

Learning Styles of Undergraduate Musical Students Attending Music College in Thailand

Estilos de aprendizaje de alumnos universitarios de Música en Tailandia

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Abstract

Some previous studies postulate that every individual has a different learning style. Students have preferences for the ways in which they receive information. One of the most challenges that music educator in Thailand face today is improving the level of music student satisfaction with the curriculum and learning environment. To determine whether a particular teaching method might enhance student satisfaction with the learning process, a learning preferences survey linked to sensory modalities was given to music students of Undergraduate Studies at College of Music Mahidol University, Thailand. The survey called VARK (an acronym for Visual, Aural, Read-Write, and Kinesthetic) was applied in order to identify student's preferences for particular modes of information presentation. The purpose of this descriptive study was thus to determine the learning style and measure the distribution of learning preference mean scores of the music students and note any significant differences among classes and gender determined using 348 participants from the Mahidol University College of Music, Thailand, in 2008-2009. According to the VARK questionnaire, students were divided into five groups (visual, auditory, read-write, kinesthetic, and multimodal learners). The unimodality preference was 33.9 % and multimodality was 66.1 %. Among the students who preferred one mode of information presentation, 15.3 % were kinesthetic, 62.7 % were auditory, 10.2 % were visual, and 11.9 % were read-write learners, respectively. Some students preferred multiple modes: bimodal (26.4 %), trimodal (27.3 %), and quadmodal (12.4 %), respectively. Music students prefer aural learning at a higher percentage than other modes. Inter-class differences varied while gender differences were not significant. Introducing the VARK survey can provide a vehicle for self-knowledge and to explore opportunities for making the music educational experience both more productive and enjoyable for students and faculty members. Knowing the music students preferred learning modes can: (1) help provide instruction tailored to the student's individual preferences, (2) overcome the predisposition to treat all music students in a similar way, (3) motivate teachers to move from their preferred mode(s) to using others, and (4) develop appropriate learning approaches and explore opportunities so that music educators will be able to make the educational experience more productive.

Key words: Learning Modes. Visual. Auditory. Read/Write. Kinesthetic. Music Education.

Resumen

Algunos estudios previos postulan que cada individuo posee un diferente estilo de aprendizaje. Los estudiantes tienen preferencias en los modos de presentación de la información. En la actualidad, uno de los retos más grandes que afrontan los educadores musicales de Tailandia es mejorar el nivel de satisfacción del estudiante en relación al currículum y al contexto de aprendizaje. Con el fin de determinar si un método particular de enseñanza podría aumentar dicha satisfacción, se administró a estudiantes de Pregrado en el College of Music Mahidol University de Tailandia un cuestionario de preferencias de aprendizaje en relación a las modalidades

sensoriales. Un cuestionario, denominado VARK (abreviación de Visual, Aural, Lecto-Escritor y Kinestésico), fue aplicado para identificar las preferencias de los estudiantes sobre los modos de presentación de información. El propósito de este estudio descriptivo fue determinar el estilo de aprendizaje, medir la distribución de las puntuaciones de los estudiantes de música respecto a sus preferencias de aprendizaje y determinar las diferencias habidas entre clases y género. Los participantes fueron 348 alumnos de Mahidol University College of Music, Tailandia, durante el curso 2008-2009. De acuerdo al cuestionario VARK, se dividió a los estudiantes en cinco grupos (visual, auditivo, lectura-escritura, kinestésico y multimodal). El porcentaje de estudiantes que prefirieron un solo modo de presentación de información fue del 33,9%, mientras que el 66,1% prefirieron un modo multimodal. De los estudiantes del modo unimodal, el 15,3% prefirieron el modo kinestésico, 62,7% el modo auditivo, 10,2% el modo visual y 11,9% el modo lecto-escritor. Algunos estudiantes prefirieron modos múltiples de presentación de información: bi-modal (26,4%), tri-modal (27,3%) y cuatri-modal (12,4%). Los estudiantes de música prefieren un modo auditivo en un mayor porcentaje que otros modos. Las diferencias entre clases variaron mientras que las diferencias de género no fueron significativas. El cuestionario VARK puede constituir un vehículo de auto-conocimiento, así como para explorar oportunidades para hacer la experiencia educativa en música más productiva y agradable tanto para estudiantes como para profesores. Conocer los modos de aprendizaje preferidos por los estudiantes puede: 1) ayudar a adaptar la enseñanza a los modos preferidos del estudiante; 2) superar la predisposición de tratar por igual a todos los estudiantes de música; 3) motivar a los profesores a cambiar sus modos preferidos por otros; y 4) desarrollar enfoques apropiados de enseñanza y explorar oportunidades para que los educadores musicales puedan ser capaces de hacer la experiencia educativa más productiva.

Palabras clave: Modos de aprendizaje, Visual, Auditivo, Lecto-escritor, Kinestésico, Educación Musical.

1. Introduction

Some previous studies proposed that every individual has a different learning style (Collins, 2004; Murphy *et al.*, 2004; Winn and Grantham, 2005). Students have preferences for the ways in which they receive information. Learning style is defined as the manner in which and the conditions under which learners most efficiently and effectively perceive, process, store, and recall what they are attempting to learn (Rourke *et al.*, 2002). The field of learning styles is complex, with over 70 different learning style models identified in a recent review (Coffield *et al.*, 2004). These models represent numerous assumptions (such as learning styles are fixed, flexibly stable, contextually determined, or even nonexistent) and focus on different aspects of the learner (cognitive personality style, information processing style, or instructional preferences).

One of the most challenges that music educator in Thailand face today is improving the level of music student satisfaction with the curriculum and learning environment. It also presents a challenge for instructors to meet the educational needs of all students. Specifically, student motivation and performance improves when instruction is adapted to student learning preferences and styles (Miller, 2001). Because students have significantly different learning styles, it is the responsibility of the instructor to address this diversity of learning styles among students and develop appropriate learning approaches (Tanner and Allen, 2004). One characterization of

learning styles is to define the learners' preferred mode of learning in terms of the sensory modality by which they prefer to take in new information (Lujan and DiCarlo, 2006).

One way to improve student motivation and performance is to adapt teaching approaches to meet the different learning style preferences of music students. Knowing the music students' learning style preferences will aid in the development of the most effective teaching approaches (Tanner and Allen, 2004). There are many methods available for assessing learning styles, with each method offering a distinctly different view of learning style preferences (Lujan and DiCarlo, 2006). The method used in the present study was adopted from Fleming (2007) and Lujan and DiCarlo (2006). It defines the preference in learning style based on the sensory modality in which a student prefers to take in new information. The three major sensory modalities are defined by the neural system that is preferred when receiving information: visual (V), aural (A), and kinesthetic (K), collectively known as VAK (Fleming, 2007). In other words, VAK categorizes student learning based on the sensory preference of the individual. Thus VAK is a perceptual, instructional preference model that categorizes learning by sensory preferences (Lujan and DiCarlo, 2006). In 1995, Fleming expanded VAK to VARK to include reading/writing (R, a mixed sensory modality that is not assessed under VAK) as an additional type of mixed sensory learning modality. Even though student learners are capable of using all of these sensory modes of learning, each individual has a unique preference, or set of preferences, in which one mode is often dominant and preferred (Coffield *et al.*, 2004).

Learners with a single learning style preference are referred to as unimodal, whereas others preferring a variety of styles are known as multimodal. Of the multimodal learners, there are sub classifications for bi-, tri-, and quadmodal learners, who prefer to use two, three or four styles, respectively (Wehrwein *et al.*, 2007). Whether tasks or activities are presented to appeal to auditory, visual, tactile, or kinesthetic sense (modality preference) is an important consideration for educators (Carbo, 1983). We were thus interested in assessing the preferred learning styles of undergraduate music major to determine their learning styles. Having this information may assist in the development and implantation of specific teaching approaches that would maximize student motivation and learning by tailoring instruction to student needs. In addition, the result of our study could be used for developing appropriate learning approaches for other universities which have music program.

2. Method

2.1 Population and sample

Participants in this study consisted of all music students who studied in undergraduate program of music at Mahidol University College of Music, Thailand. A total of 348 students completed the questionnaire.

2.2 Design

The VARK questionnaire developed by Fleming (2007) was used to identify one facet of music student learning styles: the sensory modality by which they prefer to take in information. The VARK questionnaire is a 16-item, self-report, multiple-choice questionnaire that can be completed in 10-15 min. The following are internet links to the VARK homepage (<http://www.vark-learn.com/english/index.asp>) and questionnaire (<http://www.vark-learn.com/english/page.asp?p=questionnaire>). We administered the VARK questionnaire as a hard copy to all music students of undergraduate program in music at Mahidol University College of Music, Thailand, to determine their preferred modes of information presentation.

2.3 Procedure

This study was performed at the Mahidol University College of Music, Salaya, Nakhonpathom, Thailand, in 2008-2009. The Thai version of the VARK questionnaire was administered at the beginning of the second semester to music students to determine their preferred mode(s) of learning. All 348 music students were invited to participate in the study. The purpose of the study was explained to the students. All 348 music student were completed the questionnaire. According to the VARK questionnaire, each question aims to place respondents in a “learning” situation. The respondents are permitted to omit a question or to choose two or more option if appropriate. Questionnaires were evaluated on the basis of previously validated scoring instructions and a chart (Fleming, 2007).

2.4 Analysis

Students were allowed to choose multiple answers per item to adequately describe their preferred response(s) to the situations presented. The total number of student responses was tallied for each of the four sensory modalities (V, A, R, and K) and for all possible combinations of the modalities (e.g., VA, VRK, etc.). The scoring algorithm was then applied to identify each student's modality preferences. The number of students who preferred each mode of learning was divided by the total number of responses to determine the percentage of students in each category. Data are reported as percentages of students in each category of learning style preference.

3. Results

According to the VARK questionnaire, students were divided into five groups (visual, aural, read/write, kinesthetic, and multimodal learners). Only 33.9% of the students preferred a single mode of information presentation (either visual, auditory, reading/writing, or kinesthetic) (see Figure 1).

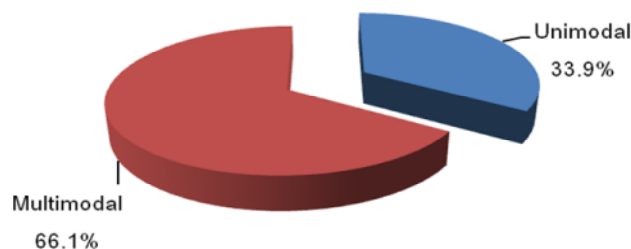


Fig. 1. Distribution of learning style of the music students.

Of the 348 students (66.1% of all students) who preferred multiple modes of information presentation, some students preferred two modes (bimodal, 26.4%), some students preferred three modes (trimodal, 27.3%), and some students preferred four modes (quadmodal, 12.4%), respectively.

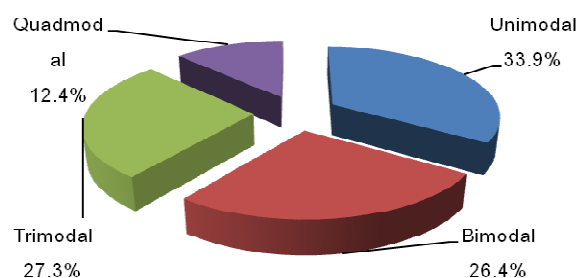


Fig. 2. Percentage of students who preferred two, three, or four modes of information presentation.

Figure 2 presents the percentages of students who preferred two, three, or four modes of information presentation. Obviously, of the students who preferred four modes of information presentation, all students preferred visual, auditory, reading/writing, and kinesthetic (12.4%). Of the 118 students (33.9% of all students) who preferred only one mode of information presentation, some students preferred visual (10.2%), some students preferred auditory (62.7%), some students preferred reading/writing (11.9%), and some students preferred kinesthetic (15.3%), respectively (see Figure 3).

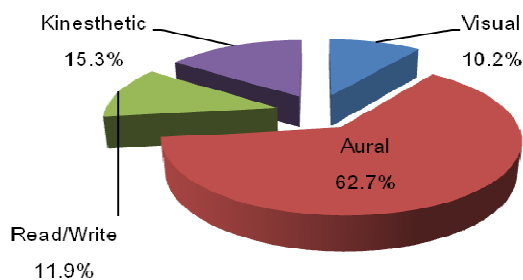


Fig. 3. Percentage of students who preferred one mode of information presentation.

Of the 92 students (26.4% of all students) who preferred two modes of information presentation, some students preferred V and A (20.7%), some students preferred V and R (3.3%), some students preferred V and K (6.5%), some students preferred A and R (27.2%), some students preferred A and K (39.1%) and some students preferred R and K (3.3%), respectively (see Figure 4).

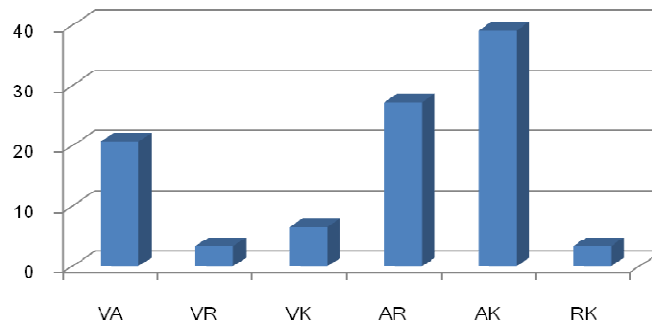


Fig. 4. Percentage distribution of Bi-modal learning styles.

Of the 95 students (27.3% of all students) who preferred three modes of information presentation, some students preferred V, A and R (34.7%), some students preferred V, A and K (18.9%), some students preferred A, R and K (37.9%), and some students preferred V, R and K (8.4%), respectively (see Figure 5).

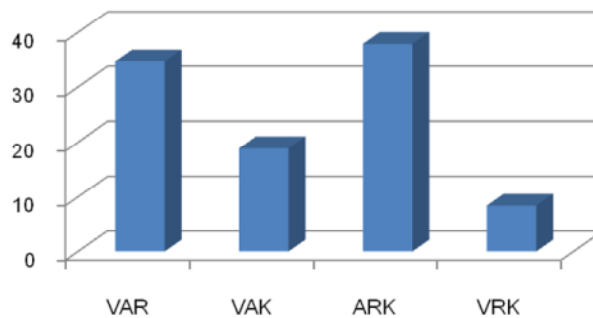


Figure 5. Percentage distribution of Tri-modal learning styles.

4. Discussion

The present study administered the VARK questionnaire to undergraduate music students to determine their preferred modes of information presentation. Three hundred forty-eight students

from College of Music, Mahidol University, Thailand, were completed questionnaire. Only 33.9% of the students preferred a single mode of information presentation (either visual, auditory, reading/writing, or kinesthetic). However, most students (66.1%) preferred multiple modes of information presentation. These students had a balanced set of preferences, which means that they prefer information to arrive in a variety of modes. They may benefit from active learning strategies over the traditional lecture format. Our result correspond to Lujan and DiCarlo's study showing that active learning strategies reach all types of learners in the visual, auditory, reading/writing, and kinesthetic schemes. In contrast, the traditional lecture format assumes that all students are auditory learners and acquire the same information presented orally at the same without dialogue with the presenter (Lujan and DiCarlo, 2006).

Some previous studies have also shown that students learn better by using active learning strategies, because active learning strategies reach all types of learners (Bonwell and Elson, 1991; Lujan and DiCarlo, 2006). Active learning strategies promote thinking through reasoning an improve problem-solving and decision-making skills (Lujan and DiCarlo, 2006). In addition, active learning strategies can be applied in large classes. That is, discussion in class, cooperative learning exercise, role play, simulations, models, debates, and games are active learning strategies that can be used in larger classes (Bonwell and Eison, 1991). These activities also promote group work generate high levels of motivation and enthusiasm (Lujan and DiCarlo, 2006).

Additionally, several studies revealed that the VARK questionnaire can motivate teachers to move from their preferred mode(s) to using others. They will be able to reach more students because of the better match between teacher and learner styles (Armstrong and Parsa-Parsi, 2005; Bergman and Fors, 2005; Collins, 2004; Forrest, 2004; Gordon, 1998; Laight, 2004; Lang *et al.*, 1999; Lewthwaite and Dunham, 1999; Miller, 2001; Pillemer *et al.*, 2003; Sandmire and Boyce, 2004; Veeman *et al.*, 2003). Knowing the students preferred modes can provide a focus for developing strategies that are tailored for individuals. This will help to overcome the predisposition of many educators to treat all students in a similar way (Fleming, 1995).

Previous studies stated that knowing the learning style of students is a valuable skill in education. Knowledge of learning styles may help educators identify and solve learning problems among students, thus helping their students to become more effective learners (Baykan and Nacar, 2007; Cooper, 2007; Fleming and Mills, 1992). Based on our findings, music students appear to have stronger aural learning preferences (see Figure 3). The preference, coupled with strong read/write preference scores (Aural-Kinesthetic; 39.1%), would suggest that the lecture presentation heighted with pictures, diagrams, PowerPoint presentations, handouts, or guided

notes would satisfy the needs of most music students (see Figure 4). Lujan and DiCarlo (2006) stated that multimodal students prefer information to arrive in a variety of modes. In the present study, 66.1% of the students exhibited multimodality, indicating that they use a combination of learning styles when learning information. These findings are compatible with other studies (Lujan and DiCarlo, 2006; Baykan and Nacar, 2007; Slater *et al.*, 2007; Wehrwein *et al.*, 2007; Dinakar *et al.*, 2005; Murphy *et al.*, 2004) that have used the VARK questionnaire as a learning style inventory. Dinakar (2005) found multimodality to be 58.0% in the caregivers of asthmatic children; Lujan and DiCarlo (2006) found it to be 63.8% in first-year medical students; Erku (2006) found it to be 53.2% in medical students in their first 3 year; and Murphy (Murphy *et al.*, 2004) found it to be 56.0% in dental students, respectively. The present result shows that multimodal students (66.1%) are more successful and multimodal percentage in our study is higher than that of other studies. However, further studies on music students in other universities will better explain this difference.

Lujan and DiCarlo's study stated that most students are able to learn effectively as long as the teacher provides a blend of visual, auditory, reading/writing, and kinesthetic activities. However, some students prefer one of the modalities over the other three so strongly that they struggle to understand the subject matter unless special care is taken to present it in their preference mode (Lujan and DiCarlo, 2006). To meet these needs, teaching should be multisensory and filled with variety. With active learning strategies, visual learners are targeted by the presence of models and demonstrations (Chan *et al.*, 1991; DiCarlo *et al.*, 1998; Rodenbaugh *et al.*, 1999). In the same way, auditory learners can be reached through discussion (Cortright *et al.*, 2005; Rao and DiCarlo, 2000), collaborative testing (Cortright *et al.*, 2003; Rao *et al.*, 2002), debate (Scannapieco, 1997), games (Bailey *et al.*, 1999; Collins *et al.*, 1999; Howard *et al.*, 2002; Mierson, 1999; Moy *et al.*, 2000; Odenweller *et al.*, 1998), and answering questions (DiCarlo and Collins, 2001). To achieve this goal, it becomes important to use active learning strategies (Rao and DiCarlo, 2001). Some investigators have reported an increase in students' achievement with the use of simulations and games, and students usually expressed positive feeling about the experiences (Wolfe, 1985). Thus, active learning strategies may be superior to the traditional lecture format in promoting thinking, reasoning, problem-solving, and decision-making skills, respectively (Lujan and DiCarlo, 2006).

5. Limitation of the study

The VARK self-reported questionnaire has not been statistically validated, and this represents a limitation to this study. Educational investigators have not been able to find satisfactory statistical method to validate the four-factor model that is the basis of VARK (Fleming, 2007). Nevertheless, a strong point of the VARK questionnaire is that its questions and options are drawn from real-life situations and respondents identify with the results that they receive—they affirm the face validity of the tool (Slater *et al.*, 2007; Fleming, 2007). Therefore, it is important to note that although the number of samples is very large, self-reported data may be biased because all data are self-selected; there is no randomization or balanced selection (Lujan and DiCarlo, 2006; Slatter *et al.*, 2007; Fleming, 2007). However, although self-perceptions are not always reliable, these data support the validity of the VARK questionnaire (Fleming, 2007).

Finally, introducing the VARK survey can provide a vehicle for self-knowledge and to explore opportunities for making the music educational experience both more productive and enjoyable for students and faculty members. Knowing the music students preferred learning modes can: (1) help provide instruction tailored to the student's individual preferences, (2) overcome the predisposition to treat all music students in a similar way, (3) motivate teachers to move from their preferred mode(s) to using others, and (4) develop appropriate learning approaches and explore opportunities so that music educators will be able to make the educational experience more productive.

6. Conclusion

The Thai version of VARK questionnaire for musician identifies music student's preferences for particular modes of information presentation. Knowing the music students' preferred modes can enrich the learning experience. Since music student have significantly different learning style, it is the responsibility of the music instructor to address this study diversity of learning styles among the music students and develop appropriate learning approaches. In addition, the result of this study could be used for developing appropriate learning approaches for other universities which have music program.

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