

# The Effectiveness of Two Blended Learning Strategies in Developing Skills of Designing Mind Maps for Secondary School Students

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This research aimed to detect the impact of difference of two Blended learning strategies in developing students skills in designing mind maps. More precisely, this research aimed to answer the following question: What is the impact difference of two strategies of Blended learning in developing skills of designing mind maps for secondary school students? To answer this question, the researchers used the experimental method with a (60) secondary student-sample in Jeddah city. The sample was divided into two experimental groups according to experimental design. The groups were exposed to two different Blended learning strategies: With the first experimental group, the strategy was to explain in the classroom and then complete exercises on the internet. With the second experimental group, the strategy was to explain on the internet and then complete exercises in the classroom. The research results showed no statistically significant differences between the mean scores of students of both experimental groups in the post application of the cognitive achievement test. This was in relation to the use of different types of blended learning strategies. Whereas, the results show that there is a statistically significant difference between the mean scores of students of both experimental groups in the skill performance in favour of the first group. The researchers recommends that teachers use blended learning strategies in teaching as they positively affect the development of mind map designing.

**Key words:** *Blended learning, Blended learning Strategy, classroom & E-Learning, Mind map.*

## **Introduction**

Over the past decades, scholars have been trying to come up with the best methods to improve the learning process. Many kinds of research were undertaken to determine how the brain functions which created new theories on how to improve the learning process (Buzan, 1993,6). Therefore, Buzan came up with the mind mapping method that helps improve the performance of both sides of the brain or the brain as a whole (Buzan, 1995, 23). Additionally improving the Mind Map will also help stimulate the thinking process even in a simple format. This method is considered to be the easiest way to register the information in the brain as well as retrieve the registered information when needed. It was proven to be an outstanding method to make the brain recognize and understand certain information (Buzan, 2002, 8).

Brain mapping uses different effective strategies in learning. One of these is called Active Learning. It is a method used by the learner to help remember or understand certain information by performing positive activities in the learning process. It helps the learner to interact with the information and learn content based on participating in a practical educational way. Brain Mapping also uses blended learning method which requires using computerized programs to illustrate the mapping method. Therefore, there are two different learning methods; an electronic method and a traditional method. Both methods will enhance the outcome of the learning process. The blended learning method has specific strategies which can be classified in accordance with the design of the learning environment(Zaiton, 2005, 174). This method allows teachers to teach part of the lesson in a traditional way, (which is face-to-face), followed by another session using an electronic way. Additionally the teacher can teach a lesson that combines both methods where the lesson starts with one method and switches back and forth using both methods. Since blended learning is very effective in terms of building the skills of students, this research will look into two of the strategies of blended learning. These are:

1. teaching traditionally in the classroom followed by computerized session, or
2. using the computerized session followed by a traditional session.

This would enable the students to benefit from both strategies in enhancing their educational experience and help develop the strategies of the blended learning process

## **Research Problems**

The main problem in this research is represented in the following question:

- What is the effect of the two different strategies on the blended learning process in developing the skills in mind mapping of high school students?

## **Discussion Questions**

There are two questions that branch out from our main topic. These are:

1- What is the effect of blended learning? That is, teaching traditionally in the classroom followed by computerized training or using the computerized method followed by a traditional teaching method. In doing so it focuses on the educational effect and the design of mind mapping of high school students?

2- What is the effect of the differences in blended learning? That is, teaching traditionally in the classroom followed by computerized training or using the computerized method followed by a traditional teaching method. In doing so it focuses on the effect of the skills in developing mind mapping of high school students?

### **Research Objectives**

The research determines:

1- The effect of the two different learning strategies in blended learning, teaching traditionally in the classroom followed by computerized training or using the computerized method followed by a traditional teaching method, on the educational outcome and designing mind mapping of high school students.

2- The effect of the two different learning strategies in blended learning, teaching traditionally in the classroom followed by computerized training or using the computerized method followed by a traditional teaching method, on the educational outcome and designing mind mapping of high school students.

### **Importance of the Research**

- It helps create instructional standardization on designing and producing blended learning educational materials and developing ways to take advantage of them.

- It helps determine the best strategic method to implement blended learning to develop the skills in designing mind mapping.

- It helps create methods and an environment in teaching high school students and helps provide them with the right learning environment.

### **Research Theories**

In order to achieve the objectives of this research, the researchers worked with the following theories:

- There is no statistical difference at the level of 0.05 between the average grades of the individuals from both groups in the knowledge outcome and the skills in brain mapping. This is derived from teaching traditionally in the classroom followed by computerized training or using the computerized method followed by a traditional teaching method.

- There is no statistical difference at the level of 0.05 between the average grades of the individuals from both groups in the research performance skills pertaining to brain mapping. This is derived from teaching traditionally in the classroom followed by

computerized training or using the computerized method followed by a traditional teaching method.

### **Research Limitation**

The research limitations are:

- Human Limitations: sample of high school students.
- Location Limitations: Balat Alshohada High School - Jeddah, KSA.
- Time Limitations: this research took place during the academic year 2014-2015.
- Subjective Limitations: the research was about brain mapping only.

### **Fundamentals of The Research**

#### ***Blend Learning Method***

According to Graff (Graff, 2003, 204), he indicates that blended learning is the most ideal way of learning because it combines traditional and electronic ways of learning, which allows students to have face-to-face education methods as well as a computerized method of learning that is internet based. According to Milheim (Milheim, 2006, 47), blended learning is a perfect method for learning since it allows the students to take advantage of different kind of available learning methods.

#### ***Blend Learning Pros***

The pros can be summarized in the following points:

- Reducing the cost of learning.
- Making it more fun for students to have a face-to-face learning experience with their teachers and classmates.
- Enhance social ties among students and among students and teachers.
- Taking advantage of technologies in designing, executing and using blend learning.
- Enhancing learning quality and having a better educational outcome.
- It resolves the learning issues of a certain lesson that cannot be taught fully electronically.
- Evaluating students in a better way.
- Being able to get more information to be taught to the students.

#### ***Importance of Blend Learning***

The importance of this method is to help concentrate on the learning process outcome and allows students to have better accessibility to the information and at any time as well as ease up the process of communicating with others (Singh, 2003, 51).



### ***Blend Learning Strategies***

There are multiple ways used to design a blend learning program to help improve the learning system. One of the easiest methods is to design a traditional method that consists of describing the curriculum, teaching it traditionally and evaluating the performance. Then add to it the electronic learning element in a way that enriches its contents and ties up the contents with certain links online (Marsh, Drexler, 2001; Aparajita, 2018).

### ***Teacher's Role in the Blend Learning Method***

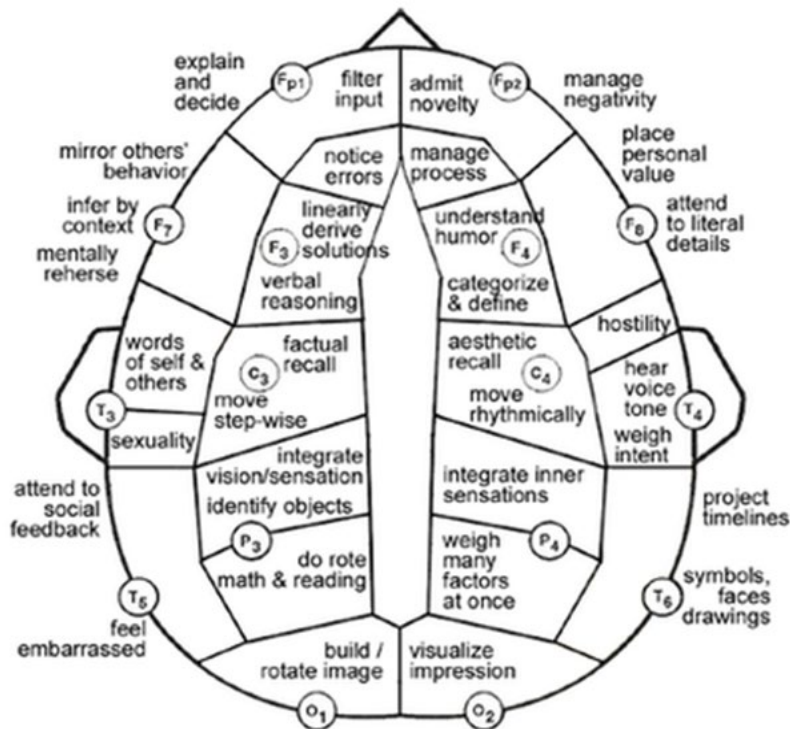
Teacher's role became more difficult according to Alghamdi (Alghamdi, 2010, 24) as follows: To ease up the learning process - To simplify the contents - To perform research - Technology familiarization - Education designing methods - Educational operation manager - Consulting.

### ***Mind Mapping***

There have been many types of research that studied the integration of the brain systems, which involved Neurology, Physiology, Biochemistry, Medical Science, Psychology and Computer Science. It was determined that the brain is divided into two halves; the left half and the right half (Caine, Caine, 1991). The left half of the brain controls the right side of the body and the right side of the brain controls the left side of the body and both sides are connected with a pack of nerve fibre that is called Corpus Callosum (Ornstein, Sobel, 1999). Even though the two halves do different body functions, they both work in perfect integration. Each side of the brain works with the other side in common functions and both halves work together to support certain functions. Even though there is a dual mechanism of the two halves of the brain, each half operates differently in a separate way (Kiladah, 2008, 34).

### ***Mind Map Concept***

The concept of mind mapping is based on a final organizational intellectual tool, which makes registering the information extremely easy as well as retrieving the registered information. A mind mapping is an effective method to observe and construct certain information; this method has common ground in using colours, has one natural content, which means it branches out like a nerve cell and uses all symbols and words in addition to certain images. Mind mapping can make boring methods into a very interesting method with colors and make it more organized in a way that the brain would have a better way to accept it (Buzan, 2002, 54).



### ***Pros And Cons Of Brain Mapping***

The mind mapping method is just like any other learning method; it has its pros and cons. Some of its pros can motivate the students, which makes them more willing to learn. Additionally it encourages students to explore as well as activity makes the lesson more enjoyable to the students and to the teacher (Buzan, Buzan, 2006,167).

On the other hand, the method can be hard to read and be understood by others. Additionally the connection between the ideas can be hard to establish which could make it complicated to the reader (Eppler, 2006, 208).

### ***Elements of the Brain Mapping***

According to Buzan, (Buzan, 2010, 187), there are 7 steps that need to be taken into consideration in order to compose any brain mapping method. These are:

- 1- Starting the method in the middle of the page; this will give the brain a better perception.
- 2- Using pictures to convey the primary message; this would help the brain to concentrate more.
- 3- Using colours when drawing because colours stimulate the brain and make it more pleasant to look at.
- 4- Connecting secondary pictures with the main one; this would help the brain connect to the ideas.

- 5- Depicting the secondary information in curvy way; not straight lines, since curves captures student's attention.
- 6- Using a keyword in each line. It would help trigger new ideas.
- 7- Using pictures when branching out the information since they support the main picture.

### ***Research Fundamentals***

#### ***First: The Curriculum Used in the Research***

- Semi-Introductory Curriculum: This curriculum was used to examine the effectiveness of the blended learning method in developing personal skills in designing mind mapping method for high school students.

#### ***Second: The Variables***

- Independent Variables: Blend learning style (traditional teaching in class followed by teaching using the web, or teaching using the web followed by traditional teaching in class).
- Attached Variables: The correlation of the educational and the practical outcome.

#### ***Third: Introductory Design***

This research studies the effect of two strategies of the blend learning method (independent variables at two levels) on the practical performance and the educational level that is attached to it. The researchers used the semi-introductory curriculum for both trial samples, which were tested before and after implementing the research procedures. Table 1 depicts the introductory design of the research:

**Table 1:** Introductory Design of The Research

Blend Learning Strategies		Independent Variables. Attached Variables. The educational outcome of the skill. The practical outcome of the skill.
Traditional teaching followed by computerized teaching	Computerized teaching followed by traditional teaching	

#### ***Fourth: Research Sample***

The sample of students used in this research is from Balat Alshohada High School - Jeddah, KSA. They are 60 students.

### ***Fifth: The Introductory Module***

The researchers designed a module of the learning method which proposed the best educational method. This module goes through five main stages, which are described below:

#### **Analytical Stage**

It consists of the following elements:

##### **a) *Student's Characteristics Analysis***

Since the participants are from high school, their characteristics can be described

- as having a close age range,
- almost the same knowledge level and
- each student is capable of using the computer.

##### **b) *The Contents***

Since the contents are not available in Arabic, there was a revision of several books and educational plans to choose the main topics and composing the contents that need to be taught.

##### **c) *Specifying the Academic Objectives***

The academic objectives were mainly behavioural to improve the skills needed in designing mind mapping according to Blume.

##### **d) *Specifying the Resources***

- Schools should offer educational resources as well as computers with internet and speakers.
- Camtasia Studio program to record and document the content.
- Youtube website to establish a channel for uploading.

#### **Designing Stage**

The designing stage relies on the analysis stage. It helps organize the contents and designing the educational strategies in addition to designing the educational materials.

##### **a) *Organizing the Contents***

This stage comes after analyzing the contents. Its purpose is to gather the contents in a certain reasonable order to help achieve the following educational goals:

A- The Theoretical Element: It is divided into five parts.

B- The Practical Element: It is divided into ten parts and all parts are presented in a video in a certain sequence.

##### **b) *Educational Strategy Design***



The researchers came up with two blended learning strategies for each group; the first group was given part of the lesson traditionally then finished with a computerized session, and the second group had the computerized session first then finished up with the traditional way.

c) ***Designing the Educational Channel***

The researchers prepared the educational channel needed to present the educational materials.

**Development Stage**

This strategy consists of three steps:

a) ***The Initial Stage for the Youtube Channel***

The researchers established a Youtube channel and worked on organizing it to make it ready for use.

b) ***The Trial Stage for the Youtube Channel***

The material of the channel was shared with experts of education and technology to verify its effectiveness.

c) ***The Final Stage for the Youtube Channel***

The channel became fully ready. All adjustments needed were made according to the experts and after trialling the channel to both verify that no mistakes were made and its ease of use.

**The Execution Stage**

This stage consists of executing the experiment according to the plan.

a) ***Testing the Tools Used***

All tools need to be tested prior to executing the plan.

b) ***Executing the Experiment***

The researchers executed the experiment according to two strategies of blend learning as follows:

- First Group: teaching in the classroom followed by a computerized session.
- Second Group: Starting with a computerized session followed by a traditional session.

**The Evaluation Stage**

The evaluation stage consists of the following stages:

a) ***The Objectives***

It is achieved by giving the final exam to determine the correlation between the knowledge level achieved to the skills of brain mapping skills as well as evaluating the outcome.

**b) *Noting the Outcome***

After the final exam, the researchers shall record the outcome in a statistical manner.

**c) *Analyzing the Results***

After the previous step, the outcome would be set for discussion and analysing. This will be discussed in the fourth chapter in detail.

**SIXTH: Preparing and Designing The Research Tools**

The researchers addressed the following elements:

**Outcome Exam**

The researchers designed an exam to determine the correlation between the knowledge level and the skills of designing mind mapping to achieve the desired goals.

**The Evaluation Card**

The researchers designed cards to evaluate the skills of students in mind mapping.

**SEVENTH: Executing the Main Elements of the Experiment**

**- *Dividing The Sample Into Two Groups***

The sample of students was chosen from Balat Alshohada High School and the experiment was set to start on Wednesday and Thursday, April 15-16, 2015. However, after the researchers undertook the initial adjustments, the researchers decided to start the main experiment during the period of April 20, 2015, until April 26, 2015.

**- *Testing The Tools***

All research tools were used to determine the results of the final exam and the evaluation card on all students in both groups.

**- *Verifying the Compatibility of The Two Groups***

The researchers used the T-TEST to verify the compatibility between the two groups, and according to the results, there were no differences at the level of 0.05 among the grades of the two groups. This indicates that the two groups are compatible.

**- *Executing the Main Experiment***

After the researchers verified the compatibility of the two groups, the next step was to teach the skills of mind mapping as follows:

- First Group: teaching traditionally followed by a computerized session.

- Second Group: starting with a computerized session followed by a traditional session.

- ***The Objectives of the Tools***

After performing the main experiment (main exam and evaluation card), the researchers looked into the independent variable and noted the results and was discussed.

## **Research Results & Explanation**

### **FIRST: The Research Results**

The researchers examined assumptions as follow:

- ***The Level of Knowledge Skill***

There were no differences at the level of 0.05 among the average points of the two groups in the knowledge skill in designing mind mapping. Therefore the first assumption will be accepted.

- **Practical Skills Performance**

There was a difference at the level of 0.05 among the average points of the two groups, the practical skills in designing mind mapping (as a result of a different strategy in education) and the first group, which experienced the method of starting with the lecture first followed by a computerized session.

### **SECOND: Explaining the Results & Discussion**

- **Regarding The Knowledge Level**

The study indicated that there is no difference at 0.05 in the average grades of students who studied using the blended learning method (traditional teaching followed by computerized session) and the grades of students who studied the other method (computerized session followed by traditional session). They both had the same level of knowledge in designing mind mapping because they both complemented one another. The traditional learning method would provide direct social interaction with others (Khan, 2005, 20) and the computerized session helps the students get the educational contents at any time and in any place. Additionally it has the capability of repeating the materials as often as they want, which gives each student full freedom in obtaining the information at their discretion (Krause, 2007).

This study supports the result of a study by Abu Bakr & Omar (2010) which indicated there is no difference in the average grades for students in terms of the general outcome for both groups. However, it differs from the Al Shamry study (Alshamry, 2007) which showed a better outcome for the group who studied Geography electronically than the other group that learned Geography the traditional way.

● **In Terms of the Skills Quality Outcome:**

The results of this study indicated a difference at level 0.05 in the average grades at the skills performance of the students who studied using the blended method (traditional teaching followed by a computerized session) and the students who studied in the blended method (computerized session followed by a traditional session). This result was in favour of the first group for the following reasons:

- Starting with the traditional teaching method helped the students handle the electronic session better including the information on the Youtube channel. This is compatible with the Yahyawi study (2013) which showed the same result.
- Making the material available on Youtube allowed the student to continue his/her training nonstop. This finding supports the study by Stacey & Rice (2002) indicating a positive effect of using the computerized session in developing the student's skills. This is due to the material being available at anytime and anywhere.
- Having the educational materials on a video on Youtube with the audio explanation would help the student as he could pause the video and watch it again if needed. This supports a study by Abu Hatab (2000) indicating positive impact of the variety of the educational materials and the way they are displayed in the student's way of learning.

**THIRD: Recommendations**

Based on the study, the following recommendations can be taken into consideration:

- 1- The researchers recommend using the blended learning method mentioned in the research.
- 2- Using the blended learning method which consists of a traditional session followed by a computerized session has a good effect on enhancing the brain mapping skill.
- 3- Using visual tools to enhance education by using videos in teaching certain skills would help the student master any skill.
- 4- Taking advantage of Youtube in showing the students all the necessary skills needed.
- 5- Using Youtube more often since it is easy to use.



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