

Effectiveness of flipped classrooms using the Blackboard System in developing art work skills and attitudes of Faculty of Education female students at Jouf University toward the use of practical skills

Hanan Abdel Samia Mabrouk

Educational Department, Faculty of Home Economics,
AL-Azhar University, Egypt , Corresponding Author's

Gihan Maher Genedy

Childhood Department, Faculty of Education, Jouf
University, Sakaka, Aljouf, KSA

Abstract:

The present study aimed to investigate the effectiveness of flipped classrooms using the Blackboard System in developing art work skills and attitudes of Faculty of Education female students at Jouf University toward the use of practical skills. The participants of the study included 80 female students from Faculty of Education at Jouf University. The researchers prepared an observation checklist and an attitude scale. They also prepared some tasks, activities, sites for videos and data for students to do at home. They taught the experimental group through flipped classroom via Blackboard System, while the control group taught through the traditional method for a whole semester. The findings revealed that using the Blackboard System proved to be effective in developing art work skills and attitudes of Faculty of Education female students at Jouf University toward the use of practical skills.

Key Words: *Active learning, Flipped classroom, Blackboard System, Art work skills.*

1. Introduction:

In the digital age , students are in continual contact with the Internet through the various technological tools and devices including computers , mobiles and tablets . Female students are in continual contact with Facebook, instructional Blackboard programs and social networks that include Twitter and YouTube.

Flipped learning " is one of the new strategies that appeared as a response to regular instruction. It aims to integrate technology and make use of its tremendous potentials

to change the teaching and learning strategies based on Internet " (Bergmann and Sams, 2012 : 25). Flipped learning depends on changing and reversing classes into lessons on the Internet so as to make use of classroom time for carrying out some activities such as discussion, problem solving and other applications. It replaces regular teaching as it adopts various technological devices such as video captions, e-books and acoustic lectures. Students can interact with others on social networks through forums. The teacher is the most important factor in this respect as he is who produces the lectures on the internet (Metwali, 2015:91).

It is important for teachers in general and art education teachers in particular to cope with technology and make use of its potentials in teaching the subject-matter. Art teachers can present some instructional films and video captions on some artistic materials. Technological devices can present some artistic instructional aids through the internet and multimedia where students can infer various solutions and novel things from one topic; thereby producing art works of novel nature(Al-Rashid,1993:213).

Nowdays, Jouf University adopts blackboard as a system of instructional management for all male and female students in all academic programs. Being easy to use, faculty members can use the blackboard to manage their courses. Also, students can use it to participate in the activities of the courses they are studying.

1.1. Statement of the problem

Female students' scores in art work are very low. This might be due to lack of motivation, and the inadequacy of lecture time to make follow-up and evaluate their art work and products. This is why the researchers suggested that flipped classrooms should be used in practical skills as there is no any related study on practical skills to the researchers' knowledge.

1. 2. Questions of the study

Main question: To what extent are flipped classrooms effective in developing the art work skills and Jouf Faculty of

Education students, attitudes towards their use of practical skills?

From this main question the following sub-questions are branched:

1. How far are flipped classrooms effective in developing the practical skills in "art work" course among Faculty of Education students(kindergarten's Department)at Jouf University?
2. How far are flipped classrooms effective in developing the students' attitudes towards their use of flipped classrooms in teaching the practical skills?

1. 3.Significance of the study

The present study is significant to:

1. Female students, as it helps them develop their art work skills and attitudes towards using flipped classrooms in teaching practical skills.
2. Teachers as it helps them use flipped learning in teaching practical skills and developing students' art work skills.
3. Researchers as it opens avenues of research in flipped learning.

1. 4.Delimitations of the study

1. Female students kindergarten' s Department.
2. Faculty of Education at Jouf University.
3. The course of "Forming with used materials"
4. The second semester of the academic year 2015/2016.

1. 5.Terms of the study Flipped learning

The term is defined by the researchers as an educational model in which the lectures and the home-assignments are replaced by electronic lectures using the modern technologies and the internet on the part of students outside of the classroom. The lecture time is allocated to discussion, projects and drills.

Blackboard

It is defined by the researchers as a worldwide instructional system to manage learning on the internet with

many languages one of which is Arabic. It is designed to help students and the teacher interact in the lecture through the internet and use the various subjects in the internet in addition to carrying out the activities that supplement regular face-to-face classroom teaching. Blackboard enables lecturers to present the courses, forums, chatting, internet-based quizzes, academic resources etc.....

Functional art works

The researchers adopt Robertson's (1994:26) definition which states that the term functional art work refers to the novel art work produced by the integrated human being who makes use of natural or artificial materials where he/she reforms and/or adopts them using his/her experiences, knowledge and skills to produce good aesthetic products.

2. Literature and related studies

2.1. Flipped learning: Definition and origin

In this digital age, students use the various technological equipments such as computer, mobiles, tablets, social networks such as facebook, twitter and youtube (Metwali, 2015:95). In spite of this, the regular methods, though they are teacher dominant, are still used. However, such regular methods have the advantage of providing real teacher-students interaction. That is why the need arose to a strategy that combines the advantages of e-learning and regular instruction. Blended learning arose as a strategy that blends the advantages of computers and the internet on the one hand and regular learning on the other hand. Flipped learning, though it is the development and extension of blended learning, is an independent strategy that is now spreading in higher education and has now become dominant (Alsaadon, 2016:1). The origin of flipped learning began in the International Conference on College Teaching and Learning (2000). In this conference, J. Wesley Baker presented the paper entitled "The classroom flip: Using web course management tools to become the guide". Baker (2000:9) suggested that the flipped classroom model helps the teacher to use his/her web

tools and course management programs to provide instruction through the internet where the students evaluate home assignments. In the classroom, the teacher has adequate time to help students practise effective learning activities and confer collaboratively with other students.

The Flipped Learning Network (2014:1) defined flipped learning as" an approach providing shift from cooperative learning to individual learning, thereby increasing dynamics and interactivity in the learning environment. The teacher guides students and encourages them to collaborative creativity". There is agreement among Holley et.al.,(2010:287),Horn(2013:1)and Johnson et.al.,(2014:11)on the fact that flipped learning turns the regular class or lecture into internet-based lectures or sessions that are accessible by students at any time and at any place outside of the classroom.

Flipped learning is à new term and its idea is related to what takes place at home in regular learning is done during the lecture in the classroom and vice-versa. The students are exposed to the subject-matter outside of the classroom through watching an instructional video made by the teacher to explain or read something related to the lesson.

The regular class and/or lecture is turned, in flipped learning, into internet-based lessons that are accessible by students outside of the classroom; thereby providing time for students to perform other activities in the classroom such as discussion, problem-solving and drilling (Metwali, 2015:91). According to Kelly (2014:8) and Alzain (2015:177), flipped learning is an individualistic learning style and is considered one of the forms of blended learning that relies on technology outside of the classroom followed by small groups' active learning in the classroom. Also, there is agreement among Large et. al., (2000:32) and Saunders,2015:177) that flipped learning is a non-conventional instructional strategy in which students are provided with videos, tapes or visual recordings to recognize the concepts at home and make direct conferencing and discussion either alone or through social networks about what they have

watched, listened to or learnt. Finally, they meet with their teacher in the classroom and confer about the videoed material or collaborative projects conducted.

It is important to refer to the fact that what is available in the classroom in regular learning has been done in flipped learning and vice-versa. Mostafa (2015:8) pointed out that the flipped e-course is a course in which the lecture is prepared through the web to be read and /or studied by the students at home and the class time is devoted to answering questions and discussing the course assignment.

The present study is consistent with the previously mentioned studies in that they stressed the importance of preparing e-courses according to the recent methods and strategies of which is flipping learning that can contribute to students' achievement, critical thinking, motivation to learn and creativity.

The blackboard academic system is a commercial management system from Blackboard Company. It provides varied instructional opportunities that overcome the various barriers and obstacles faced by the learners as well as educational institutions. Also, this system "has helped several educational institutions in spreading education through the internet. In addition, it is characterised by flexibility, viability and expansion"(Osman and Awad,2008:149).

According to Osman and Awad (2008) there are several advantages that include the following:

1. It has a forum in which the topics can be discussed by the teacher or students.
2. Files can be uploaded and/or discussed.
3. There is possibility of using the internet mail.
4. The learners have the possibility of making and putting their remarks about the subject matter or the material(s).
5. There is possibility of making conversations and archieving them.

6. The learners can search for the courses or syllabi found in the system.
7. The courses and/or syllabi can be turned electronically into CDs by the teacher and can be reviewed by the learners through mobiles.
8. Learners' self tests can be made ,graded and scored automatically.
9. Learners can make their e- pages.
10. The teacher can make tests for the whole subject-matter or units accompanied with pictures ,acoustic captions and videos.
11. It is possible to follow up the trainees everywhere from entry to exit.
12. It is possible that the board can display the mathematical symbols, pictures and PowerPoint files.
13. It is consistent with the international standards such as Scorm and LMS.
14. There is a store, for all the instructional units, that has several tools.

According to Mazur et al. (2015:7) there are some challenges that face flipped learning. Following are some of them:

1. It requires unusual awareness and effort from the institution to video the lectures.
2. The integration that should be available between what takes place inside the classrooms and at home so as to motivate the students and ensure their understanding.
3. Flipped learning requires additional work and new skills on the part of teachers.
4. Students lack the teacher when they might need to ask questions.
5. The equipments needed to make videos of the lectures might not be available.
6. Some students might be less motivated and self-regulation can be influenced compared to actual and direct instruction.

7. Flipped learning is difficult for some students who are not able to learn by themselves. That is why they turn to be passive listeners to lectures at home.

In addition, Bishop and Verieger (2013:1) pointed out that integrating technology into teaching and learning is slow. This might be due to the high cost of having systems and strategies based on technology. However, Butt (2014:33) and McLaughlin (2013:1) stated "that some staff members prefer to use regular teaching strategies to web based ones".

Art work is characterised by integration and comprehensiveness as it relies, in its making, on consistency among the various elements that interact together, thereby making students select the one(s) they like. The functional art work enables students to interact with the materials and therefore develops their creative abilities and common sense (Tawfik, 2010).

There are some factors influencing the integration between the functional and aesthetic components of functional art work:

1. Design : The good design is the basis of any work. It aids in the clear vision of developing any intellectual product of the art work's creative process. The design is the process of organizing the parts in a coherent whole and relies on the systematic process of selection and development with the aim of achieving a utilitarian function. The design is affected by several factors that include material, styles of forming work function and the subject/topic of design(Bevlin,1980).
2. The relatedness of forming processing and the art work material. The nature of the material not only affects the structure or the design, but it also affects creativity. The more artist knows the material and its potentials, the more he/she becomes able to imagine and create. There is a connection among the art work components including the material, the form and the function(Raid,1995:321).Also, the technicality affects any

art work and is related to the design process in terms of forming accuracy and the relationships among the elements. The shape results of the art work differ according to the styles of technicality as each style has its effect on form.

3. Function : There should be consistency among the design components, the elements and the methods of forming the art work. Any art work should have a usable or aesthetic function. So, the functional identification of form/shape takes place beforehand. Accordingly, the different function, the material and the form vary(Tawfik,1986).

2.2. Related studies:

There some studies related to flipped learning and its impact on some variables. Following are some of these studies:

Schiller and Herried (2013) pointed out that flipped learning enhances student's thinking inside as well as outside of the classroom .It also increases their interaction and has its positive effect on university students' learning of concepts and contributes to improving learning through inquiry (Mazur et al. ,2015).

Mostafa(2015) stated that flipped learning has a positive impact on learning outcomes, the level of information processing and the use of technological advances in supporting students with special needs. There are several studies(Alzain,2015; Almuaiter, and Alqahtany,2015;Little,2015; Alsadoon, 2016; Almuqati, 2016; Aboelrous and Emara,2016)that revealed that flipped learning proved to be effective in developing female students, academic achievement.

Ogden(2015) pointed out that flipped learning enhances students' self- directed learning and has a positive effect on motivation to learn and on the experimental group students' positive and favorable attitudes towards flipped learning. Al-Turky and Alsubaie (2016) stressed the importance of flipped learning strategy in developing students' critical thinking and

environmental awareness. It also helps in improving students' achievement levels at the various stages of Education (Mazur, 2015).

Tewfik's study(2010) aimed to investigate how pieces of art work are related to the needs of labor market through the "art work" course through integrating the various art fields with their materials and technicalities into the art work field. Also, it can take place through employing the piece of art work as a décor complementary unit with the possible least cost according to the bases of making the piece of art work.

Such bases that include the appropriate design of function, the skills of using the tools and materials and the principles of making the piece of art work.

Abu Hemida(2013) investigated the effectiveness of a proposed program in improving the creative abilities among" art work" students at the Faculty of "Fine Arts", Al-Aqsa University, Palestine. The findings revealed that the program proved to be effective in improving the students' creative abilities including fluency, flexibility, sensitivity and originality.

From the aforementioned disposition, it becomes clear that there is agreement among the studies that flipped learning has a positive effect on improving the students' performance at the level of cognition, skills and affective domain(Alzain,2015; Little,2015; Love, et al., 2015;Mostafa,2015 and Ogden,2015).Also, the findings of studies revealed that flipped learning has a positive effect on students' critical thinking, environmental awareness, motivation to learn and achievement(Al-Robayan, 2017; Al-Turky and Alsubaie, 2016; Alebaikan and Alhenaki 2016; Aboelrous and Emara2016).

A study of (Ngoc et al, 2017) aimed to examine the differential impact of studying in a Flipped Classroom (FC) setting, as compared to a Blended Learning (BL), a Traditional Learning (TL), and an E-Learning (EL) setting on learning performance, self-efficacy beliefs, intrinsic motivation, and perceived flexibility. Participants were second year

undergraduate students (N = 90). The results show that learning performance was superior in the FC setting as compared to other learning settings TL. Studying in a FC setting had a positive effect on self-efficacy beliefs and intrinsic motivation, but not on perceived flexibility. These findings suggest that the FC setting could be a promising way of enhancing students' learning performance.

3. Hypothesis of the study:

1. There is a statistically significant difference between the mean scores of the female students of the experimental group and the control in the functional side of the art work skills in favor of the experimental group that was studied in the flipped classroom through the Blackboard system.
2. There is a statistically significant difference between the mean scores of the experimental and control group students in attitude scale towards using the flipped classroom in the practical skills in favor of the experimental group that studied the flipped classroom via the Blackboard system.

4. Instruments of the study

4.1. Design of the study

The researcher used the quasi-experimental design with the experimental and the control groups.

4.2. Observation checklist of female students' art work skills

4.2.1 Aim of the observation checklist

The checklist aims at observing the female students' performance of art work skills before and after intervention.

4.2.2 Description of the observation checklist

The observation checklist is divided into 3 main dimensions under which come a set of performance indicators. The three dimensions are as follows:

- a. Design
- b. Material
- c. Carry-out/execution.

The checklist items were stated in a specific, clear, observable way and devoid of any misinterpretation. They are also short statements in the infinitive form and each one describes one performance only.

4.2.3 Validity of the checklist

The observation checklist was submitted to a panel of jury members(n=6) for validation and checking it for clarity of items/statements, its suitability for measuring the intended skills and its appropriateness to the participants' level. Based on the jurors' comments and remarks, some items were modified and some others were deleted and /or added. Finally, the checklist became valid. The final version of the scale contained 35 items(27 positive and 8 negative items).

4.2.4. Reliability of the checklist

The reliability of the checklist took the place through the two-observers' agreement where two observed the students' performance simultaneously each one independently from the other. The number of agreement and disagreement times were calculated. The observers' percentage of agreement was computed using Cooper equation which yielded 94% indicating that the observation checklist is highly reliable.

4.3.Attitude scale towards the use of flipped learning in developing the practical skills

4.3.1. Aim of the attitude scale

The aim of the attitude scale was to measure the female students' attitude before and after using the attitude scale. It also aimed to recognise whether there were differences between the students' scores in the pre and post administrations of the attitudes scale.

4.3.2. Validity of the attitude scale

The attitude scale was submitted to a panel of jury members (n=6) to validate it in terms of clarity, readability and

appropriateness to the participants' level. The jurors made their remarks and suggestions. The majority (94%) agreed at the items and their relatedness to the scale. Also, 92% viewed that the writing and working of the scale is accurate.

4.3.3. Reliability of the attitude scale

The scale was administrated to 20 students other than those participating in the study. Then it was readministered to the same students two weeks later. The correlation coefficient using "Kuder Richardson, 21KR" was computed and it amounted to 0.92 which is reliable.

4.3.4. Piloting the scale

The scale was piloted to check it for clarity, readability and timing the test. It took place through administering it to 26 female students other than those participating in the main intervention. The time of the test was computed by dividing the sum total of the time taken by each student by the number of students. The time of the test was 30 minutes in addition to 5 minutes for the instructions of the scale. Thus, the test time became 35 minutes.

4.3. 5 Directions of the scale

The researchers prepared the directions of the scale that included the aim, the nature and how to respond to the scale items. They also included the time allocated to responding to the scale items. They were given clearly, accurately and in an understandable manner.

4.4. Participants of the study

The participants of the study included 80 Faculty of Education female students of Jouf University .The sample of the study was randomly divided into two; control group, which studied in the traditional method and experimental one, which is taught in flipped classroom via the Blackboard system. In order to ensure that the two groups are equal, the observation checklist and the students' attitude scale towards the use of the flipped classroom in the practical skills were pre-administrated. The following table shows the results of the pre-administration of the study instruments.

Table (1) The difference between the mean scores of the experimental and control groups in the pre- administration of the observation checklist and the attitude scale.

Instrument	Group	Mean scores	Standard deviation	T	Level of significance
Observation checklist (design)	Experimental	1.5250	0.640	0.00	Non-significant
	Control	1.5250	0.598		
Observation checklist(Materials)	Experimental	1.625	0.627	0.259	Non-significant
	Control	1.5750	0.594		
Observation checklist(Execution)	Experimental	1.3000	0.464	0.495	Non-significant
	Control	1.250	0.438		
Total	Experimental	4.400	1.081	0.00	Non-significant
	Control	4.400	1.007		
Attitude scale	Experimental	78.0250	11.37908	0.134	Non-significant
	Control	78.0250	11.94150		

It is clear from the previous table that there is no statistically significant difference between the mean scores of the students of the experimental and control groups in the observation checklist and the attitude scale of the students towards using the flipped classroom in the practical skills.

4.5. Variables of the study

Independent variable:

- Flipped classroom using Blackboard System.

Dependent variables:

- Art work skills
- Attitudes towards practical skills.

4.6. Experimental procedures

4.6.1. Pre-administration of the study instruments

The observation checklist and the attitude scale were pre-administered to the study groups in the beginning of the second semester of the academic year 2016/2017.

4.6.2. Teaching the study groups

Teaching the experimental group via flipped classroom continued for 8 weeks. The female students were motivated and interested in learning .They participated actively and carried out

the activities and tasks effectively. On the other hand, the control group was taught by traditional method.

4.6.3. Post-administration of the instruments

By the end of the intervention/experimentation, the instruments (the observation checklist and the attitude scale) were administrated again to the study group. Data were treated statistically and the findings are dealt with in the following section.

Results and discussion

Results and discussion are related to the study hypotheses.

5.1. Verifying the first hypothesis

To verify the first hypothesis stating that there is a statistically significant difference at the level of (0.01) between the mean scores of the students of the experimental group and the control in the functional side of the skills of the works of art in favor of the experimental group studied in flipped classroom through the Blackboard system, data were treated statistically and the findings are shown in the following table.

Table (2) The mean scores of the students of the experimental group and the control in the functional side of the skills of the works of art

Observation dimensions	Study group(N=80) Control(40),Experimental(40) Df=78				t	Significant
	M		SD			
	Control	Experimental	Control	Experimental		
Design	1.53	2.53	0.640	0.554	7.471	0.01
Material	1.63	2.35	0.628	0.736	4.74	0.01
Execution	1.25	2.60	0.439	0.496	12.894	0.01
Total	4.40	7.47	1.081	1.240	11.82	0.01

Table (2) reveals that "t" value of the total score is 11.82 which is significant at 0.01 level, where "t" values of the dimensions including, design, material and execution were 7.471, 4.74, 12.894, respectively which are all significant at 0.01 level. This reflects the fact that there is statistically significant difference at 0.01 between the mean scores of the two groups in

favor of the experimental group in the total as well as in each of the observation checklist .

This reflects that the study group achieved more improvement in their administration. This is, according to the researchers, might be due to the material dimension with the photos and videos of the basic materials, alternative materials and the brightly consistent materials provided through flipped learning. Female students were enabled to choose the basic materials and the bright accessories and setting them up on facebook In addition to various photos and materials of the same art work including masks of animals made from paper, crochet and leather. The difference between the two groups in the "design" dimension is, according to the researchers, due to the opportunities provided for students to make videos that display various designs of the same work with its bright and consistent colors. There are some art pages that display photos/pictures and designs of the art work including hats, birds and animal masks and watching the design more than once.

As for the carrying -out or execution dimension the videos on the blackboard displayed the steps of the work and how to formulate the material in a way that suits the form and function of any work. Again, there is the possibility of watching and rewatching the videos frequently to observe the steps, make it with guidance on the part of the teacher and, then, make it independently, and achieve mastery learning before the lecture in the class. The lecture time in the class is devoted to assess performance and correct mistakes/errors. The flipped classroom provides interactive activities that motivate students; thereby helping them to compete and learn.

5.2. Verifying the second hypothesis

To verify the second hypothesis stating that there is a statistically significant difference at (0.01) between the mean scores of the students of the experimental group and the control in attitude towards using the flipped classroom in the practical skills for the experimental group that studied the flipped classroom through the Blackboard system, data were treated statistically and the findings are shown in the following table.

Table(3) The mean scores of the students of the experimental group and the control in attitude scale

Instrument	Study group(N=40)				t	Significant
	M		SD			
	Control	Experimental	Control	Experimental		
Attitude scale	78.37	98.53	3.021	11.822	10.156	0.01

Table (3) reveals that there is a statistically significant difference at 0.01 level between the control group's mean scores where the mean of pretesting on the attitude scale was 78.37 and that for experimental group was 98.53 in favor of the experimental group. It is evident that "t" value was 10.156 which is statistically significant at 0.01 level. Thus, such difference is due to flipped learning which interests the female students and satisfies their eagerness to use the flipped classroom in the practical skills and dealing with smart technologies in a way that is enjoyable and motivating. This increases their positive attitudes towards using the flipped learning in practical skills.

Flipped learning also helps achieve active learning and makes students feel confident and become responsible for their own learning. Unlike regular learning, the flipped classroom is interesting and helps students study the course and practice the practical skills. They can do their tasks and activities, make progress and achieve better; thereby increasing their educational level and achievement.

6. Recommendations

Based on the results of the study, it is recommended that:

1. The courses should be presented in attractive, motivating and interesting methods and techniques (e.g. Flipped learning). Also, it is important to measure the effectiveness of such methods and techniques in the various stages of education.
2. The modern technologies and advances should be made use of not only in teaching, but in evaluation styles as well.
3. Blended learning and flipped classrooms should be used at the university and the pre-university levels.

4. Students at schools(the various stages) and universities should be prepared to use flipped learning.
5. There should be training programs for teachers and faculty members on how to use blended as well as flipped learning in the teaching –learning process.

7. Suggestions for future studies

The following studies are suggested for more investigation:

- The effect of flipped learning on developing achievement and motivation to learn among secondary school students.
- Using the whiteboard and the blackboard systems in teaching "Home Economics" at the university level.
- - A study of faculty members' perceptions and attitudes towards flipped learning.

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