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Who should study music education? A vocational personality approach

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The main purpose of the current study was to examine the utility and usefulness of Holland's Theory of Personalities in Work Environments to understand the match between personality and the desire for music education. The participants included 99 pre-service music teachers in Turkey. The findings revealed that the pre-service music teachers were, foremost, artistic. To a lesser degree, they were social and conventional. In addition, significant relationships existed between personality types and satisfaction with studying in the department of music education. Based on these findings, it seems that Holland's Theory provides a useful framework for understanding music pre-service teachers' satisfaction with studying music education. Future researchers may use this theory with practicing music teachers to examine its explanatory and predictive power in the workplace.

Keywords: personality; job satisfaction; Holland's theory; music education; pre-service music teachers

1. Introduction

Personality, by definition, is 'a coherent and settled form of relationship that an individual established with his/her internal and external environment and distinguishes him/her from other individuals' (Cuceloglu 2008, 404). Personality is an important construct in psychology because it influences many types of behaviours such as people's job performance (Barrick and Mount 1991), job satisfaction (Judge, Heller, and Mount 2002) and academic performance (Paunonen and Ashton 2001; Ridgell and Lounsbury 2004).

Human personality is typically measured as a set of survey items, usually questions or statements about feelings, or behaviour, to which respondents respond by answering the question, or agreeing or disagreeing with the statements (Kline 1993). For example, in the commonly used personality inventory entitled the 'Big Five Inventory' (John, Donahue, and Kentle 1991), all items begin with the statement "I see myself as someone who . . ." and continue with statements such as 'who is depressed, blue', or 'is considerate and kind to almost everyone'. Survey participants indicate their response on a Likert-type scale with options ranging from strongly disagree to strongly agree.

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Although personality is an important construct, it has received relatively little attention in the music and music education literature. Rentfrow and Gosling (2003) investigated more than 11,000 articles published between 1965 and 2002 in prestigious social and personality journals and found that music was listed as an index term (or subject heading) in only seven articles.

Most of the studies dealing with the personality construct in the music education literature have been carried out by Kemp (1982, 1996), who examined the personality profiles of performers and music educators and found that music teachers had higher levels of extraversion than performers. Kemp (1996) usually used Raymond Cattell's 16-factor personality questionnaire to assess musicians' personalities. He noted that 'Certainly, I wish to take the view here that the musician's development is a product of the kind of person that he or she is' (15). However, contrary to Kemp's findings, Wubbenhorst (1994) did not find a significant difference between performers and music educators in the extraversion dimension of personality.

Some studies were conducted to examine the role of personality in music teaching success (Wink 1970; Krueger 1976; Kvet and Watkins 1993; Juchniewicz 2010). Wink (1970) found that high achievers in music student teaching had a high need for deference, order and affiliation and strong tendencies towards conformity. Krueger (1976) indicated that 'successful music educators tend to be intelligent, less interested in social approval, assertive, interested in their homes and in the opposite sex, enjoy sensual indulgences of all kinds, and are somewhat defensive and pugnacious' (23). Kvet and Watkins (1993) examined the perceptions of students in elementary education majors regarding the personality characteristics of successful music teachers. The participants in their study indicated that successful music teachers should be energetic, enthusiastic about teaching materials, confident, and sensitive to students, and should have an optimistic outlook, a sense of humour, an outgoing personality, patience with students, and good skills in classroom management. A recent study by Juchniewicz (2010) demonstrated the influence of social intelligence on effective music teaching.

Two other recent studies (Cevik 2011; Vuust et al. 2010) investigated the role of pre-service music teachers' personality characteristics in their career-related behaviour. For example, Vuust et al. (2010) found in Denmark that students who plan to be rhythmic musicians (those who often move around on the stage and directly interact with the audience) had personalities characterised by significantly higher levels of sensation-seeking than did students who plan to be classical musicians (those who sit motionless with their musical instrument).

Grounded in the Big Five Model of Personality, Cevik (2011) found that Turkish pre-service music teachers who saw themselves as imaginative, social and enthusiastic tended to believe that they will be satisfied teachers in the future. Cevik measured the pre-service teachers' personality on five dimensions (Neuroticism, Extroversion, Openness, Agreeableness and Conscientiousness) through a test consisting of 40 pairs of opposite adjectives (e.g. patient-impatient, quiet-talkative). The participants were asked to indicate the extent to which they agreed with the left or right half of the antonymic adjectival pairs.

Holland's theory of vocational personalities in working environments also received attention in the field of music education (Teachout 2001; Allen 1996). Holland's theory (1997) is based on the premise that vocational choice is an expression of one's personality. According to this theory, there are six personality

types (**R**ealistic, **I**nvestigative, **A**rtistic, **S**ocial, **E**nterprising and **C**onventional) and six types of work environments known by the same names (**R**ealistic, **I**nvestigative, **A**rtistic, **S**ocial, **E**nterprising and **C**onventional). The fit (congruence) between personality and the work environment plays an important role in people's job satisfaction. For example, there is high congruence if a person with **A**rtistic personality traits works in an **A**rtistic work environment. On the other hand, there is lack of congruence if this person works in a **C**onventional working environment. The profession of music teaching has predominantly the characteristics of **A**rtistic work environments, and therefore best fits individuals with **A**rtistic personality traits. Table 1 shows the characteristics of Holland's personality and work environment types.

Holland presented work environments on a hexagon (see Figure 1). On the hexagon, work environments that share the greatest number of characteristics are shown in close proximity to each other, while those that share the fewest characteristics are shown as being most distant from each other. For instance, the two closest neighbouring corners to the **A**rtistic corner are **S**ocial and **I**nvestigative, while the most distant corner is **C**onventional. This indicates that (1) people with **A**rtistic personality traits can attain the highest vocational satisfaction in **A**rtistic work environments, which are typically unstructured and flexible and allow self-expression and working independently, (2) **S**ocial work environments, which require social and interpersonal skills, and Investigative work environments, in which people are expected to solve problems through thinking, are also suitable work environments for people with Artistic personality traits, (3) Conventional work environments, characterised by structured organisations with well-ordered chains of command, are the most unsuitable work environments for people with Artistic personality traits. Since Conventional work environments typically demand lower levels of creativity, imagination and artistic ability, people with artistic personality traits, in general, are not satisfied with working in such environments.

Each profession generally reflects three types of work environments in Holland's theory and is identified with a three-letter code. Environments are defined by the number of people of a certain type working in that environment and analysis of data regarding which responsibilities they assume in that environment (Spokane, Luchetta, and Richwine 2002). The code of music education is ASI (that is, **A**rtistic, ocial and **I**nvestigative) (Gottfredson and Holland 1996). This suggests that (1) music education most possesses the characteristics of **A**rtistic work environments, followed by **S**ocial and **I**nvestigative work environments, and (2) people with **A**rtistic, **S**ocial and **I**nvestigative personality traits tend to be satisfied with working as a music teacher. In other words, people who have high creativity, imagination and artistic abilities (i.e. Artistic Type) possess good social and interpersonal skills (Social Type) and like solving problems through thinking (Investigative Type) are likely to attain high vocational satisfaction in this profession.

Although Holland's theory has been studied extensively in different fields, it has received very little attention in music education. Teachout (2001) examined the vocational personality types of 84 pre-service music teachers in the United States and found that they were, in general, Artistic, Social and Investigative (as predicted by Holland's theory), but congruence between personality and work environment was not related to teaching effectiveness as measured by lesson delivery skills and by the

Table 1. Characteristics of Holland's personality and environmental types (Swanson and Fouad 1999, 45).

Type	Self-concept and values	Potential competencies	Typical work activities and environments
Realistic	Emotionally stable, reliable, thrifty, persistent, shy, modest, uncomfortable talking about self, traditional values	Mechanical ability and ingenuity Problem solving with tools, machines Psychomotor skills Physical strength	Job with tangible results Operating heavy equipment Using tools Fixing, building, repairing
Investigative	Independent, self-motivated, reserved, introspective, analytical, curious, task oriented, original, creative, nonconforming	Scientific ability Analytical skills Mathematical skills Writing skills Perseverance	Ambiguous or abstract tasks Solving problems through thinking Working independently Scientific or laboratory settings Collecting and organising data
Artistic	Independent, nonconforming, self-expressive, intuitive, sensitive, emotional, impulsive, drawn to aesthetic qualities	Creativity, imagination Verbal-linguistic skills Musical ability Artistic ability	Creating artwork or performing Working independently Unstructured, flexible environments that allow self-expression
Social	Humanistic, idealistic, ethical, concerned for welfare of others, tactful, cooperative, generous, kind, friendly, cheerful, understanding, insightful	Social and interpersonal skills Verbal ability Teaching skills Ability to empathise with and understand others	Teaching, explaining, guiding Solving problems, leading discussions Educational, social service and mental health organisations
Enterprising	Status conscious, ambitious, competitive, sociable, energetic, popular, aggressive, adventuresome	Verbal skills related to speaking, persuading, selling Leadership skills Resilience, high energy, optimism Social and interpersonal skills	Selling, purchasing, leading Managing people and projects Giving speeches and presentations Financial, government and political organisations
Conventional	Conscientious, persevering, practical, conservative, orderly, systematic, precise, accurate, careful, controlled	Efficiency, organisation Management of systems and data Mathematical skills Attention to detail, perfectionism Operation of office machines	Organising office procedures Keeping records and filing systems Writing reports, making charts Structured organisations with well-ordered chains of command

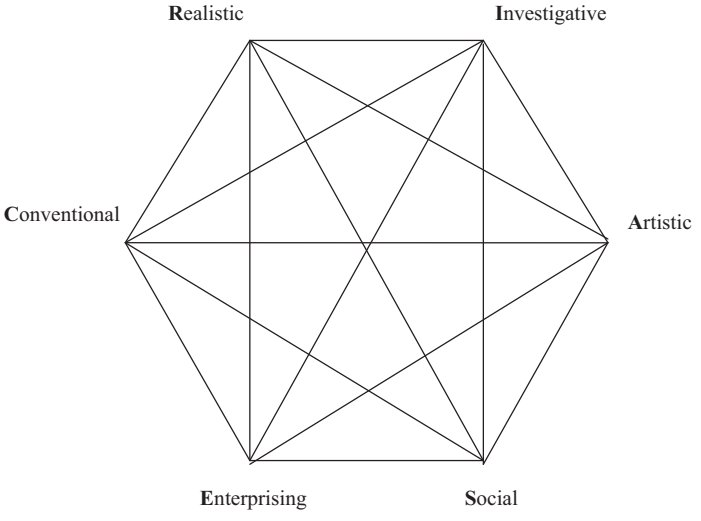

Figure 1. Holland Hexagon (Holland 1997).

planning and presentation of lessons (Teachout 2001). In contrast, in another study involving students in the music therapy major, congruence was found to be related to academic achievement and satisfaction with their education (Allen 1996). Both the studies of Teachout (2001) and Allen (1996) were conducted in the US. We failed to identify any study that examined the utility of Holland's theory in music education outside of the US. It is important to note that:

> Social science models and theories, because of their context-sensitivity, are particularly sensitive to cultural bias. Thus we should not presume a theory to be culturally valid or useful until research results support that assumption . . . there is no more crucial goal for vocational psychology than to contribute to the understanding of cultural differences and determine the extent to which there may be cultural "universals" or commonalities on which we can construct more comprehensive theories. (Spokane, Luchetta, and Richwine 2002, 405–406)

Inspired by Spokane, Luchetta, and Richwine's (2002) argument and the studies of Teachout (2001) and Allen (1996), we examined the utility of applying Holland's theory in another country. Specifically, we investigated the relationship between personality and satisfaction of Turkish pre-service music teachers with their department. Findings that support predictions that are consistent with Holland's theory will provide empirical evidence regarding the cultural validity of Holland's theory and will provide a sense of which individuals are more likely to be satisfied with studying in the department of music teacher education.

Departmental satisfaction is important to study because it influences student motivation, recruiting efforts, fundraising and student retention (Elliott and Shin 2002), academic performance (Pike 1991) and attrition (Tinto 1993). Examining satisfaction is also one way to learn about the quality of life (Berry 1998). Studying student satisfaction 'not only enables universities to re-engineer their organisations

to adapt to student needs, but also allows them to develop a system for continuously monitoring how effectively they meet or exceed student needs' (Elliott and Shin 2002, 197).

Three research questions were addressed in the current study:

(1) What are the vocational interests of pre-service teachers enrolled in a music education department?
(2) Is there a relationship between pre-service teachers' personality and their satisfaction with studying in the department of music education? If 'yes', which personality types are related to departmental satisfaction?
(3) Does Holland's theory offer a useful framework for understanding the pre-service music teachers' departmental satisfaction?

It is important to note that when measuring interests 'we are tapping the same underlying construct as we are measuring personality; interests and personality are simply two duplicative aspects (for example, arms or legs) of the same individual and therefore largely similar, despite one being the left (arm, personality) and the other being right (leg, interests)' (Spokane, Luchetta, and Richwine 2002, 401). Thus, the pre-service teachers' vocational interests were used as indicators of their personality in the current study.

2. Method

2.1. Participants

The participants included 99 pre-service music teachers (59 female, 40 male) enrolled in the department of music education in a university in western Turkey. Thirty-one participants were freshmen, 23 sophomores, 26 juniors and 19 seniors. The participants were asked to complete a survey during a regular class session in the final week of the semester. Participation was voluntary. The researcher explained the purpose of the study to the participants. Those who were willing to participate read a consent form and filled out the survey. The participants did not indicate their name in the survey to ensure anonymity.

2.2. Research instruments

An instrument titled the Vocational Interests Scale was used in this study to assess the participants' vocational personality based on Holland's theory (see Appendix 1). This scale, which consists of 30 items, was created by Perkmen, Cevik, and Alkan (2010) based on the Self-Directed Search (Holland and Powell 1994). Five items were included in each dimension of personality. Examples were 'Trying to fix mechanical and electrical devices' (**R**ealistic), 'Conducting scientific experiments' (**I**nvestigative), 'Working with gifted authors, musicians or sculptors' (**A**rtistic), 'Performing altruistic activities to make others happy' (**S**ocial), 'Participating in seminars on leadership' (**E**nterprising) and 'Checking paperwork or products for errors' (**C**onventional). The participants indicated their responses on a six-point Likert-type scale ranging from 0 (I am not interested in it at all) to 5 (I am interested in it very much). Scores on each dimension ranged from 0 to 25, with higher scores indicating a higher reflection of personality in the respective dimension.

The validity and reliability of the Vocational Interests Scale were established on a sample of 224 elementary education pre-service teachers (Perkmen, Cevik, and Alkan 2010). The instrument had internal consistency of .89 with subscale consistencies of .80 for Realistic, .88 for Investigative, .76 for Artistic, .78 for Social, .75 for Enterprising and .75 for Conventional. These coefficients showed fairly high reliability for the overall Vocational Interests Scale and for its subscales. As predicted by the theory, the principal component analysis resulted in six meaningful factors and each item loaded on its respective factor. Taken together, these findings provide strong evidence for the construct validity of the scale.

Two additional questions were included at the end of the instrument to help meet the purpose of the study. The first additional question intended to measure the pre-service teachers' satisfaction with studying music education. The Faces Scale (Kunin 1955) was used to address this question (see Figure 2). The participants were asked to check the box under the face that would best express their satisfaction with studying music education. The question was 'How satisfied are you with studying music education (becoming a music teacher in the future)? Scores on this scale ranged from 1 to 6, with higher scores reflecting higher levels of departmental satisfaction.

The second additional question was included to examine the participants' preferred career after graduation. The stem (or scenario) was

> Imagine that you graduated from your school and you have 4 career paths which offer you equal opportunities. In other words, these careers offer you the same amount of salary and social benefits. Moreover, their geographic locations are the same. Which career would you want to enter most among these four paths?

The participants were asked to select one of these career paths: (1) music teacher, (2) musician, (3) academic career and (4) non-music career.

2.3. Data analysis

Several calculations and analyses were conducted to address the research questions in the study. First, a one-letter code for the highest-scoring dimension and a three-letter code for the top three scores were allocated to each participant. For example, if a person received these scores (Realistic: 5, Investigative: 15, Artistic: 22, Social: 20, Enterprising: 11, Conventional: 7), his/her one-letter code was identified as **A** and the three-letter code as A-S-I. Descriptive statistics were calculated to determine the number of participants within each code.

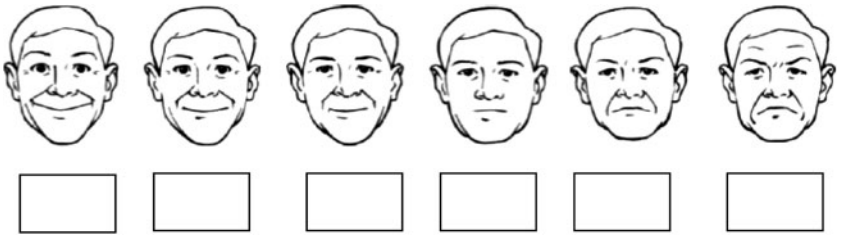

Figure 2. Faces Scale (Kunin 1955).

Second, a multivariate analysis of variance (MANOVA) model was estimated and statistical *F*-tests and *t*-tests were performed to identify which personality types preferred which career option. The personality scores in each dimension served as the dependent variables while preferred career was the independent variable in the MANOVA model. The Tukey's honestly significant difference multiple comparison test was used as the post hoc method of analysis to identify where the differences existed.

Third, the relationships between the personality scores and departmental satisfaction were examined. The Pearson correlation test was carried out to identify the relationship of the personality type scores to departmental satisfaction. Higher correlations indicated stronger relationships. Following the correlation analysis, stepwise regression analysis was conducted to examine which personality scores make a unique contribution to accounting for the variance in departmental satisfaction. The personality scores in each dimension served as the predictor variables while departmental satisfaction was the dependent variable. Based on the relationships among the variables, the stepwise regression procedure automatically selected the subset of personality variables that accounted for the most variance in departmental satisfaction. The R^2 value indicated how much of the variance in departmental satisfaction was accounted for by the selected personality variables.

3. Findings

3.1. Validity and reliability of the research instrument

Principal component analysis was performed to examine the construct validity of the scale. As expected, the analysis resulted in six meaningful factors, which accounted for 56% of the variance among the scale items. Each item associated with a factor loaded on its respective dimension. Internal consistency of the overall scale (as measured by Cronbach's alpha) was .90. Taken together, these findings provided evidence for the reliability and validity of the scale used in the current study.

3.2. Descriptive statistics and the MANOVA model

Data analysis revealed that the participants' highest three scores were **A**rtistic ($M = 21.14$, $SD = 3.88$), **S**ocial ($M = 19.19$, $SD = 3.98$) and **C**onventional ($M = 13.33$, $SD = 5.01$). This indicates that they were interested in **A**rtistic activities most, followed by **S**ocial activities. Contrary to expectations based on Holland's theory, the participants' third-highest scores were **C**onventional, not **I**nvestigative (see Table 2).

The results of frequency analysis supported these findings since 66.7% of the participants were found to be **A**rtistic and 31.3% were **S**ocial (as indicated by the

Table 2. Participants' overall scores in personality dimensions.

Personality type	Min	Max	M	SD
Realistic	0	22	9.82	5.65
Investigative	0	25	9.49	6.12
Artistic	7	25	21.14	3.88
Social	8	25	19.19	3.98
Enterprising	1	25	12.42	5.47
Conventional	2	24	13.33	5.01

Table 3. Percentage distribution of participants' three-letter code.

Three-letter code	Percent
Artistic-**S**ocial-**C**onventional **(ASC)**	24.2
Artistic-**S**ocial-**E**nterprising **(ASE)**	13.1
Social-**A**rtistic-**C**onventional **(SAC)**	11.1
Social-**A**rtistic-**E**nterprising **(SAE)**	11.1
Artistic-**S**ocial-**I**nvestigative **(ASI)**	7.1
Artistic-**S**ocial-**R**ealistic **(ASR)**	6.1
Artistic-**C**onventional-**S**ocial **(ACS)**	5.1
Artistic-**I**nvestigative-**S**ocial **(AIS)**	4.0
Artistic-**E**nterprising-**S**ocial **(AES)**	3.0
Social-**A**rtistic-**R**ealistic **(SAR)**	3.0
Social-**A**rtistic-**I**nvestigative **(SAI)**	2.0
Artistic-**C**onventional-**R**ealistic **(ACR)**	1.0
Artistic-**E**nterprising-**I**nvestigative **(AEI)**	1.0
Artistic-**E**nterprising-**R**ealistic **(AER)**	1.0
Artistic-**R**ealistic-**C**onventional **(ARC)**	1.0
Conventional-**A**rtistic-**E**nterprising **(CAE)**	1.0
Investigative-**A**rtistic-**E**nterprising **(IAE)**	1.0
Social-**C**onventional-**A**rtistic **(SCA)**	1.0
Social-**E**nterprising-**A**rtistic **(SEA)**	1.0
Social-**I**nvestigative-**A**rtistic **(SIA)**	1.0
Social-**R**ealistic-**C**onventional **(SRC)**	1.0

one-letter code). Regarding the three-letter codes, 24.2% were ASC (**A**rtistic-**S**ocial-**C**onventional) and 13.1% were ASE (**A**rtistic-**S**ocial-**E**nterprising). Only 7% of the participants were identified as A-S-I, the work environment code for music teaching (see Table 3).

To examine the role of personality in career choice, the participants' personality scores were examined by their preferred career. A statistically significant main effect was found on the Artistic dependent measure ($F = 3.13$, $p < .05$) in the MANOVA model (see Table 4). Post hoc analysis revealed that those who prefer a non-music career in the future had significantly lower Artistic scores ($M = 16.80$, SD $= 5.21$) than those who prefer to become music teachers ($M = 21.93$, SD $= 3.73$, $p < .05$) and those who prefer to pursue an academic career ($M = 21.46$, SD $= 3.24$, $p < .05$).

Table 4. Participants' personality scores by preferred career.

Personality type	Music teacher ($N = 29$)	Musician ($N = 17$)	Academic career ($N = 48$)	Non-music career ($N = 5$)
Realistic	9.59 (4.96)	10.59(6.40)	10.02(5.77)	10.25(5.73)
Investigative	8.52 (5.51)	9.00 (6.97)	10.75 (6.15)	9.02 (2.61)
Artistic	21.93 (3.73)	20.18 (4.69)	21.46 (3.24)	16.80 (5.21)
Social	19.93 (3.76)	17.82 (3.69)	19.46 (3.92)	18.75 (5.31)
Enterprising	12.41 (3.90)	10.94 (6.01)	13.29 (6.05)	11.75 (4.86)
Conventional	13.72 (5.65)	11.59 (4.77)	13.96 (4.77)	11.55 (2.38)

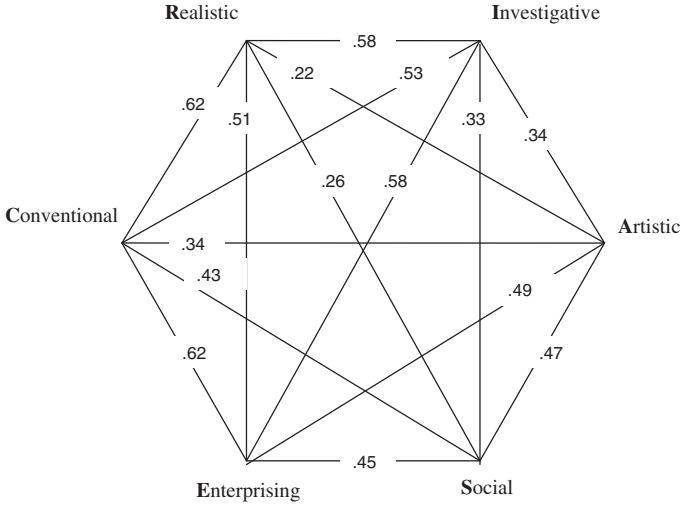

Figure 3. Interrelationships among personality types.

3.3. Correlation and regression analysis

Pearson correlation analysis was conducted to examine the relationships among the six personality dimensions and departmental satisfaction. Since almost all of the participants were characterised by the one-letter code of either Artistic or Social, we decided to use the raw scores in each dimension of personality instead of the letter code for statistical analysis. Results presented in Figure 3 indicate that personality type scores were significantly related to each other. For example, both **S**ocial ($r = .47$, $p < .01$) and **E**nterprising ($r = .49$, $p < .01$) scores were moderately correlated with **A**rtistic scores, which indicated that the pre-service teachers who are interested in **A**rtistic activities tend to be interested in **S**ocial and **E**nterprising activities as well. It was also found that **A**rtistic ($r = .21$, $p < .05$) and **S**ocial scores ($r = .27$, $p < .05$) had smaller but significant correlations with departmental satisfaction. Results of stepwise regression analysis revealed that only Social type scores made an independent contribution to the equation predicting satisfaction. This variable accounted for 8% of the overall variation in satisfaction.

4. Discussion

The main purpose of this study was to investigate the personality profiles of pre-service music teachers in Turkey in relation to departmental satisfaction. The findings revealed that the music pre-service teachers were foremost Artistic, which suggests that they seem to enjoy art-related activities and probably perceive themselves as talented, original and idealistic. They were also Social, which suggests that they probably enjoy participating in activities that require sacrifices for other people's happiness. In addition, these two dimensions of personality were found to be significantly related to departmental satisfaction. More importantly, Social scores were found to be the only significant predictor of pre-service music teachers' departmental satisfaction in the current study.

It is important to note that students' departmental satisfaction not only shows the quality of the academic department but also shows whether they study in a department that fits their personality. If their personality does not fit music education, they will probably have little or no satisfaction with studying in their department, which may result in lower motivation in their classes. The personality variable accounted for 8% of total variance in satisfaction in the current study. This finding means that 92% of the variance in satisfaction can be accounted for by other variables, one of which is likely to be the quality of the department. Future researchers interested in pre-service music teachers' departmental satisfaction might investigate the role of the quality of the department.

Music teaching, as its name implies, is a teaching profession with a social work environment. Thus, people with good social, interpersonal and teaching skills tend to be satisfied in this profession. The participants' scores on Social type were high in this study. Moreover, the Social type scores emerged as the only significant predictor of satisfaction in the regression equation. Researchers (e.g. Kemp 1982; Cevik 2011) pointed out the importance of being extroverted in the profession of music education. From this point of view, the results of our study broadly have supported previous research findings. It is important to note that being social does not simply mean being extroverted and talkative. According to Holland's theory, being social means having life goals of helping others in difficulty, contributing to human welfare and making sacrifices for others (Spokane, Luchetta, and Richwine 2002). Those who wish to become a music teacher should think carefully if they have such life goals. Two items in the Vocational Interest Scale ('Helping others in difficulty' and 'Performing altruistic activities to make others happy'; see Items 16 and 28 in Appendix 1) were intended to measure whether a person possesses such goals.

Music teaching is also a branch of the arts. Thus, people who have high creativity, imagination and artistic abilities are likely to be satisfied working as a music teacher. Participants' scores on the artistic dimension were the highest in the current study. Together, these findings supported Holland's premise that career choice is an expression of personality. The results of the present study also were in large part consistent with the results of Teachout's study (2001). Both the current research and Teachout's study (2001) revealed that among pre-service music teachers the highest two scores were for **A**rtistic and **S**ocial. However, unlike Teachout's study (2001), in the current study the participants' third-highest score was Conventional, rather than Investigative. Since music education has the three-letter code of A-S-I, Teachout's study (2001) was more consistent with the predictions of Holland's theory. An alternative explanation could be that pre-service music teachers may have a vocational interest set that is Conventional. This alternative possibility is based on the reality that our study was conducted with pre-service teachers, who have not yet encountered classroom realities in the Turkish schools. These alternative explanations provide a motivation for future research on personality linkages with music education career choices.

The current study has implications for students who wish to study music education or work as a music teacher. Considered as the father of vocational guidance, Parsons (1909) stated:

> in the wise choice of a vocation, there are three broad factors: (1) a clear understanding of yourself, your aptitudes, abilities, interests, ambitions, resources, limitations, and knowledge of their causes; (2) a knowledge of the requirements, conditions of success,

> advantages and disadvantages, compensation, opportunities, and prospects in different lines of work; (3) true reasoning on the relationships of these two groups of facts. (5)

Based on this framework, it is essential that people who want to study music education or work as a music teacher should reflect on their personality. It is also important that they possess knowledge of the requirements and the conditions for success in this profession. If they possess primarily the Artistic, Social and Investigative personality traits, music teaching is a career that fits their personality. On the other hand, if they possess primarily the Realistic, Enterprising or Conventional personality traits, they should think carefully when deciding whether the profession of music teaching is a wise career path for their future. Students have the opportunity to achieve a clear understanding of their personality through taking vocational interest tests. People's interests are good indicators of their personality (Spokane, Luchetta, and Richwine 2002). Students who wish to study music education or have difficulty deciding which career to pursue after graduation may take the Vocational Interest Scale in Appendix 1.

It should be emphasised that the current study was conducted with pre-service teachers in one institution. Thus, it would be difficult to generalise our findings to other settings and draw strong conclusions regarding the relationship of personality with satisfaction. To address these shortcomings, it would be better to validate Holland's theory with in-service music teachers and examine its explanatory and predictive power in the workplace. Future researchers may investigate the vocational personality characteristics of successful music teachers who have high satisfaction with working as a music teacher and decide if the music education has the three-letter environment code of A-S-I, as Holland suggested. Although the current study revealed that the participants' highest score was Artistic, this dimension of personality was not a significant predictor of satisfaction. This suggests that possessing Social personality traits might be more important than possessing Artistic personality traits in this profession. If this is proven true in future studies, the order of letters should be arranged. It would also be helpful to examine the degree to which music teaching possesses Conventional work environments. This can be done through finding what kinds of vocational activities the music teachers do in their schools.

Our findings also have a number of potential implications for student career counselling. Thompson (1960), for example, conceptualises work as a prime provider of life satisfaction through a mix of rational and non-rational influences on individual vocational decisions and progress towards achieving career goals. Thompson's research suggests the importance of determining the reasons students have difficulty concretising their vocational choices, and emphasises the critical role played by counsellors in taking into consideration students' individual differences and goals. A reasonable implication, then, is that career counsellors need to be trained to decode as accurately as possible the reasons why students confront difficulties with making career choice and to understand better how to mesh students' personality traits with the functionality of those traits on the job.

It is essential for counsellors to be prepared to address the plethora of things that can and do go 'bump in the night' in their lives that affect students' career planning (Pryor and Bright 2011; Bright and Pryor 2005; Bright, Pryor, and Harpham 2005; Krumboltz and Levin 2004; McKay, Bright, and Pryor 2005; McMahon, Watson, and Patton 2005; Patton and McMahon 2006; Pryor and Bright 2006; Pryor,

Amudson, and Bright 2008; Waterman 2000). Massaglia and Papenfuss summarise the chaotic nature of contemporary career decision-making in terms of the need for counselling to address 'the complex, dynamic nature of people who have to deal with an ever changing world'. Galassi et al. (1992) provide guidance related to client preferences and anticipations in career counselling. Swanson (1995) details the process and outcome of career counselling that can be adapted by counsellors working with students in myriad areas of career interests. Cultural sensitivity is also essential for successful counselling (e.g. Kim, Li, and Lian 2002). This certainly does not exhaust the multifaceted dimensions and challenges of contemporary career counselling, but these are among the leading issues that will need to be addressed in fostering positive career choices regarding music education and many other career areas that must take student personality traits and the fit of those personality traits with the nature of the proposed career choices.

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Appendix 1: Vocational interests scale

You are given 30 activities. Please indicate your level of interest in each activity using the scale below.

0 – I have no interest at all
1 – I have very little interest
2 – I have little interest
3 – I have moderate interest
4 – I have high interest
5 – I have very high interest

(1) Using mechanical tools	0	1	2	3	4	5
(2) Investing in the stock market	0	1	2	3	4	5
(3) Listening to a talk given by a famous businessman	0	1	2	3	4	5
(4) Operating office machines	0	1	2	3	4	5
(5) Trying to fix mechanical and electrical devices	0	1	2	3	4	5
(6) Writing novels or plays	0	1	2	3	4	5
(7) Participating seminars on leadership	0	1	2	3	4	5
(8) Engaging in gardening activities	0	1	2	3	4	5
(9) Conducting scientific experiments	0	1	2	3	4	5
(10) Solving mathematical problems	0	1	2	3	4	5
(11) Visiting a science museum	0	1	2	3	4	5
(12) Leading a group	0	1	2	3	4	5
(13) Taking a technical drawing course	0	1	2	3	4	5
(14) Organising files and folders on a computer in systematic ways	0	1	2	3	4	5
(15) Checking paperwork or products for errors	0	1	2	3	4	5
(16) Helping others in difficulty	0	1	2	3	4	5
(17) Attending a seminar given by a famous educator	0	1	2	3	4	5
(18) Reading articles and journals about arts and music	0	1	2	3	4	5
(19) Taking artistic photos	0	1	2	3	4	5
(20) Working on a scientific project	0	1	2	3	4	5
(21) Working as a teacher in a school	0	1	2	3	4	5
(22) Performing tasks that require hand skills	0	1	2	3	4	5
(23) Identifying errors in a financial account	0	1	2	3	4	5
(24) Organising and planning activities	0	1	2	3	4	5
(25) Reading books, articles or journals about business	0	1	2	3	4	5
(26) Guiding other people	0	1	2	3	4	5
(27) Working with gifted authors, musicians or sculptors	0	1	2	3	4	5
(28) Performing altruistic activities to make others happy	0	1	2	3	4	5
(29) Reading scientific articles or journals	0	1	2	3	4	5
(30) Listening to the talk of a famous artist	0	1	2	3	4	5

Note: Realistic – 1, 5, 8, 13, 22, Investigative – 9, 10, 11, 20, 29, Artistic – 6, 18, 19, 27, 30, Social – 16, 17, 21, 26, 28, Enterprising – 2, 3, 7, 12, 25, Conventional – 4, 14, 15, 23, 24.