# Teaching music as a university elective course through e-learning

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## Abstract

E-learning is currently considered one of the most important mediums for instruction. It is an educational tool that seeks to change our educational system from the traditional to the interactive (Sacchanand, 2008). This study will compare students' course achievement and attitudes toward music learning between two course delivery methods: blended and face-to-face (FTF). A pre-test/post-test control group experimental design model was used. Thus, participants were assigned to either experimental or control groups purposefully in order to achieve group equivalency.

The study was conducted during the fall of the 2010-2011 academic year. The participants consisted of 179 university students who were taking a music course as a university elective course at Al-Quds University. The experimental group was taught with the blended mode of instruction, which involved using both FTF and online instruction. The control group was taught with FTF instruction alone. Prior knowledge about music was measured in both groups at the beginning of the study. Students' final course scores and attitude scores toward music learning were evaluated at the end of the study. Data were analyzed using independent sample t-tests. A statistically significant difference was found between the FTF and the blended group. The analysis showed that the blended group was more successful than the traditional FTF group in terms of both course achievement and attitudes toward music learning.

**Key words:** Blended learning; Face-to-face instruction; Music elective course; Attitudes toward music learning

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## Introduction

### Background

Recently there has been a paradigm shift away from the traditional teacher-centered classroom, in which the instruction occurs with an instructor and the students at the same time and place, toward a learner-centered classroom, in which the instruction is focused on the individual learner and is based on the methods and practices that best promote high motivation, learning, and achievement (McCombs, 1999). The development and application of information technology (IT) has become a major strategy in teaching and learning processes.

Online learning is rapidly growing as the most popular form of instructional technology. Numerous varieties of online education have been examined in past literature, such as online, web-based, web-enhanced, blended, hybrid and mixed mode online learning. Smith and Kurthen (2007) stated that courses that include a minimal number of web-based elements are called web-enhanced and courses that incorporate some online learning activities (less than 45%) are called blended. If online activities are between 45% and 80% then the course is considered hybrid. Classes with 80% or more e-learning are classified as fully online.

This paper introduces blended learning as a method for teaching music in a university elective course offered to Palestinian university students at Al-Quds University in order to discover how instructional technology can help students become better learners. According to Bourne,

Harris, and Mayadas (2005) blended learning is defined as an optimal combination of face-to-face (FTF) and online education that improves learning and satisfaction of instructors and students at a reasonable cost. Yoon and Lim (2007) state that the concept of blending should help teaching and performance professionals create and manage plans to make the best use of FTF and technological formats, selecting the optimum instructional or non-instructional performance solutions.

Despite the fact that online learning is a widely used learning practice with many strategic advantages, FTF and online learning are still side by side in the educational world. Some researchers believe that there will always be a place for instructor-led educational programs. Others believe that online learning is more successful than FTF learning and may therefore take the place of FTF learning in the future. When we look at the literature, we find many advocates of these two opinions. Russell (1999) cataloged 355 comparative studies in distance education between 1928 and 1996 and argued that not one method of delivering instruction is more effective than any other.

On the other hand, although blended learning is a relatively new concept in online education, empirical studies by some researchers have looked specifically at blended courses and have found that online education is more effective than traditional FTF education. Robertson, Grant, and Jackson (2005) examined the perceived quality of the students' learning experience in online courses as compared to classroom-based learning in a graduate program. They stated that students considered the quality of their online learning in the graduate program similar or even superior to campus courses. Guiller, Durndell, and Ross (2008) conducted a study that engaged students in a critical thinking activity using both online and FTF methods and compared the two models in terms of critical thinking skills. They stated that more evidence for critical thinking was found in the online models and more students stated that they preferred this mode of discussion.

Another emerging idea is that mixing FTF and online delivery options provides the most successful instruction. Schrum, Burbank, and Capps (2007) studied students in introductory teacher preparation courses and stated that the best online teacher preparation courses may be those that blend virtual and FTF interaction, rather than those that are strictly online.

According to Amrein-Beardsley, Foulger and Toth (2007), instructors reported that the blended course model allows them to accomplish course objectives more successfully than either an online course model or a traditional course model. Most instructors noted increased interaction and contact among their students in a blended learning environment (Smith, 2005). However, little research has examined how learners perceive their e-learning environment and how learners are assisted or hindered in their learning (Chen & Macredie, 2002; Moore & Aspden, 2004). Tang and Byrne (2007) found no significant difference in course achievement between FTF instruction and blended instruction, although they stated that students appeared to be more satisfied with the blended mode of delivery than the FTF mode of delivery. Torgerson and Zhu (2004) suggest a relationship between the subject that is taught and the appropriateness of employing e-learning environments in their instruction.

Some prior studies have considered the use of technology in music learning. Jennings (2005) adopted a case study approach with a child who composed music using music sequencing technology. The availability of data produced by the music technology combined with video recordings of the child as he composed provided a robust method of data collection for this case study. However, teacher intervention in the learning process was made at the teacher's discretion rather than at the request of the student and the student's perspective was not sought.

Reynolds (2005) conducted a larger study with seven children as they composed music also using music sequencing technology. Data collection procedures involved video and audio recordings combined with pupil interviews in order to reveal the children's actions and decision making during the composition process. Reynolds was interested in revealing the process of composition and used synchronized video and audio data to provide the optimum vehicle for analysis. However, composition process data was saved periodically rather than continuously, which we argue, failed to capture the complete composition process. Also, he made no attempt to elicit the pupils' perspective.

These shortcomings were addressed in a further study (Gall & Breeze, 2005) that conducted research investigating computer-based music composition with pupils who worked in pairs at the computer using three different types of music sequencing software. Data was collected both via video recordings, saved as procedures in the music software, and via interviews with pupils and teachers. An innovative data collection method involving three video cameras, one focusing on the computer screen, one on the music/computer keyboard and the third taking wide angled shots of the classroom, provided continuous monitoring of the composition process. Their findings revealed relationships between the type of software employed, pupil collaboration and teacher interaction and pupils' perceptions of the software.

These prior studies in the music domain examined the use of music technology but were conducted in face-to-face environments. However, Seddon (2007) conducted a study investigating the viability of collaborative computer-based music composition in an e-learning environment during which he also sought the participant perspective through semi-structured interviews designed to reveal participant reflections of their learning experience. The study connected adolescent learners in Norway and England via e-mail as they engaged in collaborative computer-based music composition without a teacher being present. Results confirmed collaborative composition was technically possible in this environment and the adolescent participants described the experience as 'fun', 'interesting', 'enjoyable' and 'exciting'. The adolescents reported that they preferred to work without a teacher present and that the compositions they produced exceeded their expectations (Seddon, 2007).

As seen in the background of the study, the literature review shows that there are numerous studies covering both the use of instructional technology while teaching and learning as well as students' attitudes toward that mode of instruction. However, changes to the quality of music education with the use of IT have not been evaluated. Also, IT offered diverse learner-centered approaches and strategies, such as reflection, collaboration, interaction, problem-based learning, and general knowledge construction, and it increased the learners' motivation to be more responsible for learning. It may be uncertain which type of instructional strategies are most reliable for online learning, but determining success or failure of strategies in the online environment and understanding the background theories on which they are based is imperative to establishing appropriate pedagogies and designing well established practices.

As Palestinians began to incorporate learner-centered ideology into Palestinian classes, many Palestinian institutions and organizations have shown increased interest in developing the potential of e-learning. As blended learning is a relatively new concept of online learning, few empirical research studies have looked specifically at blended courses or have evaluated students' learning outcomes and their attitudes toward this mode of instruction (Delialioglu & Yildirim, 2008; Lin, 2008). In addition, most of the research practices are from the Western world and were conducted under different conditions and with different subjects. This empirical study seeks to evaluate the effectiveness of the blended

mode of delivery on Palestinian students' course achievement and attitudes toward music learning.

## Purpose of the study

This research examines the extent to which the implementation of blended learning has improved students' course achievement and their attitude toward music learning in a university elective music course. It seeks to compare students' course achievement and attitude toward music learning before and after implementing two course delivery methods: blended and face-to-face (FTF).

To accomplish this purpose, two major questions are addressed:

1. Is there a significant difference between the FTF group and the blended group in terms of course achievement?
2. Is there a significant difference between the FTF group and the blended group in terms of attitudes toward music learning?

# Method

### Design of the study

In this study, the researcher used a pre-test/post-test control group experimental design model. The independent samples t-test was employed to determine the difference between the experimental group and the control group in terms of course achievement and attitudes toward music learning. The independent variable was the instructional method (FTF or blended). The dependent variables were the students' course achievement and their attitudes toward music learning.

## Participants

The participants of this study consisted of 179 college-level students enrolled in a university elective music course at Al-Quds University. Eighty-six students were taught with the blended mode of delivery, which involved using both FTF and online modes of instruction; 93 students were taught with FTF mode alone. The students were assigned to the control group and the experimental group purposefully in order to achieve group equivalency based on previous test scores regarding their knowledge about music and their attitudes toward music learning.

## The instructional material

The instructional material of the music course for both groups included a general view about the emergence of music and the stages of its development through history, especially in Al-Baroque age, the classical age, the romantic age, and the contemporary music. The instructional material also featured popular music and Jazz music. In addition, this course focused on studying the definition and characteristics of music listening and appreciation, studying the orchestra and its instruments, studying musical compilations and forms, and studying the elements of musical pieces. Furthermore, the class discussed the principles and rules of musical performance and expression as well as musical notation. Learners were given ample opportunities for exposure to musical knowledge through different channels (aural and visual), supporting their different cognitive styles. The aural input was delivered through a variety of intensive and extensive listening activities designed in a way to provide opportunities to focus on melody, rhythm, and form. Learners were also encouraged to watch films and to listen to television and radio programs related to music for additional extensive listening.

### Data collection tools

The researcher used an achievement test and an attitude scale as data collection tools. The achievement test consisted of final exam questions used in the music course and it was used to test students' previous knowledge at the beginning of the study. The same test was used at

the end of the course. The test was prepared with three experts on the subject matter who were the other instructors of the same course. The attitude scale that was used in this study was developed by the researcher. The scale consisted of 40 items with a four-point Likert response format; values ranged from strongly agree (4) to strongly disagree (1).

In order to guarantee the validity of the data collection tools, a jury comprised of educational experts and experts from the departments of music at two Palestinian universities (Al-Quds & AnNajah Universities) were invited to comment on the data collection tools. On the basis of their comments, modified versions of the data tools were prepared by the researcher and the jury was again requested to assess their validity.

As for the reliability of the data collection tools, the researcher conducted a pilot study by trying out the tools on a group of 20 students from the population. These students were excluded from the participants of the study. The computed reliability for the instruments' re- test was computed using Pearson correlation formula . The obtained value of reliability on the test was (0.87) and the obtained value for the attitude scale was (0.92). These scores were high and the tests were accepted for the purpose of the study.

## Procedures of the study

At the beginning of the study, performance objectives were written and instructional materials were developed. After that, the achievement test and the attitude scale were given to the control and the experimental groups as pretests. The control group and the experimental group were then taught for 14 weeks using two course delivery methods: Blended for the experimental group and FTF for the control group. The FTF group took the course traditionally (three hours of theoretical material in the classroom weekly). The lectures were supported by PowerPoint presentations, books, and lecture notes. Classroom discussions and question and answer techniques were used in teacher-student interactions. Teamwork, classroom discussions, and projects were used in order to provide opportunities for collaborative learning. Classroom meetings for the blended group were one and half hour each. In addition to these classroom meetings, the blended group used a website that was developed for the course. Additional learning materials consisted of online lecture notes and multimedia-rich components, such as screen captures, assessment simulations, and online tutorials. The students in the blended group were able to access these learning materials through the web site. Questions, e-mail, and web announcements were used as means of student-teacher interaction. Teamwork, classroom discussions, and e-mail were used in order to enhance students' collaborative learning experiences. The website was developed like a small model of a learning management system. Students in the blended group could log in to this web site with their passwords reaching the systematically structured learning materials.

At the end of the course, the same test and scale were given to students as post-tests. The data collected before the course and after the course were analyzed using SPSS software. An independent sample t-test was used in order to compare the groups in terms of achievement in music and attitudes toward this course.

## Results

### Achievement

In order to answer the first research question, "Is there a significant difference between the FTF group and the blended group in terms of course achievement?", students' prior knowledge results on the achievement test were compared. The FTF and the blended groups' pre-test results (prior knowledge about music) are demonstrated in Table 1.

As indicated in Table 1, the independent samples t-test technique was applied to the mean pre-test

scores for the FTF and blended groups in order to examine the differences in prior knowledge. According to the test results, there was no significant difference in prior knowledge about the course between the FTF and blended groups (p=.319). The FTF and blended groups' post-test results (course achievement) are shown in Table 2.

As shown in Table 2, the independent sample t-test technique was applied to the mean post-test scores for the FTF and blended groups in order to examine the differences in course achievement. According to the test results, there was significant difference in course achievement between the FTF and blended groups (p<.01). The experimental (blended) group's mean score on the achievement test was higher than the control (FTF) group's mean score. The results indicate that the blended mode of instructional design, which was the combination of FTF and online instruction, had a positive effect on students' learning outcomes. There was no statistically significant difference in prior knowledge of music between the experimental group (blended group) and the control group (FTF group) at the beginning of the course. After 14 weeks of instruction, the experimental group received higher scores than the control group on the achievement test. The difference in the mean scores of the groups was statistically significant.

## Attitudes

In order to answer the second question, "Is there a significant difference between the FTF group and the blended group in terms of attitudes toward music?" the Attitude Scale was applied to the FTF and blended groups at the beginning and at the end of the instructional period. The independent samples t-test technique was applied to the mean scores of both groups and the results were compared at the significance level of .05. The comparison of the FTF and blended groups' mean scores at the beginning of the instructional period are shown in Table 3.

As shown in Table 3, there was no significant difference in attitudes towards music learning between the control and experimental groups before instruction (p=.813). The comparison of

**Table 1: Comparison of prior knowledge about music in the FTF and blended groups.**

| Group | N | Mean | SD | Df | t | p |
|---|---|---|---|---|---|---|
| FTF | 93 | 26.173 | 13.587 | 177 | .999 | 0.319 |
| Blended | 86 | 24.071 | 14.331 | | | |

**Table 2: Comparison of course achievement in the FTF and blended groups at the end of instruction.**

| Group | N | Mean | SD | Df | t | p |
|---|---|---|---|---|---|---|
| FTF | 93 | 51.16 | 9.97 | 177 | 6.913 | 0.000 |
| Blended | 86 | 61.49 | 10.003 | | | |

**Table 3: Comparison of the FTF and blended groups' mean Attitude Scale scores at the beginning of instruction.**

| Group | N | Mean | SD | Df | t | p |
|---|---|---|---|---|---|---|
| FTF | 93 | 126.868 | 12.422 | 177 | .237 | .813 |
| Blended | 86 | 127.337 | 13.948 | | | |

the FTF and blended groups' mean scores on the Attitude Scale at the end of instruction are shown in Table 4.

According to the test results shown in Table 4, there was a significant difference in attitudes towards music learning between the FTF and blended groups after the instruction took place ($p<.01$).The experimental (blended) group's mean score on the Attitude Scale was higher than the control (FTF) group's mean score. The results indicate that the blended mode of instructional design had a positive effect on students' attitudes towards music learning. Before the instruction, there was no statistically significant difference in the Attitude Scale mean scores between the experimental group (blended group) and the control group (FTF group). After 14 weeks of instruction, the experimental group received higher scores than the control group on the same Attitude Scale. The difference in mean scores of both groups was statistically significant.

## Conclusion and recommendations

The research in this study provides both a participant perspective and an evaluation of their e-learning environments (Moore & Aspden, 2004). It also suggests that the music e-learning resource supports participants' learning by providing appropriate material specifically designed for the e-learning environment it was used in, and by providing the participants with opportunities to effectively interact with the 'on-line tutor' and employ their own evaluation criteria. This study examined the effects of blended and face-to-face course delivery methods on students' achievement and attitudes towards music learning in a music elective course where the only difference between the experimental (blended) and control (FTF) groups was the learning strategy and course delivery method. According to the test results, the blended mode course delivery method was more successful than the FTF course delivery method in terms of both students' course achievement and attitudes towards music learning.

It is believed that a blended learning environment, with interactive materials including instructional videos, screen captures, and assessment simulations, is the most effective environment for success. Literature supports the assertion that a blended learning environment is more successful than a FTF learning environment. Osguthorpe and Graham (2003) stated that blended learning offers improved pedagogy, increased access to knowledge, and fostered social interaction between learners. Teachers are able to use a variety of instructional methods in a blended learning environment (Vaughan, 2007) and students can control the pace of their own learning, by selecting the materials and managing their own times. Moreover, Garrison and Kanuka (2004) stated that "it is inevitable that campus-based higher education institutions will adopt blended learning approaches in a significant way" (p. 104).

In music, many more skills are required for practice rather than learning concepts; thus, students are able to learn these skills by following many guiding steps reinforcing these skills. This is not possible for the students in traditional learning environments. Through interactive learning materials such as screen captures and assessment simulations students can watch a video and pause or rewind that video. They can also perform

**Table 4: Comparison of the FTF and blended groups' mean Attitude Scale scores at the end of instruction.**

| Group | N | Mean | SD | Df | t | p |
|---|---|---|---|---|---|---|
| FTF | 93 | 124.505 | 12.180 | 177 | 3.003 | 0.003 |
| Blended | 86 | 130.535 | 14.644 | | | |

a simulation resembling the usage of a real instrument in a safe environment. Although in FTF learning similar materials can be used, interactions in traditional FTF learning environments are not as successful because learning time is limited especially if the classes are crowded. In blended learning, students have flexible time to use the materials provided for them. Additionally, blended learning environments better support students' individual differences and preferences. The employment of blended-learning in teaching and learning music promotes learner centered instruction as it allows a variety of learning styles and contextual feedback. It also allows learners to work at a place and time that suits them, to watch and listen to a great number of musical forms and pieces, and to recognize most international and traditional musical instruments. Finally, blended learning facilitates the best use of musical resources for students.

As stated above, the findings of this study are supported by the literature: Schrum, Burbank, and Capps (2007), Amrein-Beardsley, Foulger and Toth (2007) and Smith (2005) emphasized that the blended learning environment provides improved learning outcomes and improved student and faculty satisfaction. They also stated that faculty-student interaction and instructors' abilities to accomplish course objectives increased in the blended learning environments compared to an online or traditional course. Although researchers such as Tang and Byrne (2007) and Delialioglu and Yildirim (2008) have found no significant difference in course achievement between FTF instruction and blended instruction, most reviewed literature concluded that blending online and FTF instruction, on average, produces stronger learning outcomes than FTF instruction alone.

## Recommendations

Since learner-centered practices are considered to be one of the best approaches to teaching and learning and because online learning is quickly pervading higher education, it is crucial that instructors are trained to successfully integrate learner-centered practices into their learning environment. The importance of training instructors to understand the impact of learner-centered practices and to implement them into both traditional and online practices will be an important part of professional development.

The researcher recommends that instructors' training modules should be developed to define and stress the aspects of learner-centeredness. Such training modules should also emphasize how instructors' attitudes, caring about the students, and trying a variety of teaching strategies create more learner-centered environments and are beneficial to student learning. So, if instructors realized the value of incorporating learner-centered practices into their teaching practices, it is likely that they would be more interested in making the necessary instructional changes needed to reach those ratings. The researcher is recommending that all training modules should:

- Address individual and social learning needs and stress collaboration and group activities and provide examples of each.
- Use online resources to illustrate at least one successful collaboration technique that involves the instructors interacting with the other instructors in the training module.
- Develop at least one collaborative activity in their new course while in the training.
- Stress the importance of interaction, of getting to know the students, and of making the students feel valued.
- Define and emphasize learner-centered practices in areas of collaboration, interaction, caring about students, and creating a variety of assessments.

In conclusion, we should provide the conditions in which our learners can learn better and be more active and successful learners. As Albert Einstein once said: "I never teach my pupils, I only attempt to provide the condition in which they can learn."

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