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Author(s): Matthew L. Williams

Source: *Bulletin of the Council for Research in Music Education*, No. 217 (Summer 2018), pp. 67-83

Published by: University of Illinois Press on behalf of the Council for Research in Music Education

Stable URL: https://www.jstor.org/stable/10.5406/bulcouresmusedu.217.0067

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Summer 2018 No. 217

The Influence of Genre and Musical Training on Ratings of Listener Enjoyment

Matthew L. Williams
University of Arizona
Tucson, AZ

ABSTRACT

*The purpose of this study was to explore continuous and summative ratings of listener enjoyment across a variety of genres and to examine the roles of musical training and familiarity. Participants (*N *= 150) provided preference ratings for four popular, classical, and world music excerpts using the* Continuous Response Digital Interface *in either a continuous or summative response condition. After each excerpt, participants also provided a rating of their familiarity with the excerpt on a pencil and paper Likert-type scale. Significant main effects for genre and major were found in preference ratings, as well as a significant interaction between genre and major. Music majors tended to rate excerpts significantly higher than nonmajors, except in the popular music genre, and majors responded faster than nonmajors in the continuous response condition. Correlations between preference and familiarity were moderate and uniformly significant, whereas there appeared to be no association between familiarity and response times. Implications for teachers selecting music for use in their classrooms include considering the impact of the genre used, the musical material presented at the outset, and students' familiarity with the music.*

Music teachers are faced daily with decisions of what music to utilize in the classroom. The issue is germane to all ages of music instruction and in all types of music classrooms, from large ensembles to modern band ensembles to general music classes. While there are a number of factors to consider, and teachers generally have some degree of flexibility in their ranking of such factors, investigations into music preference may provide teachers with additional information to aid in the selection of music.

Many researchers have offered guidance on factors influencing music preference through literature reviews (Droe, 2006; Finnäs, 1989; Hash, 2002; McKoy, 2003; Teo, 2003; Thomas, 2016; Wapnick, 1976; Williams, 2017). One of the most enduring theoretical models to help explain such influential factors is that proposed by Albert LeBlanc (1982). LeBlanc argued that decisions of preference are not the result of a single factor or even the simple combination of factors. Instead, "music preference decisions are based upon the interaction of input information and the characteristics of the listener, with input information consisting of the musical stimulus

and the listener's cultural environment" (LeBlanc, 1982, p. 29). LeBlanc suggested a multitude of complex interactions with input from more than 20 sources of variation in music preference. The use of LeBlanc's model has helped to account for some of the complications in studying decisions of musical preference, including the effects of musical training, familiarity, and response mode.

Researchers have frequently addressed the effect of musical training on preference in the research literature. Geringer and McManus (1979) asked high school students, college education majors, and college music majors to list their 10 favorite composers and found that the high school students and nonmusic majors preferred current popular artists as opposed to composers in the formal tradition, who were preferred by college music majors. A higher preference for classical music by music majors than nonmajors was also found by Wheeler (1985). Brittin (1991) explored the effect of overt categorization on jazz, pop, and rock musical styles and found that those participants with musical experience provided significantly higher ratings for jazz and for each of the popular styles overall than those without musical experience. Higher ratings from those with more musical experience were also reported by Ginocchio (2009) as well as Morrison and Yeh (1999), who found not only that an international sample of music majors provided higher preference ratings, but they preferred Western classical music over Chinese classical and jazz. However, Brittin (1996) found no difference attributable to musical training when participants were responding to examples of world music. Although certain trends seem to surface regarding the effect of musical training, further research is needed that takes musical training into consideration when investigating preferences of classical, popular, and world music examples.

Familiarity has also been demonstrated to influence ratings of listener preference (Fung, 1996; North & Hargreaves, 1995; Peretz, Gaudreau, & Bonnel, 1998; Schubert, 2007; Shehan, 1985; Verveer, Barry, & Bousfield, 1933). One of the most widely accepted theoretical models of the specific influence of familiarity on musical preference is the inverted U, which states that upon initial repetitions of a musical stimulus, listener preference is likely to increase as understanding and familiarity increase (Berlyne, 1971; Walker, 1980). However, after a certain point, listener preference is likely to begin decreasing as the piece is perceived as simplistic and boring. Thus, the effect of familiarity and repetition yields the shape of an inverted U on ratings of listener preference. Generally, studies have reflected an increase in preference as the result of greater familiarity with world music (Demorest & Schultz, 2004; Heingartner & Hall, 1974; Shehan, 1984, 1985) as well as with popular and classical music (Hargreaves, 1984; Hargreaves, Messerschmidt, & Rubert, 1980; Johnston, 2015). However, there does not appear to be any research that has explored the effect of familiarity on musical preference for classical, popular, and world music examples within the context of the same study.

The mode of response, while not explicitly delineated in LeBlanc's (1982) theory, is addressed by other inputs, such as basic attention, media, and further exploration

of the stimulus and/or environment. Regardless of how it is characterized, different response modes have demonstrated differences in ratings. The use of the Continuous Response Digital Interface (CRDI) elicited higher preference ratings than a traditional paper-and-pencil rating method (Brittin, 1991, 1996). Even if all participants use the same response mode, then the specific task may yield different results. When participants were asked to provide continuous ratings while the music was being played, for example, Brittin and Duke (1997a, 1997b) found that mean ratings of musical intensity were lower than those provided by participants who used the CRDI summatively at the end of the excerpt. Similar results were found later by Duke and Colprit (2001). It is unclear, however, if such differences between summative and continuous ratings using the CRDI would manifest when participants are asked to rate musical preference rather than musical intensity.

Response time, or the time used by participants to arrive at and communicate a decision of preference, is another area relevant to classroom musical examples that would benefit from further research. Brittin (1991) found response times to average around 9 seconds for nonmusic majors to indicate preference for pop, rock, and jazz crossover styles. Acevedo-Hernández (2006) examined six classical and popular musical examples and found response time to decrease as musical styles more closely approximated popular musical styles, with the exception of one classical excerpt. Average response times based on age ranged from 40 to 45 seconds. Acevedo-Hernández also noted that response time increased as preference ratings decreased, meaning that participants listened to more of the music that they liked the least. While it appears that preference may be inversely related to response time, further research is needed. Additionally, the influence of genre and familiarity are unclear in terms of how they may affect listener response time.

While previous research has advanced understanding of various aspects of LeBlanc's (1982) theoretical model of music preference, there are certain aspects that have not yet been explored. Preference ratings for classical, popular, and world music genres, combined with ratings of familiarity, have not yet been pursued in the same study, nor have they been explored in terms of possible effects of musical training. This lack of research may limit understanding of how these factors might influence one another, especially in terms of multiple musical styles. Combined with comparisons of continuous and summative evaluations and tracking of response times, such an investigation may yield useful information for teachers in the design and implementation of music curricula.

The purpose of this study was to explore continuous and summative ratings of listener enjoyment across a variety of genres and to examine the roles of musical training and familiarity. Specifically, I sought to address:

1. Does genre influence ratings of listener enjoyment?
2. Does genre influence initial listener response time?
3. Is there a difference between summative and continuous ratings of enjoyment based on genre?

4. Does musical training influence preference ratings or response time?
5. Is there a relationship between familiarity and either preference ratings or response time?

METHOD

Throughout this study, the terms *preference*, *enjoyment*, and *liking* were used interchangeably. Researchers have used these terms equivocally from at least 1968 (Duerksen) to the present day (Greenberg, Baron-Cohen, Stillwell, Kosinski, & Rentfrow, 2015). LeBlanc (1984), whose theoretical model of music preference served as the inspiration of the current study, defined musical preference as "an operational construct which represents a subject's demonstrated level of liking specific music stimuli" (p. 1). Although Kuhn (1980) specified preference as an "act of choosing, esteeming, or giving advantage to one thing over another" (p. 6), and this definition was later adapted by Price (1986), LeBlanc (1984) stated, "As a matter of practical research, it is probably safe to consider the Kuhn and LeBlanc definitions of preference to be identical" (p. 1). It is with this equivocal understanding that I proceeded with the study.

Participants

Participants (N = 175) were undergraduate music majors (n = 72) and nonmusic majors (n = 103) currently enrolled at a large research university in the southeastern United States. All participants were volunteers and were recruited by speaking to intact music classes offered at the institution. Both major and nonmajor classes were selected in an attempt to reach a maximum number of students with minimal classroom disruption. Participant ages ranged from 18 to 26 (M = 19.7, SD = 1.59). One-hundred eleven (63%) of the participants identified as female and 64 of the participants identified as male (37%). Of the music majors, 70 (97%) indicated they had previously participated in private music study, such as piano lessons, voice lessons, and so forth, and 72 (100%) participants indicated they had prior experience in a musical ensemble, such as school groups, church groups, community groups, and so forth. For the nonmusic majors, these numbers were 45 (44%) and 59 (57%), respectively. Due to incomplete responses, participants not following directions, and subsequent outlier analysis, 25 participant responses were removed, resulting in a final sample of 150. The final sample of participants consisted of undergraduate music majors (n = 66) and nonmajors (n = 84). An a priori power analysis using G*Power software (Faul, Erdfelder, Lang, & Buchner, 2007) indicated a minimum of 128 participants were required using an anticipated small effect size of f = .10 and the conventional power level of .80 (Cohen, 1988).

Musical Stimuli

Investigations of genre-based musical preferences necessitate the selection of representative excerpts. Given the variety and number of possible musical excerpts, I initially used

a purposive sampling method for each genre that was followed by pilot testing for final excerpt selection. In an attempt to control the effect of familiarity, I chose excerpts that I anticipated to be unfamiliar to participants but still representative of their respective genres (North & Hargreaves, 1995; Schubert, 2007). The final number of excerpts was limited to 12 in order to respect the time commitment of participants.

Classical Excerpt Selection

For the classical genre, I selected two excerpts that represented each of the Baroque, Classical, Romantic, and Modern compositional periods in an attempt to reflect the breadth of options available to listeners from the classical music genre. I also took into consideration research that has indicated greater preference for fast rather than slow excerpts and instrumental rather than vocal excerpts in the classical genre (LeBlanc, 1981; LeBlanc, Colman, McCrary, Sherrill, & Malin, 1988; LeBlanc & Cote, 1983; Shehan, 1981). In an attempt to achieve the goal of representative but unfamiliar excerpts, I selected lesser-known music by well-known composers. Two fast instrumental selections from each time period were selected to use in a pilot study. Graduate students in orchestral conducting or performance (n = 10) listened to each of the eight selections and indicated familiarity by responding "not familiar at all," "somewhat familiar," "recognizable," or "very familiar." Additionally, participants were asked to categorize each excerpt into the Baroque, Classical, Medieval, Modern, Renaissance, or Romantic time period in order to determine the validity of time period classification. Based on the results of the pilot test, excerpts were selected that displayed greatest unfamiliarity to participants while being classified in the appropriate time period.

Popular Excerpt Selection

For the genre of popular music, I again selected excerpts that represented the wide range of options available to listeners. During the 3 years previous to the study, over 70% of music consumption could be attributed to the genres of rock, R&B/hip-hop, pop, and country (Nielsen Company, 2013, 2014). The genres used by Nielsen Company (2014) matched some of those used by Billboard (2015), which permitted me to find top artists in those genres over the past 5 years. I worked under the assumption that a top-selling artist within a given genre would be likely to create music representative of that genre. I selected three artists from Billboard's Top 10 Artists of the Year over the course of the previous 5 years for the genres of rock, R&B/hip-hop, pop, and country (Billboard, 2015). For each artist, I explored prior discography to select a lesser-known piece of music, resulting in 12 pieces of popular music to use in the pilot study. Undergraduate and graduate music therapy students, as well as graduate music education students (n = 11), listened to each of the 12 selections and indicated familiarity by responding "not familiar at all," "somewhat familiar," "recognizable," or "very familiar." Additionally, participants were asked to categorize each excerpt into either the Christian/gospel, country,

dance/electronic, hip-hop/R&B, jazz, latin, new age, pop, or rock subgenre in order to determine the validity of genre classification. These subgenres were provided as options based on those used by Billboard (2015). Based on the results of the pilot test, excerpts were selected that displayed the least familiarity while being classified in the appropriate genre by participants.

World Excerpt Selection

For the world music genre, I based selection of the excerpts entirely on previous research. Given the title, origin, recording label, and other descriptive information provided by Shehan (1981), I obtained digital recordings of the four instrumental world excerpts that were chosen by Shehan (1981) to represent "some of the world's most highly sophisticated musical styles" (p. 23). The four excerpts represented Indian, African, Japanese, and Indonesian musical styles. No pilot testing of these examples was done.

Once the 12 pieces were selected, I then chose one 60-second excerpt from each to serve as the experimental stimulus. Sixty seconds was selected as the length of time because it fit within the range of time used in previous research by both Brittin and Duke (1997a, 1997b) and Duke and Colprit (2001) when comparing continuous and summative ratings. Sixty seconds is also of sufficient duration to allow changes in preference for the continuous response condition. When selecting the 60-second excerpts, I attempted to find clips of music that included portions of more than one section in order to increase the variety of music heard. For example, during popular excerpts, I tried to ensure listeners heard at least part of the verse and chorus rather than just a repeated chorus section alone. The final selection of musical stimuli, including album and timing information, may be found in Table 1.

Procedure

The listening procedure took place in a music laboratory setting. Testing sessions ranged from one to seven participants at a time, varied depending on schedule availability. Participants heard musical stimuli in one of six counterbalanced presentation orders and were randomly assigned a priori into experimental groups, differentiated by response condition and presentation order. Campbell and Stanley (1963) suggest that such a counterbalanced design is resistant to nearly all threats to internal validity, and the current study offered additional control through the random assignment of participant sessions into specific experimental conditions. Instructions and musical stimuli for each experimental group were recorded and copied onto compact discs. Standard stereo equipment, including a receiver, CD player, and two speakers provided the musical stimuli for participants. Speakers were approximately 8 feet apart and faced slightly inwards toward participants seated around two long tables.

All participants heard two practice excerpts and were able to ask questions before the session began. Participants in the continuous-summative response condition (n = 91)

Table 1
Musical Stimuli

Excerpt	Artist/Composer	Piece	Timing	Album
Classical 1	John Adams	Doctor Atomic Symphony Mvmt II: Panic	00:00–01:00	David Robertson St. Louis Symphony
Classical 2	G. F. Handel	Overture to Orlando, HWV 31	00:41–01:41	Alexander Weimann Pacific Baroque Orchestra
Classical 3	W. A. Mozart	Symphony No. 26, K. 184 Mvt. I: Molto Presto	00:00–01:00	Nicholas Ward Northern Chamber Orchestra
Classical 4	Arnold Schoenberg	Gurrelieder, Part I: Orchestral Interlude	02:07–03:07	Claudio Abbado Vienna Philharmonic Orchestra
Popular 1	Alicia Keys	"Wreckless Love"	00:38–01:38	*As I Am*
Popular 2	Miranda Lambert	"What About Georgia"	00:00–01:00	*Kerosene*
Popular 3	Leona Lewis	"Forgive Me"	02:36–03:36	*Spirit*
Popular 4	Tool	"The Pot"	03:10–04:10	*10,000 Days*
World 1	Field recording	"Festival Music (Music of the Malinke)"	00:00–01:00	*African Tribal Music and Dances*
World 2	Field recording	"Gamelan Gong Kebyar: Baris/Gambang Betjak"	00:00–01:00	*Music from the Morning of the World*
World 3	Ravi Shankar	"Sindhi Bhairavi"	12:41–13:41	*The Sounds of India*
World 4	The Noday Family	"Hanami odori"	03:37–04:37	*Flower Dance: Japanese Folk Melodies*

moved the dial on the CRDI while the music was playing and provided a final summative rating, also on the CRDI, at the end of each excerpt. Participants in the summative-only response condition (n = 84) listened while the music was playing and provided only the final summative rating on the CRDI at the conclusion of each excerpt. The CRDI background was based on semantics used by Hash (2009) and consisted of the words "really dislike," "dislike," "somewhat dislike," "just OK," "somewhat like," "like," and "really like" equally spaced across the spectrum, creating a continuous arc of preference response. The device sampled participant input at a rate of one sample per second and provided numeric data on a scale from 0 to 255. At the end of each excerpt, all participants also indicated their familiarity with the excerpt on a separate pencil-and-paper form using a Likert-type scale from 1 ("very unfamiliar") to 7 ("very familiar").

Data Analysis

The continuous response data required screening in order to obtain a single data point for two measures: enjoyment ratings and response time. In order to convert each participant's enjoyment rating across 60 seconds into one mean, I calculated the mean from the point at which the rating stabilized for three consecutive samples (one sample per second) to the end of the excerpt. Additionally, response time was calculated for the

participants in the continuous response condition from the start of the excerpt to the first of three consecutive stabilized samples.

RESULTS

Separate analyses of variance (ANOVAs) were calculated using preference rating and response time as the dependent measures. In both instances, major (music major or nonmajor) and presentation order (one of six orders) was used as the between-subjects variables while genre (classical, popular, and world) was used as the within-subjects variable. In the preference rating analysis, response type (continuous or summative) was used as an additional between-subjects variable. For analysis purposes, the final summative rating provided by continuous response participants was treated as a third between-subjects group following the procedures used by Brittin and Duke (1997a) and Duke and Colprit (2001). Raw data were screened in order to satisfy assumptions of ANOVA. Presentation order was not found to be significant in any analyses and was subsequently removed as a variable. Pearson correlations were also calculated between preference ratings and familiarity as well as between response time and familiarity. Cronbach's alpha indicated acceptable levels of internal consistency for overall preference ratings ($\alpha = .79$), familiarity ratings ($\alpha = .85$), and response times ($\alpha = .86$).

Preference Rating Analysis

Preference rating comparisons between individual examples were not of interest in this study. Consequently, preference ratings for the four excerpts within each genre were averaged into a single rating for analysis (Table 2). A repeated measures ANOVA was calculated using preference ratings for classical, popular, and world music examples. Levene's test indicated unequal variances within the classical ratings, $F(5, 217) = 8.28$, $p < .001$, although ANOVA is robust to violations of homogeneous variances (Shavelson, 1996). Mauchly's test indicated the assumption of sphericity also was violated, $\chi^2(2) = 16.35$, $p < .001$, so the Greenhouse-Geisser correction was used. Results of the ANOVA indicated significant main effects for genre, $F(1.86, 404.51) = 133.40$, $p < .001$, $\eta^2_p = .38$, and for major, $F(1, 217) = 50.25$, $p < .001$, $\eta^2_p = .19$. Additionally, the interaction between genre and major was significant, $F(1.86, 404.51) = 22.82$, $p < .001$, $\eta^2_p = .10$. There was not a significant difference between response conditions, $F(2, 217) < 1$. Although music majors consistently rated excerpts higher overall, the popular music genre elicited nearly identical ratings from both majors and nonmajors (Table 2).

Response Time Analysis

Overall mean response times for the continuous responses ($n = 73$) ranged from 9.62 seconds ($SD = 2.89$) for the African world music example to 13.06 seconds ($SD = 4.23$) for the Indonesian world music example. Response times for music majors were quicker for 11 of the 12 excerpts. Standard deviations of nonmajors were higher in each of the

Table 2
Overall and Major/Nonmajor Preference Mean Ratings and Standard Deviations

	Overall		Major		Nonmajor	
Excerpt	*M*	*SD*	*M*	*SD*	*M*	*SD*
Classical—overall	163.62	46.19	188.63	27.10	143.65	48.58
Popular—overall	153.38	34.75	154.72	38.68	152.30	31.37
World—overall	110.40	53.32	132.50	47.31	92.76	51.40
Overall			159.22	60.11	130.67	69.21

Note: Possible scores from the CRDI range from 0 (low) to 255 (high).

12 excerpts. Interestingly, excerpts within the world music genre elicited both the quickest and slowest response from both majors and nonmajors.

Similar to preference ratings, response times for the four excerpts within each genre were averaged into a single rating for analysis. A repeated-measures ANOVA was calculated using response times in the continuous response condition for classical, popular, and world music examples. Levene's test indicated unequal variances for the classical excerpts, $F(1, 71) = 18.62$, $p < .001$, popular excerpts, $F(1, 71) = 4.42$, $p < .05$, and world excerpts, $F(1, 71) = 12.09$, $p < .01$, although equal sample sizes are robust to violations of homogeneous variance (Shavelson, 1996). Mauchly's test indicated the sphericity assumption was not violated and data appeared approximately normally distributed. Results of the ANOVA indicated a significant main effect for major, $F(1, 71) = 5.27$, $p < .05$, $\eta^2_p = .07$, but no difference between genres, $F(2, 142) < 1$. Majors responded in a mean time of 10.23 seconds, whereas nonmajors responded in a mean time of 11.5 seconds. The interaction between genre and major was not significant, $F(2, 142) < 1$.

Graphs of second-by-second mean ratings were created for each genre across all participants and showed consistent trends between majors and nonmajors. Music majors rated the excerpts higher at nearly every point in the listening process. Music majors also displayed a steeper slope in the initial stages of rating, reflecting their faster response time. These trends can also be seen in a second-by-second graph of the overall average for all excerpts (Figure 1).

Familiarity

Mean ratings of familiarity ranged from 1.77 ($SD = 1.00$) for the Japanese world excerpt to 3.75 ($SD = 1.75$) for the Classical period classical excerpt. A mean familiarity rating of 3.50 indicated moderate familiarity. Pearson correlation coefficients were calculated between familiarity and preference ratings for each excerpt, as well as between familiarity and response times (Table 3). Correlations between familiarity and preference ratings ranged from .27 for the Japanese world excerpt to .5 for the country popular excerpt. All correlations between familiarity and preference ratings were significant at $p < .01$. The strongest correlation between familiarity and response time was found for the Japanese

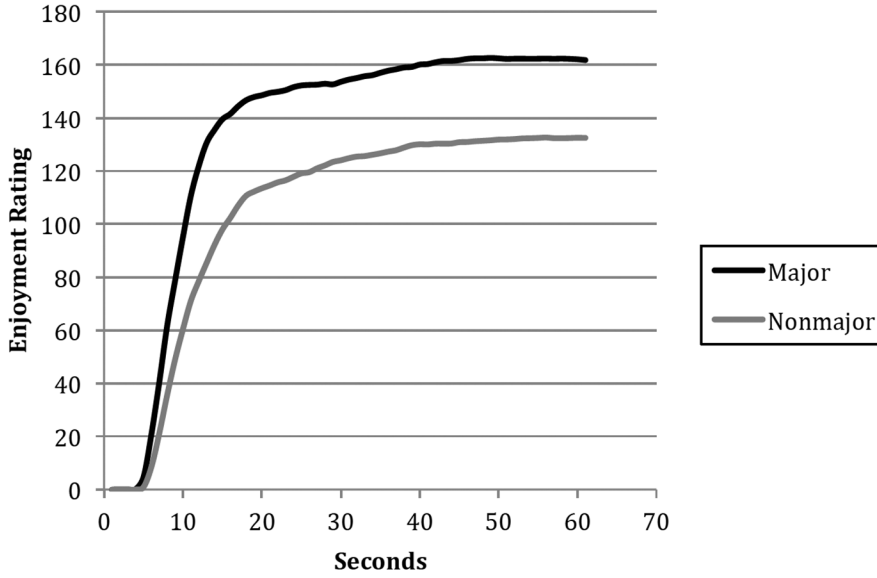

Figure 1. Second-by-second overall mean ratings.

Table 3
Familiarity Means and Pearson Correlations with Excerpt Preference and Response Time

	Familiarity		Excerpt preference		Response time	
Excerpt	*M*	*SD*	*r*	*p*	*r*	*p*
Classical—Baroque	3.4	1.67	.37*	<.001	–.09	.44
Classical—Classical	3.75	1.75	.35*	<.001	–.02	.89
Classical—Romantic	3.52	1.65	.28*	<.01	–.03	.79
Classical—Modern	2.901	.67	.39*	<.001	–.16	.17
Popular—Rock	3.02	1.76	.41*	<.001	–.04	.74
Popular—Pop	3.49	1.86	.40*	<.001	–.01	.94
Popular—Hip-Hop/R&B	3.59	1.83	.40*	<.001	.11	.35
Popular—Country	3.67	1.91	.50*	<.001	.05	.71
World—Indian	2.63	1.66	.43*	<.001	.05	.69
World—Indonesian	2.85	2.04	.39*	<.001	.16	.19
World—Japanese	1.77	1.00	.27*	<.001	.20	.10
World—African	2.04	1.28	.34*	<.001	.07	.57

Note: *represents correlations significant at $p < .01$.

world excerpt (r = .20) but was not significant (p < .10). Indeed, none of the correlations between familiarity and response times were significant. The lack of correlation indicated no association between participants' familiarity with excerpts and the amount of time they listened before turning the CRDI dial to indicate a preference rating.

DISCUSSION

Caution must be observed when generalizing the influence of genre. I carefully considered the selection of excerpts, but the use of one piece of music to represent an entire nationality or subgenre (e.g., Japanese music) is tenuous. At best, the four excerpts selected to represent a variety of subgenres within classical, popular, and world music must be taken together to represent a more holistic picture. However, the possibility still exists that the current results were simply a result of these particular musical selections. Similar studies should be undertaken using a variety of musical excerpts within similar genres and subgenres in order to reach a more complete understanding. Additionally, a participant's status as a music major was used as an indicator for musical training. It is possible that a nonmusic major might have more advanced musical training than a music major, measured in the current study by participation in private lessons and ensembles. Given the disparities in participation percentages for music majors and nonmajors, it is believed that such a situation would be the exception rather than the rule, but years of participation were not collected to verify this assumption. As a consequence, differences involving musical training may be conflated. Finally, participants volunteered after recruitment from music classes at a single university. While enrollment in music classes may represent some degree of self-selection for the nonmusic majors, the classes from which I recruited all counted toward general university degree requirements, so it was believed the sample was sufficiently representative. However, care should be taken when generalizing to other student populations.

Preference Ratings

Participants provided different ratings of enjoyment based on an interaction between genre and major. Nonmajors rated the popular excerpts higher than either classical or world, and nearly as high as music majors, while majors rated classical and world excerpts higher than nonmajors. The tendency for music majors to rate excerpts higher was consistent with previous research (Brittin, 1991; Ginocchio, 2009; Hargreaves et al., 1980; Morrison & Yeh, 1999), as was the tendency for nonmusicians to favor popular music (Geringer & McManus, 1979). World excerpts were rated as the least-liked overall by both music majors and nonmajors. Future research might continue to explore differences in preference ratings between music majors and nonmajors using a wide variety of excerpts and genres to obtain a more complete understanding of the effect of musical training.

Comparisons of summative and continuous ratings of participant enjoyment indicated no differences between response types nor was response type involved in any

significant interactions. While this echoes similar results found by Robinson (1988), it appears to conflict with related, but not identical, intervening research (Brittin, 1991, 1996; Brittin & Duke, 1997a, 1997b; Duke & Colprit, 2001). The differences may be partially explained by participant prompts as described earlier. Brittin (1991, 1996) used paper and pencil for the summative ratings of musical preference, whereas Brittin and Duke (1997a, 1997b) and Duke and Colprit (2001) used the CRDI for both continuous and summative ratings but asked participants to rate musical intensity. It is unclear whether participants may have responded similarly had they been asked to indicate preference rather than intensity. The observed equivalence of the condensed continuous mean and a summative rating when rating music preference may suggest wider application for the CRDI in music listening contexts. If the technology were to become available in a format easily usable in a classroom, then the teacher would not only get an overall rating similar to current paper and pencil methods, but they would be able to see what aspects of the music at specific instances elicited favorable and/or negative responses from their students. Further replication using other musical excerpts and a wider variety of participants is necessary.

Response Time

Genre exhibited no significant influence on participants in comparisons of response times. However, music majors exhibited significantly different response times, on average responding over a second faster than nonmajors. Majors responded sooner than nonmajors on all 12 excerpts, ranging from .39 seconds to 2.21 seconds sooner. While such timings may not hold much practical application, it does suggest that music majors make quicker decisions about music preference sooner than nonmajors, even if differences are small in time. Combined with the graphic representation in Figure 1, it can be seen that music majors not only come to a stable conclusion sooner, but they begin responding sooner as well. Such differences may result from increased exposure to different varieties of music through the course of formal music training and increased emphasis on making musical decisions. Future research might explore the qualities or characteristics on which participants base early decisions of musical preference to determine if differences exist between listening practices of majors and nonmajors.

The similarity in response times across genres, despite the significant effect of genre on the preference ratings themselves, was informative. It appeared that participants' enjoyment of the music did not elicit a faster nor slower response. Genre also did not elicit a faster nor slower response from participants. The variety in response times of individual excerpts, however, did seem to suggest that participants varied in response time based on some unidentified factor. A separate matter is whether the difference in response times, less than 4 seconds in this case, is of any practical importance. Further exploration may prove useful in terms of timing of the decision-making process.

Familiarity

On the 7-point familiarity scale, mean familiarity ratings ranged from 1.77 (*SD* = 1.00) for the Japanese world excerpt to 3.75 (*SD* = 1.75) for the Classical period classical excerpt. These ratings indicated low to moderate familiarity with each of the excerpts. Anonymity of responses should have encouraged honest responses, but it is possible some participants inflated responses or misunderstood the task, resulting in artificially higher familiarity ratings.

Ratings of excerpt familiarity yielded moderate, but significant, correlations with ratings of preference. These correlations represent a positive association between listeners' familiarity with an excerpt and her or his ratings of preference. These results are consistent with much previous research (Demorest & Schultz, 2004; Fung, 1996; Johnston, 2015; North & Hargreaves, 1995; Peretz et al., 1998). However, the current results may reflect an artificial ceiling effect in terms of preference ratings as a result of the intentional selection of unfamiliar musical excerpts. Had the musical excerpts been more mainstream selections, it is possible that correlations may have been much stronger. An additional issue when considering the familiarity response is whether participants were responding to the excerpt specifically or if familiarity with a certain style or genre might have elicited higher familiarity ratings. Future research specifically exploring familiarity and preference across genres might include the use of both familiar and unfamiliar excerpts in an effort to better understand the effect of familiarity.

All correlations between familiarity and response time were weak and not significant, indicating no association in participant responses to the measures. It seems likely that had participants heard a very familiar excerpt, less time would have been needed to make a preference decision. However, the current results do not address this hypothesis. Future studies might incorporate music with a wide variety of anticipated familiarity to better explore the effects on response time.

Implications for Music Education

The findings of the current investigation may provide music educators with information relevant to their teaching. While the differences attributed to musical training may not be as relevant to primary and secondary teachers as to collegiate teachers, there were some findings, such as the effects of genre and familiarity, that may be uniformly beneficial to all levels of teaching. The preference for classical music across all participants may provide support for educators who are tentative about its inclusion in a general music curriculum. For ensemble directors, the results seem to provide further support that students are not dismissive of the music typically programmed.

The correlation of familiarity and preference also seems to support the pedagogical use of repetition in order to increase students' preference ratings of a particular piece of music. It is possible that students are more familiar with styles and excerpts because of exposure and immersion to the music outside of the school setting. Educators might

also attempt to incorporate music that is more familiar to students periodically rather than only using unfamiliar music in the classroom.

The time taken by participants to arrive at a final evaluative decision apparent from the continuous ratings also might be relevant to how teachers use music in the classroom. Participants arrived at a stable rating within 20–40 seconds, showing little change through the remainder of the 60-second excerpts. Educators should be aware that, based on the current results, the first 40 seconds of music that students hear are crucial and may impact perceptions of the rest of the excerpt.

CONCLUSION

The pursuit of understanding of music preference decisions may be a task somewhat elusive in nature; even if decisions were to be understood for all music currently in existence, there is a steady supply of new music from which to choose. As a consequence, research exploring decisions of music preference should also constantly evolve to include and evaluate how new listening patterns and options may influence decisions of preference. The significant influence of genre provided further evidence that listeners, both majors and nonmajors, differentiate between various styles and genres and make preference decisions accordingly. Musical training also exhibited influences on preference ratings and response times, which raises some interesting questions. Does musical training over the course of a music degree change how one listens to music, or are people who listen in such a manner more likely to become music majors? While the former seems more likely to be the case, future research might further explore the development of the listening and decision-making process in music learning.

Although familiarity did not appear to influence any of the characteristics under investigation, this is likely to have been a result of the excerpt selection process. Had excerpts been selected to more fully represent a range of familiarity within each genre, perhaps possible effects of familiarity might be more fully explored in the current context. However, this may have come at the expense of inflated preference ratings. Future research might more fully address the relationship between preference and familiarity in the context of classical, popular, and world music genres.

In the current study, I explored aspects influencing the decision-making process of music listening. However, I did not investigate the decision-making process itself. Qualitative aspects of music preference research (i.e., asking participants questions such as "What did you like?" or "Why did you dislike that music?") may provide more thorough information. Focus of attention tasks might also be used in conjunction with preference research to determine causality, if any such relationship exists.

As outlined in LeBlanc's 1982 theory of musical preference, many factors contribute to one's decisions of musical listening. Although the current results may help to better understand such decisions and aid teachers in understanding their students' responses to music used in the classroom, many questions arose and remain unanswered. Would

younger students also demonstrate equivalent summative and continuous responses? Would the use of mainstream familiar music influence preference ratings or response time? What aspects of the excerpts specifically encouraged preference ratings and timing of response? It is through further research that music researchers and teachers may come to better understand the factors and decisions that contribute to music preference.

AUTHOR'S NOTE

This article is based on the author's dissertation completed at Florida State University in spring 2016. The research was presented at the 15th Biennial Desert Skies Symposium on Research in Music Education in February 2017.

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