the students, regardless of age group and gender, prefer popular genres (street music, rock music) significantly more than classical music or folk music, the perception of which does not differ from each other. In addition to maintaining the value and tradition-preserving function of school music education and instrument training, a greater integration of contemporary, quality popular genres into the curriculum could perhaps move the popularity of music classes in a more positive direction and make instrument training more attractive to young people.

To conclude, the absence of consideration for factors such as subjects' familiarity with the provided musical piece and the potential impact of seeing versus only hearing musical compositions could be seen as a potential limitation. As one more limitation, the presentation arrangement of four music videos is fixed in our study. Analyzing preferences in diverse presentation contexts would provide valuable insights into the significant factors shaping musical likes among participants. Therefore, to further explore this aspect, future research could investigate the impact of varying presentation formats on musical likes. The research findings contribute to our understanding of how individual and contextual factors shape musical preferences and provide a foundation for further exploration in the field of music psychology and education. In the future, it is also worth supplementing the data collection by taking these factors into account, as well as examining the perception of traditional concert experiences.

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ORCID iD

Józsa Krisztián https://orcid.org/0000-0001-7174-5067

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