

**Production and Formative Evaluation of a Blended  
Website-Supported Course on the Rudiments of Music**

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**A Thesis  
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of  
Education**

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**School of Graduate Studies**

This is to certify that the thesis prepared

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Entitled: Production and Formative Evaluation of a Blended Website-  
Supported Course on the Rudiments of Music

and submitted in partial fulfillment of the requirements for the degree of

**Master of Arts & Science (Educational Technology)**

complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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# ABSTRACT

## Production and Formative Evaluation of a Blended Website-Supported Course on the Rudiments of Music

Yuan Fang

This is a Thesis-equivalent design production and evaluation of an educational Website. Its purpose is to support the teaching of the Basics of Music in an interactive blended learning mode manner. This document gives an introduction to the immense music teaching activity in China which makes such a project potentially very valuable and the particular opportunity for undertaking it. The Website produced is found on a disk attached with this report. Relevant literature is reviewed. The specific goals are stated, and then the whole design procedure is presented. The Formative evaluation method involving initial trials by three experts in music teaching one who is working in e-Learning their evaluation was followed by trials with seventy-four students of the e-learning music course and comparison with nine students of the same course content not taking it in e-Learning format. The valuations were generally favourable and helped improve the site. The main improvements suggested but not yet carried out were the addition of more of the interactive music pieces, and the extension of the Website to more advanced topics.

### **Notes:**

Here is the instruction to browse the website.

step 1: insert the CD to the CD-ROM Driver of a computer;

step 2: open the folder V13, you will see six folders and one .htm file as course, music, picture, proposal, thesis zdp v1.files and Blended.htm

step 3: double click the Blended.htm file (this is the key step)

step 4: after you open the Blended.htm file, it will work as a real website and you don't need to open any other files in the folder. Blended.htm file will link to all other files;

step 5: you can click the "Thesis Proposal" and "Course" links at the up right corner and start to browse the website

step 6: you can always go back to the prior page by click the "Back" button at the end of each page you are browsing.

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## **Introduction**

The appreciation of music can be a continuing source of pleasure to everyone. Many people enjoy listening to music without any special background or knowledge about its forms and techniques or its history, but there seems to be little question that some acquaintance with the methods of musical composition and the characteristics of individual composers enhances one's musical experience (Clendenin, 1974). A substantial number of young children and adults like to listen to and sing music as well as to learn some type of musical instrument. However, most people do not move to a higher or more advanced level of musical competence before they give up. This is possibly due to their lack of basic understanding of musical composition, such as the ability to read musical notation. It is difficult to gain and enjoy the theory and methods of appreciating music by teaching oneself. There is a need to guide learners to feel the beauty of music and to really understand and appreciate the rudiments of music. Present learning materials as published by internationally famous conservatories are structured in ways that can be boring both in terms of the materials and exercises. All but a small number of the most dedicated learners lose interest quickly. The main problem is how to develop the inherent power of learners to enjoy music and how to encourage learners to appreciate the experience of learning music. I would argue that we need materials that teach the rudiments of music that are more engaging. I created an online course that is based on the blended learning theory.

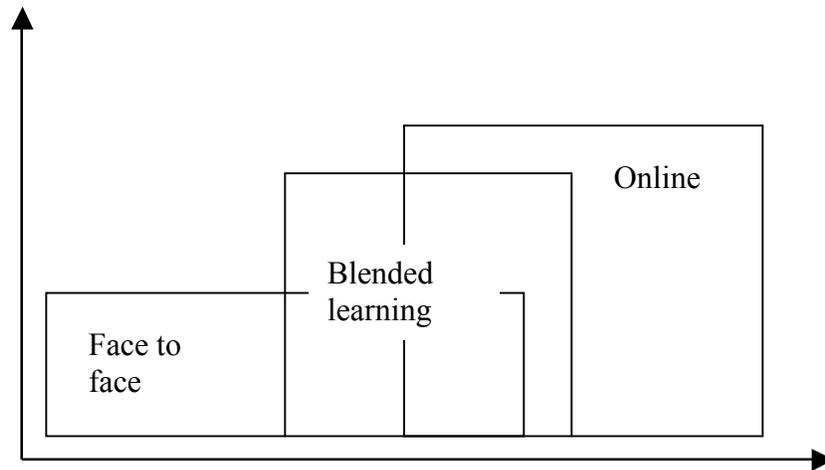
This online learning course was designed and created to develop learners' inherent capability of learning to learn music under both the face-to-face and online environment.

The purpose of the project is to guide learners to gain knowledge of the rudiments of music using the well-known example of Mozart's *Twinkle, Twinkle Little Star*. I seek to gradually develop the learner's ability through an online site under the guidance of teachers that has been specifically designed to bring out the inherent capability of the learner to take up the music according to some advanced learning theories. Learners can apply the knowledge from the online learning course to appreciate and play music and to find pleasure in music. We found most learners have some basic knowledge about music, although not very much. If we were to provide the rudiments of music to learners integrally and pedantically, learners might lose their interest as the study process is difficult. If we provide the rudiments of music to learners systematically and step-by-step and we just provide and enlighten learners with experiences, we believe that this will be a good method to encourage and advance learners' individual learning with their peer students, follow the online courses and under the guidance of the teachers.

This online learning course was designed based on the blended learning theory because a pure online learning has its drawbacks as lacking of social interactions. For less independent students, a more specially designed learning model is needed. For instance, combine both the conventional face-to-face sessions and online learning as a website. This new approach of teaching and learning is called hybrid or blended learning (Rogers, 2001). The Department of Education and Training (DET) defines the blended learning as learning which combines online and face to face approaches (DET, 2003). This definition is relatively simple. Procter gives a more comprehensive definition including the dimensions of teaching and learning styles (2003).

Blended learning is the effective combination of different modes of delivery, models of teaching and styles of learning.

Here is a graph show how the DET definition works (Heinze and Procter, 2004).



This course thus, was specifically designed to follow the principles of the blended learning theory. The teachers will work together with the learners to use the online materials and methods to help them to identify the gaps between known and unknown and guide them to fill the gaps. In each lesson, we gave examples to explain each point of music theory and gave exercises for learners to practice. The content of lessons moves from simple to complex and from a single melody to multiple voices. In this e-learning course, in addition, problem-solving and strategic reasoning tasks are offered to the students. As a goal of this dissertation-equivalent is to examine the issues related to the use of theory in design I focused on the key stages of design and captured key aspects at each stage of the process.

## **Background**

According to a survey, published in SOHU news, there are more than thirty million young children who are learning to play the piano in China. There are also a substantial number of children who are learning to perform on other instruments. As China's economy has prospered, more and more retired people are starting to learn to play all kinds of musical instruments to enrich their lives. The number of people who are learning musical instruments could thus be an actual percentage of the world's population. What do they need to know?

*The Rudiments of music are the basic elements of music theory. They include musical notation, pitch, time, scales, key signatures, time signatures, and intervals, together with their typical uses in melody and harmony. The Rudiments are those elements of theory that are normally learned, more or less explicitly, as part of learning to play any musical instrument, as distinct from the more abstract aspects of theory that would be studied as a more academic, discipline (Rudiments of Music, 2009).*

In contemporary China there is a high demand for learning the rudiments of music. There are, however, not enough music teachers. Under the current situation, with very limited numbers of music teachers and large number of learners, an online learning course designed under the blended learning theory may need less teachers to do the face-to-face teaching, though may not totally eliminate it has the potential to be a very cost-efficient, reasonable and appropriate way to solve this problem. However, this is a non-profitable website.

### ***Purpose and goals***

The purpose of the project is to develop a website to guide learners to learn knowledge of some rudiments of music using the example "Twinkle, Twinkle Little Star" and to allow

them to gradually develop their ability to be open to the bioesthetically aural inputs from other people which seduce and addict and delight and open new possibilities for expression and sharing of music. Learners can apply the knowledge from this online learning course with some help from teachers to both appreciate music and play music.

## **Literature Review**

A number of researchers have examined online learning and online course design (see for instance Bird, 2007; Bradley and Oliver, 2002; Koszalka, Song and Grabowski, 2001; Laurillard, 1993, 1995, 1998). Bird looked at the 3 'C' design model for networked collaborative e-learning for novice designers. Bradley and Oliver (2002) studied the development of e-learning courses for work-based learning whereas Koszalka, Song and Grabowski (2001) studied the learners' perceptions of design factors found in problem-based learning. Laurillard (1993, 1995, 1998) has undertaken a series of studies of multimedia and the potential impact of media to change the experience of learning. While this design-focused research study has been enriched from previous research, I would argue that there is a need, however, for a study that particularly examines how to apply educational models or theories in designing an e-learning course for music. To meet this need, in this project, we applied the blended learning theory and part of the ZPD theory to designing an e-learning course on rudiments of music.

Bird (2007) discussed the content, construction and the consolidation of models. Fowler and Mayes (2000) also state that an examination of an educational model or theory requires considerations of three basic elements of e-learning: content or new concepts, knowledge construction, and the consolidation of learning through reflection.

Content consists of the basic knowledge required of the course. For any course, it must be about something, i.e. there must be content. Biggs (1999) discusses the nature of content – as basic knowledge. Biggs (1999) defines declarative knowledge as ‘knowing-about’, or ‘knowing-what’, by which he means it is public knowledge. It can be in books in libraries, textbooks, and resources on internet, etc. However, knowledge is the private experience of the learner. Knowledge can only be acquired by participating in learning activities in which learners construct their personal understandings. Hence, content is important in online course design but it must be delivered in an active way involving the creation of knowledge by the learner.

Knowledge construction involves the process by which students make sense of the information presented. Bird (2007) points out that learning is an active process in which the learner continually re-orders their mental models of understanding while engaging in supported – or ‘scaffolded’ – learning activities. Collaboration and interaction between learners and teachers should ideally be at the core of the design model. Under the blended learning framework, several different delivery methods, such as collaboration software, Web-based courses, face-to-face teaching, and knowledge management practices should be combined. Skill-driven learning, which combines self-paced learning with instructor or facilitator support to develop specific knowledge and skills, is mainly used in this website design. In the case of China, with such a large population of learners and such a lack of teachers we designed the website in such a way as to provide the interaction for the learner through the materials and the learning progression.

Consolidation and reflection refer to the process of thinking deeply or the mental fusion that takes place when learning produces a new intuitive way of understanding the world (Bird, 2007). Boud, Keogh and Walker (1985) state that: “reflection is an important human activity in which people recapture their experience, think about it mull it over and evaluate it. It is this working with experience that is important in learning ...” (p. 45). It is only when we bring our ideas to our consciousness that we evaluate them and begin to make choices about what we will and will not do. Since our society has become more complex and the economy more developed, information has become richer and technology more advanced, people need to readjust their learning methods to meet the changes. Therefore, students need to develop keen reflective thinking capabilities so they will be able to apply new knowledge to complex situations (Koszalka, Song, and Grabowski, 2001). It is normal for people outside formal education to learn music in an independent way, mainly through individual self-directed work, rarely under the supervision of an expert tutor/mentor, and frequently in cooperation with other practitioners (Lebler, 2008). The main purpose of this learning activity is to build understanding and make sense of the information in rudiments of music.

In this study we looked to Web design to provide such support and focus on the idea of combine face-to-face learning and online learning under the guidance of blended learning theory.

The appreciation of music can be a continuous source of pleasure to everyone. There are great opportunities through combining the powerful and sophisticated information technology with e-learning theory to enhance one's musical experience. Flexible and easy access to knowledge about the forms and techniques and history of music --- anytime and anywhere --- is possible and in growing demand. E-learning offers new opportunities for both educators and learners to enrich their teaching and learning experiences, through virtual environment that supports not just the delivery but also the exploration and application of information and the promotion of new knowledge (Holmes and Gardner, 2006). The definitions of e-learning are different in different articles, however most contain a core concept such as "the use of new multimedia technologies and the internet to improve the quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration" (COM, 2001; 2). In this thesis, we will follow the definition of blended learning as the effective combination of different modes of delivery, models of teaching and styles of learning (Procter, 2003). In the design of the e-learning website, the different modes include face-to-face method and an online course.

Large *et al.* (2007) put forth a new technology design methodology which they entitle 'Bonded Design'. The authors explore the relationship between bonded design and ZPD theory for the designers because authors believe that to achieve a usable design the design team must rely on each other and *bond* each others' wisdom and knowledge no matter of the age of the members. Some of the ideas will be used in our website design for this online course on rudiments of music.

In this study we focus on the design method to explore the idea of the creation of appropriate steps for learners to easily access content and result in knowledge. There are a fairly large number of design methods such as user-centered design, contextual design, learner-centered design, participatory design, information design, etc. Each of these was considered. Given the nature of the research question and the circumstance we believed the best possible design for this project was the use of learner-centered design. The focus of this design methodology is to ensure that the design is adapted to the interests, knowledge, and styles of the learners who will use it (Large, *et al.* 2007). The potential user of this project can be for all those who are interested in learning the rudiments of music. In learner-centered design, it is assumed that everyone is a learner, whether a professional or a student (Soloway, Guzdial and Hay, 1994).

## **Method**

### ***Introduction***

I built this website for the following reasons: I have both music and education background. I passed some Royal Conservatory of Music (RCM) exams and also I am pursuing master degree in educational technology. I really like this work and I devoted a lot of time and emotion to it. Furthermore, although there are music education websites exist, most of them are built in ad-hoc fashion. This website is built based on the blended learning theory and more advanced educational technologies.

### ***Front-Page***

Here is the front-page of the website.



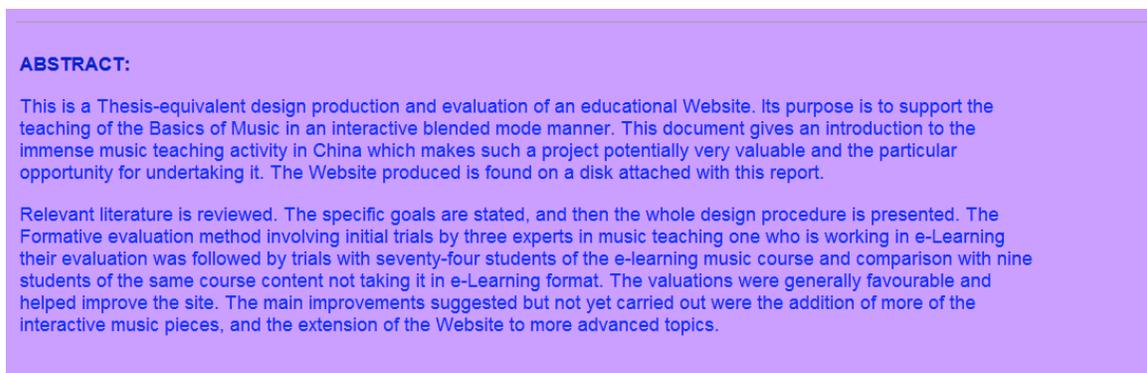
For the top half, I highlight the background and title of this project as follows. I use the Department of Education logo at the top of the front-page because this website is a master's project in Educational Technology. The logo is blue, that is the reason why I consistently use blue as the main color for this front-page and thesis proposal. On the right of the department log, I put the "Thesis Proposal" and "Course". Those are the two main parts of this website. I will explain these two parts in more detail in the following corresponding sections. Just below the department logo, I put a picture of star and moon in a deep blue night because the well-known example of Mozart's Twinkle, Twinkle Little Star will be used to illustrate how I design the course by following the blended learning theory. This picture layout is used for almost every page of this website. Besides

the picture, I put the main title of this project as “Production and Formative Evaluation of a Blended Website-Supported Course on the Rudiments of Music”. I put my name and my supervisor’s name after. So, everyone who visits this website will have a basic idea and expectation of what the purpose and contents of this website. The pictures, position of pictures and font size are designed and well balanced.



After this is an abstract as follows.

This abstract gives a more detailed description of this project. Users of this website will have a more complete picture of what they will see in this website. They will know that this course is designed under the guidance of blended learning theory.



## ***Thesis Proposal***

This part is for thesis proposal. The background color for this part is designed on grey because that is more academically. At the front-page of this part, I put the title again to remind the reader that the course is about music and the educational theory is blended learning theory. After the title, on the left is the Table of Contents. There are six sections as Introduction, Background, Literature Review, Method, Evaluation and Reference. There is a link build to each section. On the right is a picture to show the idea of the blended learning, which is a combination of face-to-face, self-placed and online collaborative learning. I found this picture on the internet. On top of the picture, there is a link to the internet

[http://en.wikipedia.org/wiki/Blended\\_learning](http://en.wikipedia.org/wiki/Blended_learning)

That is one of the best internet resources for blended learning theory from Wikipedia. From this link you can find a lot of other interesting references and links. There is a “back” button at the end of this page, which links back to the main front-page. This design gives the users a lot of convenience. The users of this website can go back to the main front-page quickly.

## Developing the Inherent Power of Learning Music:

### An Application of Blended Learning Theory in Designing an E-learning Course on the Rudiments of Music

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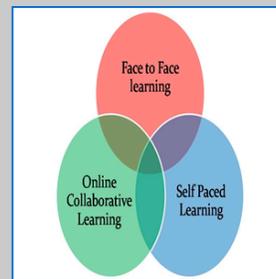
[Method](#)

[Evaluation](#)

[Reference](#)



#### [Blended Learning Theory](#)



Here are the six sections of the thesis proposal. The Mozart's *Twinkle, Twinkle Little Star* picture is at the top left of each page. The section title is at the top and in big size. The details of each section are followed. Then, a "back" button is at the end to return to the front-page of this section. These six sections are almost all in the same style besides the last section "Reference". The reference section is not in blue font but in black to distinct it from the other five sections. You can see the differences from the following pages. You can browse the website on the disc to have a better version if the pictures here are not clear enough.

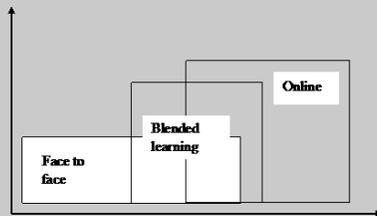


# Introduction

The appreciation of music can be a continuing source of pleasure to everyone. Many people enjoy listening to music without any special background or knowledge about its forms and techniques or its history, but there seems to be little question that some acquaintance with the methods of musical composition and the characteristics of individual composers enhances one's musical experience (Clendenin, 1974). A substantial number of young children and adults like to listen to and sing music as well as to learn some type of musical instrument. However, most people do not move to a higher or more advanced level of musical competence before they give up. This is possibly due to their lack of basic understanding of musical composition, such as the ability to read musical notation. It is difficult to gain and enjoy the theory and methods of appreciating music by teaching oneself. There is a need to guide learners to feel the beauty of music and to really understand and appreciate the rudiments of music. Present learning materials as published by internationally famous conservatories are structured in ways that can be boring both in terms of the materials and exercises. All but a small number of the most dedicated learners lose interest quickly. The main problem is how to develop the inherent power of learners to enjoy music and how to encourage learners to appreciate the experience of learning music. I would argue that we need materials that teach the rudiments of music that are more engaging. I created an online course that is based on the blended learning theory.

This online learning course was designed and created to develop learners' inherent capability of learning to learn music. The purpose of the project is to guide learners to gain knowledge of the rudiments of music using the well-known example of Mozart's *Twinkle, Twinkle Little Star*. I seek to gradually develop the learner's ability through an online site that has been specifically designed to bring out the inherent capability of the learner to take up the music according to some advanced learning theories. Learners can apply the knowledge from the online learning course to appreciate and play music and to find pleasure in music. We found most learners have some basic knowledge about music, although not very much. If we were to provide the rudiments of music to learners integrally and pedantically, learners might lose their interest as the study process is difficult. If we provide the rudiments of music to learners systematically and step-by-step and we just provide and enlighten learners with experiences, we believe that this will be a good method to encourage and advance learners' individual learning with their peer students and under the guidance of the teachers.

This online learning course was designed based on the blended learning theory because a pure online learning has its drawbacks as lacking of social interactions. For less independent students, a more specially designed learning model is needed. For instance, combine both the conventional face-to-face sessions and online learning as a website. This new approach of teaching and learning is called hybrid or blended learning (Rogers, 2001). The Department of Education and Training (DET) defines the blended learning as learning which combines online and face to face approaches (DET, 2003). This definition is relatively simple. Procter gives a more comprehensive definition including the dimensions of teaching and learning styles (2003). Blended learning is the effective combination of different modes of delivery, models of teaching and styles of learning. Here is a graph showing how the DET definition works (Heinze and Procter, 2004).



This course thus, was specifically designed to move through natural developmental stages. The teachers will work together with the learners to help them to identify the gaps and guide them to fill the gaps. In each lesson, we gave examples to explain each point of music theory and gave exercises for learners to practice. The content of lessons moves from simple to complex and from a single melody to multiple voices. In this e-learning course, in addition, problem-solving and strategic reasoning tasks are offered to the students. As a goal of this dissertation-equivalent is to examine the issues related to the use of theory in design I focused on the key stages of design and captured key aspects at each stage of the process.





# Background

According to a survey, published in SOHU news, there are more than thirty million young children who are learning to play the piano in China. There are also a substantial number of children who are learning to perform other instruments. As China's economy has prospered, more and more retired people are starting to learn to play all kinds of musical instruments so as to enrich their lives. The number of people who are learning musical instruments could thus be an actual percentage of the world's population. What do they need to know?

*The Rudiments of music are the basic elements of music theory. They include musical notation, pitch, time, scales, key signatures, time signatures, and intervals, together with their typical uses in melody and harmony. The Rudiments are those elements of theory that are normally learned, more or less explicitly, as part of learning to play any musical instrument, as distinct from the more abstract aspects of theory that would be studied as a more academic, discipline (Rudiments of Music, 2009).*

In contemporary China there is a high demand with regard to learning the rudiments of music. There are, however, not enough music teachers. Under the current situation, with very limited numbers of music teachers and large number of learners, an online learning course has the potential to be a very cost-efficient, reasonable and appropriate way to solve this problem.

## Purpose and goals

The purpose of the project is to guide learners to learn the knowledge of rudiments of music using the example "Twinkle, Twinkle Little Star" and to allow them to gradually develop their ability to be open to the inherent nature of music. Learners can apply the knowledge from the online learning course to both appreciate music and play music.



# Literature Review

A number of researchers have examined online learning and online course design (see for instance Bird, 2007; Bradley and Oliver, 2002; Koszalka, Song and Grabowski, 2001; Laurillard, 1993, 1995, 1998). Bird looked at the 3 'C' design model for networked collaborative e-learning for novice designers. Bradley and Oliver (2002) studied the development of e-learning courses for work-based learning whereas Koszalka, Song and Grabowski (2001) studied the learners' perceptions of design factors found in problem-based learning. Laurillard (1993, 1995, 1998) has undertaken a series of studies of multimedia and the potential impact of media to change the experience of learning. While this design-focused research study has been enriched from previous research, I would argue that there is a need, however, for a study that particularly examines how to apply educational models or theories in designing an e-learning course for music. To meet this need, in this project, we applied part of the ZPD theory to designing an e-learning course on rudiments of music.

Bird (2007) discussed the content, construction and the consolidation of models. Fowler and Mayes (2000) also state that an examination of an educational model or theory requires considerations of three basic elements of e-learning: content or new concepts, knowledge construction, and the consolidation of learning through reflection.

Content consists of the basic knowledge required of the course. For any course, it must about something, i.e. there must be content. Biggs (1999) discusses the nature of content – as basic knowledge. Biggs (1999) defines declarative knowledge as 'knowing-about', or 'knowing-what', by which he means it is public knowledge. It can be in books in libraries, textbooks, and resources on internet, etc. However, knowledge is the private experience of the learner. Knowledge can only be acquired by participating in learning activities in which learners construct their personal understandings. Hence, content is important in online course design but it must be delivered in an active way involving the creation of knowledge by the learner.

Knowledge construction involves the process by which students make sense of the information presented. Rooted in the research of Piaget and Vygotsky, constructivism emphasises the active role of the learner in building understanding and making sense of information. Bird (2007) points out that learning is an active process in which the learner continually re-orders their mental models of understanding while engaging in supported – or 'scaffolded' – learning activities. From the constructivism perspective, construction is at the heart of learning. Collaboration and interaction between learners and teachers is should ideally be at the core of the design model. Under the blended learning framework, several different delivery methods, such as collaboration software, Web-based courses, face-to-face teaching, and knowledge management practices should be combined. Skill-driven learning, which combines self-paced learning with instructor or facilitator support to develop specific knowledge and skills, is mainly used in this website design. In the case of China, with such a large population of learners and such a lack of teachers we designed the website is such a way as to provide the interaction for the learner through the materials and the learning progression.

Consolidation and reflection refer to the process of thinking deeply or the mental fusion that takes place when learning produces a new intuitive way of understanding the world (Bird, 2007). Boud, Keogh and Walker (1985) state that: "reflection is an important human activity in which people recapture their experience, think about it mull it over and evaluate it. It is this working with experience that is important in learning ..." (p. 45). It is only when we bring our ideas to our consciousness that we evaluate them and begin to make choices about what we will and will not do. Since our society has become more complex and the economy more developed, information has become richer and technology more advanced, people need to readjust their learning methods to meet the changes. Therefore, students need to develop keen reflective thinking capabilities so they will be able to apply new knowledge to complex situations (Koszalka, Song, and Grabowski, 2001). It is normal for people outside formal education to learn music in an independent way, mainly through individual self-directed work, rarely under the supervision of an expert tutor/mentor, and frequently in cooperation with other practitioners (Lebler, 2008). The main purpose of this learning activity is to build understanding and make sense of the information in rudiments of music.

In this study we looked to Web design to provide such support and focus on the idea of an 'ideal distance' between the actual and potential developmental levels rather than a focus on collaborative learning as is usually the case in studies that use Vygotsky's model.

The appreciation of music can be a continuous source of pleasure to everyone. There are great opportunities through combining the powerful and sophisticated information technology with e-learning theory to enhance one's musical experience. Flexible and easy access to knowledge about the forms and techniques and history of music --- anytime and anywhere --- is possible and in growing demand. e-learning offers new opportunities for both educators and learners to enrich their teaching and learning experiences, through virtual environment that supports not just the delivery but also the exploration and application of information and the promotion of new knowledge (Holmes and Gardner, 2006). The definitions of e-learning are different in different articles, however most contain a core concept such as "the use of new multimedia technologies and the internet to improve the quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration" (COM, 2001; 2). In this thesis, we will follow the definition of blended learning as the effective combination of different modes of delivery, models of teaching and styles of learning (Procter, 2003). Here, the different modes include face-to-face method and an online course.

Large *et al.* (2007) put forth a new technology design methodology which they entitle 'Bonded Design'. The authors explore the relationship between bonded design and ZPD theory for the designers because authors believe that to achieve a usable design the design team must rely on each other and *bond* each others' wisdom and knowledge no matter of the age of the members.

In this study we focus on the design method to explore the idea of the creation of appropriate steps for learners to easily access content and result in knowledge. There are a fairly large number of design methods such as user-centered design, contextual design, learner-centered design, participatory design, information design, etc. Each of these was considered. Given the nature of the research question and the circumstance we believed the best possible design for this project was the use of learner-centered design. The focus of this design methodology is to ensure that the design is adapted to the interests, knowledge, and styles of the learners who will use it (Large, *et al.* 2007). The potential user of this project can be for all those who are interested in learning the rudiments of music. In learner-centered design, it is assumed that everyone is a learner, whether a professional or a student (Soloway, Guzdial and Hay, 1994).



# Method

This project is a combined process of the blended learning theory, rudiments of music and design models. Luckin (2001) summarizes the requirements and implications of the ZPD for instruction and software design. A similar table is summarized for the framework of this application of blended learning theory in designing an e-learning course on the rudiments of music project.

Requirement	Implications: for effective instruction	Implications: Specific to website design
Rudiments of music	Curriculum design	Method adopted for rudiments of music knowledge representation
Interaction between learner and environment	The nature of the access to the resources within the website	User interface
Extension of the learner	Pedagogical strategy, monitoring	Pedagogical strategy, learner modeling: a blended learning theory approach
Flexible collaborative support for the learner	Provision of assistance needs and monitoring	Provision and quantification of assistance

Attention to the cultural specificity of the environment in which learning takes place	Integration of learning activity with other aspects of the learner's music background	Integration of website, online resources, three music teachers and seventy-four students
Availability of clearly constructed goals to provide direction for activity	Learner-centered design We select the learners attending this course to be more self-motivated and can stretch their learning capacity under the guidance of the teachers and working with their peer students and with the assistance of this on-line course.	Pedagogical strategy The E-learning Course is designed in twelve lessons. Each lesson has Instruction, Quiz and Answers.
Opportunity for learners to ensure activity is directed toward to them	The nature of the access to the resources within the online course	User interface
Recognition that the website is a tool for mediation between the learner and the curriculum	The nature of the access to the resources (human and artefact) within the learning environment curriculum design	User interface method adopted for domain knowledge representation

#### Instructional Design

I mainly used the blended learning theory. I also used Holmes and Gardener's *E-Learning: Concepts and Practice* as our guidebook to e-learning theory.

#### Design Procedure Illustrated

In this project, I built an e-learning course production that is based on the blended learning theory. First of all, I made a questionnaire based on the Luckin's conclusion that the blended learning theory is a useful theoretical construct for educational software design and the ten usability heuristics developed by Jakob Nielsen for user interface design. Each question in the questionnaire is well designed to try to collect as much relevant information as possible. After participants test this production, participants wrote back the questionnaire. The production required 2 or 3 weeks to test. The questionnaires were collected in 4 weeks. I sent 110 questionnaires at the end of April and got 87 replies and 9 records at the end of May.

#### Software Design

I used the following software:

Webpage design software: FrontPage™

Photo edition software: Photoshop 3.0™

Multimedia software: Flash CS3™

Music-creation and podcasting software: Garageband™

Music edition software: Cakewalk™

Digital nonlinear editing software: Final Cut Pro 6™, Adobe Premiere Pro™





# Evaluation

## Purpose and goals

The purpose of the evaluation is to get the information about how the goal of the project has been completed. Further improvement will also be made according to the feedback of the evaluation.

## Participants

The samples are the experts who are working on the education about the rudiments of music or about e-learning of music and the learners in China. In order to make the sample persuadable as well as for the data collection availability and convenience, most of the experts are my former teachers or classmates of my undergraduate period. Their major is musical education. The learners might be the students of those experts. They are learning rudiments of music. I expect that I will have about 60 percent responses.

## Participant Activities

I will show the e-learning course to those experts directly. After those experts use it, they will fill in and return the questionnaires to me. Then I plan to have the e-learning course shown to a small sample of the intended learner population. After learners use it, they will also fill the formative evaluation questionnaires.

## The Questionnaire

The questionnaire (in Chinese) includes three parts. The first one is the background of participants. Depending on this section, we can depart the resource of the data for analyzing the data. For example, what major is the participant? How many years the participant has learned rudiments of music? Have you taught or learned rudiments of music using e-learning course before? The second section requires participants to rank the degree of their satisfaction with the e-learning material in terms of the following data. The e-learning course will be further improved according to the feedback from the questionnaires. The following variables also incorporate the ten usability heuristics developed by Jakob Nielsen for user interface design (Such as: what is the pedagogical strategy? How ergonomic is the user interface? How does the system keep user informed about what is going on? Etc.) In the last section there are some open-ended questions.

## Time Line and Budget

Time	Assignments
Before April 15, 2010	Building the e-learning course
April 20, 2010	Sending the production and the questionnaires
From April 20, 2010 to May 20, 2010	Collecting the questionnaires
From May 20, 2010 to March 30, 2010	Analyzing the data
From May 30, 2010 to June 20, 2010	Improving the e-learning course

I only need some computer resources that I already have, so I need no budget.





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Here are the two screen shots from the internet

[http://en.wikipedia.org/wiki/Blended\\_learning](http://en.wikipedia.org/wiki/Blended_learning)

to show that from our website, users can extend to unlimited internet resources. More detailed information are available in website on the disc.



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## Blended learning

From Wikipedia, the free encyclopedia

**Blended Learning** refers to a mixing of different learning environments. The phrase has many specific meanings based upon the context in which it is used. Blended learning gives learners and teachers a potential environment to learn and teach more effectively.

Contents <span>[hide]</span>
<b>1</b> <span>Mixing synchronous and asynchronous instruction</span>
<b>2</b> <span>Considerations in blended learning</span>
<b>3</b> <span>Role of the instructor</span>
<b>4</b> <span>Current usage of the term</span>
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### Mixing synchronous and asynchronous instruction [edit]

A blended learning approach can combine face-to-face instruction with computer-mediated instruction. It also applies science or IT activities with the assistance of **educational technologies** using computer, cellular or **Smartphones**, **Satellite television** channels, **videoconferencing** and other emerging electronic media. Learners and teachers work together to improve the quality of learning and teaching, the ultimate aim of blended learning being to provide realistic practical opportunities for learners and teachers to make learning independent, useful, sustainable and ever growing. <sup>[1]</sup>

### Considerations in blended learning [edit]

Whether a course should be proposed as a face-to-face interaction, an online course or a blended course depends on the analysis of the competences at stake, the nature and location of the audience, and the resources available. Depending on the cross-analysis of these 3 parameters, the course designer will opt for one of the 3 options. In his course scenario he/she will then have to decide which parts are online, which parts are offline. A basic example of this is a course of English as a second language where the instructor reaches the conclusion that all audio-based activities (listening comprehension, oral expression) will take place in the classroom where all text-based activities will take place online (reading comprehension, essays writing).<sup>[2]</sup>

BLENDED learning increases the options for greater quality and quantity of human interaction in a learning environment. Blended learning offers learners the opportunity "to be both together and apart."<sup>[3]</sup> A community of learners can interact at any time and anywhere because of the benefits that computer-mediated educational tools provide. Blended learning provides a 'good' mix of technologies and interactions, resulting in a socially supported, constructive, learning experience; this is especially significant given the profound effect that it could have on distance learning.

### Role of the instructor [edit]

The instructor can combine two or more methods of teaching method. A typical example of blended learning methodology would be a combination of technology-based materials and face-to-face sessions to present content. An instructor can begin a course with a well-structured introductory lesson in the classroom, and then proceed with follow-up materials online. Blended learning can also be applied to the integration of e-learning with a **Learning Management System** using computers in a physical classroom, along with face-to-face instruction<sup>[4]</sup>. Guidance is suggested early in the process, to be used more sparingly as learners gain expertise.<sup>[5]</sup>

The role of the instructor is critical as this requires a transformation process to that of learning facilitator. Quite often, with the increase of baby boomers going back to school and pursuing higher education the skills required for technology use are limited. Instructors then find themselves more in the role of assisting students with computer skills and applications, helping them access the internet, and encouraging them to be independent learners. Blended learning takes time for both the instructor and learner to adapt to this relatively new instructional concept.

### Current usage of the term [edit]

### Current usage of the term [edit]

With today's prevalence of **high technology** in many countries, blended learning often refers specifically to the provision or use of resources which combine **e-learning** (electronic) or **m-learning** (mobile) with other educational resources, also called **hybrid courses**. Some would claim that key blended-learning arrangements can also involve e-mentoring or e-tutoring. These arrangements tend to combine an electronic learning component with some form of human interaction, although the involvement of an e-mentor or e-tutor does not necessarily need to be in the context of e-learning. E-mentoring or e-tutoring can also be provided as part of a "stand alone" ("un-blended") e-tutoring or e-mentoring arrangement.

Heinze and Procter have developed the following definition for blended learning in **higher education**:

Blended learning is learning that is facilitated by the effective combination of different modes of delivery, models of teaching and styles of learning, and is based on transparent communication amongst all parties involved with a course.<sup>[6]</sup>

Some of the advantages of blended learning include; cost effectiveness for both the accrediting learning institution and the learner, accessibility to a post secondary education, and flexibility in scheduling and timetabling of course work. Some of the disadvantages may include; computer and internet access, limited knowledge in the use of technology, study skills, problems which are similar to those who would be entering a physical learning institution.

It should also be noted that some authors talk about "hybrid learning" (this seems to be more common in Northern American sources) or "mixed learning". However, all of these concepts broadly refer to the integration (the "blending") of e-learning tools and techniques.

### Blended learning systems and projects [edit]

The European Union's Socrates programme has funded the development of blended learning courses in nine less widely spoken European languages. The development projects, Tool for Online and Offline Language Learning **TOOL** <sup>[7]</sup> are coordinated by the EuroEd Foundation, Iasi, Romania and Autonomous Language Learning **ALL** <sup>[8]</sup> coordinated by CNAI, Pamplona, Spain.

Each project has developed blended learning programmes at A2 'Waystage' level in accordance with the competence descriptors defined in the CEFR (Common European Framework of Reference for Languages).

ALL: Romanian, Turkish, Lithuanian, Bulgarian. TOOL: Slovene, Dutch, Hungarian, Estonian, Maltese.

The development is large in terms of size and scope and these may well be the first blended learning courses available in these languages, representing a development for the application of modern communicative language learning techniques in these languages.

The course developments were undertaken by development teams, consisting of several partner institutions, from each country. These institutions include publicly and privately funded universities, and private language learning providers, as well as consulting specialists.

Outside the academic sector, blended learning is being used in private companies, possibly because of the cost benefits over traditional training, though no studies are available which show clear cost savings. One of the earliest commercial offerings in the sector came from [Virtual College](#), which produced a blended learning NVQ system in 1995.

## Objections

[edit]

Martin Oliver and Keith Trigwell voice some objections to the use of the term "Blended Learning"<sup>[1]</sup>. They point out that the term has become a bandwagon for almost any form of teaching containing "two or more different kinds of things that can then be mixed". There is no consensus over what the things are that should be mixed: examples include different media, varying pedagogical approaches, or the mix of theoretical with practical work.

Their main objection is that generally the distinctions being drawn don't exist, or aren't productive. For example, the blending of e-learning with traditional learning implies that there can be an unblended form of e-learning in which no traditional learning occurs.

They also object to the use of the term "learning", when almost all of the focus is on how teaching is delivered and the implication is that receiving teaching is equivalent to learning.

## See also

[edit]

- [Hybrid Course](#)
- [Flexible Learning](#)
- [E-Learning](#)
- [M-learning](#)
- [Networked learning](#)
- [Virtual education](#)
- [Virtual University](#)



## References

[edit]

### References

[edit]

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## External links

[edit]

- ["Autonomous Language Learning"](#)  A European Union, government-funded, education project to build blended learning language courses in less frequently taught European languages (Turkish, Romanian, Bulgarian and Lithuanian).
- ["Tool for Online and Offline Language Learning"](#)  A European Union, government-funded, education project to design blended learning language courses in less frequently taught European languages (Dutch, Estonian, Hungarian, Maltese, Slovene).
- [An Instructional Media Selection Guide for Distance Learning: Implications for Blended Learning and Introduction to Virtual Worlds](#), an official publication of the United States Distance Learning Association (<http://www.usdla.org> ), which contains a chapter on blended learning including definitions, a blended learning model, and blended learning concept map. Free download available at: [https://docs.google.com/viewer?url=http%3A%2F%2Fwww.usdla.org%2Fassets/pdf\\_files/USDLA\\_Ins\\_Media.pdf](https://docs.google.com/viewer?url=http%3A%2F%2Fwww.usdla.org%2Fassets/pdf_files/USDLA_Ins_Media.pdf)

Categories: Pedagogy

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## Course

### Course Front-Page:

I use the dark blue as the background color to simulate the dark night sky because I use the Mozart's Twinkle, Twinkle Little Star as the example in the course to show the blended learning theory. As I explained before, I use the stars with moon picture at the top left of each page. I use both English and Chinese in the title. The background is in light yellow, which was chosen to highlight the title. There is an "introduction" button at the top of the course table. By click the button you will see some welcome sentences. That will remind the users that the courses start. Then, a table with twelve lessons

followed. Each lesson has three sections as Instruction, Quiz and Answer. I will use lessons one and two as examples to show how I built these twelve lessons. A “back” button is at the end of this page to return the link to the main front-page.



**基本乐理**  
Elementary Rudiments of Music

<b>Lesson 1: The Musical Staff</b>	<a href="#">Instruction</a>	<a href="#">Quiz</a>	<a href="#">Answer</a>
<b>Lesson 2: Clef</b>	<a href="#">Instruction</a>	<a href="#">Quiz</a>	<a href="#">Answer</a>
<b>Lesson 3: Notes</b>	<a href="#">Instruction</a>	<a href="#">Quiz</a>	<a href="#">Answer</a>
<b>Lesson 4: Ledger Lines and Stems</b>	<a href="#">Instruction</a>	<a href="#">Quiz</a>	<a href="#">Answer</a>
<b>Lesson 5: The Keyboard</b>	<a href="#">Instruction</a>	<a href="#">Quiz</a>	<a href="#">Answer</a>
<b>Lesson 6: The Semitone and the Tone</b>	<a href="#">Instruction</a>	<a href="#">Quiz</a>	<a href="#">Answer</a>
<b>Lesson 7: Note Durations</b>	<a href="#">Instruction</a>	<a href="#">Quiz</a>	<a href="#">Answer</a>
<b>Lesson 8: Dotted Notes</b>	<a href="#">Instruction</a>	<a href="#">Quiz</a>	<a href="#">Answer</a>
<b>Lesson 9: Rests</b>	<a href="#">Instruction</a>	<a href="#">Quiz</a>	<a href="#">Answer</a>
<b>Lesson 10: Dotted Rests</b>	<a href="#">Instruction</a>	<a href="#">Quiz</a>	<a href="#">Answer</a>
<b>Lesson 11: Time Signature</b>	<a href="#">Instruction</a>	<a href="#">Quiz</a>	<a href="#">Answer</a>
<b>Lesson 12: Measures</b>	<a href="#">Instruction</a>	<a href="#">Quiz</a>	<a href="#">Answer</a>



Lesson 1: the music staff

Instruction

There are three sections in each lesson. First section is instruction. A more readable instruction section for lesson 1 is followed after this picture.



# 基本乐理

## Elementary Rudiments of Music

### 课程 (Course)1: 五线谱 (The Musical Staff)

音符是用来表示音乐声音的符号。音符被写在一系列的平行线上，这些平行线叫做五线谱。

A **NOTE** is the name given to a sign that is used to represent a musical sound. It is written on a set of parallel lines called a **STAFF**.

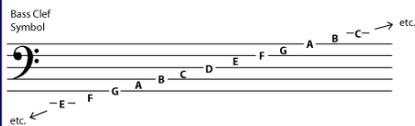
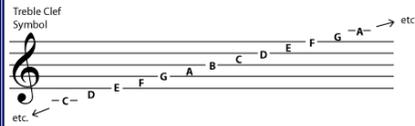


我们给每一条线和区间表明数字。通常在五线谱上线和区间旁是不标有数字的。我们在这儿标明数字是为了表明是从底部开始的。

We can refer to each line and each space by its number. A staff doesn't usually have numbers written beside the lines and spaces. We've put them there to show the fact that we number them from the bottom.

谱号被标示在每一个五线谱的开始，从而你可以知道一个特定的线上的确切音高。因为音符是按照字母顺序排列的，所以如果我们给定一条线音名，那么我们很容易说出其他线和区间的音名。

A **CLEF** (meaning **KEY**) is a sign placed at the beginning of each staff, which tells you the exact pitch of one particular line. Since the names of the notes are in alphabetical order, if we are given the name of one line, we can easily name the notes on all the other lines and spaces of that clef.



Here both Chinese and English are used to explain the “Musical Staff” followed by the blended learning theory for the following reasons. First, this website is designed mainly for the users in China. Second, it is a project in Concordia University. Furthermore, there

is no music education website which was in both English and Chinese. It is very good for learners who plan to learn music in English-speaking countries. Some basic concepts as note, clef are explained with some examples. Again, there is a “back” button at the end of this page to return to the front-page of the course part.

## Quiz

There is a quiz section for each lesson to test and to make sure the students already know the materials before they move to the next lesson. I use a cartoon picture of a boy and a girl with a question symbol to indicate the “quiz” section. Also, there is a “back” button at the end of this page to return to the front-page of the part course. Each quiz is designed based on the instruction but is more difficult. I hope the learners can learn the contents and then they can practice by themselves and get a higher step. The learners can develop their inherent ability and interest on music. Comparing to the traditional face-to-face learning, in addition to the learners’ peer students and their teachers, a well designed quiz can also be used to help to bridge the gap from known to unknown. That is a good combination of face-to-face and online learning following the principles of blended learning theory. Also, learners are presented with interesting, relevant, and engaging problems to solve. That is one of the most important characteristics of the blended learning environments.



## 小测试(Quiz)

### 课程(Course) #1 (五线谱--The Musical Staff)

打印这一页并完成它。当你完成这个测试，按照“答案”核对你的回答。如果你答对了所有的题目，你可以继续学习下一课。如果你没有达到这个标准，请再复习并再做这个测试一遍。

Print this page and complete. After writing the quiz, check your answers on the "Answer Page". If you get all of the right answers, you are able to continue the next course. If you don't, please review this course again, and then write the quiz again.

1. 填空 (Fill in the blanks):

i) 音符被写在一组平行线间。这组平行线叫做: \_\_\_\_\_。

Note is written on a set of parallel lines. The set of lines called a: \_\_\_\_\_。

ii) 每一个五线谱开始时的符号叫什么\_\_\_\_\_。

The sign placed at the beginning of each staff is called a \_\_\_\_\_。

iii) 音名是按照 \_\_\_\_\_ 顺序排列的。

The names of the notes are in \_\_\_\_\_ order.

2. 在下面的五线谱上左边从下往上给线标上数字。在右边从下往上给区间标上数字。

On the left side of the staff, draw number the lines from the bottom up. On the right side of the staff, draw number the spaces from the bottom up.



### Answer

Answer section follows the same style as instruction and quiz to give answers to the quiz for student to check their answers by themselves and under the guidance of teachers, which is also a good combination of online learning and face-to-face learning.



## 课程(Course) #1 答案 (Answer Paper)

1. 填空 (Fill in the blanks) :

i) 音符被写在一组平行线间。 这组平行线叫做 **五线谱**

Note is written on a set of parallel lines. The set of lines called a **staff**.

ii) 每一个五线谱开始时的符号叫 **谱号**

The sign placed at the beginning of each staff is called a **clef**.

iii) 音名是按照**字母**顺序排列的。

The names of the notes are in **alphabetical** order

2. 在下面的五线谱上左边从下往上给线标上数字。在右边从下往上给区间标上数字。

On the left side of the staff, draw number the lines from the bottom up. On the right side of the staff, draw number the spaces from the bottom up.



### Lesson 2 to 12

By the following pictures from lesson 12, we could see that lesson 12 has the same design as lesson 1 but for much deeper materials. The twelve lessons are designed following blended learning theory and within the similar framework of design. All the examples are based on Mozart's *Twinkle, Twinkle Little Star* from course music staff, clef, notes to measures, etc. Learns will start from zero to be able to play or sing the whole page music after they learn all twelve courses.



# 基本乐理

## Elementary Rudiments of Music

### 课程 (Course)12: 小节线(Measures)

音乐通常被小节线区分为每一个单元。每一个小节有固定的拍子。拍号决定每一小节的拍子数。例如，一些音乐每小节4拍，以四分音符为一拍。所以拍号是 $\frac{4}{4}$ 。

Music is often divided up into units called **measures** or **bars**. Each measure has a certain number of beats. The number of beats is determined by the **time signature**. For example, some music is written so that every measure has four beats, and that the quarter note is the unit that "gets the beat". In such a piece the time signature would be  $\frac{4}{4}$ .

让我们看看这段音乐：

Take a look at the following piece of music:



这是一段 $\frac{2}{4}$ 的音乐，你可以发现这个拍号在乐曲的前面。但是如果我们假设作曲家忘记写拍号在乐曲的前面。你怎么能知道这是 $\frac{2}{4}$ ？好的，如果你数每一小节的拍数，你能发现每一小节的拍数，并且是以四分音符为一拍。

This is a piece of music that has been written in  $\frac{2}{4}$  time. You can find the time signature at the beginning of the piece! But let's assume that the composer "forgot" to put a time signature at the beginning. How would we be able to know that the piece was in  $\frac{2}{4}$ ? Well, if you count up the number of beats in each bar, you would find that each bar has two beats, and that each beat is a quarter note:

小节1: 2四分音符=2拍

**Bar1:** 2 quarter notes = 2 beats.

小节2: 2四分音符=2拍

**Bar2:** 2 quarter notes = 2 beats.

小节3: 2四分音符=2拍

**Bar3:** 2 quarter notes = 2 beats.

小节4: 2四分音符=2拍

小节4: 2四分音符=2拍

**Bar4:** 2 quarter notes = 2 beats.

小节5: 1四分音符 加上 1符点8分音符 和1十六分音符=2拍

**Bar5:** 1 quarter note plus 1 dotted eighth note and 1 sixteenth note= 2 beats.

小节6: 1二分音符=2拍

**Bar6:** 1 half note = 2 beats.

任何拍号的乐曲必须确定每一个小节有同样的拍数，这个拍数是拍号上面的数字，如果我们给上面的例子写出拍数，它看上去是这样：

It is necessary, in any given time signature, to make sure that each bar has the same number of beats, and that the number of beats is the top number of the time signature. If we were to take the example above and write the count of each bar, it would look like this:





## 小测试(Quiz)

### 课程(Course) #12 (小节线-- Measures)

打印这一页并完成它。当你完成这个测试，按照“答案”核对你的回答。如果你答对了所有的题目，那么你已经达到我们课程的学习目的。谢谢！

Print this page and complete. After writing the quiz, check your answers on the "Answer Page". If you get all of the right answers, you have already satisfied the requirement of this course, Thank you!

根据给定的拍号给下面的乐曲家小节线。

Draw barlines in the following music according to the given time signatures.





## 课程(Course) #12答案 (Answer Paper)

根据给定的拍号给下面的乐曲小节线。

Draw barlines in the following music according to the given time signatures.



By using the blended theory we designed and built this website to develop learners' inherent power of learning music. This online learning course is designed to combine the face-to-face learning, online learning and self placed learning together, which is the core of the blended learning theory.

This project is a combined process of the blended learning theory, rudiments of music and design models. Luckin (2001) summarizes the requirements and implications of the some learning theories for instruction and software design. A similar table is summarized for the framework of this application of blended learning theory in designing an e-learning course on the rudiments of music project.

<b>Requirement</b>	<b>Implications: for effective instruction</b>	<b>Implications: Specific to website design</b>
Rudiments of music	Curriculum design	Method adopted for rudiments of music knowledge representation
Interaction between learner and environment	The nature of the access to the resources within the website	User interface
Extension of the learner	Pedagogical strategy, monitoring	Pedagogical strategy, learner modeling: a blended learning theory approach
Flexible collaborative support for the learner	Provision of assistance needs and monitoring	Provision and quantification of assistance
Attention to the cultural specificity of the environment in which learning takes place	Integration of learning activity with other aspects of the learner's music background	Integration of website, online resources, three music teachers and seventy-four students
Availability of clearly constructed goals to provide direction for activity	Learner-centered design We select the learners attending this course to be more self-motivated and can stretch their learning capacity under the guidance of the teachers and working with their peer students and with the assistance of this on-line course.	Pedagogical strategy The E-learning Course is designed in twelve lessons. Each lesson has Instruction, Quiz and Answers.
Opportunity for learners to ensure activity is directed toward to them	The nature of the access to the resources within the online course	User interface
Recognition that the website is a tool for mediation between the learner and the curriculum	The nature of the access to the resources (human and artefact) within the learning environment curriculum design	User interface method adopted for domain knowledge representation

### ***Instructional Design***

I mainly used the blended learning theory. I also used Holmes and Gardener's *E-Learning: Concepts and Practice* as our guidebook to e-learning theory.

### ***Design Procedure Illustrated***

In this project, I built an e-learning course production that is based on the blended learning theory. First of all, I made a questionnaire based on the assumption that the blended learning theory is a useful theoretical construct for educational software design. Each question in the questionnaire is well designed to try to collect as much relevant information as possible. After participants test this production, participants wrote back the questionnaire. The production required 2 or 3 weeks to test. The questionnaires were collected in 4 weeks. I sent 110 questionnaires at the end of April and got 87 replies and 9 records at the end of May.

### ***Software Design***

I used the following software:

Webpage design software: FrontPage™

Photo edition software: Photoshop 3.0™

Multimedia software: Flash CS3™

Music-creation and podcasting software: Garageband™

Music edition software: Cakewalk™

Digital nonlinear editing software: Final Cut Pro 6™, Adobe Premiere Pro™

## **Formative Evaluation**

### ***Purpose and goals***

The purpose of the evaluation is to get the information about how well the design enables the goal of the project to be achieved to enable improvements. Further improvements will be made according the feedback from the evaluation if we will have more time and budget to support this project.

### ***Participants***

One part of the sample was three experts who are working on education about the rudiments of music and one expert who is working about e-learning of music in China. The other part of the sample is actual learners who are learning rudiments of music following the four experts. In order to obtain the sample population as well as for the data collection availability and convenience, all of the four experts chosen are my classmates of my undergraduate period. Their major is musical education.

### ***Participant Activities***

I showed the e-learning course to those four experts directly at the end of April. After those experts used it, they filled in and returned the questionnaires to me in four weeks. They also arranged for their students to use the e-learning course and filled in and returned the questionnaires to me. Fortunately, there was a 9 learners' class that was learning rudiments of music at the same level as the content of the e-learning class. They used the e-learning course as a supplementary material. I followed these 9 learners to record how they used it every week in those four weeks. These 9 learners also filled in and returned the questionnaires to me.

### ***The Questionnaire***

The questionnaire (in Chinese) includes three parts. The first one is the background of participants. Depending on this section, we can partition the data for analysis. For example, what major is the participant? How many years have the participant learned rudiments of music? Have you taught or learned rudiments of music using an e-learning course before? The second section requires participants to rank the degree of their satisfaction with the e-Learning material. The e-learning course would be further improved according to the feedback from the questionnaires. The following variables also

incorporate the ten usability heuristics developed by Jakob Nielsen for user interface design (Such as: what is the pedagogical strategy? How ergonomic is the user interface? How does the system keep the user informed about what is going on? Etc.) In the last section there are some open-ended questions.

## **Formative Evaluation Real-time Results**

### ***Clustering and Analyzing the Questionnaire Data***

For the 87 item replies and 9 records, we did some statistical analysis and clustered the data to dig deep of the customers' feedback and potential room for improvements of this e-learning Course on the Rudiments of Music. Here is the summary of the feedback from all the questionnaires.

#### **SECTION I**

1. Title  
3 Music Teachers  
1 Music course designer  
83 Learners
2. How many years have you taught or learned rudiments of music?  
83 less than 3 years  
3 3-5years  
0 5-10years  
1 more than 10 years
3. Have you taught or learned the rudiments of music using e-learning course?  
6 Yes, I have  
81 No, I haven't
4. Have you designed an e-learning course?  
0 Yes, I have  
87 No, I haven't
5. Which method do you prefer to choose to learn rudiments of music?  
7 Classical method  
65 E-learning method  
15 Both of them

#### **SECTION II (Contingency Table)**

After you test the e-learning course, please rank the degree of satisfaction of the following data.

	Good	Neutral	No good
1. How about the pedagogical strategy is?	81	6	0
2. How about the user interface is?	78	9	0

3. How about the knowledge representation is?	82	5	0
4. How about the interaction between learner and environment is?	83	4	0
5. How about the flexible collaborative support for the learner is?	77	10	0
6. How about the extension of the learner is?	79	8	0
7. How about the system keep users informed about what is going on?	80	7	0
8. How about the system language? (Does the system speak the users' language, with words, phrases and concepts familiar to the user?)	81	6	0
9. How about the convenience of the system operation?	85	2	0
10. How about the consistency and standards of the e-learning course is? (If different words, situations, or actions mean the same thing?)	79	8	0
11. How about the flexibility and efficiency of use is? (If the system can cater to both inexperienced and experienced users?)	81	6	0
12. How about the aesthetic and minimalist design is? (If dialogues should not contain information, which is irrelevant or rarely needed?)	77	10	0

### SECTION III (Summary)

1. After you test the e-learning courses, do you think that the goal of the project has been finished?  
All the 87 relies that the goal of the project has been finished and satisfied very well.
2. Do you have any comments and suggestions for the e-learning courses?  
Both the teachers and students gave very positive feedback of this e-learning.  
Most comments are in two areas. One is that teachers and students hope this e-learning course can be extended to intermediate and high levels of music knowledge. The second suggestion is that students hope they could have more vital media examples, which will make the course easier to understand and more interesting.

#### Analysis of the Nine Records

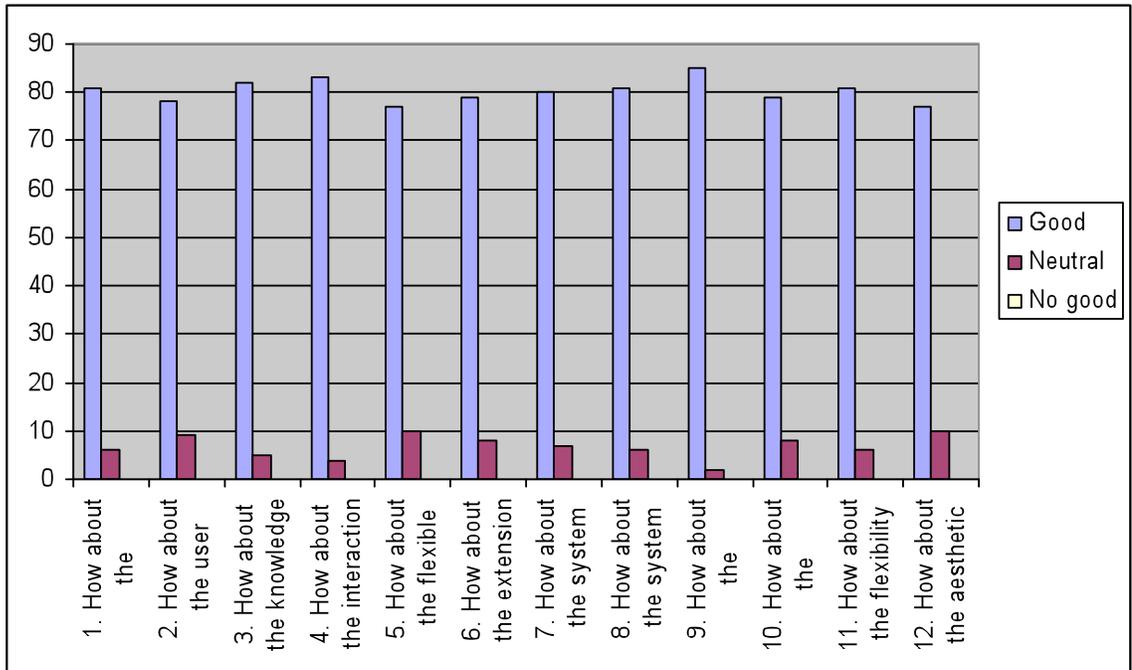
The nine detailed records for students show that the questionnaires are well understood. Also, the students are following the course step-by-step as we designed they should.

#### Analysis of the Section II

**Table 1: Clustered Column**

The following clustered column compares values across the twelve questions, which indicate that a majority of the users think this e-learning course is very good. Only a small portion think it is neutral

and no one think that is not good.



From this formative evaluation questionnaire, it give us some very valuable information to identify some important changes to be made as the teachers and students hoped this E-learning course could be extended to intermediate and high level of music. Also, more vital media examples can help the students to learn the music more easily.

### ***Evaluation of the Questionnaire***

According to the answer of the questionnaire and the clustering and analyzing of the questionnaire data, this E-learning course is a very promising tryout of new method in teaching music and a big success of the application of the blended learning theory. The results indicate that the blended learning theory offers a useful theoretical construct even for such single-learner Web-based educational course design.

Most of the teachers and students are very interested to try this new way of teaching and learning music. It shows the power of using the new information and communication

technology with careful instructional design. It is totally different compared to the traditional music class. The students showed a lot stronger interest and attendances.

It is also a more efficient way of teaching, which is what we expect. Through the e-learning environment, a teacher can teach a lot more students at the same time. The students can just follow the e-learning course step-by-step themselves and the teachers need to explain only the most difficult and tricky parts and can answer the questions according to each student's recorded and displayed status.

### ***Conclusion***

Both the teachers and students gave very positive feedback of this E-learning Course on the Rudiments of Music. However, also some specific improvements are needed. One of the potential desired additions is that teachers and students hoped this E-learning course could be extended to intermediate and high level of music. Since that is a strong indication of the success of the course, I will be more than happy to do so. Also, students hoped they could have more vital media examples. This can be a significant improvement to make this E-learning Course even more successful. By adding this feature, this E-learning course should become more successful. If we can have more time and sufficient budget, we will hire some other experts in this area to help us to further improve this E-learning course.

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