A Study on the Practice of Course Offerings and Teachers' Knowledge and Skills for *Multimedia Music* within the 12-Year Basic Education

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Summary

In Taiwan, a growing emphasis on information technology (IT) integrated instruction can be found following the implementation of the Grades 1-9 Curriculum for elementary and junior high schools in 2001 in which teachers have been encouraged to include IT related matters into their teaching plans. This trend towards IT instruction can be seen even more clearly at the senior high school level, where the course *Application of Multimedia in Music* has been offered either as an elective or as part of the required topics in *Arts in Life*. At present, *Multimedia Music* is being introduced as an elective within the arts curriculum of the 12-year Basic Education framework.

IT integrated instruction has been ongoing for many years. However, it has exerted limited impact on music instruction in school due to the factors of time, space, funding, and resources. Furthermore, *Multimedia Music* is a creative-oriented course, but music creation has been difficult to carry out in practice. Thus, the ratio of music classes taught involving creativity-based instruction is quite low, regardless of the education level.

In light of the doubts regarding the feasibility of *Multimedia Music*, this study compiled various problems and strategies culled from related literature, after which it undertook an investigation into what it considers the key factor of success -- the teachers' own knowledge and skills. Research questions were as follows:

1. What are the practical problems and strategies with regard to the establishment of *Multimedia Music?*

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2. How knowledge and skills are involved in the instruction of multimedia music in teachers teaching at the senior high school level? In addition, what are the differences to be found in teachers with different backgrounds?

The developmental background of *Multimedia Music* includes areas of both policy and curriculum, while the establishment of the course can be looked at from present conditions, as well as potential problems, strategies and direction. The literature points to current limitations in the areas of teacher qualifications, equipment and application in music creation, revealing a large gap between the stated ideals of the new curriculum and the reality in the classroom. The literature also shows that although teachers have adequate knowledge and ability in the areas of musical literary and hardware operations, they seldom use or integrate professional music software. In addition, research studies conducted with senior high school music teachers as their focus are quite few in number.

Based on the curricular goals and content of *Multimedia Music*, as well as research aspects found in related literature, the knowledge and skills as discussed in this study were organized into three categories: *multimedia music literacy*, *digital technology operational competency*, and *ability to use multimedia in music instruction*. Personal and school variables, in addition to their differences in the three categories among teachers, were examined. The research instrument, a self-devised questionnaire, was sent to senior high school music teachers via email by the Senior High School Music Subject Center from April to June of 2015. The survey, using a Likert type four-point rating scale for data collection, was conducted online with responses from 81 music teachers. One open-ended question was included to collect teachers' opinions and suggestions regarding the offering of *Multimedia Music*.

Results of the survey showed: (1) The overall knowledge and skills of senior high school music teachers in teaching multimedia music is above average, with teachers showing a higher degree of competency in the operation of digital technology. (2) Results in the *multimedia music literacy* category showed that teachers valued the use of multimedia tools in music instruction, but also exhibited insufficiency and differences in the application of multimedia music techniques such as looping and sound mixing in music creation. Similar results were found in the *digital technology operational competency* category where the lowest score was recorded in the familiarity of the use of mixers, synthesizers and effects. This lack of competency in the operation of professional multimedia equipment in teachers is worthy of note. (3) Teachers possessing a PhD exhibited a higher degree in their overall knowledge and skills when compared to teachers with a bachelor's or master's degree. However, due to the small sample size of this study, it is difficult to make

generalizations. Finally, teachers who fell into the categories of young, male, or working in the north of Taiwan showed overall higher mean scores. Thus, this is these teachers that should be encouraged to assist with the implementation of *Multimedia Music* in the future.

Conclusions were drawn based on the results of the study: (1) As the content of such a creative-oriented curriculum remains far removed from the content of current music classes, *Multimedia Music* should, in fact, be regarded as a "new" curriculum. Accordingly, problems at a practical level when implementing the goals of *Multimedia Music* should be considered. (2) From the related literature, certain obstacles that implementing *Multimedia Music* may face can be foreseen, including teacher qualifications -- *i.e.*, teacher capability and literacy in the realm of IT -- and equipment -- *i.e.*, the software and environment provided by the school. Therefore, during the period of curriculum development, it behooves music educators to consider ways to respond to such obstacles, as well as look for ways to introduce teacher training into the implementation of the 12-year Basic Education.

Recommendations were then offered based on advocacy, support and training. Finally, the researcher believes that it is imperative to draw up implementation strategies based on the content of *Multimedia Music*, with the establishment of music teacher information literacy indicators an important future goal.