Research on Teaching, Learning Satisfaction and Results of Free Online Wiki Education Platform of Music Collaborative Composition

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Abstract

Nowadays, systems of music composition education are limited to the one-way teaching of teachers' making lectures to learners on account of 'one-machine to one-person' pattern. Composers are also restricted to place and the number of people, so that it is difficult for them to expand their fields of composition and obtain other composers' advice

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and reflection. In addition, the teaching patterns of music education are confined to traditional ones that an individual teacher has to deal with a class of dozens of students, and the interaction and feedback among students, at the limit of present composition patterns, can hardly be interchanged but limited to an individual himself.

This research is centered on the nature of experience in music performing and focuses on the contents of music majors' compositions. In combination with the modern information technology (IT), such music composition achievements are not supposed to be confined to individuals and experts only. Rather, they should be appreciated by the public.

The research is furthermore united with the free software "*Online Wiki Education Platform of Music collaborative composition*" for music composers to work on collaborative composition. With the help of this user friendly platform, it would transform difficult codes of MIDI program to musical notes familiar to most music composers for their composition. Hence, they can work on their composition just as the way they do on staves.

In the end, the research investigates the discrepancies of learning satisfaction and learning achievements of music composition teaching under the implementation of "*Online Wiki Education Platform of Music Collaborative Composition.*" The findings show that the main factors that influence learning satisfaction are in turn system quality, teaching strategy and learning style, while those that influence learning achievements are learning satisfaction, system quality, teaching strategy and learning style.

The connotations of the findings would be provided as reference materials for academic and practical staff relevant to the research issue.

Keywords: Music Education, Wiki, Learning Satisfaction, Learning Achievements, Collaborative Composition, Cooperative Composition

1. Introduction

1.1. Research Background

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Creating is the progressive beginning for mankind, and the motivation of progress derives from their unceasing creating. Usually, when it comes to individual creating, it inevitably takes lots of time and efforts to compose a piece of work. With a view to improving the situation, public creating—the collective work integrated with everyone's efforts as well as wisdom—therefore, comes into existence. Under such circumstances, "cooperative composition" is a more sophisticated system for composing songs than traditional ones. The work of creating is divided into different parts, of which each person is in charge, and will be finally integrated into a completed work. However, Cooperative Composition is still lack of perfection, for people cannot fully develop their creative ideas but make limited contribution to their own compositions. Consequently, "collaborative composition" starts to become an innovative composition system. It enables everyone to freely work on composition and editing, uniting their ideas to be a collective work of excellence. Compared with Cooperative Composition, the advantages of Collaborative Composition are that it is easier to be accepted and that it provides immediate feedback from others (Erkens et al., 2005).

Under the trend of collaborative composition, Wiki has come into blossom within a short period of time, and become a burgeoning composition system on the Internet. Wiki provides a platform that can help most people write and edit; besides, it has the function of "version control", which can record all the process of composition for users to retrace previous steps and inspire their new ideas for later use. In this way, Wiki becomes a platform of fully-recorded hypertext. The most precious characteristic of Wiki is the spirit of equality: that is, everyone has the rights to participate in the process of composition and editing. The process of discussion and compromise offers people an opportunity to exchange their viewpoints and to accomplish the purpose of knowledge building (Erkens et al., 2005).

Nowadays, teaching with the help of information technology is the policy that educational administrations have been highly promoting. Many studies show that the forms of teaching may be changed after the implementation of information technology (Dexter, Anderson &

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Becker, 1999; Dias, 1999). The role of teacher is turned into a guide, assistant, or consultant of a teaching activity from a leader, while the role of student is transformed into the center of the activity, who can adjust his own learning in an appropriate degree (Chao, Yang, 2005).

1.2. Research Motivation

In accordance with the present patterns for music composition, composers are limited to one-on-one discussion with others about the modification and revision of their compositions; only after all the work of editing can these compositions be finally returned to their original composers. Such time-consuming process is terribly inefficient, let alone to have it work on multi-user collaborative composition.

Of all the systems of music composition education these days, they are limited to the one-way teaching of teachers' making lectures to learners on account of one-machine-to-one-person pattern. Composers are also restricted to place and the number of people, so that it is difficult for them to expand their fields of composition and obtain other composers' advice and reflection. Due to these environmental elements, learners give much less feedback to teachers, which indicates that the latter cannot provide immediate opinions or suggestions to the former, and that can restrain them from improving their skills of music composition. The lack of interactive channels among learners even results in the barrier to learning music composition. In addition, the teaching patterns of music education are confined to traditional ones that an individual teacher has to deal with a class of dozens of students, and the interaction and feedback among students, at the limit of present composition patterns, can hardly be interchanged but limited to an individual himself.

For all these reasons, this research applies the characteristics of Collaborative Composition of Wiki on the fields of music, and makes analytical thinking on music composition education. The research is centered on the nature of experience in music performing and focuses on the contents of music majors' compositions. In combination with the modern information technology, such music composition achievements are not supposed to be confined to individuals and experts only. Rather, they should be appreciated by the public (Dexter, Anderson &

Becker, 1999; Dias, 1999).

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Wiki's mature development on written words has now provided an Internet platform for most users to easily construct and share knowledge (Chao, Chang, 2005). Yet, such special features of Wiki can only be massively employed on words composition owing to the lack of assistant media and exploitative environment. Presently, MIDI (Musical Instrument Digital Interface), a text-based music format, can be easily-used and with a small-sized file, it makes music transmission easier and more convenient. That is why MIDI is extensively applied on the Internet.

Accordingly, this research tries to construct "Online Wiki Education Platform of Music collaborative composition" on the basis of Wiki's characteristics that it can offer users an opportunity to freely create and revise their compositions. In addition, it also uses Rttl (Ringing Tones Text Transfer Language) technology, transforming the codes of sol-fa syllables edited by music toolbar into MIDI files for trail version.

The research also makes an attempt to construct "Online Wiki Education Platform of Music collaborative composition" to create a platform that can be easier to carry out music composition education. Plus, it employs RSS (Really Simple Syndication) technology to have all the latest news and compositions on "Online Wiki Education Platform of Music collaborative composition" automatically deliver to composers, enabling them to effortlessly work on collaborative music composition, and raise the efficiency in music composition. Last but not the least, the research, furthermore, tries to improve the traditional one-way teaching pattern in music composition education and to enhance the interaction and feedback among teachers and learners.

1.3. Research Purpose

This research integrates previous relevant research findings, and combines MIDI and Wiki Platform used by Wikipedia to build up an easily-used, openly-equal, public-creating and public-shared environment for music composition education. "Online Wiki Education Platform of Music collaborative composition" offers music composers a chance to employ Wiki to gather up the public's creative ideas and

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wisdom, makes it easier to write and share their compositions, enables music to be no more confined to the format of MIDI and expands room for the development of music composition.

The purposes of the research are as follows:

(1) The possibility and feasibility of the application of music composition education on "Online Wiki Education Platform of Music collaborative composition"

(2) "Online Wiki Education Platform of Music collaborative composition" can provide music composers with good composition environment, and enhance the convenience of composition.

(3) To investigate the discrepancies of learning satisfaction and learning achievements of music composition teaching under the implementation of "Online Wiki Education Platform of Music collaborative composition".

2. Document Investigation

2.1. Wiki

The word "Wiki-Wiki" derives from a Hawaiian word "*wee kee wee kee*" meaning to hurry up. The initial definition of Wiki its creator, Cunningham, gave in 1995 is that "Wiki is a server software that allows its users to freely write and edit any contents on Web pages whatever Web browser they adopt. Also, Wiki can support hyperlink and help set up new pages which are linked to one another with the use of simple wording." Wiki, a website that provides a platform for collaborative composition, reflects how much information the public have acquire via continuous modifying and revising of their compositions. It includes a set of interconnected Web pages that can be freely expanded (Chuang, 2004), and a hypertext system that can save and edit any information. All Web pages are stored in a database that everyone can enter to start on effortless editing once he has a Web browser program with a table editor (Leuf & Cunningham, 2001).

Wiki has come into blossom in recent years and there are more and more Wiki websites have popped up. Of all the applications of Wiki, 'MediaWiki' developed from 'WikiMedia' is the most widely-used.

MediaWiki is an open source code, and the latest stable version is 1.7.1. Wikipedia, an encyclopedia recorded and edited by the public on the Internet, is so far the most noted for the application of MediaWiki because of its excellent adaptation and powerful functions. Hence, some scholars have made an explanation on Wiki Website that it is a website maintained by its users, and that everyone who visits it can edit any of the pages as he wishes.

Following are Wiki's characteristics:

(1) Collaborative, not only Cooperative (Chao, etc., 2005)

Wiki is a Collaborative Composition, which means that everyone is free to make contributions to the contents on the website and to work on his own composition and revising.

(2) Version Control (Chao, etc., 2005)

Since Wiki is an application of Collaborative Composition, there would certainly be many different versions of one composition due to the participation of numerous people. Therefore, it is important to control versions. In order to have its users make effective control over various versions, Wiki offers the functions of the examination and listing of all modifications on each version as well as the comparison of version.

Base on the two characteristics of Wiki, collaborative composition becomes public and much easier. Consequently, composers are able to discuss and share their opinions with most other composers at "Online Wiki Education Platform of Music Collaborative Composition", which can record their composition process for subsequent composers to consult and compare under the function of version control. With the great help from Version Control, teachers can examine students' composition contents in reference to their composition process, and furthermore conduct individual teaching, increasing their learning achievements on music composition (Tsai, etc., 2005).

2.2. Collaborative Composition

Composition is a presentation of human thinking. It is through composition that can transform one's thinking into reality. Still, composition can sometimes be a long journey for many people because there is always a limit to the scope of an individual's thinking,

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and thus one may encounter a choke point in composition.

For that reason, Cooperative Composition organizes group composition; each person is in charge of a certain section of the composition which would be integrated into one piece of work at the final step. Eventually, 'Collaborative Composition' becomes a better way of composition for now. At the original stage, 'Cooperative Composition' could only enable composers to develop their creative ideas at certain areas yet could make no contributions to others. In contrast to cooperative composition, collaborative composition can enable them to update and revise the contents on the website at will and make efforts to the compositions.

Ferdig & trammel (2004) think that Wiki plays the role of knowledge gatherer who makes composers to build up information and share their fulfillment through Collaborative Composition. However, at normal social communities, instability and uncertainty may arise due to members' moving in and out of the community. As a result, "participation" of the composers is not what Collaborative Composition needs but "Ego Involvement" (Barua, Chellapa, & Whinston, 1995). Only when they fully involve their ego in composition can they be responsible for the accumulation of information and join the work of Collaborative Composition as a member.

2.3. MIDI

MIDI (Musical Instrument Digital Interface), brought forth by a leading company, Roland Corporation, in the field of electronic music in 1984, is a standard digital interface between all kinds of electronic instruments and computer. Basically, MIDI data is no more than a collection of numbers. In terms of its functions, what it produces is "absolute music," which usually does not involve human voices, for it can only record sounds from instruments. In other words, MIDI does not take any voice sample and then record it down, so there would be no wavy curve that illustrates the flowing of voice. Instead, it records what kind of musical instrument and what note of a tune are played in the voice. Therefore, the MIDI file would be very small (as illustrated in Table 1).

The principle of MIDI is to assign numbers to every sol-fa syllable

and the length of each musical not, which means that data in MIDI file is demonstrated in a string of numbers.

Table 1 Instructions and Rttl Reference Table

	Do	Ra	Mi	Fa	So	Ra	Si
1	1	2	3	4	5	6	7
	C	D	E	F	G	A	B
2	MIDIMusic			Start on the music			
3	d = 4			4 beats each bar of a tune			
4	b = 123			Tempo of a tune is 123			
5	The number before sol-fa syllables			The length of a beat			
6	The number after sol-fa syllables			A musical scale: 5 is middle register (can be omitted);one number plus means a higher register, and vice versa			
7	P			a rest			
8				a dotted note, to extend a half beat			

2.4. Research Model of Education Training

Bostrom et al. (1990) present a complete theoretical structures of education training for information system which integrates cognitive psychology, educational psychology (Cronbach & Snowm, 1977), information system and computer science. Those who are mentioned above believe that the interaction of the three factors, target system, individual differences and training method, can influence the training outcomes of information system; namely, the factors may give rise to different outcomes of learning performance. As far as target system is concerned, it emphasizes the influence "human-machine interface" has on users' learning performance. Consequently, for the purpose of boosting learning performance, it is necessary to have an in-depth investigation on their interaction. The influences that the three factors have on training outcomes include direct influence and indirect influence with the establishment of trainee's 'mental model', and their causal relationship can be clearly illustrated on Figure 1.

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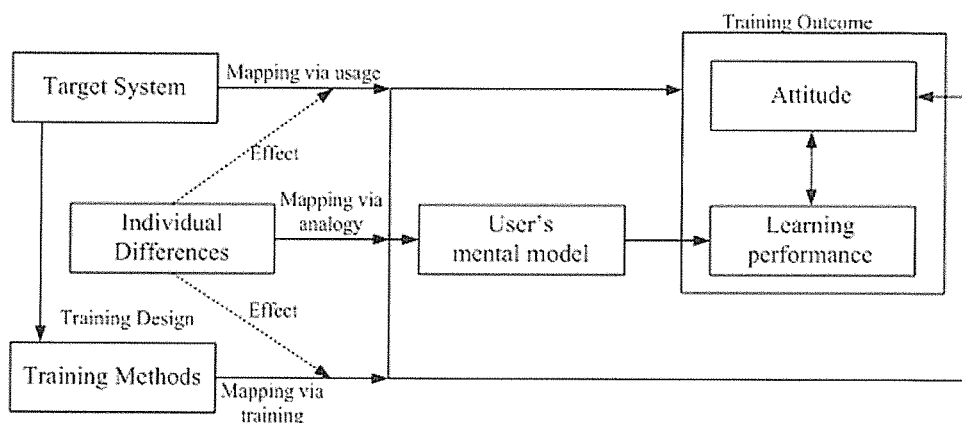Education Platform of
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Figure 1 Research Model of Education Training (Bostrom et al., 1990)

(1) Target System

Target system is the information system that users should be familiar with using in the training process; in this case, an information system can be any software, like a word processing or trial balance software. Bostrom et al. (1990) consider that the ease of use of such design of target system as human-machine interface is a crucial factor that may affect whether or not learners use a system, or there may be some indirect influence generated by users' individual differences to affect their using choice. Bostrom et al. (1990) particularly put emphasis on the influence of human-machine interface has on users because for them, user's interface is target system which provides a model for them to interact with. If the design of user's interface is far from desirable, users might be unwilling to use it. In Bostrom et al. (1990) theoretical structures, they point out the influence that target system has on learning performance, such as degree of system using, perceived usefulness and perceived ease of use.

(2)Training Method

Training method is the arranged procedure for course teaching, and Bostrom et al. (1990) demonstrate it with "Conceptual Model" and "Method Employed". The differences between both of them are respectively that the former describes how target system and software training materials are presented, which are divided into abstract and

analogical presentation, focusing on the drafting and presentation of the teaching materials. The latter puts stress on the way training employs, especially on the learning methods used during the training process, which are divided into application-based and construct-based methods. For instance, it is an application-based method employed if a learner learns how to operate software through practical case. Conversely, it is a construct-based method employed if he learns by reading software training materials, a way that stresses the importance of training.

(3)Individual Differences

Individual differences affect 'mental model' that users' have towards a system. Of all the structures, mental model represents users' ability to explain and comprehend a system structure and its internal functions (Moran, 1981). Many studies show that whether users of information systems have sound mental model for them has much to do with their accuracy of using system and learning performance (Wang, 1998). Plus, the soundness of one's mental model also plays an important part in information system training, and it can cause indirect influence of training method on training outcomes (Bostrom et al., 1988; Davis & Davis, 1990), and individual differences include users' learning styles, personal qualities, cognitive model and the ability of problem solving.

(4)Training Outcome

Training outcome consists of trainees' attitudes and learning performance on target system, and learning performance involves the using efficiency of a system, accuracy and completeness of a finished work and ability of problem solving (Staggers & Norcio, 1993). Trainees' attitudes towards target system can be directly influenced by target system and training method, learning performance can be affected by mental model, and trainees' attitudes towards target system and learning performance can work upon each other. Bostrom et al. (1990) are of the opinion that the evaluation of training outcome can be conducted at the end of or after the education training. The evaluation conducted at the end of the education training comprises the sound mental model and the using motives for target system, while the one after the education training includes continuing or stopping the use of the system. What's more, individual differences also play a crucial

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part in the training for information system, which can result in direct influence that training method has on training outcome (Bostrom et al., 1990; Davis & Davis, 1990).

(5)Mental Model

Trainee's mental model consists of their performance, explanation and comprehension of system structures, and learning can be considered a transition of mental model. For example, target system can be better understood by establishing a more complicated mental model which can be generated by three mappings as follows:

(a) Mapping via Usage: Learners can obtain their mental model simply by using target system; under the circumstances, the operating interface of target system plays a very important role. And the mental model resulted from using may be influenced by learners' individual differences.

(b) Mapping via Analogy: During this mapping process, learners' proceeding experiences accumulated by using other similar systems are essential, so those previous experiences have a significant influence on the mapping.

(c) Mapping via Training: Learners can produce their mental model by training, and such mental model generated by training can also be influenced by learners' individual differences.

The research structures of Bostrom et al. (1990) cover a wide range of areas, and there are a considerable studies working on the verification of the structures, in order to testify that the research structures of education training truly have their practicability. Therefore, this research is based on Bostrom et al. (1990) beliefs on the research structures of education training, analyzing the influences that target system, individual differences and training method have on learning performance. In the end, the research defines target system as a learning tool, like a teaching platform on the Internet; as a result, the characteristics of Internet teaching platform and the teaching strategies instructors adopt can affect mental model of learners with different learning styles, and make further influence on their learning performance.

3. Research Approach

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3.1. The Whole System Structure of the Research

Currently, in addition to enhancing the music quality by learning and listening, the creation of music nature should be emphasized in the future so that students can not only learn but also attempt to compose music in the music courses. As to music composition, it is no longer limited to individual music composition or the music editing software of single machine-single person model. Now through the online collaborate composition, a group of people can co- compose a song. Through collaborate composition, students can be more involved in music courses, and the quality of music courses can be evidently elevated. To achieve the goal, the study combines Wiki, as a platform of collaborative composition, with MIDI which records the music in text, and applies the code-switching technology of sol-fa syllables, namely Rttl, to construct a online education platform of music collaborative composition. The whole system structure of the study is shown as Figure 2.

Figure 2 The System Structure

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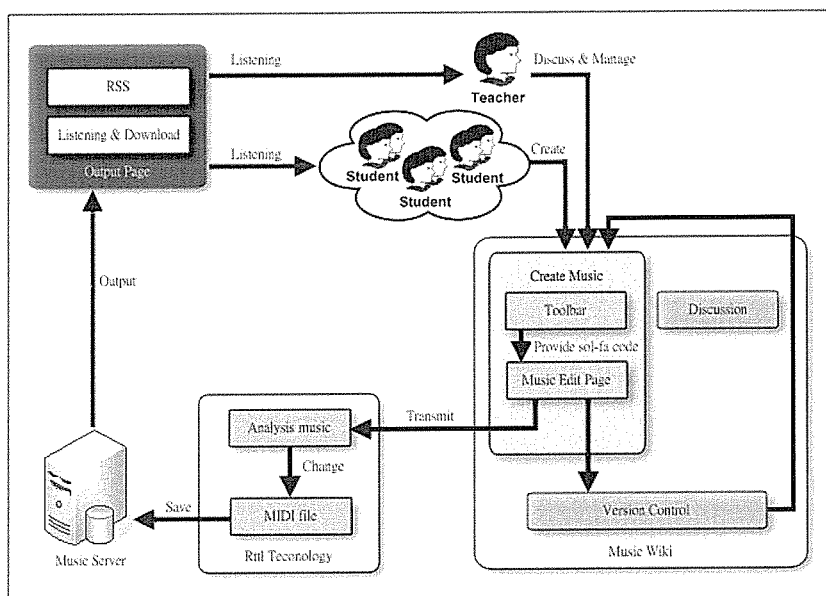Education Platform of
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We can know in figure 2 that teachers and students apply online Wiki education platform of music collaborative composition to compose. Students employ the music tool bar to compose music on the platform. Teachers teach according to students' composition, manage the platform and discuss students' creation in the discussion board. In addition, version control record every student's creating process so that the content can be examined. Teachers can provide students individual assistance and guidance and enhance the learning performance of music composition.
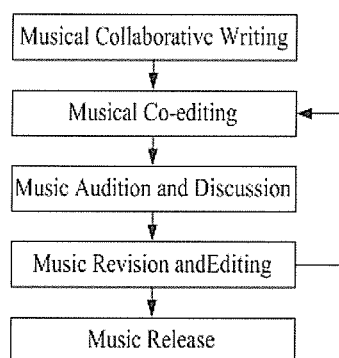
3.2. Composing Procedure

Figure 3 Composing Procedure

The composing procedure is shown as figure 3. When teacher and students apply online Wiki education platform of music collaborative composition to attempt to edit music, they can employ the music tool bar as assistance, such as the short-cut key of rhythm, meter, etc and the short-cut button of musical notes' length, such as crotchet, quaver and rest. The codes of sol-fa syllables are like the numbered musical notation which music composer can easily understand and employ. The study is based on the codes of sol-fa syllables to compose and edit music. Students can employ the simulated piano keyboard to compose music. Compared with the staff, the simulated keyboard can skip the process which interprets a piano keyboard to a staff. The codes of sol-fa syllables are similar to the numbered musical notation which provides the composers an alternative to edit music and enables

the users to compose in a familiar and convenient way. The musical notes of the melody are edited, combing with the musical alphabets. Music composers can use the player program embedded in the system to audition the editing music online. Other people who listen to the music or other music composers can discuss with each other on the Wiki discussion board and give a few words of advice about musical melody or tempo, and revise and edit repeatedly. Through Wiki version control, teachers and students can see the progress of every composition, the procedures and outcomes of musical collaborative composition. They can choose the final work and release music with RSS. Users who subscribes can listen to the audition.

3.3. Music Editing Page

When composers edit the music, they can employ the tool bar of beat duration and the simulated piano keyboard as assistance. We apply the codes of sol-fa syllables consisting of the beat duration and the musical notes to edit music directly. In addition, there is supplementary instruction to make users easily understand. In the editing process, the starting function is set in the first place, secondly the musical tempo and duration of the measure. Then the time signature and the simulated piano keyboard construct the basic musical elements, such as crotchet, quaver and rest to compose the codes of sol-fa syllables for composition.
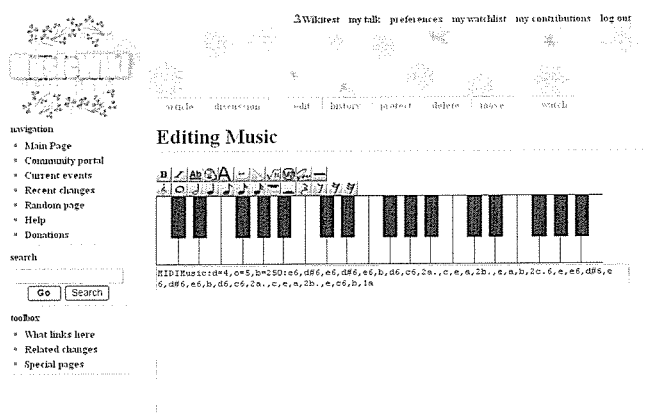

Figure 4 Composing Procedure

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The composition of "Modlitwa dziewicy" is shown as figure 4. The beginning part is to set the starting function of music editing, the duration of every measure, time signature, and the tempo. The beat duration combine with the simulated piano keyboard which the codes of sol-fa syllables consist of varied musical alphabets to compose the melody.

3.4. Research Model and Research Hypothesis

(1) Research Model

Bostrom et al. (1990) presented a complete theoretical structure which aimed at the educational discipline of information system. They believe there are three factors to influence the learning performance of information system: target system, individual difference, and training method. The interactive influence of these three factors leads to different effect of musical learning performance. The research mainly explores how learning performance is influenced when teachers adopt various teaching strategies and are influenced by various learners n the online Wiki education platform of music collaborative composition. Therefore, take target system, individual difference, and training method of Bostrom's system as the main construct. The target system is online Wiki education platform of music collaborative composition. The training method is interactive strategies. The individual difference applies Kolb's learning style inventory (Kolb, 1984).
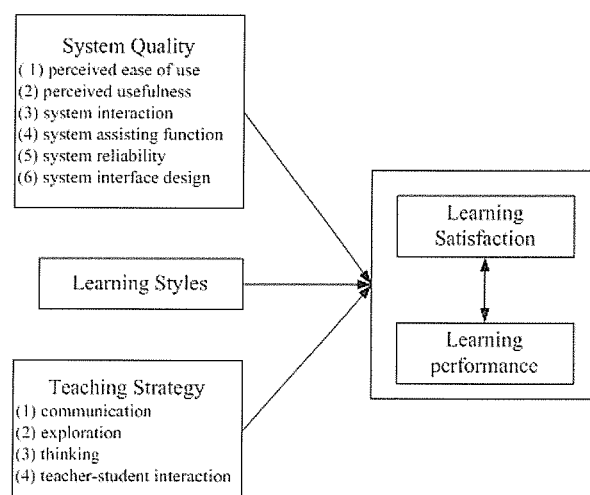

Figure 5 Research Model

(2) Research Hypotheses

Because web-based learning environment is a media for distributing learning content, in addition to basic system design, rich and appropriate content, complete function and tools which are presented through the user-friendly interface, users must be glad to use the system under the condition of no obstacles (Venkatesh, and Davis, 1996). Therefore, it will increase the learning will of learners so that learning satisfaction is influenced (Rivard, 1987; Amoroso & Cheney, 1991). Namely, the higher the quality of information technologies and the reliability, the higher the learning efficiency is (Hiltz, 1993; Piccoli et al., 2001; Webster & Hackley, 1997). Hence, the excellent user interface is an essential factor of exploiting its efficiency and enhancing its learning performance (Nunally, 1978). Therefore, the research presents the hypotheses as follows.

> H1: The system quality has positive influence on learning satisfaction.
>
> H2: The system quality has positive influence on learning performance.

In the web-based learning environment, learners' characteristics will influence the learning performance (Carrier & Jonassen,1988); therefore, learner's characteristics are an issue worthy of exploration. (Carrier& Jonassen, 1988; MacGregor, 1999; Paolucci, 1998) Because the process of learning activities mainly proceed through Internet in web-based learning, learners may have various learning performance due to the virtual reality, multi-media teaching materials, individual ability of using technology and learning styles in the web-based learning environment. Therefore, various learning styles generally contribute to the difference of learning performance (Bostrom et al., 1990; Davis& Davis, 1990; Alavi &Leidner, 2001). Therefore, the research presents the hypotheses as follows:

> H3: Learning Styles have positive influence on learning performance.
>
> H4: Learning Styles have positive influence on learning satisfaction.

The application of teaching strategies is mainly to make teachers achieve high efficiency of teaching, and make students get involved in learning actively. (Li, 1995) There are many factors which influence

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the learning performance, such as learners' styles, teaching materials, teachers, resources and equipment. Teachers are the crucial factor among them. Chen (1994) indicated that teachers are the guide who give advice according to students' feedback so that students can modify their development of thoughts. Therefore, teachers are the providers and judges of experiences. The application of teaching strategies would influence students' learning performance. The study of Lam & Wong (1974) showed that if the teaching content and method can correspond with the interest or needs of students, the learning satisfaction are going to be elevated. They also indicated that the closer teachers and students are and the more informal interaction with each other, the higher the learning satisfaction is. Bostrom et al (1990) ever presented the work research model about the educational training of information system. This model accounts for various learning performance due to various training methods and target system. Hence, the appropriate application of teaching strategies can enhance learners' learning performance. (Small and Gluck, 1994); therefore, the research presents the hypotheses as follows.

H5: Teaching Strategies have positive influence on learning performance.

H6: Teaching Strategies have positive influence on learning satisfaction.

Learning satisfaction is an index to evaluate a learner's achievement (Wang, 1999). It is also one of the most essential items of teaching quality evaluation. The learning performance would be influenced by learning types, course design, teaching, etc. (Kearsley, 1999) Learning satisfaction is a main item of learning achievement evaluation. There are many factors which influence students' satisfaction. In addition to student's personal reasons, teachers, courses, learning environment, etc all possibly influence the learning satisfaction. Many researches indicate that learning satisfaction is related to learning performance (Goodhue and Thompson, 1995; Zeithaml, Berry, & Parasuraman, 1996; Wang, 2001). Therefore, the research presents the hypotheses as follows:

H7: Learning satisfaction has positive influence on learning performance.

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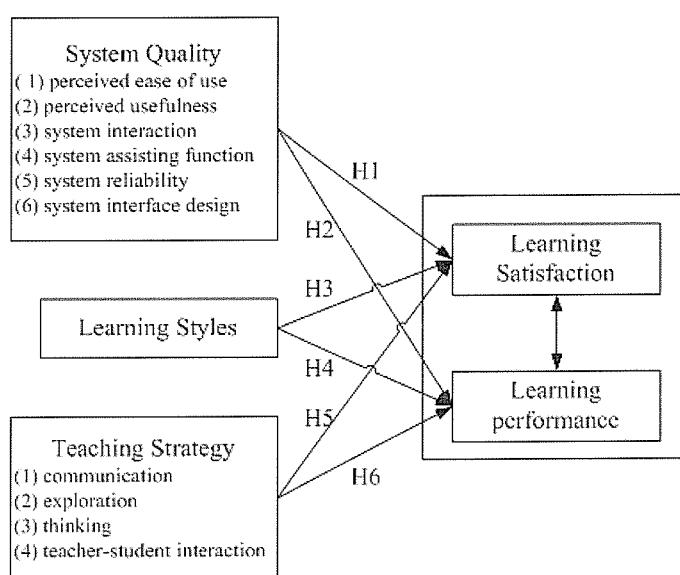Education Platform of
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Table 2 Collection of Research Hypotheses

Number	Hypotheses
H1	The influence of system quality on learning satisfaction
H2	The influence of system quality on learning performance
H3	Learning styles have positive influence on learning performance.
H4	Learning styles have positive influence on learning satisfaction.
H5	The application of various teaching strategies has positive influence on learning performance.
H6	The application of various teaching strategies has positive influence on learning satisfaction.
H7	Learning satisfaction has positive influence on learning performance.

Figure 6 Research Hypotheses

(3) Definition of Variables

The definition of variables in the research mainly applies the related variables in the study to define the variables in detail according to the past documents for the development of the questionnaires.

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Table 3 Definition of Variables in the Research

Variables	Definition of Function
The first Part: System Quality	The research takes online Wiki education platform of music collaborative composition as the target system. In addition to the humane interface design, the teaching system should be taken into consideration to provide users clearer and friendlier learning space. Therefore, the research applies six factors: perceived ease of use, perceived usefulness, system interaction and system assisting function, system reliability, and system interface design to evaluate online Wiki education platform of music collaborative composition.
The second part: Teaching Strategy	To assist students in achieving the learning goals, teaches adopt a series of meaningful and organized teaching projects, teaching methods and teaching technologies. The teaching design of research is going to be based on the supporting viewpoints of construct theory and the scaffolding instruction theory, enforce interactive strategies on the experiment group and employ the development of online Wiki education platform of music collaborative composition to proceed teaching activities.
The third part: Learning Style	Learning styles are a kind of preference, inclination, model, strategy or method They are separately converger, diverger, assimilator, and accommodator. According to twelve questions which Kolb (1976)designs for learning styles, the interviewees employ four items which describe the learning styles to arrange in order of the matching degree.
The fourth part: Learning Satisfaction	Learning satisfaction is a kind of feeling or attitude towards learning activities. Because student like the leaning activities or have their wish or needs fulfilled in the learning process, that feelings or attitude are produced. The definition of learning satisfaction in the research is the sense of satisfaction and positive will produced on online Wiki education platform of music collaborative composition.
The fifth part: Learning performance	Learning performance is an index to evaluate a learner's learning achievement. It is also one of the most essential items to evaluate the teaching quality. Learning performance would be influenced by learning styles, course design, teaching, etc. The research is based on semester grades, including the participation grades of online Wiki education platform of music collaborative composition, oral report grades, midterm and final grades.

4. Research Result

4.1. Descriptive Statistic Analysis

The main purpose of the descriptive statistic analysis of the research is to analyze the distribution of basic information of samples so that we can obtain a preliminary understanding of the distribution and basic

characteristics of samples. There are total 47 questionnaires distributed. 9 questionnaires are ineffective. 38 questionnaires are effective. Effective returned rate is 80.85%. According to the research result and learners' basic information, men are the majority, occupying 66.1%. Known from users' experiences, the number of creation composed on online Wiki education platform of music collaborative composition is 1-2, occupying 46.7%. Most of the users spend generally 2-3 hours on Wiki every week.

4.2. Reliability Analysis

The research is based on α coefficient which was presented by Cronbach. We can know from the research analytic result that the construct reliability of "system quality" is 0.796, the construct reliability of "teaching strategy" is 0.805, the construct reliability of "learning style" is 0.819, the construct reliability of "learning satisfaction" is 0.809, and the construct reliability of "learning performance" is 0.841. α of every construct is over 0.7. It indicates that every construct has adequate internal consistency.

4.3. Path Analysis

The research applies path analysis to understand the bounding among system quality of learners, learning styles, teaching strategies, learning satisfaction, and learning performance. Through path coefficients of every construct, we can know the mutual influence and the degree of influence of every construct variables. The result of path analysis is shown as table 1. The following is the illustration.

(1) The relationship between system quality and learning satisfaction: the research indicates that system quality has evident influence on learning satisfaction. Namely, if teacher enhance the system quality of learner, learning satisfaction is going to be elevated.

(2) The relationship among system quality, learning satisfaction, and learning attitude: the experiment result indicates that system quality and learning satisfaction both have positive influence on learning attitude. It shows that learners' attitude is based on the system quality and learning satisfaction of online Wiki education platform of

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music collaborative composition. As the system quality of learners and learning satisfaction elevate, so does the learning attitude.

(3) The relationship among teaching strategy, learning style and learning satisfaction: the research shows that teaching strategy and learning style both have positive influence on learning satisfaction. It illustrates that teaching strategy and learning style are crucial factors to influence learning satisfaction. If teachers attempt to enhance the learning satisfaction, they can begin by cognitive instructional strategies and learning styles.

(4) The relationship between learning satisfaction and learning performance: the experiment result indicates that learning satisfaction has positive influence on learning performance. If teachers attempt to enhance the learning performance, they should effectively elevate the learning satisfaction to enhance learners' learning performance in the learning process.

Table 4 The Result of Path Analysis

Research Hypothesis	Standardized Regression Coefficient (β)	R^2	Result
H1 : system quality -> learning satisfaction	0.435(***)	0.495	Approved
H2 : system quality -> learning performance	0.731(***)	0.702	Approved
H3 : learning style -> learning performance	0.209(**)		Approved
H4 : learning style -> learning satisfaction	0.281(**)	0.824	Approved
H5 : teaching strategy -> learning satisfaction	0.663(***)		Approved
H6 : teaching strategy -> learning performance	0.262(***)	0.712	Approved
H7 : learning satisfaction -> learning performance	0.735(***)		Approved

Note: $*p<0.05$; $**p<0.01$; $***p<0.001$

5. Conclusion

The research is based on MediaWiki to design online Wiki education platform of music collaborative composition. It takes MIDI source

code of plain text format as the subject of creation, combine with characteristics of collaborative composition to design the musical education of collaborative composition. With co-editing function of Wiki, version control and Rttl, we employ the format of sol-fa syllables to interpret the codes and transform to MIDI document. Online Wiki education platform of music collaborative composition enables students both learn and compose music in the music courses. As to music composition, it is no longer limited to individual music composition or the music editing software of single machine-single person model. Now through the online collaborate composition, a group of people can co- compose a song. Through collaborate composition, students can be more involved in music courses, and the quality of music courses can be evidently elevated. With the above-mentioned results and analyses, this part are going to make a comprehensive conclusion and present concrete advice towards the future development of online Wiki education platform of music collaborative composition.

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5.1. System Satisfaction

The research attempts to apply musical composition to online Wiki education platform of music collaborative composition. Students believe that perceived ease of use, perceived usefulness, system interaction and system assisting function, system reliability and system interface design all significantly assist in musical creative education. Moreover, with the assistance of music tool bar, it is easy to edit music without memorizing the codes or musical note interface of complex. In addition, music composed by a group can be released through online Wiki education platform of music collaborative composition; the music style is various in the meanwhile. Although students are unfamiliar to the operation in the beginning, once they combine the platform with musical creative education for a period of time, their satisfaction of using the platform would elevate.

5.2. Learning Satisfaction and Learning Performance Discussion

The research is based on the technology acceptance model by Davis et al. (1989) to construct the evaluation model of learning satisfaction

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and learning performance of online Wiki education platform of music collaborative composition. The research employs this study model to analyze key factors, such as learners' system quality, learning styles, teaching strategies, learning satisfaction, learning performance of online Wiki education platform of music collaborative composition to understand learners' needs and further construct a sound online Wiki education platform of music collaborative composition which corresponds to users' needs.

The research result indicates that the explained variance (R^2) between system quality and learning satisfaction is 49.5%. The explained variance among system quality, learning style and learning performance is 70.2%. The explained variance among teaching strategy, learning satisfaction, and learning performance is 82.4%. The explained variance (R^2) among teaching strategy, learning satisfaction and learning performance is 53.3%. It indicates that the cause variables excellently account for the result variables. In addition, online Wiki education platform of music collaborative composition possess the ability to account for. The research hypotheses are all approved and possess direct effects. The system quality is the most evident cause variable of influencing learning satisfaction. The variation quantity is 1.046 units. The cause variables are managed in order of influence degree: system quality, teaching strategy, leaning style; if teachers attempt to enhance learners' learning satisfaction, they can evaluate whether the system is useful for learners in the beginning, then learning attitude and focus on whether the system is easy to use at last.

The learning satisfaction is the most evident cause variable of influencing learning performance. The variation quantity is 0.73 units. The cause variables are managed in order of influence degree: learning satisfaction, system quality, teaching strategy, leaning style. If teachers attempt to enhance learning performance, they can begin with learning satisfaction to satisfy learners with system interface and teaching style. Secondly, teachers can make learners believe that they can enhance learning efficiency and modify their learning style by using online Wiki education platform of music collaborative composition. Therefore, the research result indicates the relation between learning satisfaction and learning performance. The research integrates information technology with instructional process. We discover that the characteristics of online

Wiki education platform of music collaborative composition make the phenomenon more obvious. We can have further exploration focusing on instructional strategies and learning styles in the future.

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