A new Spanish-language questionnaire for musical self-concept

Miren Zubeldia
Conservatorio Profesional de Música Ataúlfo Argenta, Spain

Eider Goñi
Universidad del País Vasco–Euskal Herriko Unibertsitatea, Spain

Maravillas Díaz
Universidad del País Vasco–Euskal Herriko Unibertsitatea, Spain

Alfredo Goñi
Universidad del País Vasco–Euskal Herriko Unibertsitatea, Spain

Abstract
The aim of this study is to analyze the psychometric properties of the Musical Self-Concept Questionnaire (CAMU), an abbreviated and culturally adapted Spanish language version of the Music Self-Perception Inventory (MUSPI) developed by Vispoel. Participants comprised 1,126 students from professional and advanced conservatories located in different autonomous regions of Spain. The internal consistency of the instrument was found to be high (Cronbach’s alpha = .907; AVE = .685). The exploratory factor analysis revealed an internal structure consisting of seven factors: singing, playing, reading, composing, listening, moving and general musical self-concept. Sex differences and correlations between musical self-concept and both verbal self-concept and causal attributions confirm the criterion validity of the questionnaire. In addition to being a useful tool for measuring musical self-concept in Spanish, the CAMU also enables cross-cultural research into this construct to be conducted, in line with that carried out in English.

Keywords
cultural adaptation, conservatory students, musical self-concept, questionnaire, MUSPI

Corresponding author:
Miren A. Zubeldia, Conservatorio Profesional de Música Ataúlfo Argenta, Paseo del General Dávila 77, 39006 Santander, Spain.
Email: mirenzubeldia@gmail.com
The image that each individual forms of themselves based on their experiences and relations with their environment is made up of a set of hierarchically-organized self-perceptions. General self-concept, located at the top of the hierarchy, is divided into various different domains (academic, physical, personal, social), which in turn make up more specific dimensions. The most representative model of this hierarchical and multidimensional conception of self-concept, proposed by Shavelson, Hubner and Stanton (1976), has given rise to a wealth of research aimed at specifying, expanding and modifying the idea, as well as, in particular, at identifying the dimensions that make up and explain each of its domains. It is within this context that Vispoel (1994, 2003) proposed artistic self-concept as a domain on a par with, yet different from, both academic and non-academic self-concept. According to this author, artistic self-concept is made up of four dimensions: self-perceptions regarding music, plastic art, dance and drama.

Subsequent research (Marsh & Roche, 1996; Vispoel, 1993c, 1995, 1996) has sought to develop instruments for measuring the artistic and musical self-concept of secondary school and university students (Morin, Scalas, Vispoel, Marsh & Wen, 2015; Ruismäki & Tereska, 2006; Vispoel, 1992a, 1992b, 1993a, 1993b), as well as the general population (Spychiger, Gruber & Olbertz, 2009). The selection of content has been based on a review of the self-concept literature which indicated that items from the previous measures focused primarily on the following content categories (Vispoel, 1993c, 1996): (a) one’s skill compared to other individuals; (b) skill in the given area compared to other subject areas; (c) level of comfort/security/confidence in performing tasks in the given area; (d) level of comfort/security/confidence in performing tasks in the company of other individuals; (e) inclination to welcome/avoid participation in tasks; (f) speed or facility in learning tasks (e.g., learn quickly/slowly; is easy/difficult); (g) endorsement/denial of general evaluative statements about one’s skills (e.g., perceive one’s skills as strong, weak, excellent, poor); (h) perceptions that one has or lacks natural ability in the area; (i) perceptions that one’s skill or lack of skill is recognized by other individuals; (j) perceptions about one’s typical performance in the given area (e.g., receive high/low grades, get high/low test scores); and (k) projections about performance on future tasks.

The Music Self-Perception Inventory (MUSPI), developed by Vispoel (1993a, 1993b), is currently the most highly valued and widely accepted musical self-concept measurement instrument. The reliability index of its scales oscillates between .92 and .98 and the test–retest reliability coefficient is between .80 and .90. The seven-factor internal structure of the instrument has been confirmed with secondary school and university students in the United States, in both the expanded 84-item version (Vispoel, 2003) and the abbreviated 28-item version (Morin et al., 2015).

To date, no instrument with adequate psychometric properties has been developed in Spanish to measure musical self-concept, understood as a multidimensional construct. With the aim of redressing this situation and contributing to cross-cultural research into musical self-concept, a Spanish translation of the MUSPI-84 was tested (Zubeldia, 2014, 2015). There is wide consensus in recommending two phases for the cross-cultural adaptation process: (a) cultural adaptation, where it is necessary to take into account the idioms, the cultural context, and the differences in the perception of health and sickness by the population; and (b) the validity in the target language, in order to assess the level of preservation of the psychometric proprieties (Beaton, Bonbardier, Guillemin & Bosi-Ferraz, 2000; Ramada-Rodilla, Serra Pujadas & Declós-Clanchet, 2013).

The assessment of both users and expert raters indicated that fewer items were required in order to avoid reiterations, and that the drafting of the questions needed to undergo a process of cultural adaptation; the psychometric indexes were found to be inadequate. Taking into account the results of the cultural adaptation, the questionnaire was reduced, giving rise to the CAMU by Zubeldia (2014), consisting of 28 items (see Appendix 1).

This study aims to verify whether the CAMU meets the following fundamental psychometric requisites: quality of the items, reliability of the scales, construct validity and criterion validity.
In this last respect, responses to the CAMU questionnaire were expected to follow the same patterns as responses to previous musical self-concept questionnaires in relation to two specific aspects: sex-related differences and correlation with both academic-verbal self-concept and causal attributions of success and failure.

Prior research has found that women score higher in musical self-concept, interest in musical activities and the importance attached to music (Austin & Vispoel, 2000; Bartel, 1996; Eccles, Wigfield, Harold & Blumenfeld, 1993; Koliadi-Tiliakou, 2007; Marsh, Craven & Debus, 1998; Vispoel, 1993c; Vispoel & Forte, 2000; Wigfield & Eccles, 1994). The majority of these studies were carried out with students in mainstream schools.

Musical self-concept is hierarchically related to global self-concept and self-esteem (Vispoel, 1994), and evidence has been found of the mediator role played by the importance attached to music when determining the degree of correlation between these variables (Vispoel, 2000). It is logical to assume that students of music conservatories, who are enrolled on non-compulsory, specialist music courses, perceive music as important and that, therefore, their perception of their own musical competence is closely related to their self-concept. For its part, verbal self-concept is the

### Table 1. Descriptive analysis of the items of the CAMU.  

<table>
<thead>
<tr>
<th>Item</th>
<th>Dimension</th>
<th>Mean</th>
<th>SD</th>
<th>Asymmetry</th>
<th>Kurtosis</th>
<th>Alpha if the item was eliminated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Singing</td>
<td>3.91</td>
<td>1.466</td>
<td>-.414</td>
<td>-.767</td>
<td>.904</td>
</tr>
<tr>
<td>2</td>
<td>Playing</td>
<td>4.69</td>
<td>1.144</td>
<td>-.911</td>
<td>-.326</td>
<td>.905</td>
</tr>
<tr>
<td>3</td>
<td>Reading</td>
<td>4.75</td>
<td>1.074</td>
<td>-.914</td>
<td>-.910</td>
<td>.904</td>
</tr>
<tr>
<td>4</td>
<td>Composing</td>
<td>3.78</td>
<td>1.437</td>
<td>-.172</td>
<td>-.894</td>
<td>.905</td>
</tr>
<tr>
<td>5</td>
<td>Listening</td>
<td>4.29</td>
<td>1.419</td>
<td>-.615</td>
<td>-.497</td>
<td>.902</td>
</tr>
<tr>
<td>6</td>
<td>Moving</td>
<td>3.36</td>
<td>1.553</td>
<td>.073</td>
<td>1.054</td>
<td>.906</td>
</tr>
<tr>
<td>7</td>
<td>General</td>
<td>4.66</td>
<td>1.024</td>
<td>-.730</td>
<td>.347</td>
<td>.903</td>
</tr>
<tr>
<td>8</td>
<td>Singing</td>
<td>4.17</td>
<td>1.584</td>
<td>-.584</td>
<td>-.887</td>
<td>.905</td>
</tr>
<tr>
<td>9</td>
<td>Playing</td>
<td>4.46</td>
<td>1.241</td>
<td>-.913</td>
<td>.330</td>
<td>.906</td>
</tr>
<tr>
<td>10</td>
<td>Reading</td>
<td>4.79</td>
<td>1.170</td>
<td>-.1073</td>
<td>.804</td>
<td>.904</td>
</tr>
<tr>
<td>11</td>
<td>Composing</td>
<td>3.64</td>
<td>1.395</td>
<td>-.183</td>
<td>-.842</td>
<td>.904</td>
</tr>
<tr>
<td>12</td>
<td>Listening</td>
<td>4.26</td>
<td>1.460</td>
<td>-.559</td>
<td>-.724</td>
<td>.903</td>
</tr>
<tr>
<td>13</td>
<td>Moving</td>
<td>3.09</td>
<td>1.505</td>
<td>.293</td>
<td>-.979</td>
<td>.906</td>
</tr>
<tr>
<td>14</td>
<td>General</td>
<td>5.02</td>
<td>.967</td>
<td>1.291</td>
<td>2.085</td>
<td>.904</td>
</tr>
<tr>
<td>15</td>
<td>Singing</td>
<td>3.98</td>
<td>1.534</td>
<td>-.437</td>
<td>-.885</td>
<td>.904</td>
</tr>
<tr>
<td>16</td>
<td>Playing</td>
<td>4.85</td>
<td>1.051</td>
<td>-.1051</td>
<td>.925</td>
<td>.905</td>
</tr>
<tr>
<td>17</td>
<td>Reading</td>
<td>4.66</td>
<td>1.105</td>
<td>-.929</td>
<td>-.687</td>
<td>.904</td>
</tr>
<tr>
<td>18</td>
<td>Composing</td>
<td>3.90</td>
<td>1.421</td>
<td>-.310</td>
<td>-.879</td>
<td>.904</td>
</tr>
<tr>
<td>19</td>
<td>Listening</td>
<td>4.22</td>
<td>1.384</td>
<td>-.529</td>
<td>-.684</td>
<td>.902</td>
</tr>
<tr>
<td>20</td>
<td>Moving</td>
<td>3.46</td>
<td>1.564</td>
<td>.033</td>
<td>1.155</td>
<td>.906</td>
</tr>
<tr>
<td>21</td>
<td>General</td>
<td>4.87</td>
<td>.907</td>
<td>.850</td>
<td>1.050</td>
<td>.903</td>
</tr>
<tr>
<td>22</td>
<td>Singing</td>
<td>4.38</td>
<td>1.498</td>
<td>-.744</td>
<td>-.503</td>
<td>.904</td>
</tr>
<tr>
<td>23</td>
<td>Playing</td>
<td>4.82</td>
<td>.900</td>
<td>-.839</td>
<td>1.159</td>
<td>.904</td>
</tr>
<tr>
<td>24</td>
<td>Reading</td>
<td>4.84</td>
<td>1.100</td>
<td>-.1069</td>
<td>.776</td>
<td>.904</td>
</tr>
<tr>
<td>25</td>
<td>Composing</td>
<td>3.70</td>
<td>1.379</td>
<td>-.186</td>
<td>-.822</td>
<td>.904</td>
</tr>
<tr>
<td>26</td>
<td>Listening</td>
<td>4.36</td>
<td>1.398</td>
<td>-.676</td>
<td>-.508</td>
<td>.902</td>
</tr>
<tr>
<td>27</td>
<td>Moving</td>
<td>3.16</td>
<td>1.489</td>
<td>.230</td>
<td>-.999</td>
<td>.905</td>
</tr>
<tr>
<td>28</td>
<td>General</td>
<td>5.02</td>
<td>.982</td>
<td>1.261</td>
<td>1.828</td>
<td>.903</td>
</tr>
</tbody>
</table>
A number of studies have also found that causal attributions are directly related to musical self-concept (Arnold, 1997; Asmus, 1986; Austin & Vispoel, 1998; Bartel, 1996; Legette, 1998; McPherson & McCormick, 2000; Pintrich & Schunk, 1996; Schmidt, 2005). In specific terms, better self-concept corresponds to a better use of internal attributions (ability, effort and cognitive strategies) for explaining musical results. Similarly, it has also been found that music students tend to attribute their successes to their social relationships with peers, families and teachers (Austin & Vispoel, 1998; Duke, Flowers & Wolfe., 1997; Klinedinst, 1991).

Research questions and hypotheses

This study addressed the following research questions:

1. Does the CAMU meet the psychometric criteria required to measure musical self-concept in a reliable, detailed manner?
2. Is musical self-concept different in men and women, as shown in previous research? Do women have better musical self-concept than men?
3. Does the musical self-concept, measured by the CAMU, correlate as in previous research with other self-concept dimensions and with causal attributions?

The principal aim of this study is to verify whether the CAMU meets the psychometric criteria required to measure musical self-concept in a reliable, detailed manner. The second and third research questions have been raised in order to verify the criteria validity. Specifically, women are expected to have better musical self-concept than men and musical self-concept is expected to correlate with both verbal academic self-concept and general self-concept. Direct relationships are expected to be found between musical self-concept and internal (ability and effort) and external (support from parents and teachers) attributions of success, and inverse relationships are expected between this construct and external attributions (luck, task difficulty) of both success and failure.

Method

Participants

Participants comprised 1,126 students, of which 67 were eliminated due to inadequate responses (social desirability bias, random answers, inconsistent response patterns or a high number of non-response items). Following the elimination of these subjects, the final study sample comprised 1,059 students, of which 814 were engaged in mid-level music studies and 245 were enrolled on advanced level music courses.

Participants were aged between 12 and 65 ($x = 19.25; \sigma = 6.39$); 483 (47.8%) were men and 528 women (52.2%).

Variables and measurement instruments

The CAMU, by Zubeldia (2014), contains 28 items drafted evenly in both positive and negative terms. Participants engaged in mid-level studies (adolescents) responded to the items on a six-point Likert-type scale, while those enrolled on advanced courses (adults) answered on an eight-point scale. The response options ranged from totally false to totally true. The instrument is divided into seven scales that measure the following musical self-perceptions: ability to sing, ability to play a
music instrument, ability to read music, ability to compose music, ability to listen to music (and identify characteristics of the piece in question), ability to create dance movements to music, and general musical ability.

Both the verbal academic self-concept measure and the general self-concept measure were obtained from the responses given to the corresponding four-item scales taken from the Multidimensional Self-Concept Questionnaire (AUDIM) developed by Fernández-Zabala, Goñi, Rodríguez-Fernández and Goñi (2015).

Causal attributions were obtained using a scale based on Weiner’s two-dimensional model (1974), which measures internal/external and stable/unstable causal attributions, the combination of which results in the following causes: effort, luck, ability and task difficulty, through a total of eight items. Another two items measure causal attribution of success to environmental factors such as family support by parents and support from teachers. The scale therefore comprises a total of ten items.

Procedure and analysis

The questionnaires were administered to the whole group in class time, in the classrooms of the various participating conservatories. The response time for the battery of questionnaires varied between 10 and 20 minutes. The single blind criterion was used and the anonymity of the responses was guaranteed. Participation was strictly voluntary.

After the questionnaires had been collected, those subjects deemed not to have given reliable, valid answers were eliminated. Two criteria were used to eliminate subjects with unreliable or invalid responses (Barnett & Lewis, 1994; McKnight, McKnight, Sidanius, & Figueiredo, 2007): lack of coherence in responses given to similar items (lack of sincerity), and the total number of items answered (subjects who failed to respond to at least 80% of the items were eliminated). In the case of missing values (1%), using the expectation maximization (EM) algorithm and the Markov chain Monte Carlo (MCMC), an approximate score was extracted for each missing item, based on the total responses given by each participant (Allison, 2002).

The following analyses were conducted to verify the psychometric characteristics of the CAMU (Carretero-Dios & Pérez, 2007): (a) an analysis of the discriminatory capacity of the items (mean, standard deviation, asymmetry, kurtosis and item reliability); (b) a study of the exploratory factor structure, by means of an oblique rotation of the data using the SPSS 20 program for Windows, extracting as factors all those with an eigenvalue larger than unity; (c) a reliability calculation: Cronbach’s alpha, composite reliability and average variance extracted; (d) a comparison of central tendency scores between the responses given by men and women, as well as a correlation calculation with verbal-academic self-concept and the causal attributions of success and failure.

Results

To address the first research question concerning the psychometric features of the CAMU, the psychometric characteristics of each of the items are given in Table 1, the internal consistency of each scale is shown in Table 2, and the results of the exploratory factorial analysis are given in Table 3.

The majority of mean scores for the item responses were high, being between 4 and 5 (Carretero-Dios & Pérez, 2007), although it is true that this is often the case in self-concept questionnaires (Tomás & Oliver, 2004). Both the symmetry and kurtosis were acceptable.

A number of internal consistency indexes were also calculated. Those referring to Cronbach’s alpha are given in Table 2.

Both the global Cronbach’s alpha and the index for each of the individual scales were high (Nunnally & Berstein. 1995). Nevertheless, given that this index is heavily influenced by the
Table 2. Cronbach’s Alpha of the CAMU.

<table>
<thead>
<tr>
<th>Scales</th>
<th>Singing</th>
<th>Playing</th>
<th>Reading</th>
<th>Composing</th>
<th>Listening</th>
<th>Moving</th>
<th>General</th>
<th>Global</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.936</td>
<td>.842</td>
<td>.900</td>
<td>.927</td>
<td>.903</td>
<td>.908</td>
<td>.829</td>
<td>.907</td>
</tr>
</tbody>
</table>

Table 3. Exploratory factor analysis of the CAMU, with oblimin rotation.

<table>
<thead>
<tr>
<th>Item</th>
<th>Dimension</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>General</td>
<td>.722</td>
</tr>
<tr>
<td>28</td>
<td>General</td>
<td>.704</td>
</tr>
<tr>
<td>21</td>
<td>General</td>
<td>.605</td>
</tr>
<tr>
<td>7</td>
<td>General</td>
<td>.409</td>
</tr>
<tr>
<td>15</td>
<td>Singing</td>
<td>.955</td>
</tr>
<tr>
<td>1</td>
<td>Singing</td>
<td>.945</td>
</tr>
<tr>
<td>8</td>
<td>Singing</td>
<td>.849</td>
</tr>
<tr>
<td>22</td>
<td>Singing</td>
<td>.773</td>
</tr>
<tr>
<td>11</td>
<td>Composing</td>
<td>.912</td>
</tr>
<tr>
<td>25</td>
<td>Composing</td>
<td>.878</td>
</tr>
<tr>
<td>18</td>
<td>Composing</td>
<td>.783</td>
</tr>
<tr>
<td>4</td>
<td>Composing</td>
<td>.760</td>
</tr>
<tr>
<td>13</td>
<td>Moving</td>
<td>.893</td>
</tr>
<tr>
<td>27</td>
<td>Moving</td>
<td>.891</td>
</tr>
<tr>
<td>20</td>
<td>Moving</td>
<td>.803</td>
</tr>
<tr>
<td>6</td>
<td>Moving</td>
<td>.788</td>
</tr>
<tr>
<td>5</td>
<td>Listening</td>
<td>.918</td>
</tr>
<tr>
<td>19</td>
<td>Listening</td>
<td>.894</td>
</tr>
<tr>
<td>12</td>
<td>Listening</td>
<td>.862</td>
</tr>
<tr>
<td>26</td>
<td>Listening</td>
<td>.808</td>
</tr>
<tr>
<td>9</td>
<td>Playing</td>
<td>.837</td>
</tr>
<tr>
<td>2</td>
<td>Playing</td>
<td>.795</td>
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<td>23</td>
<td>Playing</td>
<td>.556</td>
</tr>
<tr>
<td>16</td>
<td>Playing</td>
<td>.353</td>
</tr>
<tr>
<td>17</td>
<td>Reading</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Reading</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Reading</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Reading</td>
<td></td>
</tr>
</tbody>
</table>

number of items and the sample size (Sijtsma, 2009), McDonald’s omega coefficient (.984) was also calculated, along with the average variance extracted (AVE) of the questionnaire (.685), which was above the established cut-off value of .50 (Zumbo, Gadermann, & Zeisser, 2007). These results attest to the internal consistency of the CAMU.

The Kaiser–Meyer–Olkin measure of sampling adequacy (KMO = .905) and Bartlett’s test of sphericity ($\chi^2_{(378)} = 21432.575, p < .000$) allowed us to reject the hypothesis of a diagonal correlation matrix. We therefore proceeded to conduct the exploratory factor analysis, the results of which are presented in Table 3.
### Table 4. Sex-related differences in the dimensions of musical self-concept.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Sex</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singing</td>
<td>Male</td>
<td>492</td>
<td>3.77</td>
<td>1.451</td>
<td>−7.734</td>
<td>.000***</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>540</td>
<td>4.43</td>
<td>1.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playing</td>
<td>Male</td>
<td>492</td>
<td>4.82</td>
<td>.87</td>
<td>3.884</td>
<td>.000***</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>540</td>
<td>4.60</td>
<td>.91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading</td>
<td>Male</td>
<td>492</td>
<td>4.69</td>
<td>1.02</td>
<td>−1.981</td>
<td>.048*</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>540</td>
<td>4.81</td>
<td>.92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Composing</td>
<td>Male</td>
<td>492</td>
<td>3.99</td>
<td>1.24</td>
<td>5.984</td>
<td>.000***</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>540</td>
<td>3.53</td>
<td>1.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Listening</td>
<td>Male</td>
<td>492</td>
<td>4.32</td>
<td>1.28</td>
<td>1.131</td>
<td>.258</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>540</td>
<td>4.23</td>
<td>1.28</td>
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<td>Moving</td>
<td>Male</td>
<td>492</td>
<td>2.87</td>
<td>1.25</td>
<td>−9.246</td>
<td>.000***</td>
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<td>Female</td>
<td>540</td>
<td>3.62</td>
<td>1.35</td>
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</tr>
<tr>
<td>General</td>
<td>Male</td>
<td>492</td>
<td>4.93</td>
<td>.74</td>
<td>1.572</td>
<td>.116</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>540</td>
<td>4.85</td>
<td>.82</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05 ** p < .01, *** p < .001

A seven-factor composite solution was extracted, with a percentage of total variance explained of 76.996%. The seven dimensions, which conceptually correspond to those originally proposed by Vispoel (1993c, 2003), are clearly differentiated. Whether or not this structure remains following confirmatory factor analyses has yet to be verified.

The second research question concerned mean differences across genders on the musical self-concept factors. Table 4 shows the sex-related differences in musical self-concept observed in the responses given to the CAMU.

The data revealed significant differences between men and women in all the scales, with the exception of listening to music and general musical ability. Women scored significantly higher in the ability to sing, ability to read music and ability to create movements to music scales. Men scored significantly higher in the ability to play and ability to compose scales.

Next, to address the third research question, concerning the criterion validity of the CAMU based on previous research, correlation analysis between musical self-concept, other self-concept dimensions and causal attributions was performed. Table 5 presents the correlations observed between the variables.

Statistically significant correlations were observed between musical self-concept and general self-concept, and, more intensely, between musical self-concept and academic-verbal self-concept. Significant correlations were also found between the causal attributions of success and musical self-concept. These correlations were positive in the case of internal attributions (ability, effort) and negative in the case of external attributions (luck and task difficulty). In other words, stronger attributions of success to effort and ability are associated with greater musical self-concept, whereas this relationship is inverted for attributions of success to luck or task difficulty.

Correlations between musical self-concept and attributions of failure were also carried out, the negative correlation of the internal attribution ability ($r = -.209***$) being the most significant result.

As stated below in the discussion, these results are consistent with those found in previous research studies using other musical self-concept measurement instruments, and therefore support the criterion validity of the CAMU.
Correlations between musical self-concept, verbal self-concept and causal attributions of success.

<table>
<thead>
<tr>
<th></th>
<th>General musical ability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal self-concept</td>
<td>.659 (*** )</td>
</tr>
<tr>
<td>General self-concept</td>
<td>.148 (*** )</td>
</tr>
<tr>
<td>Attribution to effort</td>
<td>.091 (** )</td>
</tr>
<tr>
<td>Attribution to ability</td>
<td>.180 (*** )</td>
</tr>
<tr>
<td>Attribution to luck</td>
<td>−.128 (*** )</td>
</tr>
<tr>
<td>Attribution to task difficulty</td>
<td>−.165 (*** )</td>
</tr>
<tr>
<td>Support from parents</td>
<td>.082 (** )</td>
</tr>
<tr>
<td>Support from teachers</td>
<td>.064 (*)</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01, ***p < .001

Discussion

The analysis of the discriminatory capacity of each item gave satisfactory results as regards mean, standard deviation, asymmetry and kurtosis. The exploratory factor analysis clearly revealed the seven factors proposed in the reference instrument. Both the Cronbach’s alpha and the composite reliability and average variance extracted indexes attested to the measure’s internal consistency.

The sex differences observed are consistent with the results reported by previous research, albeit with some nuances. Since the measurement instruments used were different, and no data regarding sex differences in the individual dimensions was provided in those studies, it is difficult to compare results. The reference works for this study were those conducted using a questionnaire that measures self-perceptions of ability and interest in different domains, and which found that girls scored higher than boys for reading, dance and music (Austin & Vispoel, 2000; Eccles et al., 1993; Forte & Vispoel, 1995; Marsh, Craven & Debus, 1999; Vispoel & Forte, 1994; Vispoel & Forte, 2000; Wigfield & Eccles 1994; Wigfield et al. 1997). Similar results were found using another instrument based on the MUSPI (Bartel, 1996), which observed better self-perceptions among women, despite the fact that these were not reflected in general music ability scores. In other words, the data do not fully coincide and it is likely that the differences perceived between the sexes are not real. Nevertheless, if boys’ lower general self-perception were to be confirmed, along with this construct’s close relationship with commitment to musical ability, then educators’ aim should be to foster the best and most reasonable self-perception possible.

In this sense, the criterion validity of the questionnaire cannot be either confirmed or rejected, since the discrepancies observed may be attributed to differences between the musical self-concept of the general population (on which previous studies mainly focused) and the sample group in our study, or alternatively to the use of different measurement instruments. When correlations with the other dimensions of self-concept were analyzed, however, the results corroborated the measure’s criterion validity: the findings revealed a significant correlation between musical self-concept and verbal-academic self-concept. Indeed, this correlation was even more intense than that observed in previous studies (Vispoel, 1994), conducted using the MUSPI and the SDQ II and III, and was accompanied by another significant, albeit less intense, correlation between musical self-concept and general self-concept.

Future research should compare the correlations observed between general and musical self-concept in mid-level and advanced-level students, with higher correlations being expected in the latter group as more importance will logically be attached to being good at music among those who hope to become professional musicians in the future.
As regards the correlations found between causal attributions and musical self-concept, as in previous works (Arnold, 1997; Asmus, 1986; Austin & Vispoel, 1998; Bartel, 1996; Legette, 1998; McPherson & McCormick, 2000; Pintrich & Schunk, 1996), the results indicate a positive correlation between musical self-concept and the most adaptive attributions such as effort and ability, and a negative correlation between musical self-concept and maladaptive attributions such as luck, task difficulty (for attributions of success) and ability (for attributions of failure). As correlations for attributions of success and failure were carried out separately, the results showed that ability had negative correlation with music self-concept for attributions of failure.

Therefore, the worst situation for musical self-concept arises when people attribute their failures to lack of ability. It is thus important for teachers to foster healthy attributions among their students, highlighting the importance of effort as the most desirable attribution (both for attributions of success and failure).

In relation to future research, other studies with more pragmatic or conceptual objectives (carrying out confirmatory analysis and structural models) are pending. These studies could be carried out based on the successful validation of the present questionnaire. We also coincide with Vispoel (2003) in our belief that musical self-concept measurement instruments require further development and should be expanded to include new dimensions to measure subjects’ perception of their sense of rhythm, conducting skills and ability to improvise and sight-read, depending on the type of sample being analyzed. Similarly, future research should also focus on developing a questionnaire to measure musical self-concept in children aged 12 and under, since this would be of great use.

In conclusion, we should underscore once again the importance of the CAMU as a validated measurement instrument that can be used in future cross-cultural studies or comparative research between different countries.

**Funding**

This article was written within the framework of the 2015 University of the Basque Country project (EHUA 15/15) entitled “School adjustment and engagement in secondary education in accordance with students’ individual characteristics and social context”.

**References**


Appendix 1. Items of the Musical Self-Concept Questionnaire (CAMU).

1. I am good at singing (SING)
2. I find it hard to play a musical instrument (PLAY)
3. I am good at reading music (RE)
4. I find it hard to create/compose music (COM)
5. I am good at identifying characteristics of music by ear (LIST)
6. I have never been very good at creating dance movements to music (MOV)
7. I am confident in my ability to perform most music-related activities (GEN)
8. I have never been very good at singing (SING)
9. I find it easy to play a musical instrument (PLAY)
10. I have never been good at reading music (RE)
11. I am good at composing/creating music (COM)
12. I find it hard to identify characteristics of music by ear (LIST)
13. I am good at creating dance movements to music (MOV)
14. I find most music-related activities hard (GEN)
15. I am good at singing (SING)
16. I have trouble playing a musical instrument (PLAY)
17. Reading music is something I find easy (RE)
18. I have never been good at composing/creating music (COM)
19. I am skilled at identifying characteristics of music by hearing (LIST)
20. It is hard for me to create dance movements to music (MOV)
21. I find most music-related activities easy (GEN)
22. I find it hard to sing (SING)
23. I am good at playing a musical instrument (PLAY)
24. It is hard for me to read music (RE)
25. I create/compose music well (COM)
26. I have never been very good at identifying characteristics of music by hear (LIST)
27. Creating dance movements to music is something I’m good at (MOV)
28. I have never been very good at most music-related activities (GEN)

*GEN = General musical self-concept; SING = Singing; COM = Composing; LIST = Listening; RE = Reading; PLAY = Playing; MOV = Moving.

Anexo 1. Ítems del Cuestionario de Autoconcepto Musical (CAMU).

1. Soy bueno/a cantando (CAN)
2. Tocar un instrumento musical me resulta difícil (TOC)
3. Tengo habilidad para leer música (LE)
4. Me es difícil crear/componer música (COM)
5. Identificar características de la música de oído es algo que se me da bien (ESC)
6. Nunca he sido muy bueno/a creando movimientos de danza para la música (DAN)
7. Tengo confianza en mi habilidad para la mayor parte de actividades relacionadas con la música (GEN)
8. Nunca he sido muy bueno/a cantando (CAN)
9. Tocar un instrumento musical me resulta fácil (TOC)
10. Nunca he sido muy bueno/a leyendo música (LE)
11. Soy bueno/a componiendo/creando música (COM)
12. Me resulta difícil identificar características de la música de oído (ESC)
13. Crear movimientos de danza para la música es algo que se me da bien (DAN)
14. Tengo dificultades para realizar la mayor parte de las actividades relacionadas con la música (GEN)
Anexo 1. (Continued)
15. Cantar es algo que se me da bien (CAN)
16. Tengo dificultades a la hora de tocar un instrumento musical (TOC)
17. Soy bueno/a leyendo música (LE)
18. Nunca he sido muy bueno componiendo/creando música (COM)
19. Soy habilidoso/a a la hora de identificar características musicales de oído (ESC)
20. Me resulta difícil crear movimientos de danza para la música (DAN)
21. Se me dan bien la mayor parte de las actividades relacionadas con la música (GEN)
22. Me resulta difícil cantar (CAN)
23. Soy bueno/a tocando un instrumento musical (TOC)
24. Me resulta difícil leer música (LE)
25. Tengo habilidad para crear/componer música (COM)
26. Nunca he sido muy bueno/a a la hora de identificar características de la música de oído (ESC)
27. Tengo habilidad para crear movimientos de danza para la música (DAN)
28. Nunca he sido muy bueno/a en la mayor parte de las actividades relacionadas con la música (GEN)

*GEN = Autoconcepto musical General; CAN = Cantar; COM = Componer; ESC = Escuchar; LE = Leer; TOC = Tocar; DAN = Danzar.

Appendix 2. Items of the Causal Attributions Scale.
1. When I play/sing successfully in a concert or audition, it is thanks to my effort
2. If I play/sing badly in a concert or audition, it is a question of luck
3. When I play/sing successfully in a concert or audition, it is thanks to my skill or talent
4. If I play/sing badly in a concert or audition, I attribute it to the difficulty of the piece
5. When I play/sing successfully in a concert or audition, it is a question of luck
6. If I play/sing badly in a concert or audition, I attribute it to my lack of effort
7. When I play/sing successfully in a concert or audition, it is because the piece is easy
8. If I play/sing badly in a concert or audition, I attribute it to my lack of skill or talent
9. I think that the success achieved in music until now is thanks to parental support
10. I think that the success achieved in music until now is thanks to my teachers’ support

Anexo 2. Ítems de la Escala de Atribuciones Causales.
1. Cuando toco/canto con éxito en un concierto o en una audición es debido a mi esfuerzo
2. Si toco/canto mal en un concierto o en una audición lo achaco a la mala suerte
3. Cuando toco/canto con éxito en un concierto o en una audición es debido a mi habilidad o talento
4. Si toco/canto mal en un concierto o en una audición lo achaco a la dificultad de la obra
5. Cuando toco/canto con éxito en un concierto o en una audición es debido a la buena suerte
6. Si toco/canto mal en un concierto o en una audición lo achaco a mi falte de esfuerzo
7. Cuando toco/canto con éxito en un concierto o en una audición es debido a que la obra es fácil
8. Si toco/canto mal en un concierto o en una audición lo achaco a mi falte de habilidad o talento
9. Creo que los éxitos conseguidos hasta el momento en la música se deben en gran medida al apoyo de mis padres
10. Creo que los éxitos conseguidos hasta el momento en la música se deben en gran medida al apoyo de mis profesores