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Journal of Research in Curriculum, Instruction and Educational Technology (JRCIET)

Aims and Scope

The *Journal of Research in Curriculum, Instruction and Educational Technology (JRCIET)* is a regional quarterly refereed educational journal. It is one of the publications of the Association of Arab Educators (AAE), Egypt. JRCIET is published in English, French and German in January, April, July and October. It is issued both electronically and in paper forms. It accepts the publication of original high quality papers on both theoretical and empirical research in different areas of educational research related to curriculum, instruction and educational technology. In order for serving as a vehicle of expression for colleagues and/or for meeting university academic standards, or for promotion purpose, JRCIET publishes dissertation abstracts (M.A & PhD) in addition to reports on symposiums, conferences and meetings held on topics related to its main concerns previously referred to.

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Contributions

Offers of contributions are welcome from researchers /academics interested in teaching, learning and educational technology. Contributors should consult the online "Instructions for Authors" on the AAE website: <http://www.aaeeducators.org/> or JRCIET website on <http://jrciet.blogspot.com/> for manuscript preparation before submission. Submissions that do not fit with the "Instructions for Authors" will not be considered for publication.

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should not exceed 25 pages following JRCIET's formatting system (see section on formatting the manuscript). Submitted manuscripts should be written according to the APA style (for a brief manual of the APA style, consult the *Association of Arab Educators'* website on <http://www.aeducators.org/>)

Manuscript Formatting

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Components of the research/article manuscript

Three copies of the research/article should be submitted. The manuscript should be typed, double-spaced on a A4 paper, on one side of the paper only. A cover page should contain only the research title, name(s) of author(s) and institutional affiliations on a separate page in order to preserve author anonymity on submission of the research/article to referees. An abstract not exceeding 200 words should be included on a separate sheet of paper. The main components of the research/article are Introduction, Method, Results, Discussion, Conclusion(s), Acknowledge- ments (if any), and References. Diagrams and Figures if they are considered essential, should be clearly related to the section of the text to which they refer. The original diagrams and figures should be submitted with the manuscript.

Footnotes should be avoided. Essential notes should be numbered in the text and grouped together at the end of the research/article.

Research Title

The title should accurately reflect the focus and content of the research. The title should be brief and grammatically correct.

Titles do not normally include numbers, acronyms, abbreviations or punctuation. They should include sufficient detail for indexing purposes but be general enough for readers outside the field to appreciate what the paper is about. The title should be no more than 14 words in length.

Authors' names and institutional affiliations

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A Suggested Science Curriculum for Hearing Impaired Primary Stage Students Based on Their Needs to Develop Their Preventive Awareness

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Abstract

The current research aimed at evaluating the effectiveness of a suggested science curriculum for hearing impaired primary stage students based on their needs to develop their preventive awareness. To achieve this aim, the researcher designed a list of the needs in whose light the suggested science curriculum for primary stage should be designed. This list was used to reach a suggested form for the curriculum to develop the dimensions of preventive awareness. A unit for sixth-year, primary stage titled 'the sun is the source of all energies' was selected and prepared in detail out of the suggested vision. In light of the previous, a teacher's guide to teach the unit was designed. In addition, the researcher prepared the research instruments which included an achievement test, an attitude scale, and a test for the ability to deal in real life situations. A group of participants was then selected to participate in the research and the instruments were applied to these participants before and after application. The results revealed that there is a statistically significant difference between the mean scores of the research participants in the pre and post-application of the achievement test, the attitude scale, and the test for the ability to deal in real life situations in favor of the post-application.

Keywords: *A suggested science curriculum based on needs, hearing impaired students, primary stage, preventive awareness.*

Research Questions and Delimitations

This research attempts to answer the following main question:

What is the suggested form of a science curriculum for hearing impaired primary stage students based on their needs to develop preventive awareness for these students?

The following sub-questions derive from the main question:

1. What are the needs in whose light the suggested science curriculum for hearing impaired primary stage students should be designed?
2. What is the form of the suggested science curriculum for hearing impaired primary stage students?
3. What is the effectiveness of teaching a unit of the suggested science curriculum in developing preventive awareness for hearing impaired students?

The research is delimited to the following:

1. A group of sixth-year, primary stage hearing impaired students (9 students) at Al Amal Deaf School, Al-Matariyyah Educational Administration, Cairo.
2. Applying the unit titled 'the sun is the source of all energies' out of the suggested curriculum's units during the first term, 2015-2016 on hearing impaired, sixth-year, primary stage students at Al Amal Deaf School due to the following reasons:
 1. Teaching this unit involves many experiments, visual teaching aids, and educational activities which can be effectively employed during teaching. Hence, learning occurs in a way that is effective and appropriate for the nature and characteristics of hearing impaired students. Furthermore, the desired educational aims are achieved.
 2. The unit's content includes sources of energy in our life such as the sun, electricity, and machines as well as the importance of keeping these sources, making good use of them, rationalizing their consumption, and consequently enhancing our life styles and our society.
 3. The information tackled by the hearing impaired student through this unit is related to scientific application in the form of advanced devices that he/she uses and experiences in everyday life and the

effect of these devices on human welfare and protecting the environment.

4. Measuring the effect of the unit on each of the preventive awareness aspects which are: the extent to which hearing impaired students can achieve the concepts and knowledge of the selected unit's scientific content at the levels of (knowledge, comprehension, and application); the hearing impaired students' attitudes towards the domains of preventive awareness (environmental, health, and technological); and the ability of hearing impaired students to deal in real life situations related to studying the selected unit in light of the domains of preventive awareness (environmental, health, and technological).
5. The research's results and their explanation are related to the nature of the participants, and the time and place of conducting the research.

Theoretical Background and Previous Studies

In light of the nature and objectives of the current research, the researcher presents the following:

First Axis: Hearing impaired students and educational strategies to communicate with them

a. Hearing Impairment: hearing impairment is considered a real problem that faces various societies whether advanced or developing. Hearing impairment, whether partial or total, prevents the child from participating positively and interactively in the environment where he/she lives. It also limits the child's willingness to practice different activities with peers. Hence, educating these students is important since it is the only way that increases their culture and ability to cope with the surrounding world. There have been various definitions of hearing impairment which tackled total impairment and partial impairment. Abdel Hamid (2011) defined the hearing impaired as: the person who suffers from a severe hearing loss which affects understanding of speech and the ability to continue

studying in normal schools with students at the same age whether or not using aural aids. This requires providing special programs which introduce educational services suitable for the nature of hearing impairment. Botros (2010) defined the hearing impaired as 'individuals who cannot use the sense of hearing in normal life purposes; whether the ones who were born completely deaf or with a degree of deafness that disabled them to depend on their hearing to understand speech and learn language, who turned deaf during their early childhood before they acquire speech and language, or who turned deaf directly after learning speech and language to the degree that the effects of this learning totally faded. In all cases, this results in losing the ability to speak and learn language.'

T. Abdel Raouf. and Abdel Raouf (2008) define the hearing impaired as 'the person who suffers from the loss of the hearing sense in a degree which prevents him/her from communicating with others except by using special methods and techniques which help him/her to communicate depending on the sense of sight.' Shukair (2005) believes that the hearing impaired person is 'a person who completely lost the sense of hearing before the age of five, which makes it difficult for him/her to achieve a response representing understanding of heard words and consequently cannot acquire language or communicate using regular methods. This could be due to genetic or acquired factors making the degree of hearing loss not lower than 70-75 decibels which prevents the hearing impaired person from enjoying life and making use of it and consequently he/she needs special techniques and methods to communicate, learn, and practice.' Al Wakfy (2004) mentions that the hearing impaired is 'the person whose hearing impairment disables him/her to successfully process linguistic information through the sense of hearing whether using aural aids or not. In addition, Al Zohairy (2003) indicates that the hearing impaired child is 'the child who lost the hearing ability before learning to speak or right after learning to speak to the extent that learning effects were lost quickly. This child suffers from a disability or a disorder that disables him/her to use the sense of hearing and therefore he/she cannot acquire

language in the regular way.’ Moores (2001) states that deafness refers to ‘the presence of a severe hearing impairment in the sense that the child finds it difficult to process linguistic information through the sense of hearing whether using aural aids or not and this affects the child’s education negatively.’

Based on these definitions, the researcher reached an operational definition of the hearing impaired student who is ‘the student who suffers from a severe hearing loss, 70 decibels and above, which has a negative effect on the student’s acquisition of concepts and scientific facts in the regular ways like his/her normal peers. This requires the introduction of special curricula which suit the student’s nature and needs.’

Communication methods for teaching the hearing impaired students: communication is the process of exchanging ideas and information among individuals. It is an active process which involves receiving, interpreting, and sending messages. Speech and language are basic means of communication. There are other methods which involve non-verbal communication such as gestures, position of the body, eye-contact, facial expressions, and head and body movements (Yahia, 2004). Hearing impaired education and social preparation requires training them on effective communication methods that are appropriate for their degrees of impairment with the purpose of enabling them to express their thoughts, feelings, and attitudes; to interact among themselves and with others; and to engage in social life. These methods are explained below:

Oral method: A method for communicating with the hearing impaired which is used in teaching and training hearing impaired children and providing them the linguistic skills that help them adapt with the world of normal children. It depends on the hearing impaired child’s observation of the tongue and lips’ movements and translating these movements into letters and words that he/she learns. This is sometimes called speech reading or visual reading since it depends completely on the sense of sight in realizing letters and words spoken by the

speaker's lips as well as realizing the speaker's facial expressions and movements (Shoair, 2009).

Manual method: It is used for developing the cognitive abilities of the hearing impaired child and it includes:

Sign language: which is a visual sensory system based on relating the sign to meaning. This language depends on signs performed by hands and facial expressions to indicate different topics. It is an independent language related to the environment where the hearing impaired lives. Sign language differs from one country to another and one city to another. In addition, most signs are imitations of what is present in nature or remarks of things through which the hearing impaired realizes the spoken language (Rochester institute of Technology, 2004; Yahia, 2004). There are two types of sign language:

Descriptive signs: which describe a particular object or idea and help to clarify the characteristics of something such as opening the arms to express multitude or reducing the distance between the thumb and the forefinger to express smallness or little amount. It should also be considered that both hearing impaired and normal students use these descriptive signs to clarify the meaning of words (Solaiman, 2001).

Non-descriptive signs: which are used only by the deaf. These are signs with special significance related to the language shared among the hearing impaired such as when the hearing impaired points down with his finger to mean that something is bad. Through this, the hearing impaired person gets images for words through signs (Roald, 2002).

Finger spelling: it is a type of communication methods used by the deaf students in which finger positions are used to represent alphabetical letters. These letters are used in turn to express words, phrases, and statements. This method is usually used when there are no signs expressing certain words, concepts, or different ideas (Botros, 2010).

Total Communication Method: This method depends on a philosophy which involves that there is no one best method for all deaf students at all times. In other words, there could be a good method to communicate with a deaf student but not necessarily the best way for another deaf student. Every student's nature and needs differ from those of other students and hence communication methods must vary and differ according to the nature of individual differences among deaf students (Al Shakhs & Al Tohamy, 2009). The results of the studies of Abdel Samiea (2007) and Abu Shama (2005) proved the effectiveness of teaching science for deaf students using the total communication method in increasing their cognitive achievement.

The nature of science curriculum for hearing impaired students: Ebid (2001) defined curriculum as 'the contents which the teacher teaches students.'

A group of bases to be considered when designing curricula for hearing impaired students were specified, these are:

- *Scientific basis:* we cannot educate and teach the hearing impaired students except if we make the courses and teaching methods, to be followed, suitable for the general characteristics, biological and psychological traits, and social circumstances of these students.
- *Social basis:* this represents the society and all its components including the cultural heritage, the traditions, and the social standards in addition to the society's problems, aims, and future and present hopes.
- *Educational and philosophical bases:* these bases have a great effect on designing courses for the hearing impaired. The evidence lies in that courses may differ according to the difference of the aims we seek to achieve. Educational and philosophical bases represent the philosophical and educational system; the educators' performance concerning the aims of education; and the school with its

role as an educational association seeking to achieve the aims based on a certain educational, social, and human philosophy adopted by the educational system.

- *Psychological bases:* these are related to studying the psychological and educational characteristics of the hearing impaired students; growth patterns and features for these students; their needs, inclinations, attitudes and their relation to educational courses; as well as the effect of learning and training theories regarding teaching methods especially because these theories are one of the means of specifying the courses' aims.

Second Axis: Preventive awareness

Education and instruction give special attention to awareness since this aspect of learning aspects, or what is called learning process outcomes, concerns the cognitive and affective aspects together. Awareness provides knowledge as well as making a valuable change in the individual's cognitive processes and this results in realization, understanding, analysis, and conclusion which extend to the individual's emotional structure (Al Laqany & Hasan, 1999). The importance of awareness lies in that it is included within the first level of the affective objectives' levels which describe the individual's inner emotions; these emotions are the basic drives of human behavior (Hasanien, 2008).

Although the cognitive aspect of preventive awareness is a first step in the framework of providing students with desired positive attitudes and behaviors, providing students with information and scientific concepts is not adequate for achieving this purpose. Over emphasis of the cognitive aspects away from affective and psychomotor aspects may not contribute in achieving preventive awareness, however, it may cause completely negative effects (Moussa, 2009). The process of developing and increasing awareness is considered a cultural issue which contributes in forming the society's mentality scientifically and makes the follow up of science and its achievements a part of the society's interests. Hence, the society

realizes the role of science and technology in solving its problems in a better way. There are several types of awareness which are developed for students in general through science teaching.

This research seeks to develop preventive awareness for hearing impaired primary stage students through the suggested science curriculum. Hence, it is important to shed light on the definition of preventive awareness, its domains, and the role of the suggested science curriculum in developing preventive awareness.

Definition of Preventive Awareness: Awareness is the first step in forming the affective aspects and the attitudes and values they include. Although awareness is classified as the lowest degree of the affective classification, it greatly involves the cognitive aspect. It refers to the individual's realization of particular aspects of a situation or a phenomenon and it involves several domains (Shehata & Al Najjar, 2011). In addition, awareness is a strong emotional affective load enabled through several behavioral phenomena for the individual. Awareness is developed through the stages of education and the more adult and fixed it is, the more likely it is to support and direct rational behavior in the desired direction (Ibrahim, 2009). It is also defined by D. Motawea (1999) as 'the information, knowledge, concepts, and beliefs that the students have and which affect their responses, behaviors, and roles towards a particular problem.' Out of the previous, it can be concluded that awareness includes three aspects:

The cognitive aspect: this is represented in the availability of scientific information about a particular phenomenon or topic.

The affective aspect: this is represented in forming inclinations and positive attitudes towards the topic. If the topic is 'environment' for instance, the individual should attempt to protect and keep it.

The applied (performative) aspect: this is represented in the individual's response to situations and phenomena correctly and rapidly and the ability to deal in life situations facing him/her.

It can be concluded that all the definitions of awareness agreed that awareness is achieved only with the combination of the cognitive, the affective, and applied aspects. The researcher defines preventive awareness as 'the individual's quick response resulting from being emotionally influenced by information and knowledge (environmental, health, and technological) about a situation or a real scientific problem. This response may appear in the form of behavior or a person's ability to make a decision towards the situation or the problem. Awareness is achieved only with the combination of the cognitive, the affective, and applied aspects and it includes several domains.'

Domains of Preventive Awareness: there are several domains of preventive awareness including:

- *Environmental awareness:* Science teaching provides multiple opportunities to develop environmental preventive awareness which is one of the aims of environmental education. Primary stage students are the basis of environmental education which is expected to achieve a great effect at this stage (Mutisya & Barker, 2011). Environmental preventive awareness helps the individuals achieve commitment based on sense and conscious awareness of the various environmental relations and problems. It also helps them to acquire patterns of behavior which represent a sense of responsibility towards the environment where they live in the sense that they care about maintaining and keeping their environment (Al Sherbiny & Al Tanawy, 2010). There are several definitions for environmental awareness: Hadzigeorgious and Skamias (2013) define environmental awareness as 'knowledge of the mutual relations or environmental issues and human life in a sense that knowledge affects the individual's life, how he/she feels, thinks, and acts. It is considered a basic

condition of environmental culture.’ Awareness of the environmental risks is considered a vital part of the environmental awareness. It was defined by Samaan and Faraag (2002) as ‘the realization of an individual centered around knowledge and feeling of environmental danger and his/her ability to specify the source and reason for that danger and avoiding this reason in everyday life situations’. Science curricula in general have multiple potentials to provide for students either the hearing impaired or the normal students within the area of protecting themselves first and then protecting the environment against the dangers threatening them. And hence these curricula carry the greatest load to achieve this. The study of N. Esmaeil (2008) tackled the designing of a program for scientific activities to develop awareness of the environmental risks and the results showed the program’s effectiveness. The researcher benefited from the previous studies and literature in the field of environmental awareness and awareness of the environmental risks in specifying some of the environmental risks associated with environmental problems that are faced by hearing impaired primary stage students to develop their awareness of these problems.

- *Health awareness:* Mohamed (2014) defines preventive health awareness as ‘raising the students’ awareness towards the damages resulting from exposure to different materials used in the current period related to the revolution and what the students should do to avoid these damages.’ It is also defined by Ibrahim (2009) as the individual’s practice of sound health habits. One of the studies which tackled preventive health awareness is the study of Reda (2013) which aimed at developing health awareness as well as some 21st century skills for first preparatory level at Jazan University. The results of the study indicated the effectiveness of using social software in developing health awareness and some 21st century skills. In addition, the study of Al Sayed (2007) aimed at

developing awareness of incorrect health behaviors for primary stage students by using caricatures. The results indicated that there is a positive correlation between the prevalence of incorrect health behaviors and the degree of awareness of these behaviors for hearing impaired primary stage students.

Technological awareness: Due to the technological advancement in all the fields of life, science teaching should cope with this information and technological revolution and should provide the students a technological education for which technological awareness is a pillar (Al Nagdy, 1999). There is no doubt that science curricula can have a great role in creating and forming technological awareness for the students if they include different information about technology and its applications in society (Nagla, 1995). It has also become an aim of science teaching to develop a new awareness to understand the relation among science, technology, and society (S.T.S) since there is no aspect in our lives which is not affected by science, technology, or both (Shetewy, 2005). Technological awareness is defined as 'the students' realization of the extent to which technological development is involved in all the various aspects of their lives whether personal, educational, environmental, economic, cultural, or political aspects' (Al Mehy & Nagla, 2005). one of the studies which tackled technological awareness through science teaching is the study of Lotfy (2010) which aimed at developing awareness of the technological scientific issues which have an environmental social feature through a suggested program. The study concluded that the suggested program developed the aspects of awareness (cognitive, psychomotor, and affective). The study of Shetewy (2005) aimed at developing science curricula at the primary stage in light of the integration among science, technology, and the society. The study proved the effectiveness of a unit of the curriculum in developing achievement; the attitude towards the issues of science, technology, and the society; and the ability to deal in real life situations. It can be concluded that the tight relation among science, technology, and the society should be included within

science curricula at the different stages of education in general and for the hearing impaired students in particular so that hearing impaired students would have the opportunity to recognize the effective role played by science for human welfare and solving several problems and social issues resulting from scientific and technological advancement. This is achieved through selecting the topics to be included in the suggested science curriculum in light of their value and their relation to the students' lives and society. Science should not be learned without awareness of its application and without clarifying its relation with the hearing impaired students' lives. Based on the previous discussions, the researcher believes that preventive awareness includes multiple domains. These domains are not separate or isolated, but they are related and integrated.

The Role of the Suggested Science Curriculum in Developing Preventive Awareness: The role of scientific education has increased in light of the contemporary developments which reflect the features of the age of science and technology. Humans benefited from scientific and technological achievements and their positive aspects; however, they also have negative aspects. Together with these achievements, some problems and crises which threaten man and the environment have increased due to the unawareness of the right behavior towards them. These problems include environmental pollution with all its aspects and dimensions, energy crisis, etc. (Abdel Salam, 2001). Shoair (2005) also indicates the role of science in providing the students with the concepts and skills that help them in protecting themselves against exposure to some problems. This is due to the nature of science as the most related subject to the student's life and the health problems he/she faces. While preventive awareness represents an importance for ordinary students, its importance increases greatly for hearing impaired students due to two reasons. The first reason is that the percentage of disabled individuals in the society is not small, and as for the deaf, their number exceeds 70 millions. The second reason goes back to the negative effects caused by hearing impairment on the deaf person. It affects the cognitive, social,

emotional, educational, and health aspects. This affects in turn the deaf person's ability to learn and communicate with others and hinders the acquisition of information and experiences which help the deaf to protect themselves against the dangers that would face them. Hence, it was necessary to design a science curriculum for the hearing impaired students based on their needs to develop preventive awareness in order to keep their safety and health against accidents or expected dangers. The program also aims at developing their awareness of how to deal in a scientific organized way with the problems that may face them such as air pollution, lack of energy, electromagnetic pollution, dangers arising from over-exposure to the sun and sitting in front of the TV or computer for a long period, as well as dangers resulting from fuels.

Research Problem and Objectives

The researcher concluded the research problem through the following:

Reviewing the results of researches and previous studies which tackled:

1. *Designing special science curricula for hearing impaired students:* a few studies, such as the studies of Abdel Samiea (2007), Abdel Wahab (2000), and Fahmy (1989) indicated that there is a crucial need to prepare special curricula for hearing impaired students which consider the needs, characteristics, and abilities of these students. Looking at the reality of teaching science to hearing impaired students, we find that it depends on memorization without the students' positive and effective participation in the educational process. In addition, there is a weakness in using the teaching aids needed for achieving the aims of science teaching to the hearing impaired students. Furthermore, there is a concern with the students' memorization of the final information without caring about details which affects negatively on their academic achievement and their confidence in their ability to learn (Bahgaat, 2004).

2. *Developing preventive awareness:* there are various previous studies which tackled developing the domains of preventive awareness in general including the studies of A. Ahmed (2008), Abdel Rahman (2005), A. Motawea (2006), H. Abdel Fatah (2004), Khalil (2010), Mohamed (2014), and Radwan (2005).

The pilot study:

The researcher conducted a pilot study to identify the reality of science teaching for hearing impaired students at the primary stage. The study included:

1. *Interviews:* The researcher held open interviews with 10 teachers at Al Amal Deaf School (Al-Matariyyah Educational Administration) and Al Amal Deaf School at Abbasya as well as with 10 supervisors of special education in Cairo with the aim of identifying the viewpoints of science teachers and supervisors of special education about the degree of appropriateness of the current science curriculum in light of the nature of hearing impairment and the growth demands of hearing impaired students at the primary stage for developing preventive awareness domains.

The following results were concluded out of the interviews:

1. Most of the teachers and supervisors emphasized that hearing impaired students at the primary stage study the same content that is studied by normal students at the same stage with a slight simplification for lessons.
2. The content of the science curriculum is unrealistic, unsuitable for those students and it needs modification and reorganization. Hence, it is necessary to design science curricula which suit the needs of those students.
3. There is no science lab equipped with laboratory sets and tools which help teachers to implement the applied part of science. The teachers create some simple teaching aids at their own expense.

4. The teacher faces a difficulty to acquire the special signs related to the scientific concepts within the content because there is no sign dictionary for the scientific concepts. Consequently, each teacher depends on his/her own experience to present a descriptive sign for the concept which he/she may acquire from the hearing impaired students in class.
5. There is an agreement between teachers and supervisors that the current curriculum does not consider the individual differences among students and does not suit their needs and willingness to learn. Most of them also emphasized that it is necessary to design a science curriculum that achieves the aims of primary schools for hearing impaired students which contributes effectively to developing preventive awareness for these students.

These results agree with the results concluded by Abdou (1998), Abu Nagy (2003), Abu Shama (2005), Akl (2012), Al Laqanny and Hassan (1999), Al Qority (2001), Al Tohamy (2005), Berman, Guthmann, Crespi, and Liu (2011), Cahn (2006), Fahmy (1989), Hadzigeorgious and Skamiaus (2013), and Mathews (2007), Taha (2008), and Zidan (2003) that school books specialized for the hearing impaired students are not valid since the courses studied by these students are the same courses studies by normal students at the primary and preparatory stages.

It can be concluded that the research problem is specified in the lack of a science curriculum for hearing impaired primary stage students that is appropriate for their abilities and that considers their characteristics and needs.

The current research aims at:

1. Preparing a list of the needs in whose light the suggested science curriculum for the hearing impaired primary stage students should be designed.

2. Presenting a suggested form of the science curriculum for hearing impaired primary stage students based on their needs.
3. Applying one unit on a group of students to specify the extent to which preventive awareness developed in all aspects (cognitive, psychomotor, and affective) for hearing impaired students after studying the selected unit.

Research Procedures

To answer the research questions, the following procedures were followed:

First: to answer the first question, ‘what are the needs in whose light the suggested science curriculum for hearing impaired primary stage students should be designed?’, the researcher prepared a list of the needs that should be used in order to design the science curriculum for hearing impaired students. This was achieved through reviewing literature and previous studies which concerned designing science curricula and educational units for hearing impaired students whether in the primary, preparatory, or technical secondary stages, as well as investigating the international projects in developing science curricula for hearing impaired students. The initial form of the list was submitted to specialists in curriculum and instruction, mental health, special education, educational psychology, as well as supervisors of special education at the educational directorate in Cairo with the aim of identifying the extent to which the list was suitable for hearing impaired primary stage students and suggesting further needs. The list was modified according to their instructions, observations, and suggestions and some secondary needs were omitted. The final form of the list included (5) basic needs and (61) secondary needs.

Second: to answer the second question, ‘what is the form of the suggested science curriculum for hearing impaired primary stage students?’, the researcher specified the general aims of the suggested curriculum – in light of the list of needs previously

prepared, the general aims for hearing impaired education, and science teaching aims that suit the nature of hearing impairment – submitted them to jury members, and modified them according to their suggestions. The final form of the aims is clarified below:

1. Providing hearing impaired students an amount of information and scientific concepts to enable them to understand the environment where they live.
2. Drawing the attention of hearing impaired students towards observation of phenomena and different things, realizing the relation among them and the reasons behind them, and tasting the world's magnificence and beauty.
3. Providing hearing impaired students some technological aspects of devices as appropriate for their age realization in order to cope with the contemporary developments and challenges.
4. Developing awareness of the importance of following the appropriate health behaviors to avoid diseases.
5. Developing the skills of communicating with the surrounding environment through writing, reading, sign language, lips' reading, and reading tables and images.
6. Developing positive attitudes towards science and appreciating scientists in general and Arab scientists in particular.
7. Developing the students' awareness of environmental problems and suggesting solutions for them.
8. Providing the hearing impaired students the skills of group work and cooperation through their team work while achieving different activities.
9. Training the hearing impaired students on performing simple scientific experiments, while taking safety and security precautions, and developing their abilities to observe and conclude.
10. Enhancing the hearing impaired students' abilities to solve simple problems using creative methods.

11. Forming scientific attitudes for the hearing impaired student through guiding his/her behavior in everyday life situations.
12. Providing the hearing impaired student aesthetic values and sense of beauty through studying different topics.

The researcher prepared a general suggested form for the science curriculum and for the time necessary for teaching the curriculum's units.

Third: to answer the third question, 'what is the effectiveness of teaching a unit of the suggested science curriculum in developing preventive awareness for hearing impaired primary stage students?', the researcher followed the steps below:

Preparing and controlling the experimental unit: to verify the effectiveness of the suggested curriculum in developing preventive awareness for hearing impaired students, a unit of the suggested curriculum's units titled 'the sun is the source of all energies' was designed for six-year primary stage students to experiment it according to the following steps:

Reasons for selecting the experimental unit

The unit 'the sun is the source of all energies' was selected out of the suggested curriculum of the first term since its topic is related to the hearing impaired student's environment. It tackles sources of energy (the sun – electricity – machines) and how to keep them and make good use of them within the environment which made studying this unit functional, strongly related to the hearing impaired student's life, and far from the abstract look towards teaching facts and scientific concepts. In addition, the unit tackles the main source of energy; the sun and how to make use of it especially because the hearing impaired student seeks to adapt with the environment according to his/her needs and demands.

Preparing the experimental unit

In light of the unit's aims and the suggested science curriculum's contents, the basic topics of the unit were specified:

the sun, electricity, and machines. The unit's contents were specified, formed, and organized so that each topic was represented through some sub-lessons as appropriate for the characteristics and nature of six-year primary stage hearing impaired students. After the researcher specified the unit and its contents, she prepared a teacher's guide which included: the unit's title, learning aspects included within the unit, the unit's objectives, the teaching strategy used for teaching the unit, the activities and teaching aids, the lesson plans, and assessment.

Research Instruments: they include:

1. *Designing and statistically controlling the achievement test:*
The achievement test was designed according to the following steps:

Specifying the test objectives, forming the test items, test validity, and piloting the test on a group of 9 sixth-year primary stage students at Al Amal Deaf School – Al-Matariyyah during the last week of September, 2015 – 2016.

Final form of the test

After modification, the items of the test were 30. One mark was given to each item the student answered correctly, and a zero was given in case of incorrect answers. Hence, the test's maximum score was (30) marks and minimum score was (0) marks. Table (1) clarifies the distribution of the achievement test's items on the preventive awareness dimensions at the three cognitive levels (knowledge – comprehension – application).

Table 1 Criteria of the achievement test in its final form

Item	Topics	Cognitive levels			Total	Percentage
		Knowledge	Comprehension	Application		
1	The sun	2,4,7	10,15,16,19	20,27,29	10	33 %
2	Electricity	3	8,12,14	5,18,20,24	8	26.6 %
3	Machines	1,6,9	11,13,17	21,23,25,26	12	40 %
Total		7	10	13	30	

2. *Designing the attitude scale:* After necessary modifications, the items of the scale were (30) items in its final form. A positive item on the three response (agree – undecided – disagree) Likert-type scale was given the

marks (1, 2, 3) respectively and vice versa as for negative items. Consequently, the maximum score for the scale was (90) marks.

Table 2 Dimensions of the scale and the statements measuring each dimension

Dimensions of the scale	Statement number for each dimension	Sum of statements	Percentage
1. Environmental attitudes	1, 4, 8, 11, 12, 13, 19, 22, 27, 29	10	33 %
2. Health attitudes	3, 5, 6, 7, 15, 16, 17, 20, 23, 24	10	33 %
3. Technological attitudes	2, 9, 10, 14, 18, 21, 25, 27, 28, 30	10	33 %

3. *Designing the test for the ability to deal in real life situations:* After modification, the final form of the test included (30) items. One mark was given for each situation in which the student dealt correctly, and a zero in case of selecting a wrong choice regarding the situation. Hence, the maximum test score was (30) and the minimum score was (0). The following table clarifies the criteria of the test for the ability to deal in real life situations with regard to preventive awareness dimensions:

Table 3 The criteria of the test for the ability to deal in real life situations with regard to preventive awareness dimensions

Dimensions	Item number	Sum of items	Percentage
1. Environmental awareness	1, 7, 4, 10, 13, 16, 19, 22, 25, 28	10	33 %
2. Health awareness	2, 5, 8, 11, 14, 17, 20, 23, 26, 29	10	33 %
3. Technological awareness	3, 6, 9, 12, 15, 18, 21, 24, 27, 30	10	33 %
Total number of situations		30	

Research group:

A group of students at Al Amal Deaf School, Al-Matariyyah Educational Administration, Cairo was selected to participate in the research due to the interest revealed by the school

administrators to help the researcher as well as the agreement of the general administration of special education to conduct the research at this school. The group included 9 male and female students who represent sixth-year, primary stage as a whole at the school, and who are all hearing impaired.

Experimentation Procedures

Pre-application of the research instruments

The researcher – with the help of the school teacher who is specialized in teaching hearing impaired students using communication techniques (sign language, lips reading, and total communication) – applied the research instruments (the achievement test, the attitude scale, and the test for the ability to deal in real life situations associated with the selected unit ‘the sun is the source of all energies’) before teaching the selected unit on the research group on Sunday, 28/9/2015. During application, the researcher explained the research instruments and their aims to students.

Administration of the suggested unit

There weeks before conducting the research experiment, the researcher met the science teacher at Al Amal Deaf School, Al-Matariyyah Educational Administration. During this meeting, the researcher clarified the purpose of the study and provided the teacher with a copy of the teacher’s guide, a book, and a CD including the PowerPoint presentations and the educational videos. The researcher asked the teacher to read the guide carefully and record her inquiries during a whole week after which another meeting was held to discuss and clarify all inquiries. The researcher also made sure that all the instruments and educational materials necessary for implementing the lesson plans within the guide were available, especially different types of illustration cards and the materials and instruments necessary for experimentation activities. It was also checked that enough work sheets were available. The teacher started teaching the unit ‘the sun is the source of all energies’ during the first term 2015 –

2016 / three classes per week with a continuous follow-up on the part of the researcher.

Post-application of the research instruments

After teaching the unit's topics, the research instruments (the achievement test, the attitude scale, and the test for the ability to deal in real life situations related to preventive awareness) were applied starting from 16/11/2015 to 18/11/2015.

Results and Discussion

The most important results reached by the research are presented below in order to answer the research questions and verify the hypotheses:

First: Results of applying the achievement test: the first research hypothesis reads 'there is a statistically significant difference between the students' mean scores in the achievement test's application before and after studying the suggested unit in favor of the post-application.'

Table 4 Z value for the significance of differences between the means of the ranks of the research group's scores in the pre and post-application of the achievement test

Achievement test	Number	Mean of the negative ranks	Mean of the positive ranks	Total of the negative ranks	Total of the positive ranks	Z value	Significance
	9	0	5	0	45	2.690	0.007

Table 4 indicates that there is a statistically significant difference at the 0.01 between the means of ranks related to pre and post-application of the achievement test in favor of the post application.

To evaluate the effect size of the unit, 'the sun is the source of all energies' on six-year, primary stage hearing impaired students' cognitive achievement, the effect size of the Wilcoxon test was calculated through the following correlation:

$R \frac{Z}{\sqrt{N}}$; N is the total number of observations of the research group

Table 5 Effect size (r)

Large	Medium	Small	Abs®
0.5	0.3	0.1	

R value, calculated through the previous correlation, equaled 0.629. This is the ratio of what is explained by the independent variable (the educational unit) out of the total variance of the dependent variable (the cognitive achievement); this ratio represents a large effect size and hence the first hypothesis was accepted.

Second: Results of applying the attitude scale: the second research hypothesis reads ‘there is a statistically significant difference between the students mean scores in the scale of attitudes towards preventive awareness before and after studying the suggested unit in favor of the post-application’.

Table 6 Z value for the significance of differences between the means of the ranks of the research group’s scores in the pre and post-application of the attitude scale

Attitude scale	Number	Mean of the negative ranks	Mean of the positive ranks	Total of the negative ranks	Total of the positive ranks	Z value	Significance
	9	0	5	0	45	-2.66	80.00

Table 6 indicates that z value equals -2.66 at the 0.01 level and hence the second hypothesis was verified, i.e. there are statistically significant differences between the means of the ranks regarding the pre and post-applications in favor of the post-application of the attitude scale. To evaluate the effect size of the unit, ‘the sun is the source of all energies’ on the attitude towards preventive awareness, the researcher calculated the effect size (r). R value, calculated through the previous correlation, equaled 0.64. This is the ratio of what is explained by the independent variable (the educational unit) out of the total variance of the dependent variable (the attitude towards

preventive awareness); this ratio represents a large effect size and hence the second hypothesis was accepted.

Third: Results of applying the test for the ability to deal in real life situations related to preventive awareness: the third research hypothesis reads ‘there is a statistically significant difference between the students mean scores in the test for the ability to deal in real life situations before and after studying the suggested unit in favor of the post-application’.

Table 7 Z value for the significance of differences between the means of the ranks of the research group’s scores in the pre and post-application of the test for the ability to deal in real life situations

Test for the ability to deal in real life situations	Number	Mean of the negative ranks	Mean of the positive ranks	Total of the negative ranks	Total of the positive ranks	Z value	Significance
	9	0	5	0	45	-2.67	80.00

Table 7 indicates that z value equals -2.67 at the 0.01 level and hence the third hypothesis was verified, i.e. there are statistically significant differences between the means of the ranks regarding the pre and post-applications in favor of the post application of the test for the ability to deal in real life situations. To evaluate the effect size of the unit, ‘the sun is the source of all energies’, the researcher calculated the effect size (r). R value, calculated through the previous correlation, equaled 0.63. This is the ratio of what is explained by the independent variable (the educational unit) out of the total variance of the dependent variable (the ability to deal in real life situations); this ratio represents a large effect size.

Discussing and Interpreting Results

After presenting the results of the study, the following conclusions were reached:

1. There is a clear increase in the research group students' mean scores in the achievement test as a whole and in all its sub-levels (knowledge, comprehension, and application) in the post-application which emphasizes the effectiveness of the suggested unit in increasing achievement. It is also noticed that the effect size is large, which indicates that the suggested unit 'the sun is the source of all energies' was effective in increasing the achievement for the research group. These results agree with those of several studies which tackled the cognitive achievement of hearing impaired students in science through designing curricula or academic units appropriate for the nature of hearing impaired students or considered developing the cognitive achievement through using different teaching strategies such as the studies of Abdel Ghany (2005), Abdel Malek (2010), Abdel Wahab (2000), Akl (2012), Fahmy (1989), H. Ahmed (2009), M. Esmaeil (2014), Mohamady (2007), and R. Abdel Fatah (1992),.
2. There is a clear increase in the research group students' mean scores in the attitude scale as a whole and in all its sub-dimensions (environmental, health, and technological awareness) in the post-application which emphasizes the effectiveness of the suggested unit in developing the attitude towards preventive awareness. It is also noticed that the effect size is large, which indicates that the suggested unit was effective in developing the attitude for the research group. These results agree with those of several studies which tackled the attitude whether towards science or towards the dimensions of awareness in particular such as the studies of, Abdel Salam (2013), Abdel Samiea (2007), Abdou (1998), Abu Nagy (2003), Mohamed (2014), and Mohamed and Hasan (2004),.
3. There is a clear increase in the research group students' mean scores in the test for the ability to deal in real life situations as a whole and in all its sub-dimensions (environmental, health, and technological awareness) in

the post-application which emphasizes the effectiveness of the suggested unit in developing the hearing impaired students' awareness towards dealing in real life situations. These results agree with those of the studies which tackled developing awareness in general or preventive awareness in particular such as the studies of Ahmed (2008), Mohamed (2014), Nashwan and Abu Qamar (2004), and Radwan (2005).

Conclusion

In light of the research's conclusions regarding the requirements for designing science curricula for the hearing impaired primary stage students and suggesting a science curriculum for that stage, the researcher suggests the following:

1. Providing rooms for educational sources at Al Amal Schools for the hearing impaired students for the various stages to make use of them in performing different activities, as well as providing the necessary scientific devices such as computers, projectors, and video sets.
2. Considering the preparation of special curricula for teaching science to the hearing impaired students at the preparatory and secondary stages according to their characteristics and needs.
3. Considering the preparation of labs which enhance science teaching and providing simplified scientific books which contribute to science curricula at the different stages including images and signs that help the hearing impaired read the books and consider their characteristics and needs.
4. The necessity of creating new methods and techniques for assessing science teaching for the hearing impaired students to discover their abilities and guide them in a way that lets their abilities grow to the maximum extent.
5. There should be a teacher's guide that assists the teacher regarding teaching methods, aids, and activities appropriate for each lesson. In addition, there should be images for the signs associated with scientific concepts in

the school book so that the hearing impaired students would understand the lesson to a great extent.

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The effect of a blended learning program using Schoology LMS on developing EFL preservice teachers' teaching knowledge and reducing their writing anxiety

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Abstract

The study aimed at developing preservice EFL teachers' teaching knowledge and reducing their writing anxiety. To achieve these aims, an instructional program based on the free LMS (learning management system) Schoology was developed. Schoology is a free-access, web-based, multi-function LMS that can be utilized in education at no cost. Ten units of the course (Practicum One) were designed to fit and benefit from the tools available in the LMS. Instruments of the study included an achievement test and a scale of writing anxiety. The test was developed by the researcher, while the scale was modified from Cheng 2004. Sample of the study consisted of 93 female students enrolled at the General Diploma program at Taibah University. Of them, 43 were treated as the experimental group, and 40 were treated as the control group. Results of the achievement posttest showed a significant and remarkable difference between the two groups favoring the experimental group. The scale results shows that experimental group students' writing anxiety was drastically reduced. Recommendations and suggestions are presented.

Introduction

Blended learning is a relatively modern term that refers to a software platform in which a student learns through delivery of content and instruction via digital and online media with some element of student control over time, place, path, or pace. "In blended learning, face-to-face classroom methods are combined with computer-mediated activities. The terms "blended," "hybrid," "technology-mediated instruction," "web-enhanced instruction," and "mixed-mode instruction" are often used interchangeably in research literature". (Norm, 2012, p.4). The

concept of blended learning has been around for a long time, but its terminology was not firmly established until about the start of 21st century. Graham and Bonk (2006) defined 'blended learning systems' as learning systems that "combine face-to-face instruction with computer mediated instruction." (p. 15). Currently, use of the term *blended learning* mostly involves "combining Internet and digital media with established classroom forms that require the physical co-presence of teacher and students." (Norm, 2012, p. 17).

There have been extensive discussions on the usage of online technology or computer mediated communication (CMC) in language education. Investigations on the latest communication channels such as weblog (e. g., Downes, 2004; Mortensen, 2008), discussion board (e. g., Bhappu, Ebner, Kaufman, & Welsh, 2009), social network (Boyd & Ellison, 2007; Ellison, Steinfield, & Lampe, 2007), and instant messenger (e. g., Jacobs, 2008; Lewis & Fabos, 2005) to name a few have been discussed in various studies. As a result, CMC has been indicated to contribute to students' linguistic development mediation (Darhower, 2002), help students identify language genres (Lam, 2004), increase their success in using the target language (Hanna & de Nooy, 2003), and provide more opportunities for negotiations, collaborations, interactions and communications (Jonassen, 2004; Kitade, 2000, 2006; Leahy, 2008).

Computer-mediated communication (CMC) environments such as discussion boards, blogs, journals, or wikis are now commonly available with learning management systems (LMs) such as *Blackboard*. These CMC modes have recently become an integral part of the life style of today's people who communicate through these media on their mobiles or tablets anywhere and anytime.

E-learning platforms, such as *Blackboard*, are characteristically equipped with facilities that integrate reading and writing in the foreign language, such as discussion boards, blogs and wikis. These facilities are particularly beneficial for language learners to develop their reading and writing skills.

They operate in ways that can help both teachers and students discover how the latter's ideas grow and improve over shorter or longer periods of time (Mak & Coniam, 2008; Lee, 2004; Coyle, 2010; Cabiness, Irvine, & Grove, 2013; Pena-Shaff, Altman, & Stephenson, 2005; Smith, 2006; Lloyd-Williams, 2007; Halic, Lee, Paulus, & Spence, 2010; Maag, 2006; Lundin, 2008). These tools also provide students with both reflective and interactive feedback and continually involve them in collaborative activities with their peers and teachers in a way that extends the learning opportunities beyond formal instruction times (Álvarez, 2012; Deng & Yuen, 2011).

The time has come for a major redesign of learning environment tools for classroom and online learning. Until now the design of Learning Management Systems has focused primarily on the "management" aspects of courses, mostly informing and guiding students on what they should do next in their role as a student. *Schoology* introduces a new user-centric approach to learning. *Schoology* is a learning platform designed to immerse students in an easy-to-use collaborative environment that strengthens the connection between them and their instructors.

Schoology founders Jeremy Friedman, Ryan Hwang, Tim Trinidad, and Bill Kindler teamed up and founded *Schoology* in the 2007-2008 school year. Their mission was to "reinvent the way technology is implemented in the classroom. With a goal of improving student outcomes, they realized the need to disrupt the stagnant education technology market by making *Schoology* available for every educator. *Schoology* not only provides institutions with a configurable, scalable, and easy-to-implement solution, but also provides a basic version of its award-winning platform free for educators" (*Schoology* website, 2015).

Today, more than seven million educators, students and administrators around the world use *Schoology*, a unified platform with tools for instruction and curriculum management, dedicated mobile apps, access to an integrated global learning community, advanced analytics and reporting, and an open

platform for third-parties to build on top of the *Schoology* LMS. This news follows rapid global customer growth, including Uruguay's selection of *Schoology* for all 620,000 students in their national education initiative Plan Ceibal, and CSU Global Campus' choice to collaborate with *Schoology* for its premier global online university. *Schoology* has also been named the top overall education technology product at the 2014 SIIA CODiE Awards. (*Schoology* website, 2015).

Problem of the study:

EFL Student-teachers at Taibah University do not seem to make use of the many facilities that can be offered via online and blended learning programs. Learning to teach English cannot be achieved through attending lectures only. Having access to a wealth of resources and open discussions via an LMS can help in enriching the student-teachers' knowledge about teaching and reinforcing their practices. In addition, it was noticed that student-teachers avoid writing lengthy reports and prefer to resort to the seemingly safe option of having multiple choice-based tests. It is thought that through an interactive blended learning program, they may overcome their writing anxiety along their study of EFL practicum.

Questions of the study:

1. What is the effect of the suggested blended learning program on developing teaching knowledge of Taibah University EFL student-teachers?
2. What is the effect of the suggested blended learning program on reducing EFL student-teachers' writing anxiety ?

Hypotheses of the study:

1. There will statistically significant mean differences between the scores of the experimental group and those of the control group in the posttest of EFL teaching knowledge.
2. There will statistically significant mean differences between the scores of the experimental group and those

of the control group in the post application of the writing anxiety scale.

Review of literature

Staub (2013) conducted a quantitative correlational study to examine the relationship between teacher training and teacher use of a laptop in a one-to-one laptop program. Teachers recorded their training weekly throughout the twelve-week study. Teacher use of laptops was measured through self-reporting in a pretest and posttest design, focusing on four characteristics, based on the school district's technology goals: use of *Moodle/Schoology*, use of web 2.0 technologies, use of Apple's iLife suite, and the teacher's differentiation of instruction using the laptop. Teachers self-assessed their Level of Use in these four areas with a survey instrument derived from the Concerns-Based Adoption Model's Level of Use dimension. Teachers recorded the quantity and type of professional development training using a weekly time recording matrix. Using Spearman's Rho to conduct correlational analysis, statistical analysis suggest no significant correlation between teacher training and teacher use of laptops in a 1:1 laptop initiative. With the results of this study, suggestions for professional development, especially in educational technology, are made. The results of this study indicate a need for further research in more robust professional development plans when implementing new educational technologies.

Dang and Robertson (2010) report on a study investigating Vietnamese EFL students' reflection on a web 2.0 LMS (*Schoology*) that they worked with during a course. The main discussion focused on the local students' autonomous learning behaviors in relation to their cultural values in online learning. In second language learning, various attempts and initiatives have been developed and documented in different learning settings, especially in developed countries. However, in the context of Vietnam, where internet broadband has only recently become very popular and affordable, the employment of web 2.0 in EFL training has been very limited. Results showed that learners

achieved higher levels of autonomy after learning ESL via the LMS as compared to other learners who studied ESL traditionally.

AlHarbi (2015) investigated the effects of the online course tools, specifically discussion boards, blogs and wikis, the built-in facilities of *Blackboard* as computer-mediated communication integrated in e-learning environments on improving integrated reading and writing and on the attitudes of EFL college students towards literacy skills in e-learning environments. A pedagogical model was designed and described in a background of relevant research. The study made use of both quantitative and qualitative data to investigate the effects of these tools on both reading/writing performance and on attitudes. The findings indicated that the students' performance on an integrated reading/writing test was improved and so were their attitudes towards literacy skills. The findings also showed that the e-course tools at issue facilitated students' interactions and supported learning of the reading/writing skills in a growing online discourse community.

Emireta (2006) reports on a program that has been implemented in a blended-learning (b-learning) pedagogical model that includes: (a) learners work with English Online, software conceived as the backbone of the entire Communicative English Program, (b) online monitoring, (c) face-to-face EFL teacher-led classes, and (d) conversation classes with native speakers of English. This paper describes the elements of the b-learning model, issues about its implementation, and results obtained in the piloting of its first module. The results obtained with the pilot group in module 1 show a substantial improvement in the students' language skills, as well as high satisfaction levels with the entire Communicative English Program. The results support the success of the b-learning model implemented.

Hseih (2009) compared the effects of three instructional methods--collaborative synchronous online communication, asynchronous online communication, and independent study as

traditional in grammar translation method--in English reading comprehension. A quasi-experimental research design included pre and post reading comprehension tests for all three groups (N=138) and a post perception survey for the experimental groups. After treatment, collaboratively synchronous and asynchronous online communication users outperformed those in the independent study group. Yet, no significant difference was found in reading posttest scores between synchronous and asynchronous communication groups. Findings from the post perceptions survey of the experimental groups displayed no statistically significant differences between them. But, three variables, the perceptions of collaboration in computer-mediated communication (CMC), effects of CMC, and perceptions of *Moodle*, each showed positively significant effects on reading comprehension posttest scores.

With regard to writing anxiety, several studies were conducted to explore, assess and reduce EFL writing anxiety . Jahin (2012) assessed the impact of peer reviewing on their writing anxiety level and essay writing ability. Data collection was carried out via two instruments: Second Language Writing Anxiety Inventory (SLWAI) (Cheng, 2004) and an essay writing test. The study sample consisted of 40 EFL major prospective teachers at Taibah University, KSA. These were equally divided into two groups: control (n=20) and experimental (n=20). Both groups were similar in terms of academic level, mother tongue background, and target language proficiency. The experimental group participants were introduced to peer-reviewing essay writing sessions while the control group participants were taught through the traditional teacher feedback-based essay writing. Results of data analysis showed positive impacts of peer reviewing on experimental group participants' writing anxiety and essay writing ability. Implications for using peer reviewing in ESL writing were discussed.

On the other hand, studies (e.g. Onwuegbuzie, Bailey, & Daley, 2000; Lee & Krashen, 2002, Atay and Kurt, 2006; Rankin-Brown 2006; Temesgen, 2009; etc.) indicated that the higher the

students' writing anxiety , the lower language their writing proficiency is. For example, Hassan's (2001) study revealed that high levels of writing anxiety negatively influenced the quality of students' writing composition. Atay and Kurt's study (2006) of Turkish prospective teachers' writing anxiety showed that more than half the participants had high or average writing anxiety . Abdel Latif's (2007) study showed that students with low English linguistic knowledge had more writing anxiety than those with high linguistic knowledge. Magno (2008) found out that writing anxiety was one of the factors that predicted writing proficiency in English. Temesgen's (2009) study showed that students who received training on peer review experienced significantly less writing anxiety than those who did not.

Zhang (2011) aimed to measure the level of ESL writing anxiety experienced by Chinese English majors. The effects of ESL writing anxiety on English writing performance, the students' perception the main causes of ESL writing anxiety and their learning style preferences in ESL writing class were also examined, which provided pedagogical implications of successful learning and teaching strategies for reducing ESL writing anxiety. This study was based on quantitative research and three questionnaires were used to collect data. The results of the SLWAI showed that there is a high level of ESL writing anxiety among Chinese English majors, and the Cognitive Anxiety is the most common type of ESL writing anxiety. The differences in the level of English writing anxiety between the groups of freshmen and sophomores reached the level of statistical significance. The sophomores were found to suffer significantly higher levels of English writing anxiety than the freshmen. Correlation analysis results suggested a negative relationship between measure of ESL writing anxiety and measures of writing performance (course grade and timed writing grade). An in-depth analysis of the causes of ESL writing anxiety revealed that linguistic difficulties, insufficient writing practice, fear of tests (TEM), lack of topical knowledge and low self-confidence in writing performance constitute the main sources of ESL writing anxiety experienced by Chinese English majors. Furthermore,

suggestions on learning and teaching strategies for reducing ESL writing anxiety were provided on the basis of the acknowledge of sources of ESL writing anxiety and students' learning style preferences in the ESL writing class.

Materials and instruments

This study included three data-gathering tools in addition to the instructional material represented in the suggested blended-learning program. The tools are: a teaching knowledge test, teaching practices report analysis, and a scale of writing anxiety .

The development of the program

An instructor's account was setup on the *schoology* LMS website for free. The course access code was given to the students of the experimental group to join the course on the same LMS. In the first lecture, the LMS and its different functions were introduced to the students, and they were encouraged to make the best use of all the different facilities provided by the LMS. In addition, a mobile application developed by schoology was also introduced for students to encourage them to synchronize their use of the website on both computers and mobile phones.

The program consisted of lectures, reading materials, educational videos, uploaded handouts, assignments, quizzes, surveys, open discussion forums, registering attendance, updates, and measuring students' interaction via analytics. (For samples of the training program, please see the screenshots in the appendix).

In the meanwhile, the control group was taught the practicum 1 course using the traditional method which in this context was mainly dependent on lectures using PowerPoint presentations. Although the presentations were the same ones use with the experimental group, the many other functions of the LMS were not available for the control group.

The development of the test

A content analysis of the topics of the course was undertaken and a total number of fifty test items were developed in the MCQ format. The content of the test was chosen based on similar other test items introduced in national and international EFL teaching knowledge tests ;(the national is the Saudi Qyyas test, while the international is the Cambridge TKT test). The test was validated by a group of EFL professionals in the college of Education at Taibah University, and the reliability of the test was calculated using the split half methods after applying it to a sample of 15 students in a third group other than the control and the experimental groups of the study. Alpha correlation for the two halves was..... which is an indicator that the test was reliable. (Please refer to the appendix for the full test). The test consisted of 40 items and the total score was 80 marks.

The writing anxiety scale

The study adopted the Second Language Writing Anxiety Inventory (SLWAI) (Cheng, 2004)

The Second Language Writing Anxiety Inventory (SLWAI) (Cheng, 2004) (see Appendix 3) measures the degree to which an individual feels anxious when writing in an L2 and consists of 22-items all of which are answered on a five-point Likert Scale, ranging from 'strongly agree' to 'strongly disagree'. The SLWAI has good internal consistency, with a Cronbach Alpha coefficient reported of .91 (Cheng, 2004).

Despite the evident internal consistency of the SLWAI, its reliability was assessed via the test-retest method. It was administered twice to a sample of students similar to the participants of the main study. An interval of five weeks separated the two administrations. An Alpha Cronbach's correlation coefficient of .89 was calculated. Besides, an internal consistency reliability check was computed and it was found that the alpha coefficient for the SLWAI was .91.89, which is close to the correlation coefficient reported by Cheng (2004).

Sample of the study

The sample consisted of 93 female student-teachers enrolled in the Diploma-in-Education programme in the academic year 2014-2015. 43 students represented the experimental group, and 40 represented the control group. All of them were graduates of the college of Humanities, English department at Taibah University and had no prior knowledge or practice of teaching English.

Results and Discussion

Results of the test

The teaching knowledge test was applied on both groups before and after the intervention. The total score was 80 by assigning two scores for each item. Tables (1) and (2) show the mean score of both groups before and after the experiment.

Table (1) Participants' scores in the PRE-Teaching knowledge test

Group	Number	Teaching knowledge pretest			t-value	Sig.
		Mean score	SD	Percentage		
Control	40	13.0500	3.706	16%	1.308	.194
Experimental	43	14.0465	3.228	17.5%		

Table (2) Participants' scores in the POST-Teaching knowledge test

Group	Number	Teaching knowledge posttest			t-value	Sig.
		Mean score	SD	Percentage		
Control	40	45.35	8.033	56.68%	13.428	.000*
Experimental	43	72.48	10.308	90.6%		

As table (1) shows That both group scored relatively the same in the pretest; (16% and 17% for the control and the experimental groups respectively). T-test found no significant mean differences between the two groups in their knowledge about TEFL before the experiment. Table (2) however, shows that students who used *Schoology* LMS surpassed their

counterparts who didn't use it. A remarkable difference was witnessed in the experimental group achievement in the posttest. While the control group scored a mean of 45.35 (56%), the experimental group scored a mean of 72 (90%). This means that while students in the control group benefited from the course in its traditional medium, the experimental group reflected a bigger benefit from the course when using *Schoology* LMS. The difference is statistically significant at 0.000 level.

The results of the knowledge test thus answers the first question of the questions of the study which was stated as: What is the effect of the suggested blended learning program on developing teaching knowledge of Taibah University EFL student-teachers? The results shows that the effect is a highly positive one. This also makes hypothesis one of the hypotheses of the study sustained.

Results of the scale:

The quantitative part:

Data collected from the SLWAI were analyzed by summing the subjects' ratings of the 22 items. Fifteen statements in the SLWAI are negatively worded. The scale for these items was reversed so that strongly agree took (1) and strongly disagree took (5). Only seven items were positively worded. These are items 1, 4, 7, 17, 18, 21 and 22. The scale for these items ranged from 'strongly agree' taking (5) to 'strongly disagree' taking (1). This was done so that, in all instances, the higher the score, the higher the writing anxiety level and, correspondingly, the lower the score, the lower the writing anxiety level. A total score above 65 points indicates a high level of writing anxiety, a total score below 50 points indicates a low level of writing anxiety, and a total score in-between indicates a moderate level of writing anxiety. Responses were processed statistically using the Statistical Package for Social Sciences (SPSS). Tables (3) and (4) show the mean ranks attained by both groups before and after the intervention and the significance of the difference between the two groups.

Table (3) comparing each group with itself in SLWAI scores before and after the intervention

Group	number	Writing anxiety scale Pre-administration		Writing anxiety scale Post-administration		T-value	Sig. (2-tailed).
		Mean	SD	Mean	SD		
Control	40	149	13.2	142	17.5	1.404	.168
Experimental	43	143	18.09	109	22.92	5.475	.000*

Table (4) comparing the two groups' scores in SLWARI after the intervention

Group	number	Writing anxiety scale Post-administration		T-value	Sig. (2-tailed).
		Mean	SD		
Control	40	142	17.5	6.999	.000*
Experimental	43	109	22.92		

As tables (3) and (4) show that both groups had a high level of anxiety / anxiety when facing writing tasks before the intervention. The control group had an anxiety rank that scored (149) and the experimental group was close to that with a rank that scored (143). This means that both groups were equally anxious about writing tasks.

After the intervention and using *Schoology* LMS, however, the experimental group seem to have gained confidence in writing and reduced their anxiety from 143 to 109 which shows a big shift in their attitude towards writing and a really big leap unto writing confidence. The control group on the other hand do not seem to have gained sufficient confidence in writing. Their rank fell from 149 to 142 which means that they are still encountering negative feelings when it comes to writing in EFL. This can be attributed to the nature of the teaching method utilized with them; mostly presentations and MCQ quizzes with minimum opportunities for writing tasks.

When comparing both the control and the experimental groups on the post administration of the scale (table 4), we find that there is indeed a statistically significant mean difference at .000 level in the writing anxiety scores favoring those of the

control group – a thing which emphasizes that the low score in anxiety , the better.

The qualitative part:

In order to unveil the complexities of students' anxiety / anxiety when writing EFL, an additional open-ended question was added in the experimental group's version of the scale in the posttest administration. The question was as follows: *How do you think your experience with Schoology improved your writing confidence?*

By reviewing students' responses, we find that almost all of them agreed that Schoology helped them improve the quality of their writing as well as the confidence they lack in approaching writing tasks. Some their comments include the following¹:

-Yes, it is my best way to learn how to write, although I discovered my mistakes after I sent my comments but I feel that I am learning more about writing skills.

-Yes, very much. Before I was afraid from making writing mistake. But now my confident increased because I read my message more than three time before I send it and notice my mistake. So I don't commit it again.

-Actually Schoology opens my eyes to points I did not think of it. I have not to be afraid if my writing is not good and not to be shy if my writing being chosen as a sample for discussion in class. Also, I have not worried if other people read or evaluate my writing because I want to know the good and bad things in my writing in order to improve or correct it.

-My experience with schoology is enjoyable. I think that Using this program during the march Scholastic is develop our language, because, through this way we practice the writing skill and make us save a rich set of words and with this program my writing confidence is very improved .

-It is a good chance to share my opinions with my classmates . I'm not afraid of making mistakes . I'm still student and it is okay if i still make mistakes but to be honest I sometimes blame myself for making mistakes especially if they were very clear.

¹ students' errors were not corrected for authenticity of quotation

On the other hand two students expressed their reluctance to write and their residual anxiety even after the intervention. For them, it is believed that a longer exposure to similar training programs can help in reducing, and eventually eliminating their writing anxiety . Sample of their responses are the following:

-Improved slightly beginning to use it I think that with the passage of time would be much better my writing

-I cannot decide yet but I think it will be another good way to improve my English because I used to check my English before submitting any comment because I hate my English to to be rated as poor by my teacher or colleagues.

The result of the writing anxiety scale provides answer to the second question of the questions of the study which as stated as: What is the effect of the suggested blended learning program on reducing EFL student-teachers' writing anxiety ? The results show that the program had a positive effect on reducing students' writing anxiety . In their detailed written views, students showed how they became more confident in writing professional standard English. The results also make the second hypothesis of the hypotheses of the study sustained.

Recommendations

Based on the attained results, the following recommendations are suggested:

1. Using learning management systems (LMSs) in education should be part and parcel of the instructional process not only in EFL but also in all disciplines and for all educational stages. Schoology is but one example of the power of blended learning and how it can help improve knowledge and reduce fear.
2. While some LMSs are highly expensive for Egyptian universities to purchase (for example *Blackboard* and *Jusur*), many other LMSs are free and highly reliable (like *schoology*, *Edmodo* and *moodle*). Thus, a faculty member does not need to wait until his/her institution purchase and impose certain LMSs. They can start immediately by making use of the free LMSs on the internet.

3. While students in the university level can find their way in the web for the information required in a course, they are still in need of guidance and mentoring, and here comes one other benefit of blended learning that takes in consideration students' inclination towards technology and guides its use.
4. Technology has repeatedly proven to be a challenging as well as entertaining environment for students' edutainment. So we should not refrain from making use of the available technology (LMSs) in reducing fear, anxiety and anxiety, and increasing self-confidence and creativity.
5. Course designers are requested to include blended learning practices in their new courses. A handbook-only course is no something of the past. A real effective course is one which is both printed and virtual, practical and theoretical, educating and entertaining.

Suggestions for further studies:

The following studies are suggested based on the results of the present study:

1. A study is required to use *schoolology* LMS for developing other language skills such as listening and speaking for students of EFL at different education stages.
2. A study is required to make use of *schoolology* in developing practical teaching performance skills where students would be observed regularly in their school practice.
3. A study is required to use *schoolology* for reducing speech anxiety and increase taking confidence among students in first as well as second language classrooms.
4. A study is required to compare the use of more than one free LMS (*Schoolology, Edmodo, or Moodle*) in teaching different language skills.

Conclusion:

Technology has made it easy for university students to reach different pieces of academic information both quickly and cheaply. However, a systemic guided program run by the course

instructor is something that cannot be undone with. It will enrich students' knowledge, open their eyes to new horizons in the study, and guide their endeavors while exploring the different aspects of the new world of the course. The present study is thought to have provided an example of how this can be achieved. It is believed that by using one free LMS, many things can change both academically and psychologically. It is our duty as educators to help the rising generations to attain these aspired changes.

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The Effects of the Frequency of Lexical Errors on the Quality of EFL Learners' Writing Through Email Communication

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Abstract

This study seeks to investigate the effects of the frequency of lexical errors on the assessment of compositions written by the primary school learners, and factors that cause lexical errors in their writing in English through email communication. The data, 182 compositions, were gathered from 51 sixth grade learners during the second semester of 2015. The results revealed that the students had the greatest problem with formal mis-selection of words in lexical error category. The results showed that the type of writing prompt seemed to have an effect on the frequency of occurrence of lexical errors. Participants made more mistakes on interlingual/transfer errors than on intralingual/developmental errors. Learners also had intralingual errors due to the overgeneralizations and partial exposure to the target language. In addition, learners also included internet linguistic features in their writing. A low negative correlation was found between the holistic scores and the frequency of lexical errors. The results also provided evidence that as the frequency of lexical errors decreases the quality of the compositions relatively seems to increase. Some implications are drawn this study. Teachers can include these errors in the teaching, and they should provide a context where fluent and accurate language use should be modeled to learners.

Introduction

English learners' errors should be analyzed carefully because these errors show the process of learning a language. The learners' errors are very important providing insight into

how far a learner has progressed in acquiring a language and showing how much more the learner needs to learn. There is a general consensus among researchers on the crucial role of lexis in language learning and teaching. Lexical knowledge in second language is fundamental to the development of second language proficiency. The end of Primary education represent important milestones in the learners' foreign language (FL) acquisition process. The FL proficiency achieved at the end of this educational stage establishes an important benchmark worth describing. Lexical errors are very interesting from this point of view, because they provide researchers with insightful information that help determine the evolution of the lexical profile of learners at this stage. Furthermore, lexical errors might also help in discriminating among proficiency levels.

According to Verspoor et al. (2012), it has been frequently attested that lexical measures change as proficiency increases. They found that the lexicon of the learners changes subtly and slowly across proficiency levels, developing towards more sophistication, accuracy, and fluency. The role of errors in learners' writings is not as straightforward, though. It seems reasonable to think that as learners grow older and their knowledge of the L2 progresses, they will perform better, or in any case differently, than low(er) proficient peers. Thus, different proficiency levels may have varying impacts and consequences in L2 acquisition. Verspoor et al. (2012) believe that it has been proved that, although all learners make errors, the more advanced learner makes fewer errors. However, some other studies (Torras & Celaya, 2001; Cenoz, 2003; and García Lecumberri & Gallardo, 2003) show that there is a qualitative change rather than a quantitative one, and that error tallies do not decrease when considered globally. The amount and the type of errors produced vary with age and proficiency (e.g. Celaya & Torras, 2001; and Lasagabaster & Doiz, 2003). It is our intention here to address this issue in the particular case of lexical errors.

Traditionally, writing is defined as the paper-based modality; however, many writings today are happening through

computer-based medium. Today's learners use computers as a tool to learning, and teachers have to adopt the use of technology to teach. Many studies (Kim, 2011; Li & Zhu, 2013; and Vurdien, 2013) have employed computer-mediated communication (CMC) in the language learning in the different contexts. CMC can be either synchronous or asynchronous. Synchronous communication is often referred to as real-time communication (e.g., chat, Messenger). Asynchronous CMC refers to communication is not real time. Both of users have to wait and receive the message in a delayed time. For example, email is the most popular form of asynchronous CMC. Many foreign language studies have included the use of email to develop writing skills (Levy, 1997; and Chaffee-Sorace, 1999).

However, lexis is one of the major problems that confront EFL learners and due to their 'anemic vocabulary, they are unable to communicate their ideas as clearly as they would like to. Also, they are unable to grasp the ideas transmitted to them. Moreover, writing ability is hampered by EFL learners' limited vocabulary. Therefore, This study continues to use the benefits of email in English as a foreign language (EFL) context in order to conduct an error analysis on EFL learners' writings. This study is significant because it includes the error study in a new learning context. The study would provide a clear linguistic feature analysis via email for educators and researchers. The study presented here intends to describe the lexical error profiles of learners at the end of the primary educational stage.

Statement of the problem

Sixth grade learners have difficulty mainly in the production of accurate and acceptable sentences in their writing. Further there is a tendency among some learners and teachers that argues these written errors play a crucial role in writing assessment in that the percentage of errors may be a predictor of writing quality. Moreover, students do not have enough chances to practice writing via e-mail communication and free interaction. Guided by previous controversial findings regarding error decrease as proficiency increases and through the need to

establish benchmarks for the end of primary educational stage, this study posed the following research questions:

1. What types of lexical errors are frequently found in the compositions written by the target group?
2. What factors cause these errors in the learners' writing samples?
3. Was there a relationship between lexical choices in written English and holistic score of the quality of sample writings?

Background

In the process of learning English as a foreign language, making errors is something inevitable; nevertheless, mistakes constitute a source of learning if they are corrected appropriately. According to Thornbury (1999), errors can be classified into three different types taking into account lexicon, grammar, and discourse. Lexical errors are defined as mistakes at the word level, and they include, for example, choosing the wrong word for the meaning the students want to express (*I made my homework* instead of *I did my homework*) (p.114). The nature of lexical error development is not straightforward. Different trends can be observed: some errors decrease with FL proficiency, some increase temporarily, while others show instability and then finally end up disappearing, and other errors fossilize, that is, they become permanent in learners' interlanguage. As FL language knowledge increases, the learner incorporates new words, new aspects of already known words, and/or new morphosyntactic norms. Linguistic competence becomes more stable and relationships among linguistic components strengthen. As a consequence, some (lexical) errors disappear, but some other become more pervasive.

Vocabulary is one of the basic components of language when communication is regarded and it is also a central part of language learning. The development of lexical knowledge is considered by both researchers and teachers to be central to the acquisition of a second or foreign language (Read & Chapelle, 2001). Llach (2005a:

46) states that “language learning starts up with vocabulary, words are the first linguistic items acquired by the learner (in first and second language acquisition) ... and no language acquisition at all can take place without the acquisition of lexis”. Relevant research literature suggests a strong relationship between vocabulary acquisition and lexical errors which are generally considered a vital aspect of the acquisition process (Llach, 2007a). Lexical errors not only play a relevant role in the second language vocabulary acquisition process, but they also are among the most numerous type of errors in learners’ performance. Therefore, providing observable learner language data, lexical errors are an important source of information about L2 vocabulary acquisition (Llach, 2007b). Shin (2002: 1) states that “the study of learner errors has been a part of language pedagogy for a long time. Language instructors are constantly concerned about the errors made by their students and with the ways they can improve language teaching”.

Lexical errors’ reduction with time and proficiency is a perception that is not always sustained by empirical evidence. Examination of the interlanguage of very advanced learners has suggests that even they produce many errors, especially of the lexical type (Ambroso, 2000). Moreover, the perennial presence, even in very advanced learners’ production, of fossilized errors (see e.g. Olsen, 1999) refutes the universality of the claim: *the more proficient, the more accurate*. The increasingly more complex and sophisticated production of more proficient learners (Lasagabaster & Doiz, 2003; and Ruiz de Zarobe, 2005) can help account for the apparently counterintuitive result that as proficiency increases errors do not decrease. Several studies have described and compared the errors in the production of advanced learners and of lower proficient learners. They have reached different conclusions. For instance, Hawkey & Barker (2004) and also Grant and Ginther (2000: 141) concluded that the number of word choice errors decreased as proficiency level increased.

Verspoor et al. (2012) suggest that lexical changes and organization occur at advanced levels. Specifically, they state that

general error production does not help discriminate among proficiency levels, and that only L1 transfer errors show significant decrease. There has been ample research in this line. Younger and low proficiency learners resort to their L1 more frequently than more proficient and older learners, especially with regards to use of borrowings (Celaya & Torras, 2001; Lasagabaster & Doiz, 2003; and Wang, 2003). Nonetheless, Cenoz (2003) showed that the oldest learners transfer most from their L1, and Sanz (2000) found out that the more proficient the learners are, the more they transfer. Inconclusive findings abound thus in this area of research. Also, Lexical errors categories may distinguish among proficiency levels. Furthermore, they can serve as lexical profilers for age and stage-ends. Foster-Cohen (2001 in Lakshmanan 2005: 104) talks about the sliding window effect to unveil L2 acquisition developmental stages by looking into what learners can or cannot do. As has been advocated somewhere else (Grant and Ginther 2000: 143) by coding errors of various types, it could be possible to examine how lexical knowledge develops. And thus, use them to discriminate among proficiency levels or FL acquisition stages.

It is an indisputable fact that the teacher plays a crucial role in the learning /teaching process. Sullivan (2001) believes that foreign language teachers are fundamentally different from other teachers in that they are attempting to teach a second language using that very language as the medium of instruction. Since "the medium is the message," unique challenges arise for English language teachers and learners. Studies of lexical errors have been conducted on learners of English and other languages from various language backgrounds. Szymanka (2002) discusses lexical problems areas in the language of Polish advanced speakers of English. She presented two samples of data drawn from PELCRA learner corpus, representing two groups of students at different proficiency levels. The results show that collocation errors are among the most widely represented error categories in both groups. She suggested that the theory of the bilingual lexicon has to incorporate the collocation restrictions among L1 and L2 lexical items to a larger extent than it has been

proposed so far. Also, Woodall (2002) conducted a study on using the first language while writing in a second language on 28 adult participants (9 L2 Japanese, 11 L2 English, and 8 L2 Spanish) to observe how language switching was affected by L2 proficiency. The results suggest that less proficient L2 learners switched to their L1 more frequently than more advanced learners.

Lexical errors are thought to be important composition assessment criteria and quality predictors. Research has proved their influence on writing evaluation to some extent, although results are still too scarce to be conclusive (Engber, 1995). It is difficult to establish objective measures of writing quality and evaluation criteria. Compositions are also one of the most difficult L2 tasks to assess, since subjectivity is here present at its highest. teachers rely on their own intuition of what to mark as bad (or good) writing. Lexical errors play an important part in this decision, but also more personal aspects like the agreement on the ideas expounded, the linking of the topic, or his very relationship to the learner, whether they “like” him/her or not can also influence the score. Different authors and teachers use different assessment rates and criteria, and there are, definitely, many of them (Crusan, 2002; and Jarvis et al., 2003).

Crusan (2002) found out that most American universities evaluate their students writing skills by means of indirect measures, above all multiple choice tests. Laufer & Nation (1995) also comment on how several lexical measures affect the judgments of quality in writing. This disparity of evaluation criteria, together with the fact that writing assessment has an important impact on placement decisions and final grades in composition classes do not benefit the language learner, who is left in the outmost ignorance of what to base his practice of writing skills on. Chen (2004) studied 710 Hong Kong Chinese ESL students. There are 5 types of error found. This study found out that students used the syntactic transfer from Chinese to English. Therefore, it caused the run-on sentence and incomplete ideas. Also, Alhaysony (2012) examined written samples of 100

first-year female Arabic-speaking EFL students in the University of Ha'il. The findings showed that students made a considerable number of errors in their use of articles, especially, the lexical errors. This study had a mixed finding because these errors included interlingual and intralingual transfer.

Researchers and practitioners (Warschauer, 1997; Gonzales-Bueno, 1998; Beauvios, 1998; El-Hindi, 1998; and Bollati, 2002) have noted several benefits of using e-mail communication in language classrooms. They state that e-mail can promote real and natural communication. Through e-mail, students are able to communicate with native speakers or other English learners worldwide. This provides authentic context for communication. Besides, e-mail also facilitates independent learning which is essential in second language (L2) writing. Furthermore, e-mail stimulates students' interest in communicating as they feel they have an authentic audience who will respond to their writing. Over a network, using e-mail and sharing files, students have the chance to collaborate and work together with other classmates, peers, and teachers. Networking electronically can help learners create, analyze, and produce information and ideas more easily and efficiently.

The following studies informs this study to use email as the medium to observe students' writing. Many benefits were found to support the language learning through email. For example, language learning occurred through constant communication, so Cooper and Selfe (1990) found that the email can generate more communication. Similarly, Pratt and Sullivan (1994) also found that the use of email increased the oral communication. Based on these two studies, namely, learners had more output in using the target language. In addition, learning a second/foreign language could be very stressful for students. Students' affective filter would be very high if they were asked to use the language face to face. Thus, Kern (1995) and Sullivan (1993) found that students felt less anxious when they joined the online discussion. For example, students were allowed to have more time before they write. They can draft their writing in an asynchronous manner. However, the face-to-face communication generated a lot of

emotional stress. For example, Hoffman (1996) stated that the anonymous or non-face to face interaction can serve as a face-saving (p.55). Namely, language users will not feel embarrassed when produced the wrong usage of language.

Trenchs (2011) used electronic mail as a medium of instruction to improve students' writing in Spanish as a second language. Three students engaged in e-mail transmission with her. Results revealed that these students were self-motivated to use Spanish in a new and creative way in meaningful and authentic texts. Karchmer (2009) investigated thirteen K-12 teachers' reports of how the internet influenced literacy and literacy instruction in their classrooms. The teachers, including ten women and three men, represented eleven different states in the USA and were considered exemplary at using technology by their colleagues. Findings revealed that these teachers noticed an increase in their students' motivation to write. They also noticed that e-mail had a great influence on the progress of their students' writing. the study conducted by Warschauer (1996), this study found that students who joined in the email writing group improved their writing skills.

Huang (2006) analyzed 34 Taiwanese English majors' writing errors based on a web-based writing program. This study found that 55% errors are on the usage. Namely, subject-verb is the main area EFL students need to study. In addition, students noted that the communication is more authentic thought email. They can reach different audiences and received feedbacks and comments from their email pen-pals. Furthermore, Shang (2007) explored the effects of using e-mail on EFL writing performance in aspects of syntactic complexity, grammatical accuracy and lexical density. The subjects for this study were forty non-traditional EFL students enrolled in an intermediate reading class at a university in Taiwan. Findings from students' self-reports revealed that e-mail writing improved students' foreign language learning and developed their attitudes towards English. Thus, it is very important to identify and remedy lexical errors in foreign language learners' compositions because those errors appear to be one of the main

causes of communication problems (Llach, 2005b). Therefore, this study continues to use email as the medium to examine the EFL learners' lexical errors. However, these studies did not analyze errors of language produced in computer-mediated contexts; therefore, this study would like to explore lexical errors through asynchronous email writing by EFL learners.

Purpose of the Study

The aim of this study was, therefore, four-fold:

1. to identify and examine the most frequent types of lexical errors in a sample of the learners' writings.
2. to investigate factors cause lexical errors in the learners' writing.
3. to investigate the relationship between lexical accuracy and the holistic quality of learners' writing based on a rubric.
4. to assess the value of incorporating e-mail communication for the enhancement of the learners' writing performance.

Definition of terms

- Lexical Error

A lexical error is a deviation in form and/or meaning of a target language lexical word (Hsiao-ping & Esther, 2014). In this study, 'lexical error' was used as a superordinate term including errors of wrong word choice, errors of literal translation, errors of omission or incompleteness, misspelling, errors of redundancy, errors of collocation and errors of word formation.

- Interlingual Errors

Those attributed to the native language. There are interlingual errors when the learner's L1 habits (patterns, systems or rules) interfere or prevent him/her, to some extent, from acquiring the rules and patterns of a second language (Woodall, 2002)

- Intralingual Errors

Those due to the language being learned, independent of the native language. According to Wang (2003) they are "items

produced by the learner which reflect not the structure of the mother tongue, but generalizations based on partial exposure to the target language.. The learner in this case, tries to "drive the rules behind the data to which he/ she has been exposed, and may develop hypotheses that correspond neither to the mother tongue nor to the target language" (Wang, 2003, p. 352).

- Writing Prompt

It is a statement formed to make students deeply think about a topic and motivate them to produce better writing.

Significance of the Study

In a broader perspective, this study scrutinized the relationships among lexical accuracy and the quality of second language writing. The findings of this study can be of importance to foreign and second language researchers, curricula developers and English teachers and can provide them with crucial proof of how a foreign language is acquired by a specific group of language learners. It can also show that the current state of the L2 learners' knowledge, and their most important problems with lexical usage in writing in a second language through asynchronous email. The study might be helpful for EFL learners, as it would shed light on the different uses of writing via e-mail communication and its benefits for them. In a narrower perspective, this study can also shed light on understanding what types of lexical errors sixth grade learners make and in accordance with these common errors, what kind of remedies English instructors can take. The researcher believes that this study may inspire other researchers to investigate in this topic and perhaps eventually to design more appropriate and efficient writing materials and courses for learners of English at the primary stage.

Method

Participants

The participants for this study consisted of (51) sixth grade learners chosen at random from Abbas Zaher primary school in Damietta during the 2014 - 2015 academic year.

learners were similar in age, ranging from 11 to 12 years old. They have developed a certain language proficiency in using English. Therefore, they were able to produce data for analysis.

Instruments

The current study was designed to investigate the students' use of lexicons of English and to evaluate their writing proficiency. The researcher, to attain this aim, participants were required to write four letters for four weeks through email during the second semester of 2015. The students were required to write at least 50-75 words in English for each of the writing prompt. The writing prompts (see Appendix A).

Data Collection Procedures

To collect the data, participants were administrated a writing assignment that involved letter writing. They were required to write a letter assigned by the researcher weekly for four weeks. They were required to write through email. Their writing samples were collected and analyzed to check various errors and numbers and ratios were counted. During all the writing periods, the researcher was encouraged her learners to write on their own and she refused to answer the questions pertinent to syntactical features and word choices, or to make any suggestions or give guidance about the format and organization of the learner compositions.

Data Analysis

After data collection, the following steps were followed. First, each letter was examined word and word and sentence by sentence. I generated the coding categories based on all writing samples. Second, I counted the number of errors and converted it into percentage to examine the occurrence. After that, I will categorize what factors cause these errors based on the distinctions between intralingual and interlingual errors. Intelligible errors will be labeled and discussed. The data were presented and clustered into common units of meaning or themes.

Results and Discussion

The results of the study presented are based on the three research questions posed.

The first question

To answer this question, 182 compositions were examined sentence-by-sentence to identify any lexical errors. At first, errors were identified and labeled. Then, the lexical errors were classified into 13 subcategories under two main categories: formal and semantic features. Table (1) shows 13 lexical error categories, frequencies, percentages and rank order of errors found in 182 sample learner writings. Of the 13 types of lexical errors identified, the formal mis-selection of words was the most problematic error category in the data. These errors were found the highest percentage of occurrence (27.5 %). This can be seen in the rank order, for which misselection lexical errors ranked first. The second and third most frequent errors were related to borrowing and near synonyms, both of which included approximately 16.5% and 13.6% errors, respectively. Errors related to calque and vowel-based type also occurred frequently (8.2% and 7.4%), followed closely by coinage error category (6.6%). To test the first question the following table (1) illustrates the results.

Table (1): Categories, Frequencies, and Percentages of Lexical Errors for the 182 Compositions

Lexical Error Types	Frequency	Percentage	Rank Order
Mis-selection	87	27.5	1
Borrowing	52	16.5	2
Near Synonyms	43	13.6	3
Calque	26	8.2	4
Vowel-based Type	23	7.4	5
Coinage	21	6.6	6
Over-inclusion	15	4.7	7
Consonant-based Type	13	4.1	8
Arbitrary Combinations	11	3.5	9
Verbosity	11	3.5	9
Mis-ordering	7	2.2	11
Suffix Type	4	1.3	12
Semantic Word Selection	3	0.9	13
TOTAL	316 Errors	100%	

Of all the 316 lexical errors found in sample compositions for this study, 87 were mis-selection errors which accounted for 27.5 percent of the total lexical errors (see Table 1). Most of the errors in this category were related to using distorted words.

The wether was very bad (weather)
I usually breakfast and diring tea (drink)

It can be claimed from the above sample sentences that the students used some words that also do not exist in English. However, these mis-selection errors may occur due to the incorrect application of certain English words and not the influence of the Arabic language.

I like chat with my strange friends on the web (foreign)
Then, I wash my teeth (brush)

The second most common lexical error type was the direct use of L1 words in target language, which is also known as borrowing errors. There were 52 borrowing errors, representing the 16.5 percent of the total errors. Here are some examples of errors of this type:

I am a very fun person. (pleasant/joyful)
My marks have decreased a little. (declined)

From the above sentences, it can be claimed that the source of these errors was the students' first language, namely Arabic. As James (1998) stated, in these examples mother language words were used in the target language with no perception of any need to tailor them to the new host language. In addition, students tended to use the L1 words to fill the expressional vacancy in the L2 that seemed to be caused by cross culture differences. Even though the errors in examples 5 and 6 above are considered to be interlingual errors, they can also perhaps be traced to students' insufficient learning of the target language.

Another problematic area detected in this study was near synonym errors, accounting for 13.6 percent of the total lexical errors. The analysis of the 1se errors reveals that near synonym errors seem to have several causes. For instance, in example 3 above, it is obvious that the intended meaning of 'foreign' was

not clearly expressed by the near synonym 'strange'. The cause of this error can also be called divergent polysemy. The mis-application of the target language or incomplete learning can be argued as a cause of this assumed synonym error.

The fourth most common error type in the study was related to the use of calques. There were 26 calque-related errors, accounting for 8.2 percent of the total errors. Here are some examples of these errors:

I swam in the sea and if need to add it was funny (so to speak)
I and my little cousin went to the childpark (playground)

In the sentences above, the target language words or phrases were created basing on the literal translation of the L2 words or phrases. The creation of calque usually involves a word-for-word translation. Further, the translation seem to keep both the form and the meaning of the L1 words which is, however, against the L2 forms. It seems evident that *the source of the calque errors is the mother language*. Thus, they should be considered as interlingual errors.

Vowel-based type errors ranked fifth, just below those of calque in the present study. There were 23 errors of this type, accounting for 7.4 percent of the total lexical errors in the study. This category of errors dealt with the students' unsuccessful attempt to make a choice of pairs (or triplets) of words that look and sound similar. The following sentences are quoted from the sample compositions to illustrate the errors of vowel-based type:

I go to bead 9:00...(bed)
Than, we and my cousins went to the aqua parks (then)

Although the words are similar in pronunciation and form, to some extent, they are totally different in meaning. The correct words and their substitutes used in the above sentences are all target language words: bed/ bead, and then/than. So, the influence of the mother language is not evident here. Thus, it can be claimed that the learners were experiencing a performance

problem in selecting the correct target item. This type of error is called intralingual error which may be caused by incomplete learning or misapplication of the learners' language learning.

The second question

Table (2) presents the result of factors causing the learners' errors. The lexical errors, 46% was found in the intralingual errors, and 54% was found in the interlingual errors.

Table (2): Causes of Errors

Lexical Error Types	Frequency	Intralingual/ development errors	Intralingual/ development errors (%)	Interlingual / transfer errors	Interlingual/ transfer errors (%)
Mis-selection					
Borrowing		38			44.8
Near Synonyms	87	21	43.7	39	36.5
Calque	52	28	40.4	19	76.7
Vowel-based	43	9	65.1	33	80.8
Type	26	5	34.6	21	69.6
Coinage	23	13	21.7	16	38
Over-inclusion	21	7	61.9	8	73.3
Consonant-	15	4	46.6	11	46.2
based Type	13	3	30.8	6	27.3
Arbitrary	11	7	27.3	3	54.5
Combinations	11	5	63.6	6	57.1
Verbosity	7	3	71.4	4	50
Mis-ordering	4	2	75	2	66.6
Suffix Type	3				
Semantic Word Selection					
TOTAL	316	145	46	170	54

the participants have difficulty in word choice in the verb phrase and prepositional phrases. Semantically, the wrong word choices in their writing mislead the readers. In addition, some participants wrote very little, and this might be explained by their limited vocabulary. They could not think of appropriate words and phrases to express their ideas. Some students' writing samples were very short because they did not have too much exposure in English writing. The lack of fluency in writing also increased the difficulty to comprehend students' writing samples.

In this study, learners made interlingual/transfer error from their first language to English. There are several

explanations for the interlingual transfer in sentence structure, vocabulary use, and word choices. First, these participants' literacy skills in the first language affect heavily on their English learning. Second, the English teacher used Arabic as the instructional language to teach second language. Therefore, the model of fluency in speaking and writing was absent. The lack of fluency input could lead learners' error from Arabic to English.

The third question

182 writing samples were analyzed in terms of the occurrence of lexical errors and each sample was holistically scored by using a holistic rubric (See Appendix B). The relationship between the holistic scores of 182 writing samples and the frequency of lexical errors found per sample was examined. In the first step, mean and standard deviation scores of these two variables were calculated using SPSS. As shown in Table (3), the mean for lexical errors was 2.67 (SD= 1.794). It is also shown in the table that the mean of holistic scores in the study was 4.23 (SD= 0.837).

Table (3): Descriptive statistic for the frequency of lexical errors and the holistic scores

	N	Mean	Std. Deviation
Frequency of Lexical Errors	182	2.67	1.794
Holistic Scores	182	4.23	0.837

In the next step, a Pearson product-moment correlation was conducted to examine the relationship between the holistic scores of the 182 writing samples and the frequency of lexical errors found per sample as shown in Table (4). A negative correlation between the holistic scores and the frequency of lexical error was found ($r=-0.493$, $p=0.000$).

Table (4): Correlation between frequency of lexical error types and the holistic scores

		Frequency of Lexical Errors	Holistic Scores
Pearson Correlation	Frequency of Lexical Errors	1	-0.493
Sig. (2-tailed)	Holistic Scores	-0.493	1

Lexical errors play a crucial role in writing assessment in that the percentage of lexical errors may be a predictor of writing

quality. Some studies, even though the results are too diverse to generalize, have been conducted that the influence of lexical errors on writing assessment (Engber, 1995; Llach 2005a, 2007a, 2007b). So, in this study, to investigate whether the percentage of lexical errors is a good indicator of overall quality of learner composition, a non-directional Pearson productmoment correlation was conducted. On the basis of a Pearson productmoment correlation coefficient, a low negative correlation ($r = -0.493$) was found in the present study between the holistic scores and the frequency of lexical errors. From this result, it can be concluded that the holistic scores of the quality of the compositions of the learners may be independent from the frequency of lexical errors.

Conclusion

This study found that learners' L1 has caused negative transfer on word and sentence levels. Namely, relying on the mother tongue is the main strategy used by the learners when they compose the essay in English. However, this study would like to highlight that these errors have positive indications for language teachers and researchers. For teaching purposes, teachers need to design activities for areas needed for improvement. Teachers should keep in mind that overemphasis on errors can frustrate learners' motivation. Teachers could use these errors in class and revise the teaching activities. For learners, we should allow learners to learn when they are ready. In the classroom, teachers should be able to provide corrective feedbacks in a non-threatening way in order to raise learners' awareness to correct themselves. Teachers also should be able to model the complete sentence and lexical use in order to provide learners more exposure in using English. Moreover, This study contributes to the scant literature noted for email interaction in a foreign language (Murray, 2000). Further, it has contributed to advance research in two respects; firstly, it moves research from use of conversational and traditional written data to examination of a computer-mediated corpus and, secondly, in using emails as data, the focus of enquiry goes beyond the limits of the turn and

of speech acts theory often found in this field (Taleghani-Nikazm & Huth, 2010).

Implications

Making errors are a normal language developmental process, so students' errors are great sources for improving teaching and learning. Teachers should not label students based on their errors in writing. Namely, students' effort of trying should be praised, and teachers should encourage students to engage writing for different purposes in order to language in the different contexts. Even though the learners in the present study had been studying English for many years, they still had problems with forming simple, error-free sentences. Most of the letters written by these particular students included numerous lexical errors. As the results of this study showed that the learners seemed to have had difficulty in spelling of the words and choosing correct lexical item among a set of synonyms. For example, most of the mis-selection errors occurred due to the failure of the learners to realize the corresponding patterns between sounds and letters in English, and also perhaps because of a lack of experience by the learners with reading and writing words in English. Thus, EFL teachers should pay attention to spelling problems. They might ask their students to read newspapers, short stories, and short novels as to acquire familiarity with the English word structures.

As a solution to near-synonym problems, teachers may ask their learners use monolingual dictionaries of synonyms and may also encourage them to use corpora to raise learners awareness of collocations. It might even be useful for learners to recite and read aloud in English the most common collocations and phrasal verbs in order to get accustomed to the words pairs that they usually go together in English. Furthermore, EFL instructors might teach lexical items in context with numerous examples and try to warn the learner not to transfer culturally-related concepts from their native language into target language or vice versa. EFL teachers should also realize that focusing on lexical items alone will not guarantee an improvement of English

language writing quality. For this reason, writing instruction should perhaps address broader areas including organization, development of ideas, voice and style, and written conventions. Students might also be taught to gain awareness of the possible differences between first language writing patterns (e.g., the organization of the ideas) and target language writing patterns.

This study would suggest teachers should prepare students to use English in real-life settings. Namely classroom activities should be embedded to authentic audience and materials. This finding would imply the model of using fluent English for EFL students in this study. Teaching can include authentic materials, such as newspapers, magazines, websites, and published reading materials in teaching. For the future teachers and students, we believe that that the encouragement; positive corrective feedback, authentic target language input, interactive teaching and learning activated the students' motivation and awareness can facilitate language development. Finally, teachers should believe in the usefulness of the different technological activities in the syllabus. They should believe that such activities build students' personalities and confidence, which in turn help them to be better communicators of the language outside the class.

Recommendations for Future Study

Based on the findings of this study, future research should focus on the following areas.

1. This study investigated the quality of writing in terms of only one variable, lexical errors. It would be interesting to add other variables to this type of research. Therefore, future studies are needed to research how other elements of writing, such as coherence, cohesion, planning, organization might also play a role in the quality of learners' letters.
2. This study could be improved upon by being replicated with students of different levels and also with a more diverse composition sample. A study with different levels of writing proficiency may support the claims of the

present study and might give a broader picture of the influence of errors on the quality of the learner writing.

3. Remedial courses should be conducted for those learners in all language skills and special attention should be given to lexical choice and English grammar.
4. Some points for further research may include the following: using techniques like individual and cooperative learning in internet-aided writing, and finding their effects on learners' writing achievement.

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Teaching Unplugged: Does it have the Potential to Improve EFL Students' Speaking skills in a Writing Class?

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Abstract

The present study attempted to investigate the effect of unplugged teaching of writing on EFL majors' speaking as well as essay writing skills. All level-one EFL students enrolled in the writing 1 (code: 1606110) course at the College of Education and Arts, Northern Borders University, Saudi Arabia, participated in this study. They were randomly divided into an experimental and a control group. Unplugged teaching of writing was used with the experimental group students, whereas students of the control group were taught in the usual way by using the prescribed writing book. A pre-post speaking test and a pre-post writing test were used to assess participants' speaking and essay writing skills. Results revealed that experimental group students outperformed their counterparts of the control group in both speaking and essay writing skills. Based on these findings, it was recommended that teaching unplugged, if not implemented alone, could be used as a complement, not a replacement for the coursebook-based lessons. In addition, a radical change should be made in EFL teachers' convictions, from viewing their roles as conferrers of knowledge to that of mentors, from controllers to facilitators. Moreover, EFL teachers are recommended to return to the basics of their job, to scrutinize their resources, and to realize that they do not need to depend on a coursebook or on an interactive whiteboard to be effective teachers. They need to liberate themselves from their slavish dependence on materials, and newly invented digital gadgets and to return English language teaching to its roots by using instructional practices which are more conversation-driven and materials-light.

Keywords: *Teaching Unplugged, Speaking Skills, Writing Skills.*

Introduction

In EFL contexts like in Arab countries, where students have very limited opportunities, if any, for exposure to real world

input, and for oral communication with native speakers, deliberate interaction in the classrooms becomes essential for developing their communicative language competence. Needless to say, the unquestionable value of that kind of interaction between the teacher and the students and among students themselves for the development of foreign/second language proficiency has long been emphasized by many linguists as well as classroom researchers (Long, 1983; Krashen, 1985; Van Lier, 1996; Brown, 2001; Yu, 2008; among others). Conforming with this highly recommended teaching practice, most, if not all, EFL teachers profess commitment to the Communicative Language Teaching (CLT). However, classroom-based research indicates that most teachers only pay 'lip service' to the importance of communicative language teaching; In the Colombian EFL secondary school classrooms, for example, Herazo (2010, p. 47) concludes that "what constitutes authentic oral interaction is sometimes not clearly understood and some of the activities that take place in the classroom seem unlikely to generate meaningful opportunities for the development of oral interaction". In South Korea, teachers tell their principals that "they are following CLT, when in actuality they are sticking to their comfortable traditional methods" (Dailey, 2010, p. 3). In the Iranian context, "although teachers held a positive claim towards practicing CLT, the state of the practice of language teaching and learning was not in favor of the premises of CLT" (Shahin & Ehsan, 2014, p. 1905). Teachers still follow more structural approaches in their classrooms. In New Delhi, although teachers claim to be following CLT, "they seem to be following traditional approaches inside classrooms" (Jabeen, 2014, p. 69). In Saudi Arabia, Maslamani (2013) puts it very clear that EFL instruction "fails to promote classroom communicative interaction, learner-learner interaction and oral proficiency" (p. 73).

Although experts in the field of foreign/second language learning have long been warning that "slavish use of coursebooks may have destructive effects on teaching and learning processes" (Charalambous, 2011, p. 4), research indicates that teachers' over-reliance on coursebooks might be a real reason behind their

failure to engage students in a meaningful interaction (Cunningsworth, 1995; Cadorath & Harris, 1998; Charalambous, 2011; Anugerahwati, 2013; among others). Actually, the vast majority of research which attempted to evaluate English language coursebooks reveals that “all books have certain limitations and deficiencies and...there is no course book that can work in all situations or can be applied to all teachers and students” (Charalambous, 2011, p. 6). In Jordan, for example, Bani Abdelrahman, (2014, p. 148) concludes that textbooks still focus on the traditional view that “students are consumers of knowledge. Moreover, the textbooks are designed to stimulate memorizing facts and supplying students' minds with information without giving them the chance to think and create”. In Saudi Arabia, Alhamlan (2013) assured that secondary school students complain of the difficulty of the material in the textbook and that these books do not provide the opportunity for the students to interact in the classroom. In Palestine, elementary school EFL teachers complain of the large number of unfamiliar words and the inadequacy of the time devoted to delivering the materials (Hammad, 2014). In the Sudanese English language syllabus (SPINE series), Alfaki (2014) found that 89% of the reading comprehension questions in his study sample are actually low-order thinking skill questions. In Iranian senior high school and pre-university English textbooks, lower-order cognitive skills, according to Bloom's taxonomy of learning objectives, were more prevalent than higher-order ones (Riazi, 2010). In Pakistan, higher secondary level coursebooks are not designed according to the needs and requirement of students. They do not encourage student involvement in improving the basic language skills like speaking, listening, reading, writing. They are helpful only in “passing exams and getting good marks through the cramming of the materials” (Shah, Majeed, & Ul-Waheed, 2013, p. 481).

In the same vein, research indicates that despite the several undeniable advantages of educational technologies, a greater reliance on these technologies hinders student-teacher interaction (Li, 2007; Stewart, 2008; Weiss, 2009; Coyle, Yanez &

Verdu, 2010). Keeping up with the heap of newly invented digital gadgets, language teachers struggled to adopt as much as possible of these technologies for their own agenda of language teaching. However, there is a consensus among studies which attempted to evaluate the challenges and benefits of technology integration into classroom teaching that over-dependence on these technologies negatively affects genuine classroom dialogic interactions and effective learning. According to Li (2007, p. 390), seasoned teachers express their “fear that technology would take away “real learning”. Stewart (2008, p. 463) concludes that over-reliance on classroom technologies not only keeps “students apart, self-absorbed and unengaged” but it would also lead to “greater alienation”. For Weiss (2009), much is lost in today’s so-called smart classrooms; creativity and interaction among students and instructors decreased remarkably; active learning is stifled; discussions silenced; and what is emphasized is memorization.

Thus, with the notable failure to implement CLT principles in the classroom and with the commonly voiced limitations of coursebooks as well as lack of evidence that smart classroom technologies lead to real learning, a return to a less tech-rich classroom is badly needed. A classroom that challenges students to imagine rather than merely see, a classroom where knowledge, not fun, is the goal, patience, not instant gratification, is the foundation of good learning and thinking (Weiss, 2009).

In this respect, Dogme ELT or teaching unplugged is seen as the panacea for the short-falls of modern approaches. Dogme, introduced as an approach to language teaching by Scott Thornbury in 2000, is a kind of teaching which is done by using only the resources brought by teachers and students and by exploiting whatever happens inside the classroom (Banegas, 2012). It foregrounds dialogue and personal narratives of the students. According to Ghazal and Singh (2014, p. 143), Dogme ELT “promotes a pedagogy that is unburdened by an excess of material and independent of the use of technology. Instead, it is

grounded in the local and relevant concerns of the people in the classroom". In this regard, Thornbury (2000) attacks the direction taken by most English language teaching approaches accusing teachers of "hi-jacking lessons with an excess of teaching materials, technological gimmicks, and what was described as 'Obsessive Grammar Syndrome'" (as cited in Parry, 2012, p. 4). Thornbury and Meddings (2001) claim that learning a language is not like learning any other subject, like geography, history or mathematics that is best learned when it has been pre-assembled into bite-sized units. In other words, language is not an 'entity external to the learners'. Rather, language is an emergent phenomenon, the learning of which is a jointly constructed and socially motivated process, depending on the interests, desires, and needs of the users, not on pre-selected coursebook texts by an absentee writer. These texts are 'dead on the page' and the teacher uses his skills to 're-animate them for the learner'.

Context of The Problem

Keeping up with the best practices of teaching English language all over the world, EFL teachers in the Arab world, in general, and in Saudi Arabia, in particular, employed almost all methods over the past few decades. Furthermore, different types of educational resources and technologies have been integrated into EFL classrooms – textbooks, workbooks, vocabulary-building books, grammar books, phrasal verb dictionaries, photocopyable resources, charts, posters, audio CDs, videos, websites – to name just a few. However, still many students complain about the difficulty they face in an English class. Alshumaimeri (2003) assures that after learning English for many years "students leave the secondary stage without the ability to carry out a short conversation" (as cited in Elyas & Al Grigri, 2014, 76). Supporting this, Kandil (2009) puts it clear that a large number of the Arab students in the GSS of the governmental schools are not adequately prepared, from a

linguistic point of view, to pursue their university education with a great deal of efficiency.

It is clear that plugged teaching fails to engage learners, trigger their imaginations, and provide them with something really useful they can retain. Hence, what students need is not just another teaching method but a critical pedagogy that allows their voices to emerge in the EFL class and connects language learning to their real-life experiences.

Statement of the Problem

Although most, if not all, methods of teaching as well as several types of educational resources and technologies have been employed in EFL classrooms, many students do not feel at ease while speaking or writing essays on their own despite having good grammatical skills and sound vocabulary banks. Hence, this study was conducted to investigate the effect of the unplugged teaching of writing on EFL majors' speaking as well as essay writing skills. More specifically, the study attempted to answer the following questions:

1. What is the effect of unplugged teaching of writing on EFL majors' essay writing skills?
2. What is the effect of unplugged teaching of writing on EFL majors' speaking skills?

Hypotheses of the Study

The researcher hypothesized the following:

1. There is a statistically significant difference between the mean scores obtained by the experimental group students and those of the control group on the post-test of overall speaking proficiency favoring the experimental group.

From this main hypothesis, the following sub-hypotheses branch:

There is a statistically significant difference between the mean scores obtained by the experimental group students and those of the control group favoring the experimental group on the post-test of:

- pronunciation intelligibility.
 - Grammatical Accuracy.
 - Vocabulary Adequacy
 - Fluency.
 - Interactive Communication.
2. There is a statistically significant difference between the mean scores obtained by the experimental group students and those of the control group on the post-test of essay writing favoring the experimental group.

From this main hypothesis, the following sub-hypotheses branch:

There is a statistically significant difference between the mean scores obtained by the experimental group students and those of the control group favoring the experimental group on the post-test of essay writing with respect to:

- Organization.
- Mechanics.
- Vocabulary and language use.
- Ideas and Content.

Objectives of the Study

The current study attempted to achieve the following objectives:

1. Exploring the effect of using Unplugged Teaching of writing on EFL students' overall speaking proficiency.
2. Exploring the effect of using Unplugged Teaching of writing on EFL students' essay writing skills.

Significance of the Study

The current study derived its importance from the following:

1. The study is considered one of the pioneering studies that attempted to risk using Unplugged teaching within formal classroom context.

2. The findings of this study may direct the attention of teachers and curriculum developers to the importance of avoiding the over-reliance on coursebooks as well as educational technologies that might hinder meaningful interaction.

Delimitations of the Study

This study was delimited to:

1. EFL level-one male students registering in the writing 1 (code: 1606110) course, at the College of Education and Arts, Northern Borders University, Saudi Arabia. Because of sex segregation imposed in Saudi Arabia, male students were preferred to be the participants of this study since the researcher himself is the one who conducted the intervention in order to guarantee effective interaction.
2. Four main essay writing domains (organization, mechanics, vocabulary & language use, and ideas & content), in addition to five speaking sub-skills (pronunciation intelligibility, grammatical accuracy, vocabulary adequacy, fluency and interactive communication). The selection of the specified writing domains and speaking sub-skills was done in light of the description of writing 1 (code: 1606110), and Listening and speaking 1 (code: 1606112) courses in the study plan of the dept. of Languages and Translation.

Literature Review and Theoretical Background

What is Dogme (Unplugged Teaching)?

Dogme/Unplugged Teaching, a term taken from the film industry that refers to filming without scripts or rehearsal (Richards, 2013). Dogme ELT or Teaching Unplugged is based on the idea that “instead of basing teaching on a pre-planned syllabus, a set of objectives and published materials, teaching is built around conversational interaction between teacher and students and among students themselves” (Richards, 2013, p. 18). According to Chappell (2014), Dogme ELT is:

A movement that came at the turn of the millennium in response to the perceived misgivings of teachers' language lessons relying on materials rather than 'genuine' communication. Teaching materials are presumed to hinder such communication and take the focus away from learner language (P.1).

It was instigated as a reaction against the overreliance on resources in the classroom, in which genuine communication is buried under piles of materials and photocopies (Worth, 2013). It has been mainly determined to "liberate teachers from their dependence on materials, and has developed into a methodology aiming to return English language teaching to its roots by using approaches which are learner-centred and materials light" Tomlinson (2012, p. 159). In this sense, Dogme has "brought about a radical change in the process of language learning. The teacher is not allowed to talk 'to' or talk 'about' the learners; rather, they are required to talk 'with' each other, engaging in a meaningful dialogue" (Ghazal & Singh, 2014, p. 148).

Simply put, The goal of the Dogme approach is "to restore teaching to its pre-method 'state of grace' - when all there was a room with a few chairs, a blackboard, a teacher and some students, and where learning was jointly constructed out of the talk that evolved in that simplest, and most prototypical of situations" (Thornbury, 2000, as cited in Ghazal & Singh, 2014, p. 149).

What are the Basic/Core Principles of Teaching Unplugged?

According to Meddings and Thornbury (2009), Dogme ELT is based on three fundamental principles; it is conversation-driven, materials-light, and it focuses on emergent language.

Conversation-Driven

According to Thornbury and Meddings (2001) language is not a subject. It is a medium and giving it subject status by basing the teaching of it around a textbook is an indisputable way of paralyzing its capacity to convey messages as the medium becomes the message and the only message. Thus, in Dogme ELT,

conversation is at the heart of language learning. It grows in a natural way based on students' interests and their needs. If the language lesson didn't include real language use, as stated by Thornbury (2011), its usefulness is questionable. Through conversation students are making use of language; they work together to create connected sentences that build on and add to what has already been said by their colleagues; and they construct meaning which is relevant to the topic at hand (Parry, 2012; Xerri, 2012). Thus, in an unplugged teaching class, power does not exist in the teacher who "delivers the grammar to the students who learn it. Instead, discourse and learning start with the learners' own lives. It is built on an understanding of the shared construction of knowledge" (McCabe, 2005, p. 334). Supporting this, Xerri (2012, p. 60) puts it clear that Dogme ELT "opposes the knowledge transfer model of education and does not view students as possessing a tabula rasa that the teacher is responsible for filling with learning". For Ushioda (2011),

The Dogme approach places a premium on conversational interaction among teacher and learners where communication is authentic and learner-driven rather than pedagogically contrived and controlled by the teacher. Choice of learning content and materials is thus shaped by students' own preferred interests and agendas, and language development emerges through the scaffolded dialogic interactions among learners and the teacher (as cited in Banegas, 2012: 1).

Based on the first principle (conversation-driven) of teaching unplugged, several assumptions are made with respect to language learning; language fluency is foregrounded for accuracy, not vice-versa; through meaningful teacher-supported dialogic interaction, communicative confidence is developed among the students; and spontaneous extensive runs of discourse, produced by students, are much more superior to short and accurate sentences.

Materials-Light

Early in his one-page article that appeared in the latest volume of IATEFL issues, Thornbury (2000) called for a back-to-basics style of language teaching; a style that simply

encompasses only a room with some chairs, a blackboard, a teacher and his students. Study materials used are provoked by a conversation in class and should be resultant from students' needs and interests (as cited in Ghazal & Singh, 2014, p. 149). "A successful lesson need not necessarily be materials-driven but can actually be based on 'the 'raw materials' provided by the people in the room" (Meddings & Thornbury, 2009, p. 7). It is the lesson during which the teacher talks with, not to, his students in a meaningful dialogue, and lessons are not 'hi-jacked' with an overload of teaching materials, technological devices, and what was described as 'Obsessive Grammar Syndrome' (Thornbury, 2011). Supporting this, Chappell (2014, p. 1) assures that "language learning episodes are claimed to have their beginnings in these social interactions, where there is a perceived or noticed need to develop the repertoire of a learner's functional linguistic system". This materials-light kind of teaching in which learning is collaboratively constructed by students and teachers, "frees the teacher from a sense of dependence on course books and technology" (Xerri, 2012, p. 60). For Ghazal and Singh (2014: 148), materials-light teaching is preferred because materials, especially course books, can:

Come between the teacher and the students, preventing them from any meaningful discussion suffused with the vitality of their own learning experience. Instead of becoming the facilitator of critical learning, the teacher may get reduced to a 'materials operator', separated from the learners by a screen of 'things to do' (P. 148).

Focus on Emergent Language

The last principle of the Teaching Unplugged approach complements its holistic nature. Being a materials-light and conversation-driven, Teaching Unplugged focuses on the language that emerges incidentally from the meaningful exchanges rather than on a pre-determined language syllabus; Language that take place in the classroom between teachers and students, and between the students themselves. Apart from encouraging classroom dynamics that lead to a dialogic and emergent pedagogy, the teacher's main role is to maximize

language learning opportunities by directing his students' attention to the features of the emergent language (Meddings & Thornbury, 2009). This emergent language, as pointed out by Ghazal and Singh (2014), forms the basis of further dialogues, grammar exercises, or pronunciation drills. The teacher allows the learners to choose where they want to go next; however he/she still steers the conversation towards areas which may need more attention. But there are never any prescribed grammar content or vocabulary lists that must be mastered at the end of each class (p. 147).

In this way, teaching is responsive to the language generated during the lesson and students' errors are seen as opportunities for learning to happen (Xerri, 2012). In addition, learning content is not predictable neither by the students nor by their teacher. It is, rather, something that arises as a result of the meaningful interaction taking place in the classroom events.

Ordinary/Typical Classroom Talk

Since classroom dialogic interaction is part and parcel of Teaching Unplugged, it is important to shed light on typical classroom talk in order to understand the type of talk that takes place between students and teachers in non-Dogme classes. Great efforts have been exerted by EFL/ESL classroom researchers over the past years to understand classroom talk and to describe it.

Research over the past decades indicated that EFL/ESL Teachers are very likely to own classroom interaction. Edwards and Mercer (as cited in Mohr & Mohr, 2007, p. 441) documented that "teachers perform 76% of classroom talk". Similarly, Rezaee and Farahian (2012, p. 1237) concluded "that on average, some 70 percent of the class time was allotted to teacher talk, 20 percent to student talk and about 10 percent to other activities". As far as students are willing to be taught, they are likely to concede to the teacher the right to talk first, last, and most; to control the content of what is said; and to control its transmission by allocation of turns at speaking (Delamont,

1976). Supporting this, (Edwards & Furlong, 1978) put is clearly that in the language game of teaching, the teacher, who is usually the most active player, sets the rules of communication. He usually tells pupils when to talk, what to talk about, when to stop talking, and how well they talked. He also has a virtual monopoly of what are called structuring moves. It is he who makes the running. He speaks most frequently; and his speeches are usually the longest.

According to Mohr and Mohr (2007, p. 441), “teacher talk dominates classroom communication” and it is often “managerial rather than conversational in nature”. Chappell (2014, 2) puts it very clear that “teacher-led sets of questions that are often unrelated and require students to respond with factual answers and known information” is the most predominant characteristic of classroom talk. Supporting this, Forestal (as cited in Mohr & Mohr, 2007, p. 441) assures that “60% of teacher talk involved asking questions, primarily display questions, which expect students to recall information taught previously by the teacher”. Clarifying this, Edwards and Furlong (1978) point out that teachers cannot risk many questions to which answers are unpredictable and which give them little or no right to close down the discussion. Instead, they ask questions which entitle them to regain the floor frequently in order to comment on or evaluate students’ answers and give feedback. In this respect, Chappell (2014, 2) claims that “teacher’s feedback on the student’s response stifles possibilities for further student talk”. Cadorath and Harris (1998) attribute teachers tendency to avoid referential questions to the “emphasis on lesson planning and the dominance of a course-book as a source of classroom activities” (p. 193). They claim that teachers being restricted to the confines of lesson plans and course books had its unfavorable consequences; It leads to the inhibition of dialogic interaction between the teacher and the student and the avoidance of genuine communicative opportunities available in unplanned language. Moreover, it leads to the loss of aspects of local knowledge and experience as topics for classroom talk.

Method and Procedures

Participants

All EFL level-one male students registering in the writing 1 (code: 1606110) course at the College of Education and Arts, Northern Borders University, Saudi Arabia, volunteered to participate in this study. They were randomly assigned either to experimental or control group. Participants shared some common characteristics as they are all of average ages ranging from 18 to 20 years old, from the same Saudi culture, and with homogeneous English learning backgrounds. After excluding drop outs the number of the students who successfully completed the experiment was 48 students equally divided between the two groups of the study.

Experimental Design

The study used a pre-test/post-test experimental and control group design. An experimental group and a control group were exposed to pre-post means of getting data (a pre-post speaking proficiency test and a pre-posttest of essay writing). Unplugged teaching of writing was used with the experimental group students (see the intervention section for more details), whereas students of the control group were taught the ordinary course, in the usual way, by using the prescribed writing book; that is, *Interactions 1 Writing, gold edition, by Cheryl Pavlik & Margaret Keenan Segal (2007)*. As stated in its description, that course aims at having students be able to; 1) describe different stages of writing an academic essay; 2) write well-developed paragraphs with an accurate use of transitions, both within and between paragraphs; and 3) practice editing and revising essays. The prescribed book includes ten chapters; namely, *Academic Life Around the World, Experiencing Nature, Living to Eat, or Eating to Live?, In the Community, Home, Cultures of the World, Health, Entertainment and the Media, Social Life, and Sports*.

Research Instruments

A Pre-post speaking proficiency test and an essay writing test were developed and used by this researcher to answer the study questions:

Pre-Post Speaking Proficiency Test

Following the spoken English proficiency tests, and the tests developed by the Foreign Service Institute (FSI) of the U.S. State Department, a spoken English proficiency test was developed for assessing EFL students' overall speaking proficiency with respect to the four specified speaking sub-skills. The test consisted of five parts. In the first part, which was intended to measure pronunciation, the testee was asked to read aloud a printed passage (of about 112 words). In the second part, the testee was presented with five spoken biographical questions and was asked to answer each of them orally. In the third part, the testee was presented with another five spoken but open-ended questions which was intended to elicit free and somewhat lengthy responses. In the fourth part, the testee was presented with five hypothetical situations and he was asked to tell orally what he would say in those situations. These situations required the testee to indulge in a role play with the examiner to ask for permission, make an offer, make a request, apologize and to extend an invitation. The fifth and last part consisted of a group of five pictures and the testee was asked to tell orally the story that these pictures illustrate.

Test Validity and Reliability

The validity of this test was established by showing it to six EFL university colleagues working with this researcher. They reviewed the test items as regards suitability for measuring the speaking proficiency of level-one EFL majors. In addition, reliability of this test was determined by administering it to a group of EFL majors (n=15) not participating in the study by using the test re-test method, and by calculating the correlation between the scores on the two administrations. Results of calculations indicated that the reliability coefficient for the first part was 0.84, for the second part was 0.82, for the third part was 0.83, for the fourth part was 0.81, and for the fifth part was 0.86. These coefficients indicated that the overall instrument is internally consistent and reliable.

Inter-rater reliability was also established via rating ten answer tapes, not included in the study, by this researcher and another rater, on the rubrics of the test rating scale. It was found ($r=82$) which indicates a high inter-rater reliability.

Scoring the Test

An analytic rubric was devised by the researcher for scoring the speaking proficiency test. The rubric consisted of five domains/dimensions against which the student's speaking proficiency was scored: pronunciation intelligibility, grammatical accuracy, vocabulary adequacy, fluency, and interactive communication. Each student's tape-recorded answer was scored by two raters, who independently rated the student's speaking proficiency on aforementioned five dimensions. Thus, a student's final score on this test was the mean score given by the two raters.

The Score Scale

The score scale is a five-point scale. Each one of the five specified domains of speaking is evaluated separately and assigned a score of "1"(lowest), "2," "3," "4," or "5"(highest). The scale is a continuum representing a range of quality. Each score-point on the continuum is defined by domain-specific scoring guidelines (See the rubrics of the rating scale). Thus, the test maximum score was 25 marks

Pre-post Essay Writing Test

In order to measure EFL students' easy writing skills, a Pre-Post Essay Writing Test was developed. The test in its final form included two writing prompts; one for the pretest and the other for the posttest. For each prompt, testees were asked to write a five-paragraph essay.

Scoring the Essay Writing Test

An analytic rubric for scoring essay writing was also devised by the researcher. Four main domains/dimensions were specified to be measured by means of the rubric. Each domain represented a main criteria of essay writing; i.e. organization, mechanics, vocabulary and language use, and ideas and content.

Each student's essay was scored by two raters, who independently rated the student's writing using the rubric. Thus, a student's final score on this test was the mean score given by the two raters. The scoring system was analytic. Each dimension was scored holistically. The score assigned indicates the test rater's overall impression of the student's command of the components of each domain.

Test Validity and Reliability

To decide content and face validity, four writing prompts and a 4-point scoring rubric were developed and shown to the same EFL university colleagues who judged the speaking test. After revising the test according to their comments, the final form consisted of two writing prompts; one for the pretest and the other for the posttest. Thus, the test was approved as a valid and appropriate tool for measuring EFL students' essay writing skills. Moreover, reliability of this test was determined by administering it to the same pilot group of EFL majors (n=15) by using the test re-test method, and by calculating the correlation between the scores on the two administrations. Results indicated that the reliability coefficient for this test was found ($r = .82$) which is considered a reasonable value for such tests.

Inter-rater reliability was also established via rating ten essays, not included in the study, by this researcher and another rater, on the rubrics of the test rating scale. It was found ($r=.86$). This value indicates a high inter-rater reliability between the two raters. The average time for finishing this test was found to be 30 minutes. Therefore, 30 minutes were decided on to be the optimum time for finishing this test.

The score scale

The score scale is a 4-point scale. Each one of the four specified areas of essay writing is evaluated separately and assigned a score of "1"(lowest), "2," "3," or "4"(highest). The scale is a continuum representing a range of quality. Each score point on the continuum is defined by area-specific scoring guidelines. Thus, the test maximum score was 16 marks.

Pre-Testing

On 1st February, 2015, this researcher started administering the speaking proficiency test and then the essay writing test in order to measure EFL students' overall speaking proficiency and their essay writing skills. This step was intended to ascertain the equivalence of the two groups of the study. An Independent *t*-test was used to compare the mean scores of the participants of the two groups. Results of comparisons showed that there is no statistically significant difference between means of scores obtained by students of the control and experimental groups neither in the pre-measurement of overall speaking proficiency ($t=1.04$, $p<0.05$) nor in the pre-measurement of essay writing skills ($t=.15$, $p<0.05$). This result shows that the two groups of the study are equivalent both in the overall speaking proficiency and in their essay writing skills before the intervention. Administration of the instruments was done inside the classroom under the direct supervision of this researcher.

Intervention

This intervention was conducted from 11th February to 29th April 2015. It lasted for about 11 weeks. It was conducted in a way that is true to Dogme principles. The whole learning experience was established on what the students bring into the class -their own knowledge of language - no matter however limited. The teacher did not have a clear prepared lesson plan. Third-party externally prepared materials such as textbooks, exercises, gap-fills, scripted dialogues, vocabulary lists, photocopies, videos or audios were not allowed inside the classroom. Instead, real talk and meaningful interaction formed the lesson core. The only thing that the teacher took with him into the classroom was a set of guidelines and templates -in his head- to help students give their learning a thematic structure and not to turn to be 'much ado about nothing'.

All students were seated around one table making a circle. The process approach to writing was adopted in this intervention as it emphasizes the value of dialogue as a teaching technique, and this agrees with the objective of the current study.

The whole writing process was mediated through talk. Talk that was shaped and scaffolded by the teacher. Talk that reflected natural conversation, characterized by spontaneous spoken language taking place in real time, and in a shared context. Most of the time, students talk to learn how to write, whereas the teacher took a less direct and more facilitative role. Lessons were conducted through a five-step process as follows:

Prewriting

In their preparation for writing, students, in this step, were to figure out what they were going to write about. They were not allowed to surf the web or study literature. Rather, they were asked to brainstorm with their teacher and to come up with five topics for writing from their lives and their world activities. They were asked to give topics from their knowledge, beliefs, concerns and interests. Their contributions were being recorded in the lesson log by the teacher.

When they stop giving, they were being invited to discuss the generated topics and to select and decide on one of them to be the topic of the day. After determining the topic, students were being asked to make pairs and to design a scenario on that topic and, if possible, role-play it before their colleagues. This was to encourage classroom interaction among students.

Upon finishing role-plays, students were being invited by the teacher for a whole-class discussion of the selected topic. In that discussion the teacher asks the students some questions on the selected topic and they give answers to them. All of the teacher's questions were real questions/referential not display ones that increase student engagement. Questions the answers of which were unpredictable.

Drafting

In this step, students were asked to write a rough draft of the topic. They were encouraged to emphasize content rather than mechanics. While writing, students were asked to feel free to ask and to speak up anytime and the teacher was ready to see the dialog before it happens, guide that discourse through the

students themselves, recognize the emerging language and build upon it and then set activities to utilize the emergent point/s.

Upon finishing their drafts, students were asked to work individually and say aloud a brief or a summary of what they had written. Other students were asked to comment on their colleagues' drafts, and the teacher was always ready to provide scaffolding to the students.

Revising

In light of the comments of their colleagues and their teacher, students were asked in this step to improve their drafts by reviewing, modifying, and reordering their work through rearranging, adding, or removing content. In addition, they were also asked to check the appropriateness of the type of language and style expected by their intended readers.

After finishing their reviews, students were asked to work in pairs and to exchange reading their revised drafts aloud to each other, and to discuss their writings with their peers and to give and take feedback on them. The emergent language from the initial dialogues between the teacher and the students, and among students themselves, formed the basis of further dialogues, grammar exercises and pronunciation drills. In addition, the teacher was always ready to capitalize on students' mistakes and to turn them into group discussion activities for the whole class.

Editing

At this point of the writing process, students were asked to fine tune their manuscripts line by line. They were asked to proofread and correct errors and edit to improve style and clarity. Apart from promoting the kind of classroom dynamic which was conducive to dialogic and emergent pedagogy, the teacher was optimizing language learning affordances by directing students' attention to features of the emergent language. Students' errors in capitalization, spelling, punctuation and grammar were the sparks for discussion and meaningful

interaction between the teacher and the students and among students themselves.

Publishing

In this step of the writing process, students were to check whether their writings appeal to and address their intended audience or the readers to whom they were writing. Students were not allowed to publish their works online via personal blogs or web sites. Instead, they were asked to share their final writings with the whole group. Students were asked to read aloud, one at a time, their final products to the whole class. Other students were asked to listen to the one who reads and prepare their comments on his writing. Upon finishing reading, students start discussing their comments and their ideas with their colleague.

In the meantime, the teacher was building on students' contributions and ideas, and jointly constructing shared and developing understandings of those ideas. The teacher was doing his best in order to keep the topics of talk open and not to close off the possibilities for inquiry. This was done through guiding students to use different kinds of inquiry acts such as information seeking and wondering. Information seeking inquiry acts included clarifications, justifications, explanations and confirmations that support speaking students in understanding or making sense of something. Wondering inquiry acts in which the speaker invites speculations, conjectures, entertains ideas, considers possible words, and engages others in playing with possibilities, reflecting, considering, and exploring.

Emergent language and linguistic points that were discussed and explained to the students during this intervention included the following:

- Punctuation
- Capitalization
- Organization
- Subject-verb agreement
- Pronunciation

- Prepositions
- Time words
- Count and non-count nouns
- Transition words
- Fact and opinion
- Emergent topics, generated by the students, that were taken as topics for writing included:
 - Major ritual occasions in Saudi Arabia
 - Traditional ways of life of the Bedouin
 - Falconry
 - Hobbies of the Saudi Youth
 - Merits and demerits of social networking sites
 - Folk Medicine

Post-Testing

On 6th May, 2015, this researcher started re-administering the speaking proficiency test and then the essay writing test in order to measure EFL students' overall speaking proficiency and their essay writing skills after the intervention. Re-administration of the instruments was also done inside the classroom under the direct supervision of this researcher.

Results of the Study

This section presents the results obtained from this study. Results are presented in terms of the study hypotheses.

Testing the First Hypothesis

Independent Sample t-tests were used to test the first hypothesis of the study. To obtain specific information on individual speaking skills, students' scores on of the five speaking sub-skills were also compared. Findings are presented in table 1 .

The results in Table 1 indicate that there is a statistically significant difference between the mean scores obtained by participants of the control and experimental groups in the post-test of speaking proficiency, in favour of the experimental group. The experimental group got higher mean scores than those

obtained by control group. They obtained a mean score of (3.0000) in pronunciation intelligibility; (3.0417) in grammatical accuracy; (3.0833) in vocabulary adequacy; (2.6667) in fluency; (2.8750) in interactive communication; and they obtained an overall mean score of (14.6250) in speaking proficiency. Conversely, control group students obtained lower mean scores for each evaluated speaking sub-skill. The overall result of the t-test shows that the t-value =(-7.94) and the difference is significant at (0.001) level. Thus, the first hypothesis is affirmed.

Table 1 “T” value of the Control and Experimental Groups in the Post-Test of Speaking Proficiency

Speaking Sub-Skills	N	Mean Score		SD		“T” value
		Control	Experimental	Control	Experimental	
Pronunciation Intelligibility	24	2.3333	3.0000	.482	.780	-3.56**
Grammatical Accuracy	24	2.5833	3.0417	.584	.751	-2.36**
Vocabulary Adequacy	24	2.5000	3.0833	.780	.504	-3.08**
Fluency	24	2.1250	2.6667	.448	1.049	-2.33**
Interactive Communication	24	2.3333	2.8750	.637	.947	-2.33**
Overall Speaking Proficiency	24	11.8750	14.6250	1.035	1.345	-7.94**

Testing the Second Hypothesis

Independent Sample t-tests were used to test the second hypothesis of the study. To obtain specific information on particular aspects of the writing, students’ scores on the four individual domains/dimensions of writing were also compared. The findings are presented in Table 2 below.

Table 2 “T” value of the Control and Experimental Groups in the Post-Test of Essay Writing

Writing Domains	N	Mean Score		SD		“T” value
		Control	Experimental	Control	Experimental	
Organization	24	2.0000	2.7083	.590	.690	-3.82**
Mechanics	24	2.0833	2.4167	.408	.584	-2.29**
Vocabulary and Language Use	24	1.4583	2.7500	.658	.532	-7.48**

Ideas and Content	24	2.1250	2.5833	.537	.654	-2.65**
Overall Writing Ability		7.6667	10.4583	1.007	1.503	-7.56**

The results in Table 2 indicate that there is a statistically significant difference between the mean scores obtained by participants of the control and experimental groups in the post-test of essay writing, in favour of the experimental group. The experimental group got higher mean scores than those obtained by control group. They obtained a mean score of (2.7083) in organization; (2.4167) in mechanics; (2.7500) in vocabulary and language use; (2.5833) in ideas and content; and they obtained an overall mean score of (10.4583) in the general writing ability. Conversely, control group students obtained lower mean scores for each evaluated writing domain. The overall result of the t-test shows that the t-value = (-7.56) and the difference is significant at (0.001) level. Thus, the second hypothesis is affirmed.

Discussion of the Results

Although it is notoriously difficult to prove “cause and effect” in educational intervention research, the findings of this study does indicate that teaching unplugged is promising in an EFL context. According to the mean scores of the experimental group students on the post-test of overall speaking proficiency, teaching unplugged is capable of improving students’ speech production skills. Experimental group students became better able to achieve intelligible pronunciation and adequate intonation with a relatively effective use of grammatical rules. They also became better able to use relevant, adequate and correct vocabulary in expressing themselves fluently and smoothly. Moreover, they became better able to contribute effectively throughout the interaction, and maintain conversation through showing understanding and expanding on responses.

These high gains shown by the experimental group students could be attributed to the effect of the teaching unplugged approach used with them in this study. Being conversation-driven and emergent language-focused,

conversation and meaningful interaction which grows in a natural way, based on students' interests and their needs, were at the heart of language learning. These results are quite in agreement with the theories of Krashen's (1985) exposure to comprehensible input, Long (1983), Van Lier (1996) and Brown's (2001) meaningful interaction. In this respect, Harmer (1998, p. 87) maintains that students should be given "speaking tasks which provoke them to use all and any language at their command". Supporting this, Celce-Murcia and Olshtain (2000) state that:

The most important feature of a classroom speaking activity is to provide an authentic opportunity for the students to get individual meanings across and utilize every area of knowledge they have in the second or foreign language. They should have the opportunity and be encouraged to become flexible users of their knowledge, always keeping the communicative goal in mind (p. 176-177).

According to Lazaraton (as cited in Celce-Murcia, 2001, 105), "what academic ESL students need most is extensive authentic practice in class participation, such as taking part in discussions, interacting with peers and professors, and asking and answering questions". Thus, it is clear that all these teaching practices recommended by those researchers are exactly the principles upon which teaching unplugged is based, and which it stresses and seeks to achieve in EFL classrooms.

The results of this study are also in line with those of Yu (2008) and Zhang (2009). Yu (2008) recommended that classroom environment should offer students a context where learning opportunities are co-created by both the teachers and students in a creative and friendly atmosphere. That context draws their attention to different discursive language interactive practices reflecting the social reality surrounding them outside the classroom. This interaction and cooperative negotiation of meaning leads to both language and self-development of the students. Zhang (2009, 98), concluded that comprehensible input, meaningful interaction and the effort-generated output that turns to be sources of input for other speakers play a crucial

role in the development of oral fluency in the EFL classroom. He justifies his conclusion by assuring that “when input is negotiated and learners produce output in interaction, they selectively “take in” portions of comprehensible input and choose correct linguistic form to express themselves (p. 92)”.

It is clear that by using the unplugged teaching approach, the EFL teacher becomes free from overdependence on course books and technology and this allows him to engage his students in a meaningful interaction with the teacher as well as with their colleagues. Students became more able to assume a more positive role in their learning process rather than being often on opposing side with the teacher, or as Aljumah (2011, 85) put it “teachers babble all the time, whereas students mumble and swallow their words, or say nothing”.

As for essay writing skills, experimental group students’ mean scores on essay writing posttest indicate that teaching unplugged is capable of improving students’ essay writing skills as well. Experimental group students became better able to logically organize their essays in a skillful format using transitions effectively and logically. They also became better able to write complete sentences that vary in structure and length, with correct spelling, grammar, and punctuation. Their writing tones became clearer and more consistent and appropriate for their intended audience than before. Their essays reflected well developed main ideas and clarity of purposes with vivid and specific evidences and examples while focus is still tight.

These remarkably high gains shown by experimental group students in the essay writing posttest could be also attributed to the effect of the unplugged teaching approach used with those students. Being material light, teaching unplugged did not keep students within the confines of a specific prescribed textbook by an absentee writer, that might not be designed according to their needs and requirements, or encumber them with a heap of photocopies. Moreover, it did not entangle them with piles of digital gadgets that would put down discussions and stifle active learning. Instead, writing materials was co-created by students

themselves in a pleasant atmosphere, depending on their interests, desires, needs and real life experiences. These results assure Harmer's (1998) claim that the type of writing we get students to do should "depend on their age, interests and level....it's all a question of what language the students have at their command and what can be achieved with this language (p. 80)".

These results indicate that by using this critical pedagogy, students' voices emerge clearly in the EFL classroom. Knowledge is collaboratively and enthusiastically constructed by students and teachers. Teachers assume their basic role as facilitators of critical learning not just materials operators. Nothing stands between the teacher and his students and prevents meaningful discussion. However, these results does not mean that this study sees unplugged teaching as being opposed to technology as such. Instead, the results of this study is in opposition to using technology that does not enable learner-centered teaching which is based upon authentic communication.

Recommendations and Suggestions for Further Research

Based on the findings of this study, some important recommendations related to EFL teaching and EFL teachers are presented. The results of the study indicate that teaching unplugged is capable of improving students' speech production skills. This is an indication that in appropriate EFL contexts, similar to those of the present study, teaching unplugged could be integrated with great success in EFL classes. Since commonly used pedagogical practices are deeply entrenched into Egyptian culture and any attempt at innovation is seen as an outrage against traditions, teaching unplugged, if not implemented alone, could be used as a complement not a replacement for the coursebook-based lessons; teaching unplugged for speaking practice, for example, and coursebook-based lessons for grammar.

In addition, in order to promote the development of language for our students, a balance of talk that contains more exploratory, information-seeking, and inquiry-based dialogue, on the one hand, and less unnecessary rote, recitation and elicitation, on the other hand, needs to be strategically managed in our EFL classrooms. That balance of talk offers the potential for opening up genuine opportunities for language learning, where students are involved and consequently susceptible to new linguistic features that emerge during mutual interaction.

In the same vein, EFL teachers themselves need to make a radical change in their convictions, from viewing their roles as conferrers of knowledge to that of mentors, from controllers to facilitators. Pre-service teachers need to be trained in establishing a dialogic pedagogy and how to exploit the genuine situations inside classrooms for creating more knowledge, and in understanding and analyzing their learners' needs. EFL teachers are recommended to revisit the basics of their job, to scrutinize their resources, and to realize that they do not need to depend on a coursebook or on an interactive whiteboard to be effective teachers. They need to liberate themselves from their slavish dependence on materials, and newly invented digital gadgets and to return English language teaching to its roots by using instructional practices which are more conversation-driven and materials-light.

Further research is needed to provide empirical evidences through practical application on of the success of teaching unplugged in the Egyptian context. It would be interesting to try teaching unplugged with other subjects on an experimental basis. Moreover, future descriptive studies are needed to identify EFL Arab students' as well as teachers' attitudes towards the integration of teaching unplugged into our classrooms.

In conclusion, one needs to re-iterate the limitations of the study reported on here. This remains a small scale study that does not enable generalizing results beyond this population. Furthermore, since it is not possible to prove beyond all doubt that there were no confounding variables that influenced the

enhanced performance of the experimental group in this study, it remains difficult to claim “cause and effect”. However, the similarities of the control and experimental groups on the measures reported on before the intervention, and the differences in scores after the intervention, provides some indication that it is possible that the intervention contributed to the improved abilities of the experimental group students. These empirical findings in the EFL teaching setting at least indicate that teaching unplugged could be potentially useful in this context.

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A Meta-analysis for Results of Research on Virtual Classrooms' Use and Utilization

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Abstract

The main aim of the study is to analyze the results of the uses of the research and its impact on the environment from 2006 to 2010. All these facts will provide a theoretical information in the scientific field.

This will be achieved through accessing a virtual learning and by studying the expected problems in the scientific field. Educators and communicators have to be informed with the research results which can help in improving the educational system.

Research Procedures: The research process is to show and analyze the previous studies that is related to the topic of the research.

Research Results & Findings: The general conclusion is the effective uses of the environmental learning style. It is either an immediate achievement or delayed one) it depends on the skills required, the learners thoughts towards using the virtual learning system and this also according to the subjects learnt, the stage and the source of the study except some changes, we didn't prove its validity.

Introduction

In the light of the rapid changes and transformations the world witnesses in all fields of life, and at the beginning of the twenty first century, a great advancement occurred in the area of educational technology. Educational technology is one of the most educational specializations affected by the great developments in the area of cognitive and technological developments. Education can be enhanced starting from the kindergarten stage to the university stage through utilizing educational technology. This is because educational technology,

if used well, can make the educational experience more realistic, closer to life and more applicable (Saied, 1991:7).

Recently, many terms related to e-learning, in general, and virtual learning environments (VLEs), in particular, appeared and are still quickly growing. Many computer applications especially those used on the internet such as virtual reality environments, classrooms, museums, schools, libraries and universities which are used for serving the educational process and made the world a small village in which the educational community interacts face-to-face, were used.

The word environment is confined to its connotation. It generally refers to the surrounding place in which the living creature lives with all his elements. The educational environment indicates the place in which the learner learns and the resources, equipment and conditions it includes and gives the learner his personality and uniqueness. Virtuality entails using computer and communication technology basically in building a nontraditional society. Thus, VLEs are integrated technological environments (such as e-learning management systems) in which the learner lives alone or within a group of learners who exchange opinions and ideas within a two or three- dimensional virtual environment that takes varied forms and models such as virtual reality programs, games, schools, libraries and worlds (Azmy, 2014: 453).

VLEs are the product of contemporary technology that were novel in the field of education and training since they depend on using the computer and its applications in the curricula, management of the educational process, the information process and the training fields. This is done through designing an interactive electronic site published on the internet in which information is built as dynamic pages and makes a kind of interaction and communication among participants through that electronic environment as if they were under one ceiling working together as one team for building their own learning and training under their distant teacher (Alfiky, 2009: 22).

There are many studies in this area such as Shatat (2008: 10) who mentioned that VLEs is one of the e-learning techniques in which the learning environment is web-based. Nasreddein (2008: 25) pinpointed that VLEs are a group of programs or e-learning management systems which present programs and curricula electronically through the computer or the internet. This is done synchronously or asynchronously. These programs provide a group of educational tools and aids which aim at serving the learner and the teacher, enhancing the learning process in addition to utilizing internet services and the characteristics of e-communication in order to facilitate presenting these programs and courses to the learners in varied patterns and styles.

Context of the problem

Analyzing the results of the previous studies and through the exploratory study conducted by the two researchers in the university libraries and the well-known databases on the internet to identify the studies and research papers on using VLEs, the researchers concluded that there are many Arab studies and research papers which used VLEs as a technology that contributes in developing and enhancing the educational process as a whole from 2006 to 2015. Therefore, a need existed to conduct systematic and detailed analyses on these studies and research papers to achieve integration among them, formulate new generalizations and guide the currently available and future studies to the right direction.

According to Bernard Berelson, content analysis is the objective, organized and quantitative description of the overt content of communication (**Ahmad, 2013: 343**). Kaplan sees that it aims at quantitatively classifying certain content in the light of a system of categories designed to give suitable data for specific hypotheses specific to this content.

There are many studies conducted in this respect in the area of educational technology. Saleh (2003) analyzed the content of the e-documents available on the internet on training programs for the working force at the general education in the

area of information and its future trends. Saleh (2008) identified the trend of scientific research in the second generation of e-learning concerning conceptualizing the second generation of e-learning, identifying its tools and how to make use of them, and the trends of its research. The study presented suggestions in the form of research areas within the framework of the second generation of e-learning that go in line with the international directions of research on this generation and meet the researchers' queries and interests. Consequently, there is a must to identify the techniques used in analyzing educational studies more widely such as content analysis, bibliometric analysis, and meta-analysis or post-hoc analysis.

The researchers chose meta-analysis for its accuracy, simplicity and efficiency. It is a use of the previous research repository to explain methodological questions related to the previous studies it introduced. This is one of the most accurate techniques since it answers many questions posed by educational researchers and stakeholders as a result of the massive accumulation of the results of studies and research papers in a specific field. It usually aims at comparing the results of these studies to achieve the integration among them and formulate new generalizations based on these comparisons and their results. It also directs future research. Thus, meta-analysis with its concern with effect size through the formulas developed by experts is considered the most suitable method of studying the relationship between the results of previous studies and their variables (Ahmad, 2013: 367 & 374)

Glass, an American scholar, is considered one of the pioneers who wrote about meta-analysis since 1976. Glass defined it as "analyzing the results of analyses and using the systematic quantitative method to reach information from the results of previous studies and present them in a specific field objectively to judge the effectiveness of these studies (Ahmad, 2013: 368). Although meta-analysis method is one of the recent ones, it introduces new broad horizons to the educational scientific research, not to mention the benefit gained by

educational policy and decision makers (Abou Hatab and Sadeque, 2010: 129).

Meta-analysis is considered a statistical method applied to the quantitative results of previous studies aiming at the integration of the varied results of these studies. Thus, it makes the process of analysis scientifically objective (Albos, 2001: 3).

Therefore, some studies were concerned with studying the effectiveness or effect size. The following are examples of the studies on meta-analysis of the results in the area of educational technology.

Alhosary (2001) analyzed the results of studies on computer assisted instruction in some dependent variables such as immediate and delayed achievement, attitude towards the subject and the computer, developing some thinking patterns and developing some practical skills. Alhosary also used some classifying variables such as educational stage, program type, school subject, type of learners and source of study. The study concluded that computer assisted instruction is effective in developing immediate and delayed achievement, some thinking patterns and some practical skills.

Aly (2004) dealt with the benefit from the results of the studies on educational interactive videos and investigating their effectiveness in developing some dependent variables such as cognitive achievement, practical skills, duration of learning, and attitude towards the subject. She used a number of classifying variables such as school stage, school subject, type of learners and source of study. The study revealed the effectiveness of educational interactive video programs in developing variables under study.

Abdel-Ghany (2011) dealt with the trend of studies on using the Internet in education and identifying its effect on achievement and attitude towards some practical skills, using the Internet in education and the school subject, thinking patterns, self-efficacy and achievement motivation according to classifying

variables such as school stage, school subject, pattern of using the Internet in education and source of study. The study concluded the effectiveness of using the Internet in education in developing achievement, some practical skills, attitude towards using the Internet and school subject, thinking patterns, self-efficacy and achievement motivation.

Bernard et al. (2004) used meta-analysis comparing distant education to the traditional method in the studies published from 1985 to 2002. The study included 232 studies with an effect size reaching 599. It aimed at assessing the synchronous and asynchronous approaches in distant education compared to the traditional one. Asynchronous applications were found to be better than the synchronous and the traditional one.

Wolf (2006) used meta-analysis of the studies on using educational technology in teaching reading for the handicapped. It aimed at providing the prep and secondary school teachers with the results that dealt with using educational technology in teaching reading for the gifted. It analyzed the studies conducted from January, 1995 to March, 2006. The results showed that using educational technology had a great effect in teaching the reading skills for the handicapped.

Cook et al. (2008) aimed at analyzing the results of the studies that dealt with internet- based learning from 1990 to 2007 and comparing it to the traditional learning in health studies. The results indicated the effectiveness of internet- based learning.

Dragon (2009) meta-analyzed 35 studies on technology - based learning. It aimed at identifying the difference between the field-dependent and the field- independent students in technology- based learning environments. The results revealed the difference in the ratios of performance in favor of the field-independent students.

This study depended on the quantitative statistical form in analyzing the results of the previous studies that dealt with VLEs to reach generalizations and interpret them in an objective

systematic way that depends on statistical quantitative methods in estimating frequencies and the units to be analyzed to help the pioneers in this area.

Problem of the study

Through the researchers' feeling the necessity of reaching standard solutions, conclusions and generalizations for the integration between the results of previous studies in the area of VLEs through analyzing the results in the light of objective criteria, comparing the results in the light of the set criteria and directing the currently available and registered for future research in the area of VLEs, the problem of this study may be formulated as trying to identify the effect of VLEs in the educational process. The study seeks to answer the following two questions:

1. What is the effect of using VLEs in the educational process?

This question has the following sub-questions:

1. What is the effect of using VLEs on achievement?
 2. What is the effect of using VLEs on immediate achievement?
 3. What is the effect of using VLEs on delayed achievement?
 4. What is the effect of using VLEs on developing some practical skills?
 5. What is the effect of using VLEs on patterns of thinking?
 6. What is the effect of using VLEs on students' attitudes towards using them in the educational process?
 7. What is the effect of using VLEs on self-efficacy?
 8. What is the effect of using VLEs on achievement motivation?
2. What is the relationship between using VLEs in the educational process, on the one hand, and each of the following on the other: achievement, immediate achievement, delayed achievement, developing some

practical skills, thinking patterns, students' attitudes towards using VLEs in the educational process, self-efficacy and achievement motivation. The analysis will be conducted according to the following classifying variables: school stage, school subjects, pattern of using VLEs and source of study.

Purpose of the study

The study aims at conducting a meta- analysis of the results of studies on using and utilizing VLEs from 2006 to 2015 and its role in setting a map that benefits researchers in future research through reaching new facts for answering the proposed questions.

Importance of the study

This study is important in:

1. Enriching the theoretical knowledge in the scientific field through giving an indicator of the effect of using VLEs.
2. Directing the currently available studies and those to be conducted in the area of VLEs to the study of new scientific problems by throwing the light on the curriculum, pattern of use, and tools used, and studying the relationship between these uses and the results through comparison.
3. Benefiting educators, those responsible for the educational process and researchers, from the results of the research by reaching some generalizations based on the meta-analysis for enhancing the educational process focusing on theoretical principles to reach the best style of using virtual classrooms in the educational process.

Delimitations of the study

This study was limited to:

1. The Arabic studies conducted from 2006 to 2015.
2. The Arabic studies that have enough data for calculating effect size.

3. M.As, Ph.Ds, journals and proceedings of conferences in education.
4. Meta-analysis of the selected Arabic studies was limited to the following variables: achievement, immediate achievement, delayed achievement, developing some practical skills, thinking patterns, students' attitudes towards using VLEs in the educational process, self-efficacy and achievement motivation.
5. The studies were classified according to the following classifying variables: school stage, school subject, pattern of using VLEs and source of study.

Method of the study

This study used meta-analysis. It is a qualitative technique that depends on statistical methods in organizing and extracting information from data and results of studies in a specific field.

Terms of the study

Meta-analysis

It is analyzing the results of analyses. It is the quantitative organized technique of getting information from the results of varied studies and presenting them objectively in a way that aids judging the effectiveness of these results (Ahmad, 2013: 368). The researcher adopted this definition.

Virtual Learning Environments (VLEs)

The researchers adopt Azmy's (2014: 453) definition of VLEs as an integrated technological environment (such as an e-learning management system) in which the learner lives alone or with a group of learners exchanging opinions and ideas inside a two or 3- dimensional environment that takes varied forms and models such as virtual reality programs, and virtual games, classrooms, schools, libraries and worlds.

Effect Size

The researchers adopted Abou Allam's (2004: 108) definition of effect size. To her, it is a statistical tool that shows the extent of the effect of the experimental variables on some

dependent variables and that shows whether this effect is strong or weak.

Theoretical Background

First dimension: Meta-analysis

The development in educational research results from the concern of researchers and those responsible for setting policies and taking practical decisions. It comes through following educational journals and conferences leading to the growth of the research movement in the different sciences. Because the accumulation of information and the integration of the results of studies is a basic condition for the growth of science, a need for a technique that aids the coordination among the results of the different educational studies and getting general conclusions and generalizations for building and developing the social sciences and humanities occurred.

Abou Hatab and Sadeque (2010) mentioned that the reasons for using meta-analysis are that “one of the characteristics of research in social sciences is its frequent failure in reaching consistent results. This means that studies conducted on one topic may not support each other”. Perhaps, those responsible for setting policies and taking decisions are the most suffering from this when they want to depend on the results of studies and find conflicting results.

Recently, the field of educational technology, as one of the research areas, witnessed great development and the quantity and quality of research increased. Such development necessitates an increase in meta-analysis of the studies after classifying them into areas. The development and broadness of research in each sub- areas of theory and application of educational technology impose a direction towards conducting a meta- analysis of the results of these studies.

Meta-analysis is one of the statistical techniques that help the researchers and those working in the development of educational research to reuse the heritage of previous studies to answer the methodological questions related to genuine studies.

These relations, which may look like practical problems, the research method used in them, the variety of variables tackled, studying one field of these fields of specializations, and variation in the school stages on which the studies were conducted, are identified. This is done to conduct methodological comparisons that can enrich theoretical knowledge (**Abdel Hameed, 2013: 367**)

Haig (1988) considers meta-analysis a recent trend that started to expand. He agrees with Basta (1997) that it includes integrating the group of studies that dealt with a certain topic and gathering their results and treatments to reach a general conclusion. This requires recording the characteristics of these studies and their results applying the suitable statistical methods.

Thus, meta-analysis is one of the techniques used to synthesize the digital or quantitative results of the previous studies. It is a relatively recent technique that is characterized by its ease of use even to non-specialists in statistics and it can lead to useful results.

Steps of conducting meta-analysis

Abdel Hameed (2013: 372) agrees with the experts that design and procedures of meta-analysis studies do not differ from other studies depending on primary or secondary data. They can be summarized in the following basic steps: (1) Identifying the scientific problem, (2) data collection, (3) evaluating data, (4) analysis and interpretation and (5) reporting the results.

Glass, McGow and Smith (1981), Abdel Hameed (1987), Shreef (1993), Basta (1997) and Abdel-Ghany (2011) identified the steps of meta-analysis as (1) gathering scientific studies, (2) examining the studies, (3) classifying them, (4) mining data, (5) calculating effect size and (7) evaluating the value of effect size.

Advantages of meta-analysis

Meta-analysis technique is considered the quantitative parallel of the traditional review of studies but it is much better

than it. **Glass** (1981: 22), **Allam** (1998: 329) and **Basta** (1997: 11) explain the advantages of meta-analysis as follows:

1. Meta-analysis is distinguished by its system, method, and statistical method as quantitative since it does not make an initial judgment on a study based on its kind only. Rather, there is a quantitative estimation of the results for each study separately and a classification of each one's characteristics for reaching general results through summation of these quantitative estimations.
2. It helps the researcher in showing the gathered effect of the available evidences from previous studies in a way that the traditional review cannot make.
3. It can deal with huge numbers of previous studies. It is appropriate and has a powerful statistical effect beside its explanation of the relationships among psychological and educational variables.
4. It allows generalization of the trends available in the previous studies and identifying the changes and the dimensions reached and do not need to be re-dealt with in future studies.
5. It can be used with correlational studies and those using ratios and other measures in addition to the studies that compare means. **Abdel Hameed** (2013: 380) pinpoints that the researcher's success in meta-analysis is restoring scientific knowledge in the past and linking it to the recent developments in the same area. This achieves a scientific added value. Therefore, the researcher must be cautious dealing with previous studies deficient in method, tools and the database that affect results.

Second: Virtual Learning Environments (VLEs)

The concept of VLEs

VLE is a concept that spread as the essence of a life that the learners live to learn through an artificial world using the computer. It may be non-existent in reality or it may be an alternative for a reality that can not be dealt with. VLE is a logical

extension for the computer technology development. Thus, it is one of the patterns of computer instruction. It is a system that aims at supporting and serving the educational process as a whole through an environment that simulates the real educational environment.

Basically, it depends on computer and communication technology to form an educational social identity that has no time or place limit. These environments were basically created for distant education and works through online computer applications such as virtual classrooms, schools, universities, libraries, museums, tours, labs and VLEs. Abderrahman (2008: 10) pinpoints that a VLE is one of the e-learning styles in which the learning environment is web-based.

It consists of a number of elements which are the infrastructure comprising web linking devices, computers, necessary software in addition to the educational materials, tests, registration systems, system for controlling how to present these materials and tools that enable the learner to communicate with the teachers, the other learners or parents and conducting written or oral discussions with them, synchronously or asynchronously, such as e-mails and chats.

Nasreddein (2008: 25) adds that VLEs are a group of programs or e-learning management systems that introduce programs and curricula electronically through the computer or the internet, synchronously or asynchronously. These programs provide a group of instructional tools and aids that serve the learner and the teacher and enhance the learning process in addition to utilizing internet services and e-communication characteristics to facilitate presenting these programs and courses to the learners in varied methods and styles.

Uses of VLEs

Salem (2009) identified some uses of VLEs in education as follows:

1. Direct experience.
2. Variation in learning strategies and styles in VLEs since all traditional instructional strategies and styles can be presented in VLEs.

3. They provide the learner and the teacher with a big number of services and resources that enhance the quality of the educational experiences and develop the efficiency and effect of web- based teaching processes.

Reasons for using VLEs

Fargoun (2013) identified reasons for using VLEs as follows:

1. Mutual support and encouragement among students when assessing their works.
2. The increasing need for lifelong learning which stimulated persons for more learning to enhance their skills and knowledge.
3. Effective communication among the participants and the content of the curricula.
4. Cooperation among the students and between them and the teacher.

Patterns of VLEs:

There are many patterns that usually work through online computer applications such as virtual classrooms, schools, universities, libraries, museums, tours, labs and virtual reality environments.

Virtual classrooms

Abderraouf (2007: 99) defined them as a group of activities that resemble the traditional classroom activities that a teacher and students, separated by vast distances, carry out while working together synchronously regardless of where they are. They interact through online dialogue and print messages that all web- connected persons can see and read; consequently, understand and interact with.

Shatat (2008: 47) defines virtual classroom as the class that works on the computer and international and national information webs through tools, techniques and programs that enable the teacher to present lessons, identify objectives, set assignments and study activities, and communicate with

students through varied techniques. It enables each student to read instructional objectives and lessons, answer assignments, send tasks, participate in discussion boards and dialogues, and preview the procedures of the lesson and the score gained.

Azmy, Megahed and Hamed (2014: 453) explain that virtual classrooms include:

1. Giving lectures in the form of a text, sound or video.
2. Evaluating students: After finishing the lecture, each student is asked to answer a group of questions and to send it through e-mail. The teacher sends the result or the student gets immediate result of feedback.
3. Using chat rooms to discuss the topics and ask questions or make a query.
4. Using the white board for making important announcements.
5. Sending files and exchanging them between the teacher and the students.
6. Using asynchronous tools and techniques such as discussion boards, file and documents' transfer and e-mails.

Kinds of virtual classrooms

Asynchronous virtual classrooms:

Sometimes called self e-learning systems. These are not confined by time or place.

Synchronous virtual classrooms:

These look like classrooms but the teacher or the student uses time- bound tools or programs, i.e. both teacher and students should be present but in different places.

Advantages of virtual classrooms

Almoussa and Almobarak (2005: 245) point out some advantages of virtual classrooms such as (1) low cost of equipments, (2) covering a great number of students without age or geographic limits and (3) high speed of follow up and continuous response.

Virtual schools

Abderraouf (2007: 89) defined them as these schools that use computers, varied digital multimedia, and different communication networks for communicating digital information electronically in its varied forms to the students inside the school or outside it, at home. Azmy, Megahed and Hamed (2014: 454) and Shatat (2008: 47) add that the virtual school is similar to the traditional one in the presence of the teachers and students but the student joins the school through the internet and gets the school guide which usually includes:

1. How to register at school.
2. Components of the virtual classroom.
3. The school subjects required.
4. Making assignments and method of school testing.
5. Getting to know teachers and students, and how to contact them.

Advantages of virtual schools

Abderraouf (2007: 110) sees that the advantages of virtual schools include (1) increasing the efficiency and effectiveness of the educational process, (2) low cost of instructional material compared to printed ones and (3) low cost of study compared to the equivalent traditional one.

Virtual universities

The establishment of virtual universities as academic institutions aims at providing the students with the most unique international university educational level at their residence through the internet by creating an integrated educational environment that depends on a highly developed network. It introduces a group of university certificates from the oldest international recognized universities. It also provides all kinds of support and help supervised by web virtual community that includes the expertise of university experts and professors in the world (Moustafa, 2009).

Azmy, Megahed and Hamed (2014: 455) agree with Aziz (2007: 175) that virtual universities are based on two basics:

1. Self- and continuing education for all persons through the use of information and communication technology in education and teaching and using simulation, i.e. simulating reality through introducing a virtual reality or models that are similar to reality so that practice is done through the computer.
2. Using the World Wide Web that makes the process of simulation and interaction easy such as the simulation models at the faculty of medicine for making operations or Physics and Chemistry lab experiments, and design, production and use of educational computer programs.

Advantages of virtual universities

Abdellatif (2010) presents some advantages of virtual universities as follows:

1. They make the student able to learn anywhere and anytime.
2. They often introduce varied programs that suit the needs of the society and students.
3. The programs and what they include are continuously updated.
4. They allow the students to exchange varied kinds of lectures through the internet.

Virtual libraries

Alkhannak (2012) defined them as a group of digitally computerized information repositories composed in a particular way suitable for use through the information network that enable people to reach information regardless of distances and introduce all services introduced by the traditional libraries.

Tareque (2009) identified the following advantages for virtual libraries:

1. The possibility to provide new forms of information that can't be stored and broadcasting them through traditional channels.
2. Possibility of sharing information.

3. The virtual library carries its groups to the user where he is since the library exists where there is a computer connected to a network.
4. Making use of computers' ability to restore and explore information.

Virtual Museums

Ismail (2009: 92) explains that virtual museums may be confused with virtual reality and the equipments and devices attached to it to enable the audience to interact with this reality. However, this concept is not completely correct. Not every museum using virtual reality technology is a virtual museum; rather, a virtual museum basically depends on a network for its existence and carrying out its diverse functions and tasks.

Characteristics of a virtual museum

Saleh (2009: 371) mentioned that the characteristics of the virtual museum are:

1. It is an imaginary site on the internet not a real identity.
2. Museums use hypermedia technology in linking exhibits to the studies and comments related to them.
3. Some virtual museums use 3-dimension virtual reality technology for showing their museum possessions. The user's role is exploring using the mouse cursor through panoramic snapshots of a hall in a real museum.

Advantages of virtual museums

Ashsharkasy (2015) and Ismail (2009: 121-125) see that "virtual museums gain their importance due to the advantages attributed to the network and its potentials". Alhalafawy (2009: 174-175) add that they are "integrated educational environments that have many advantages". The advantages can be summarized as follows: making the museum possessions available online, exceeding the time and place limits, overcoming the problem of limited space, providing many services for special needs students, redesigning the museum show easily and at a few cost, enhancing the quality of teaching and learning, stimulating motivation towards learning, and concentration and power of effect.

Virtual Tours

They are one of the technological novelties that appeared powerfully through the internet, and were caught by educators and teachers. Virtual tours were first used in 1994. They were derived from the interpretation of the name “the visitor’s museum”. The first one who used the virtual tour was Queen Elizabeth II when she officially inaugurated the center of visitors which was called “a virtual tour” that was done through virtual reality.

Azmy, Alhalafawy and Anwar (2014: 500) define virtual tours as an interactive tour that includes a group of varied digital tools that can be utilized through the internet for presenting a group of alternatives that simulate specific places and provide learners with varied opportunities for recognizing the components of these places without any time or place limits.

Types of virtual tours

Bedard et al. (2005) mentioned that the types of virtual tours are:

1. Text- based virtual tours: This is the simplest and least expensive type of virtual tours since they do not use any visual tools.
2. Image- based virtual tours: This is one of the simplest tours since it depends on synchronization of text with a group of images that support them.
3. Sound- based virtual tours: This type depends on sound since most of them are audio-visual. Most of them use sound when the tour is characterized by walk through which allows the learners to feel walking through the virtual tour. This is suitable for the special needs learners.
4. 3-d virtual tours: This kind depends on a group of 3D- images, drawings and scenes.
5. Panoramic virtual tours: These tours give learners a better feeling of reality since they present their content in a 3D format. They depend on a group of images linked together to form a panorama with 360 degree. This type

requires accuracy in producing images and assembling them together. The images should be of high quality.

Advantages of virtual tours:

Azmy, Alhalafawy and Anwar (2014: 502) summarized advantages of virtual tours as follows:

1. They present the required information from different perspectives.
2. They present a group of tours in unreachable regions.
3. They enhance and consolidate the students' experience in a specific field.
4. They help the learners to explore the trip places before real visit.
5. They provide learners with the possibility of visiting sites, walking through them anytime, anywhere.
6. They are available for learners at different levels.

Virtual labs

They were introduced by Ismail (2011) as programmed labs that simulate real labs through which the learners learn by conducting distant practical experiments for unlimited times. They compensate for the absence of lab equipments. Most of the course topics may be covered by virtual experiments which is difficult to achieve in reality due to the limited time devoted to practice and limited number of labs. Besides, Zaitoun (2005: 165) defined them as a virtual teaching and learning environments that aim at developing lab experimental skills among learners on one of the internet sites. This site usually includes a main page that has a number of links or icons (tools) related to lab experiment activities and their achievements and evaluation.

Advantages of virtual labs

Ismail (2011) and the E-Learning National Center (2010) mention some advantages of virtual labs as follows:

1. Compensating for the lack of real lab facilities due to lack of financial support.

2. Conducting lab experiments that are difficult to conduct in real labs due to their danger such as nuclear power ones.
3. Visual presentation of data and phenomena that cannot be presented through real experiments and protecting learners from dangers of practical training at the beginning of learning.
4. The possibility of interacting with other people in conducting the same experiment at a distant.
5. Making the lab experiments available from any place and for unlimited trials according to the learner's comprehension.

Virtual reality environments

The concept "virtual reality" is one of the important concepts that information technology added to our contemporary group of concepts. It refers to forming 3D environments using computer drawings and simulation equipments to prepare someone to sense them and use his different senses interacting with them and changing their givings to enhance the feeling of engaging with this environment.

Azmy, Said and Ibrahim (2014: 112) defined it as an interactive environment that simulates a physical or imaginary reality to allow the learner free walk through inside this environment and acquiring the desired learning experience. Alkhannak (2012) assured that the concept virtual reality is a 3D- environment virtually generated and the learner wishes to interact with. It can be generated using the computer technology and simulation from physical components and programs in addition to other equipments to achieve different educational, medical, entertainment, purposes.

Types of virtual reality

Anwar (2010) classifies types of virtual reality as:

1. (Desk Top virtual reality) Immersive: These depend on common computers but they should be provided with high quality screen card. Other tools are also used to embodiment of things. Another kind is panoramic virtual

reality that allows watching the virtual environment with an angle reaching 360⁰.

2. Semi-immersive VREs: These allow a high degree of tele-presence of learners more than the previous type. It allows walking through the environment using some tools such as 3D- mouse, joystick and gloves.
3. Fully immersive VREs: In these environments, some tools of tracking such as helmets and gloves which allow concrete seeing of things and more engagement in the environment.

Procedures of the study

This study aimed at conducting a meta-analysis for the results of studies on using and utilizing VLEs from 2006 to 2015 to reach new facts. This was done through reviewing and analyzing related literature and previous studies that dealt with meta- analysis to (1) answer questions, (2) identify the sample of Arabic studies (M.A., Ph.D., periodicals and proceedings of conferences issued by specialized educational institutions, faculties of education or educational research institutes), and (3) identifying the independent variables of the studies to explore the effect of using VLEs on the educational process, in general, through the following dependent variables: immediate achievement, delayed achievement, developing some practical skills, patterns of thinking, and attitude towards using VLEs in the educational process.

This will be done in the light of the following classifying variables: school stage (primary, prep, secondary ...), school subject (Math, Science, Social studies ...), pattern of using VLEs, and type of study (M.A., Ph.D., periodicals and conferences). In addition, data needed for estimating value of effect size was identified, procedures followed and effect size values were evaluated.

To achieve this, the researchers followed some procedures suggested by Glass, McGaw and Smith (1981), Gamaledin (1987), Basta (1997) and Alhosary (2001) which are: collecting

the studies, examining and classifying them, writing down the results then calculating effect size.

The researchers collected the Arabic studies and made sure they match the set conditions and the classifying criteria. The M.A., Ph.D., conferences and periodicals conducted from 2006 to 2015 were collected. They were 47 (34%) studies. Sixteen studies, that did not contain the statistical data for calculating effect size, were excluded while 31 (66%) were accepted.

A checklist was designed for analyzing the studies. It included four items. The checklist was submitted to a group of jury members for validity. The checklist in its final form (Appendix 1) became applicable and it contains the following data:

1. Bibliographic descriptive data for the study (general information that included the researcher's name, title of the study, date, universality, ...)
2. Independent and dependent variables.
3. Pattern of using the VLEs which include virtual classrooms, schools, universities, museums, tours, labs, and virtual reality.
4. Statistical data through which effect size will be calculated. They include number of participants in the experimental group and the control group, mean score of the experimental and the control group, standard deviation of the experimental and the control group, mean score of the pre- and post-tests for the experimental group, standard deviation for the experimental group pre- and post-test, F- ratio, t- test value, degree of freedom, percentage of the experimental and the control group, sum of differences between groups, Chi square, sum of squares between groups and total of sum squares.

Calculating effect size

The researchers used many equations for calculating effect size. Each equation was used in the light of the data available in each study. These equations are as follows:

1. Glass, McGaw & Smith's (1982, 102) equation was used when the data available in the study included the mean scores of the experimental and the control groups, and standard deviation of the control group.
2. Glass, McGaw & Smith's (1981, 185) equation was used when the data available in the study included the mean scores of the pre-posttest of the experimental group and standard deviation of the pre-test.

Calculating the value of mean effect size

After calculating effect size for every dependent variable in each study, the mean effect size was calculated by dividing total values of effect size by their number (see Albos, 2001: 11 and Abdel Hameed, 1995: 97).

Assessing the value of effect size

To assess the value of effect size, the researchers followed the following steps:

1. The big value matching the mean score of effect size was identified using equinocial distribution table for standard grades (Alkanany, 2002: 12), (Appendix 6).
2. The value of change in the big area matching the value of effect size, gained from the previous step, out of 0.50 (the maximum change in area) was assessed.
3. If the value of change resulting from the previous step was more than 0.25 (i.e. 50% or more of the value of maximum change in area), the independent variable had a significant effect on the dependent variables. On the other hand, if this value was less than 0.25, the independent variable had insignificant or weak effect on the dependent variables (Alhosary, 2001: 11).

Results of the study

Results related to the first question which states "What is the effect of using VLEs on the educational process?" included answering eight sub- questions which identified the effect of using VLEs on achievement, immediate achievement, delayed achievement, some practical skills, patterns of thinking, students'

attitude towards using them in the educational process, self-efficacy and achievement motivation. Table 1 presents the number of the Arabic studies, number of effect size, mean effect size number and value of change in the area for each dependent variable.

Table 1: Number of the Arabic studies and effect size, mean effect size number and value of change in the area for each dependent variable

Variable	Number of the Arab studies	Number of effect size	Mean effect size number	Value of change in the area
Achievement	27	35	3.4125	0.4996
Immediate achievement				
Delayed achievement				
Developing some practical skills	17	28	9.2493	0.4999
Patterns of thinking	4	6	4.2967	0.4999
Attitude towards use of VLE in the educational process	7	7	15.1271	0.4999
Self-efficacy	1	1	0.74	0.2704
Achievement motivation	3	3	2.39	0.4918
Total number of studies (31)	59	80		

It is clear from table 1 that although the number of the Arabic studies that were analyzed was 31, the results showed an increase in the number of the studies after the analysis since the number of variables reached 59 and effect size reached 80. The increase is attributed to the fact that some studies used dealt with more than one variable and sometimes more than one experimental intervention for the same variable with more than one effect size. Considering variables, the achievement variable (immediate and delayed) came in the first rank since 27 studies with 35 effect size dealt with it. The variable developing some practical skills came in the second rank with 17 studies and 28 effect size. Attitude towards using VLEs came in the third rank with seven studies and seven effect size. In the fourth rank came pattern of thinking variable with four studies and six effect size.

Achievement motivation came in the fifth rank with three studies and three effect size. Then, in the sixth and the last rank came the variable self-efficacy with one study and one effect size.

Table 1 also shows that the value of change in area was more than 0.25 for each dependent variable. This gives a strong indicator of the effectiveness of using and utilizing VLEs in developing achievement (immediate and delayed), developing some practical skills, attitudes towards using VLEs in the educational process, patterns of thinking, achievement motivation and self-efficacy.

Second: Results related to the second question which stated: “What is the relationship between using VLEs in the educational process and each of the following: achievement (immediate and delayed), developing some practical skills, patterns of thinking, attitudes towards using VLEs in the educational process, self-efficacy and achievement motivation. These relationships will be examined in the light of the following classification variables: school stage, school subject, pattern of using VLEs and source of study. This question and its sub-questions were answered by presenting the results related to the relationship between using VLEs in the educational process and the classification each of the aforementioned variables.

Answering the first sub-question: Table 2 presents results on the relationship between using VLEs and achievement in the light of the classifying variable “school stage”.

Table 2 shows that the value of change in area was more than 0.25 for each dependent variable in the light of the classifying variable “school stage” as follows:

1. **Developing achievement:** The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing achievement (immediate and delayed) in kindergarten, primary, prep, secondary, and university stages. On the other hand, a poor indicator is shown concerning the effectiveness of using and utilizing VLEs in the educational process in

developing achievement (immediate and delayed) in the other stages.

2. ***Developing some practical skills:*** The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing some practical skills in all educational stages: kindergarten, primary, prep, secondary, university stages and the other stages.
3. ***Developing patterns of thinking:*** The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing patterns of thinking in the prep and university stages.
4. ***Developing attitudes towards using VLEs in the educational process:*** The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing attitudes towards using and utilizing VLEs in the educational process in the secondary, university and the other stages.
5. ***Developing self-efficacy:*** The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing self-efficacy among primary stage pupils only.
6. ***Developing achievement motivation:*** The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing achievement motivation among the primary and prep stages students.

Table 2 also showed that the value of change in area was less than 0.25 for the achievement variable in the other stages. This gives an indicator of the ineffectiveness of using VLEs in the educational process for developing achievement in other stages. The reason may be that the other stages may need practice and direct experience which affected the results of the experiment under analysis.

In brief, using VLEs in the educational process is highly effective in developing the variables under investigation at all

educational stages except achievement in the other stages where results revealed the poor effect of using VLEs in its development at this stage.

Table 2: Number of the Arab studies and effect size, mean effect size number and value of change in the area for the classifying variable "school stage"

Independent variable		Achievement	Immediate achievement	Delayed achievement	Practical skills	Pattern of thinking	Attitude	Self-efficacy	Achievement motivation
Kindergarten	N	1	1						
	NEF	4	1						
	MES	1.12	1.84						
	CA	0.3686	0.4671						
Primary stage	N	3	1				1	1	
	NEF	3	1				1	1	
	MES	3.84	2.98				0.74	4.64	
	CA	0.4999	0.4986				0.2704	0.4999	
Prep stage	N	4	3	2					2
	NEF	5	6	2					2
	MES	3.37	2.95	6.59					1.265
	CA	0.4995	0.4984	0.4999					0.3962
Secondary stage	N	2	3			1			
	NEF	2	6			1			
	MES	1.38	3.13			1.17			
	CA	0.4162	0.4991			0.3790			
University	N	13	8	2	4				
	NEF	17	13	4	4				
	MES	4.84	16.67	3.15	24.07				
	CA	0.4999	0.4999	0.4992	0.4999				
Graduate studies	N								
	NEF								
	MES								
	CA								
Other stages	N	4	1			2			
	NEF	4	1			2			
	MES	0.65	0.96			9.07			
	CA	0.2422	0.3315			0.4999			

N= number of studies

NES= number of effect size

MES= mean of effect size

CA= change in area

Answering the second sub-question: This presents results related to the second classifying variable “school subject”

Table 3 shows the relationship between the independent variables and the classifying variable “school subject” through the number of Arabic studies, number of effect size, mean of number of effect size and value of change of area.

Table 3: Number of the Arabic studies and effect size, mean effect size number and value of change in the area for the classifying variable “school subject”

Independent variable		Achievement	Immediate achievement	Delayed achievement	Practical skills	Pattern of thinking	Attitude	Self-efficacy	Achievement motivation
Educational technology	N	11		7	1	4			
	NEF	14		12	1	4			
	MES	5.78		17.99	8.65	24.07			
	CA	0.4999		0.4999	0.4999	0.4999			
Arabic	N								
	NEF								
	MES								
	CA								
English	N	1							
	NEF	1							
	MES	5.29							
	CA	0.4999							
Others	N								
	NEF								
	MES								
	CA								
Science	N	6		5	3	1	1	1	1
	NEF	6		11	5	1	1	1	1
	MES	3.11		3.19	3.426	1.17	0.74	2.40	2.40
	CA	0.4990		0.4993	0.4996	0.3790	0.2704	0.4918	0.4918
Mathematics	N	3		1					1
	NEF	6		1					1
	MES	1.74		2.98					4.64
	CA	0.4591		0.4986					0.4999
Social studies	N								
	NEF								
	MES								
	CA								
Art education	N	1							
	NEF	2							
	MES	0.20							
	CA	0.0793							
Physical education	N								
	NEF								
	MES								
	CA								
Musical education	N								
	NEF								
	MES								
	CA								
Other subjects	N	6		4		2		1	1
	NEF	6		4		2		1	1
	MES	.62		1.28		4.535		0.13	0.13
	CA	0.2324		0.3997		0.4999		0.0557	0.0557

N= number of studies
 MES= mean of effect size

NES= number of effect size
 CA= change in area

It is clear from Table 3 that the value of change in area was more than 0.25 for each of the dependent variables under study in the light of the second classifying variable “school subject” as follows:

1. **Achievement:** The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing achievement (immediate and delayed) in Educational Technology, Mathematics, Science and English.
2. **Developing some practical skills:** The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing some practical skills in Educational Technology, Mathematics, Science and other subjects.
3. **Patterns of thinking:** The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing patterns of thinking in Educational Technology and Science.
4. **Attitudes towards use of VLEs in the educational process:** The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing the students’ attitudes towards using VLEs in the educational process in Educational Technology and Science.
5. **Self-efficacy:** The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing self-efficacy in Science only.
6. **Achievement motivation:** The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing achievement motivation in both Science and Mathematics. On the other hand, a poor indicator is shown concerning the effectiveness of using and utilizing VLEs in the educational process in developing achievement motivation in the other subjects.

It is also clear from Table 3 that the value of change in area was less than 0.25 for achievement in other subjects which gives an indication of the ineffectiveness of using VLEs in the educational process concerning achievement in Art education and other subjects. In addition, results revealed that using VLEs was ineffective in developing achievement motivation in the other subjects. This may be due to the weak reliance on one study for calculating effect size which affected the results of the experiment under investigation.

In brief, using VLEs in the educational process is highly effective in developing dependent variables in all school subjects that existed in the studies under investigation except for achievement in Art Education and the other subjects, and achievement motivation in the other subjects.

Answering the third sub-question: This presents results related to the third classifying variable “pattern of using VLEs”.

Table 4 shows the relationship between the dependent variables and the classifying variable “pattern of using VLEs” through the number of Arabic studies, number of effect sizes, mean of number of effect sizes and value of change in area.

It is clear from Table 4 that the value of change in area was more than 0.25 for each of the dependent variables under study in the light of the third classifying variable “pattern of using VLEs” as follows:

1. **Achievement in each pattern of using VLEs:** The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing achievement (immediate and delayed) in all patterns of using VLEs in the educational process (virtual classrooms, libraries, museums, tours, labs, and reality).
1. **Developing some practical skills in each pattern of using VLEs:** The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational

process in developing some practical skills in all patterns of using VLEs in the educational process (virtual classrooms, libraries, museums, tours, labs, and reality).

2. ***Patterns of thinking:*** The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing patterns of thinking in all patterns of using VLEs in the educational process (virtual museums and labs).
3. ***Students' attitudes towards using VLEs in the educational process in all patterns:*** The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing the students' attitudes towards using VLEs in the educational process in all patterns of using VLEs in the educational process (virtual classrooms, museums, tours, labs, and reality).
4. ***Self-efficacy in all patterns of using VLEs:*** The values give strong indicators of the effectiveness of using and utilizing VLEs (use of virtual classrooms pattern) in the educational process.
5. ***Achievement motivation in all patterns of using VLEs in the educational process:*** The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process (virtual labs pattern). On the other hand, results revealed that using VLEs (virtual classroom pattern) was not effective in the educational process.

In brief, it can be concluded that using VLEs in the educational process is highly effective in developing the dependent variables under study and all patterns of using VLEs (virtual classrooms, libraries, museums, tours, labs, and virtual reality). Results also showed that virtual classrooms pattern was ineffective in developing achievement motivation in the studies under examination.

Table 4: Number of the Arabic studies and effect sizes, mean of the numbers of effect sizes and value of change in the area for the classifying variable "pattern of using VLEs"

Independent variable		Achievement	Immediate achievement	Delayed achievement	Practical skills	Pattern of thinking	Attitude	Self-efficacy	Achievement motivation
Pattern of VLEs use									
Virtual classrooms	N	12		6			3	1	1
	NEF	13		6			3	1	1
	MES	3.31		6.15			4.853	0.74	0.13
	CA	0.4994		0.4999			0.4999	0.2704	0.0557
Virtual schools	N	-		-		-	-	-	-
	NEF	-		-		-	-	-	-
	MES	-		-		-	-	-	-
	CA	-		-		-	-	-	-
Virtual universities	N	-		-		-	-	-	-
	NEF	-		-		-	-	-	-
	MES	-		-		-	-	-	-
	CA	-		-		-	-	-	-
Virtual libraries	N	2		2		-	-	-	-
	NEF	2		2		-	-	-	-
	MES	3.91		1.87		-	-	-	-
	CA	0.4999		0.4686		-	-	-	-
Virtual museums	N	4		-		1	1	-	-
	NEF	9		-		1	1	-	-
	MES	1.43		-		8.65	64.49	-	-
	CA	0.4222		-		0.4999	0.4999	-	-
Virtual tours	N	1		1		-	1	-	-
	NEF	1		1		-	1	-	-
	MES	7.03		1.84		-	11.31	-	-
	CA	0.4999		0.4617		-	0.4999	-	-
Virtual labs	N	6		6		3	1	-	2
	NEF	6		12		5	1	-	2
	MES	3.05		3.17		3.426	1.17	-	3.52
	CA	0.4998		0.4992		0.4996	0.3790	-	0.4998
Virtual reality	N	2		2		-	1	-	-
	NEF	4		7		-	1	-	-
	MES	7.59		25.49		-	14.99	-	-
	CA	0.4999		0.4999		-	0.4999	-	-

N= number of studies

NES= number of effect size

MES= mean of effect size

CA= change in area

Answering the fourth sub-question: This presents results related to the fourth classifying variable “source of study”

Table 5 presents the results of the relationship between the dependent variables and the classifying variable “source of study” through the number of Arabic studies, number of effect sizes, mean of number of effect sizes and value of change in area.

Table 5: Number of the Arabic studies and effect sizes, mean of the numbers of effect sizes and value of change in the area for the classifying variable “source of studies”

Independent variable	Pattern of VLEs use	Achievement	Immediate achievement	Delayed achievement	Practical skills	Pattern of thinking	Attitude	Self-efficacy	Achievement motivation
M.A. studies	N	14	8	1	2	1	1		
	NEF	18	13	1	2	1	1		
	MES	2.61	2.18	11.41	9.76	0.74	0.13		
	CA	0.4955	0.4854	0.4999	0.4999	0.2704	0.0557		
Ph.D. studies	N	6	4	1	3	-	-		
	NEF	7	7	1	3	-	-		
	MES	7.16	27.92	1.77	26.883	-	-		
	CA	0.4999	0.4999	0.4616	0.4999	-	-		
conferences	N	5	4	-	2	-	1		
	NEF	8	4	-	2	-	1		
	MES	2.06	4.51	-	3.175	-	4.64		
	CA	0.4803	0.4999	-	0.4993	-	0.4999		
periodicals	N	2	1	2	-	-	1		
	NEF	2	4	4	-	-	1		
	MES	2.97	4.30	1.43	-	-	2040		
	CA	0.4985	0.4999	0.4236	-	-	0.4918		

N= number of studies

NES= number of effect size

MES= mean of effect size

CA= change in area

It is clear from Table 5 that the value of change in area was more than 0.25 for each of the dependent variables under study in the light of the fourth classifying variable “source of study” as follows:

1. ***Achievement in source of study (M.A., Ph. D., conference and periodical)***: The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing achievement (immediate and delayed) in source of the study (M.A., Ph. D., conference and periodical).
2. ***Developing some practical skills in source of the study (M.A., Ph. D., conference and periodical)***: The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing some practical skills in source of the study (M.A., Ph. D., conference and periodical).
3. ***Patters of thinking in source of the study (M.A., Ph. D., conference and periodical)***: The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing patterns of thinking in source of the study (M.A., Ph. D. and periodical).
4. ***Students' attitude towards use of VLEs in the educational process according to source of the study:*** The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing the students' attitudes towards using VLEs in the educational process according to source of the study (M.A., Ph. D. and conferences).
5. ***Self-efficacy according to source of the study (M.A., Ph. D., conferences and periodicals)***: The values give a strong indicator of the effectiveness of using and utilizing VLEs in the educational process in developing self-efficacy according to source of the study (M.A).
6. ***Achievement motivation according to source of the study (M.A., Ph.D., conferences and periodicals)***: The values give strong indicators of the effectiveness of using and utilizing VLEs in the educational process in developing achievement motivation according to source of the study (M.A., conferences and periodicals). Yet, the

values give a poor indication of the effectiveness of using and utilizing VLEs in the educational process in developing achievement motivation according to M.A. source of the study.

To sum up, using VLEs is highly effective in developing dependent variables under examination in this study according to source of the study (M.A., Ph.D., conferences and periodicals). Yet, they are not effective in developing achievement motivation according M.A. studies under examination in the meta- analysis.

Discussion and interpretation of the results

First: The effect of using and utilizing VLEs in the educational process on achievement, developing some practical skills, patterns of thinking, students' attitudes towards using VLEs in the educational process, self-efficacy and achievement motivation.

The results indicated that the values of change in areas were more than 0.25 for each of the dependent variables which are strong indicators of the effectiveness of using VLEs in the educational process in all the dependent variables under examination.

This result may be attributed to many advantages of using patterns of VLEs in the educational process which made these environments positive and effective in developing the dependent variables under examination. Some of these advantages are:

1. Using patterns of VLEs in the educational process has the ability to show experiments realistically and acquiring high quality real learning experiences for implementing varied educational experiences and projects.
2. Using patterns of VLEs in the educational process helps showing objects using realistic perspective and changing transition of images through the learners' control.
3. Using patterns of VLEs in the educational process increases motivation towards learning and sensation of presence.

4. Using patterns of VLEs in the educational process helps the learner to interact with the others and provides tools, techniques and potentials that are more effective in mental imagery through showing 3-D elements and panoramic shows.

The researchers see that these advantages, in addition to others, led to the effectiveness of using VLEs in the educational process in developing achievement, some practical skills, patterns of thinking, attitudes towards using VLEs in the educational process, self-efficacy and achievement motivation.

Second: The relationship between using VLEs in the educational process and achievement, some practical skills, patterns of thinking, attitudes towards using VLEs in the educational process, self-efficacy and achievement motivation. This was examined according to the following classifying variables: school stage, school subject, pattern of VLEs and source of the study.

The results indicated the effectiveness of using VLEs in the educational process for the dependent variables under examination according to the classifying variables except the following:

1. Concerning the school stage classifying variable, the value of change in area was less than 0.25 for achievement in other stages. This is an indicator of the ineffectiveness of using VLEs in the educational process for developing achievement in other stages. The reason may be that these stages may need practice and direct experience which may have affected the results of the study under meta-analysis.
2. Concerning the school subjects classifying variable, the value of change in area was less than 0.25 for the following variables:
 1. Achievement in Art Education.
 2. Achievement in other subjects.
 3. Achievement motivation in other subjects.

4. This is an indicator of the ineffectiveness of using VLEs in the educational process for developing achievement in Art Education and other subjects. The reason for Art Education may be the reliance on one study for calculating effect size which affected the results of the experiment under examination. The reason for achievement in other subjects may be that few studies were used for analysis and the short period of administering the experimental intervention which affected the results of the experiment in the study under examination. Concerning achievement motivation in other subjects, the reason may be depending on one study for calculating effect size which affected the results of the study under examination.
3. Concerning the pattern of using VLEs classifying variable, the value of change in area was less than 0.25 for achievement motivation in the virtual classroom variable. This is an indicator for the ineffectiveness of using VLEs in the educational process for developing achievement motivation in the virtual classroom pattern. The reason may be depending on one study for calculating effect size which may have affected the results of the study under examination. Maybe, if there were a bigger number of studies, the results might have been different.
4. Concerning the source of study classifying variable, the value of change in area was less than 0.25 for achievement motivation in M.A. studies. This is an indicator for the ineffectiveness of using VLEs in the educational process for developing achievement motivation in the M.A. studies. The reason may be that self-efficacy may need practice or that the analysis depended on one study for calculating effect size which might have affected the results of the study under analysis.

Thus, the researchers concluded the effectiveness of using VLEs in the educational process in developing achievement (immediate and delayed), some practical skills, patterns of thinking, students' attitudes towards using VLEs in the educational process, self-efficacy and achievement motivation according to school stage, school subject, pattern of using VLEs and source of the study classifying variables except the following:

1. Ineffectiveness of using VLEs in the educational process for developing achievement in other subjects.
 1. Ineffectiveness of using VLEs in the educational process for developing (1) achievement in Art Education, (2) achievement in other subjects and (3) achievement motivation in other subjects.
2. Ineffectiveness of using VLEs in the educational process for developing achievement motivation in the virtual classroom pattern.
3. Ineffectiveness of using VLEs in the educational process for developing achievement motivation in the M.A. studies.

Recommendations of the study

1. The necessity of establishing an educational library in which all educational studies, conferences and periodicals conducted in Egypt are put and the necessity of obliging researchers to submit a hard and a soft copy before being granted the degree.
2. The necessity of paying concern for the meta-analysis technique or post- hoc analysis and raising the researchers' awareness of its importance in enriching theoretical knowledge in the field, in addition to guiding researchers to study new scientific problems.
3. The necessity that researchers add the data needed for calculating effect size in the procedures of the study since the researchers in this study faced many difficulties in finding these data.

4. The necessity of providing the potentials, tools and applications for using VLEs.
5. The necessity of training teachers on using VLEs and raising their awareness of its importance for developing the educational process.

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Collaborative Learning Based on Tools of Web 2.0 and Its Effect on Developing Hypermedia Design and Production Skills among Faculty of Education Students According to Their Learning Styles.

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Abstract

The current research aims at measuring the effect of collaborative learning based on tools of Web2.0 on developing hypermedia design and production skills among thirty female at level seven at the Faculty of Education, University of Hail according to their learning styles. Research tools included achievement test and observation checklist for the skills of designing and producing hypermedia, as well as Torrance test of learning and thinking styles and were applied pre and post on the study sample. The study used T-test and ETA square in SPSS to analyze the results and their interpretation, and the study found the following results:

1. There is a statistically significant difference at (0.05) level between the mean score of the research sample in achievement test of the concepts involved in the skills of designing and producing hypermedia (pre, post) in favor of the post assessment.
2. There is a statistically significant difference at (0.05) level between the mean score of the research sample in observation checklist of performing the skills of designing and producing hypermedia (pre, post) in favor of the post application.
3. Collaborative learning environment achieves the effect of (≤ 0.14) in the cognitive aspects and aspects of the performing skills of designing and producing of hypermedia.
4. There is a statistically significant difference at (0.05) level between the mean score of the research sample in the pre and post application of the scale of learning and thinking styles when using collaborative learning, and in favor of the post one.

Key words: Collaborative learning - Second Generation Tools "web2.0" - Hypermedia - learning styles.

Introduction:

The speed of the changes in innovations of educational technology entails the educators to reconsider some educational

practices that may, in some viewpoints, seem to have become fixed and cannot be dispensed with or replaced. It was natural to develop the in-action teaching strategies to correspond with the rapid sequential developments in the field of education. Collaborative learning based on web 2.0 helps reconsider the entrenched perception in the minds of some educators of constancy and stability on one style of teaching and makes it possible to replace it with a variety of educational practices in line with the innovations of technology.

The emerge of web 2.0 technologies in education initiated reformation of e-learning programs and their contents in a more interactive way with learners and teachers at once. One of the new applications of web2.0 is social networks that had its share of influence in the aspects of teaching and learning processes (Hadi, 2011). Thus, the traditional learning environment is no longer the only source for providing information and educational experiences necessary for learners, and that lead many educators to design online collaborative learning environments, to get the attention of learners , encourage them to exchange views and experiences, and provide them with appropriate opportunities for interaction and social collaboration, In order to build the new cognitive structure to provide continuous learning based on the use of modern technology, beyond the limits of time and space (Hamdani, 2006.47).

Saudi universities have competed for introducing modern technologies in university teaching and integrating technology into university curricula. The University of Hail was among these universities that focused on introducing e-learning in university teaching, and activating techniques and media in teaching. All these innovations have contributed in improving the educational process in university education and helped give the students a lot of skills and practical experience away from the traditional way.

Collaborative learning is one of the most important strategies that have proven instructional excellence and importance as it provides participants with the opportunity to learn and share sources of diverse information, as well as the

possibility of exchanging experiences among themselves, where the main goal of collaborative learning is not only the acquisition and participation of knowledge, but also exceeds it to enhance the individual with the ability of building knowledge in innovative ways (Paavola et. al. 2004, 567).

According to the basics of education and psychology, the role played by the partnership and interaction with others in the cognitive development and learning stems from the Principles of social constructivism theory which emphasized that social interaction is necessary to engage in self-regulation, and it also accommodates cognitive development and learning (Alnamy, 2012, 3).

It is clear from the foregoing that the relationship between web 2.0 and the constructivism results from the fact that web2.0 tools by their very nature are designed to constantly create the kind of changes in the learning community, helping to create a growing knowledge of the learner, and since the constructive knowledge is the results of social interaction and the language use, thus knowledge is collaborative not individual. Harriman (2007) also indicates that the collaborative learning via the internet is one of the most successful means as characterized by: increasing the motivation to learn, learner-centered, and support collaborative work between learners.

Many studies have been conducted to ascertain the effectiveness of collaborative learning in developing achievement and various skills either kinesthetic or mental, including the studies of: (Aa'ati, 2015; Ismail 0.2013; Mahdi, Algazar, Alostaz.2012; Alsayed 2013; Alnamy 2012). It is clear that collaborative learning encourages design proficiency on research, inquiry, and enthusiasm, which is reflected on the students' scientific activity and enhances their ability to self-learning.

Alcott's study (2007) indicates that Hypermedia is the technique of building informational elements interconnected in a non-linear style, and helps to enrich the student information, and increase his/her efficacy by activating and stimulating him/her,

whereas through it, the student transforms the nominal data into information and information into knowledge and skills. Arman (2007) emphasizes that, hypermedia is one of the most important products of information technology era that has its influence in the provision of sophisticated mechanisms to boost the efficiency of education and training, it also provides those in charge of education and training with huge potentials to present topics, concepts, details and skill required components that are difficult to be displayed and clarified via the traditional methods of education and training.

Algazar (2002) emphasizes on the necessity of student teacher mastery of designing interactive hypermedia skills. It can contribute to reduce time and effort and help accelerate students' acquirement of information. Hussein (2013.282) also recommends the need to train teachers during their university preparation to recruit hypermedia and multimedia software for use in educational situations. Moreover, the international conference held in Taiwan (2001), entitled the education in the new millennium, highlighted the need to deal with and make use of modern technology in the educational process both individually and in groups, and stressed the importance of using hypermedia to facilitate the success of the educational process due to its properties that create environment suitable for curriculum development (International Conference on Computer in Education / International Conference on Computer-Assisted Instruction 2000).

From the above, it is clear that there is a growing interest toward expanding the use of distance learning approach using the Internet to promote the educational process. Using collaborative learning is one of the areas that contribute to the success of the students' practice and the introduction of technological innovations after examining their effectiveness in the field of education in general, and the development of the skills of designing hypermedia software in particular. Due to the necessity of developing the skills of designing and producing hypermedia among female-students in the Faculty of Education, as evidenced by the recommendations of previous studies, and

its importance for them after joining the labor market and using it in the educational process in a meaningful way in line with the nature of innovations of the era, starting from the fact that modern methods in teaching have become one of the most important pillars upon which the educational system depends as an assistant instructional tool, comes the idea of this research, which aims to provide them with the design and production of hypermedia skills through the use of collaborative learning based on web 2.0 and according to their learning style.

Context of the Problem:

Getting the problem of current research results from several sources, including the following:

1. Related studies and literature that focused on the use of collaborative learning in the educational process, and its impact on the achievement and the development of various skills, including the studies of (Abdul Ati, 2015; Alghoul, 2012; Alnamy, 2012; Harrima, 2007), which recommended the use of collaborative learning in the educational process.
2. The recommendations of conferences such as the Fourth International Conference of e-learning and distance education (2015), the Second International Conference of e-learning and distance education (2011), the conference of e-learning technology and the challenges of educational development in the Arab World (2009) the Tenth Annual Scientific Conference of e-learning technology and overall quality requirements (2005). These conferences recommended the need to design and develop interactive e-learning communities and effectively using social networking to achieve the desired educational goals, and the importance of shifting from E-leaning towards electronic collaborative learning, as the style of collaborative learning and social participation is one of the main instructional goals besides the behavioral and cognitive objectives in the contemporary education systems.

3. Student teacher acquirement of the skills of designing and producing interactive hypermedia software is one of the important and necessary skills in the educational process, and is considered as a basic prerequisite that female students must master before graduation and work enrollment. Effective teacher is the one that reinvest technological innovations in his lessons meaningfully and effectively. Many studies have focused on revealing the impact of teaching using hypermedia on developing achievement, thinking and various skills, including the studies of (Khalaf, 2009), (Hassan, 2007), (Alsayed, 2007), (Ahmed, 2006), (Abdelrahman, 2009), (Osman, 2008), (Ebrahim; Abdulaziz, 2008), (Alsayed, 2008) whose results showed the impact of these media on the students in achievement and acquisition of various skills and attitudes development.
4. A pilot Study is conducted in order to determine the availability of design and production of hypermedia skills among seventh-graders at faculty of education according to their learning style, as well as the need to use collaborative learning for developing these skills. The questionnaire was applied on a sample of 22 female students from the seventh level of the Faculty Education to investigate their possession of designing and producing hypermedia skills, and their desire to work collaboratively. As shown by this study, there are deficiencies in performing the practical practices of how to design and build those skills, as well as the lack of collaborative work. The researcher interprets that to the reason that students register for the courses according to their own desire and without obligation to the specified courses for each study level, and this creates barriers between students in the lecture, as we find each course with a new group of students per semester, and this leads to a lack of cooperation and partnership between the students.

5. This study differs from previous studies as it is one of the few studies that have addressed the effect of collaborative learning on developing of hypermedia design skills. There are many studies on the impact of collaborative learning in achieving other instructional outputs, but few have handled the effect of collaborative learning on acquiring the skills of hypermedia design and production in particular. This study can contribute to develop a framework to make use of collaborative learning and using it in the process of teaching-aids instruction.

Based on what has already seen, rises clearly the need to use collaborative learning as a modern and appropriate approach of learning for that sample which helps to create a kind of intimacy and cooperation, construction and passion to learn by participating for the development of design and production of hypermedia skills among seventh-graders in the faculty of education according to their learning style.

Statement of the Problem:

The problem of the present study can be identified in the presence of inadequate performance among students in level seven at the Faculty of Education concerning the skills of designing and producing hypermedia, so the research seeks to answer the following main question:

"What is the effect of collaborative learning based on Web 2.0 on the development of designing and producing hypermedia among the female students in Level seven at the faculty of Education, according to their learning style?"

The following questions are derived from that main question:

1. What are the concepts related to the skills of designing and producing hypermedia?
2. What are the skills of designing and producing hypermedia?
3. What is the effect of using collaborative learning based on web 2.0 on developing the involved concepts in the skills of designing and producing hypermedia?

4. What is the effect using of collaborative learning based on web 2.0 on the development of the skills of hypermedia design and production?
5. To what extent does collaborative learning affect the cognitive aspects and the performing skills of designing and producing hypermedia?
6. Is there a difference between learning and thinking styles among the seventh-level registrars for the production and use of teaching aids course?
7. What is the effectiveness of using of collaborative learning in developing the learning and thinking styles among female students in the seventh level?

Purpose of the Study:

The present study intends to solve the problem by achieving the following goals:

1. Determining necessary standards to design collaborative learning environment required for students' acquiring the design and production of hypermedia skills.
2. Designing a collaborative learning environment to provide female-students of Level seven at faculty of education with the skills of designing and producing hypermedia.
3. Overcoming the low cognitive level of students' knowledge of designing and producing hypermedia, through measuring the impact of collaborative learning in developing:
 1. The cognitive skills to design and produce high-level media among female-students of the Seventh level at Faculty of Education.
 2. The performing skills to design and produce high-level media among female-students of the Seventh level at Faculty of Education.
4. Identifying the learning and thinking styles of students of the faculty of education Level seven (sample of the study).

5. Recognizing the effectiveness of using collaborative learning on developing learning and thinking styles.

Significance of the Study:

The significance of the present study lines in the facts that;

1. It is a reflection of modern educational trends, which stresses the importance of interactive media and using it in education.
2. It is one of the developmental researches in the field of education technology, as it is based on the adoption of one of the instructional designing models and applying in practice.
3. It employs some of the collaborative learning, based on the second generation of the Web, tools in education in general and the university education in particular to achieve constant communication between the teacher and the learner regardless of place or time.
4. It attracts educators and curricula designers' attentions to the learning and thinking styles in the educational process in general and in designing and producing hypermedia particular, during planning for the curricula and instructional activities, experiences and programs. And taking into account activating the functions of both spherical halves of the brain together instead of using monotonous traditional methods in developing a particular style over the other style account that sometimes exposes some students to frequent failure.
5. It is one of the techniques concerned with the interaction between the manipulation and readiness that matches the learning styles and the individual differences among learners.
6. It designs a collaborative learning environment to strengthen teamwork among students in hypermedia designing and production, and exchanging views about that.

Hypothesis of the Study:

1. There is a statistically significant difference at (0.05) level between the mean score of the research sample in achievement test of the concepts involved in the skills of designing and producing hypermedia (pre, post) in favor of the post assessment.
2. There is a statistically significant difference at (0.05) level between the mean score of the research sample in observation checklist of performing the skills of designing and producing hypermedia (pre, post) in favor of the post application.
3. Collaborative learning environment achieves the effect of (≤ 0.14) in the cognitive aspects and aspects of the performing skills of designing and producing of hypermedia.
4. There is a statistically significant difference at (0.05) level between the mean score of the research sample in the pre and post application of the scale of learning and thinking styles when using collaborative learning, and in favor of the post one.

Methodology of the Study:

The researcher, in the present study, depended on:

1. Developmental Research Methodology, through applying an instructional model for designing collaborative learning environment represented in ECEL model.
2. Descriptive approach: this research includes the theories and studies based on Arab and foreign resources available in this area and study tools, within the theoretical framework, tools of the study, analysis, interpretation of the results and recommendations for further research.
3. Quasi-experimental approach: in order to measure the impact of collaborative learning in hypermedia development and production among the students of the Faculty of Education Level seven according to their learning style.

Variables of the Study:

The research variables are:

1. The independent variable: Collaborative learning environment.
2. The dependent variables: are represented in the degrees of acquisition in:
 1. Knowledge Achievement.
 2. Performance observation checklist.
 3. Torrance Scale of learning and thinking styles.
3. The control variable: degrees of the pre-assessment of each of the (Achievement test, skill-performance card, Torrance Scale of learning and thinking styles).

Delimitations of the Study:

The proposed study is limited to the following:

1. Some Collaborative learning based on tools of Web 2.0, which are: Wiki - RSS tool - weblogs.
2. Knowledge and skills related to designing hypermedia involved in the production and use of teaching aids Course.
3. Level seven female-students at the Faculty of Education, University of Hail registered for the course of producing and using the teaching aids, first semester 2015/2016.
4. Using ECLE model as a model of instructional designing of collaborative learning environment.

Terminology of the Study:**Collaborative Learning:**

AL Husseini, et al. (2012.257) defines it as an approach and strategy for teaching in which learners work together in small or large groups, and collaborate in completing the task or achieving common instructional objectives. Knowledge, skills and attitudes are acquired through collaborative group work, thus it concentrates on the cooperative and collaborative efforts among learners to generate knowledge rather than receiving it through social interactions where instruction is learner-centered. The learner is seen as a contributor in the learning process.

Also it is defined as "A learning style that is based on social interaction among learners in small groups that seek to achieve shared learning objectives and tasks through organized and well-planned group activities, using communication tools via the Web and its services. It focuses on generating not receiving knowledge, through the learner activity, positivity and teacher's instruction and guidance (Edman, 2010, 101).

Procedurally, it is defined as "one of the learning styles based on social interaction among female students of level seven in the faculty of education registered for producing and using aids. As they work in small groups, each of which is made up of six students collaborating through group activities in the fulfillment of the tasks required to achieve the desired instructional objectives by using some of Web 2.0 tools. "

Second Generation of the Web "Web 2.0":

Web 2.0 is defined as "A new method of the Internet that depends on the size of supporting communication between users, and maximizing the user's role in enriching the digital content on the Internet. This is reflected in the construction of some applications that meet the attributes and characteristics of the Web notably blogs and free authoring and social networks" (Yusuf; Shuaib, 2015, 197).

Yowell & James (2009, 10)) define it as "the application that uses the Internet as an environment and allows the active participation and cooperation and interaction among users, and is characterized by the establishment and sharing of intellectual resources and sociality among users."

Procedurally, it is defined as "Tools that enable female-students, at Level seven in Faculty of Education registered for the course of producing and using teaching aids, to communicate with their colleagues concerning the teaching practices, to improve their performing skills, and to design and produce hypermedia. These tools are the Wiki, vector News Rss tool, weblogs."

Hypermedia:

Hussein (2013, 265) defines hypermedia as "a set of tools that combine texts, sounds, stable and animated images, slides and video clips. They are associated with each other in hyperlinks covering the objectives and studying unit, in which the student moves freely and non-linear among topics and interacts with them".

Khamis (2007.37) defines it as "an entire complete instructional system, includes an integrated and interactive group of multimedia that includes texts, sounds, stable images and graphics, and organized animation, interconnected in saturated non-linear way, enabling the learner to roam freely, across not linear paths, using specific search strategies, to quickly access the information or the scenes needed. "

Procedurally, it is defined as "An instructional integrated software that includes a group of multiple instructional media consisting of written and spoken texts, graphics, stable images, animation, video, cartoons and vocal effects integrating and interacting together that are selected depending on the instructional situation and work in one format to achieve the desired objectives."

Learning Styles:

Fleming & Bonwell (2002) define learning styles as "a way through which the learners receives knowledge, information and experiences and his way of arranging and organizing them, and then the way in which he records, symbolizes and integrates, and keeps them into his information reservoir, and then retrieved a way to express them.

Katami (2008.32) defines learning styles as "the way in which the individual learns and absorbs the displayed learning experiences, and the preferred method used by the individual in organization, information and problem processing."

The researcher procedurally defines learning styles as "the tendency to respond by using one of the two spherical halves of the brain more than the other, and that is degree obtained by the

student in learning and thinking styles scale, which was developed by Torrance and others (Torrance et. al, 1984).

Firstly: Review of Literature and Related Studies:

The researcher handles in the theoretical framework of the study in three main axis: the first one: Collaborative learning based on Web2.0, the second: Hypermedia and its role in the educational process, and the third is: learning styles and their relationship with collaborative learning. These three axis are displayed as follows:

The first axis: Collaborative learning based on the second generation of the Web:

The collaborative learning is one of e-learning strategies that is based on the learner and is based on social interaction as a base for building knowledge through the employment of communication tools and technology across the Web, which is considered as an effective environment that helps in the construction and development of the social conception of learning, and emphasizes collaborative learning (Al-Ghoul, 2012 302). Downesm (2006, 1-5) explained that the social and collaborative character is the hallmark of collaborative learning software as it is the second e-learning generation of the Web.

There are numerous definitions for Collaborative E-Learning; Stahl, Koschmann & Suthers (2006,5) define it as a "one of the sciences concerned with studying how can learners learn along with the help of computers, or with the help of technology to ensure the improvement of the learning process and employ teamwork so that learners can discuss their ideas and put forward their views, the thing that allows the exchange of ideas and information Cross-fertilization process, it pays attention to multiple and different views on the subject of learning matter". Khamis (2003.268-269) defines it as an" approach or a strategy for instruction, in which learners work together in small or large groups, and share in fulfilling the task or achieve common instructional objectives, through which acquisition of knowledge and skills or trends is done through

collaborative teamwork, therefore it focuses on collaborative efforts between learners to generate knowledge rather than receiving it through social interaction. As instruction is learner-centered, that's why the learner is seen as an active participant in the learning process."

From the foregoing, it is clear that collaborative learning is not a synonymous to cooperative learning even though they are similar in that they are of the modern instructional methods that aim at individual's learning in small groups. Collaborative learning based on web 2.0 is mainly based on social interaction among learners.

Cooperative Learning is a learning structure in which learners cooperate among each other to perform the targeted tasks, without competing or hampering each other, all of them work on his project, such as conducting an experiment, or writing in a research, but they are cooperating to achieve similar goals (Al-Otaibi, Al-Tayeb; 2010; 846). whereas collaborative learning is deemed to be a strategy or an approach to learn based on working in groups to achieve one goal, where everyone has a specific role (determined by himself) the work of each individual completes the work of the rest of the group, and therefore do not exchange their roles in the performance of collaborative tasks. The members of the group meet for consulting and discussing ideas and information acquired for the production of new knowledge or scientific value or gaining new skills, and therefore it is learner centered , and emphasizes the learner to learner interaction (Al-Ghoul, 2012.303).

Collaborative learning is characterized by the following Profiles (Khamis, 1430, 311):

1. It applies a lot of instructional theories such as cooperative learning, the intended learning, sources-based learning, and project-based learning.
2. Interaction and interdependence among the learners, and everyone, in the group, that has a main role with whom instrumental work is not complete.

3. Individual responsibility, each individual is responsible for mastery of the learning provided by the group.
4. Group reward (Reinforcement), there are fundamental reasons according to which group work should remain, the reward is delivered only after the termination of the overall work.
5. Collective training through social communication sites.

Khamis (2003.296) sees that the importance of collaborative learning approach results from several advantages as it helps in: students' use of information resources in their search, directing their efforts towards getting, combining and organizing information from different resources, adding value to these resources through students' deliberation, and building representations for their own knowledge to achieve specific learning objectives, learners also share information communicating together, coordinating activities, and cooperating in the construction of knowledge products, as well as providing learners with knowledge enhancement to help them build their activities and learning.

Many studies have emphasized the effectiveness of collaborative learning based on web 2.0 on developing achievement and some various skills, such as Ismail's (2013) which aimed at designing a proposed collaborative learning environment based on the employment of social networks as an instructional-social space, for developing electronic networking communication skills and the attitudes towards chemistry learning via the Web. The study found statistically significant differences between the mean scores of the two applications pre and post in favor of the post one in the attitudes towards chemistry learning scale, and in the scale of social communication skills. The study recommended the need to expand the use of collaborative learning environments.

Al Sayed's study (2013), aimed at building a proposed structure for an online collaborative learning environment to develop problem-solving skills and attitudes towards the learning environment among educational technology students. The results were statistically significant in favor of the second

experimental group in each of the achievement test, observation checklist, and post attitude scale. The study recommended that using collaborative e-learning environments in teaching courses is worthwhile due to its numerous advantages.

Wali's study (2010) targeted to identify the effectiveness of a training program based on collaborative networking learning on developing teachers' competencies in the recruitment of e-learning technology in teaching. The study found that the program was effective in improving the cognitive, professional and emotional aspects of the efficiencies of employing e-learning technology in teaching, whereby the researcher attributed to the use of collaborative learning.

There are many collaborative learning tools. The present study uses three tools of the most frequently used applications, and will be displayed as follows:

The Wiki:

Al-Far (2012.78) indicates that, the Wiki is considered one of the most landmarks of Web2.0 revolution. It is a combination of a Web site and a word-processor document that can only be read like any other site, but its real strength lies in its ability to enable a group of individuals and website visitors to work collaboratively on the content of the site using a web browser without the need to register.

Krebs, Ludwig and Müller (2010) applied Wiki technology to strengthen the partnership between students to learn mathematics. As it allows the establishment of collaborative content, as well as participating in writing, and creating new links to that content by the learners, in addition to the possibility of applying Wiki to achieve mass participation to manage content in formal learning. The study results showed the effectiveness of learning math using Wiki technology due to the promotion of thinking and collaboration among students through it. This is consistent with the present research in which the Wiki tool is used because of its ability to manage the content of designing and producing hypermedia through collaborative work among them.

The most prominent feature of Wikis is to allow users to collaborative work on building content with complete freedom to add and omit without the need of possessing the content or encountering any restrictions on access. So the working model in the Wiki allows on one hand group of users to roam in a society in which members share their effort and knowledge, and On the other hand, the Wikis design provides great potentials for knowledge management within the context of a particular activity or project.

Rich Site Summary (RSS):

Habishi et al. (2012.714) define RSS tool as an abbreviation for Rich Site Summary that means site intensive-summary, or Really Simple Syndication i.e. feedback or input and the latter term is the most commonly used. It is a service for the disseminating updates for the network sites which saves time so as to help the site visitors browse the recent news. It is one of the Web2.0 applications, as it enables you to get the latest news at the same time, they are released on the subscribed site.

Lan and Sie (2010) aimed at assessing RSS in improving Mobile Learning in terms of the accuracy of the message's timing and the clarity of its content compared to the SMS text messages services and e-mail service. The study has identified four factors to assess the content of the message, namely: time, the message's content, accuracy, and the appropriateness of the content of the message. The study results showed that, the RSS Tool is most suitable to deliver mobile learning because it is suitable for providing learners' activities and achieving the goal of mobile learning anytime and anywhere.

It is clear from the foregoing that, the RSS tool allows the user to follow up a huge number of sites without the need to visit all of the sites. The present research adopted the RSS tool because of its ability to inform students of new topics that are added through collaborative learning and providing them with their peers' comments.

The Weblogs:

After propagation and vast reputation, Weblogs have been described as the second revolution in the Internet world after e-mail and the Wiki. The reason, for their reputation and rapid propagation, is perhaps due to their efficacy and direct access by beneficiaries. Al-Meligi et al. (2010) view them as an internet application, working through the system of content management, which is a Web page that displays dated and chronological descending order entries (inputs), accompanied by a mechanism to archive old entries. Each entry has a permanent address that does not change from the moment of its publication which enables the reader to recall a particular entry later when it becomes unavailable on the first page of the forum.

Several studies, such as Bakr (2011); Al-Madhovi (2011); Salem and Ali (2011); Amasha (2011) indicate the advantages of using weblogs in education, namely:

1. They are used to comment on the students' learning on their personal blogs.
2. Students ideas are connect with their peers through comments.
3. They are helpful in asking questions about difficult concepts.
4. A tool for personal diaries but electronically.
5. They promote creative and sensory and group thinking.
6. They lead to blending personal interaction with social interaction.
7. They provide students who encounter participation shyness with motivation.
8. They facilitate the teacher-to-students direction and guidance.

So weblogs are considered dynamic communication tools in the instructional process, as they can be used effectively with the student to communicate with the teacher even outside the classroom Al-Madhovi (2011); Salem and Ali (2011) have revealed the effectiveness of using weblogs on achievement and

attitudes among students, and their importance in the development of thinking and retention of learning effect among them. Halic et. Al. (2010) also indicated that the studies on the impact of weblogs are still very limited, so his study aimed at revealing the effectiveness of using weblogs in large classes on students' academic achievement as 67 undergraduate students reported that weblogs promote their learning and motivate them to think about the subject not only in the classroom but also outside it. The results of that study emphasize the effectiveness of weblogs on increasing interaction and cooperation among students.

Several studies, such as Robertson (2008) and Tekinarsland (2008), have concluded that teachers found it easy to use weblogs, and that they have an important role in supporting cooperative learning, and are flexible as teachers could use them in the exact and appropriate time and that they can review the previous topics easily.

Fadda and Yahya (2010) emphasized that, weblogs enable students to document their literary works and that preserves these works and reflects their development so that they can practice their writing skills on the Internet, especially in case of teacher's suspension and criticism towards their writings through these weblogs.

According to Al-Ghoul (2012.71) collaborative learning depends on many theories, including:

1. Vygotsky's Social Development Theory: it is a theory of social interaction that plays a fundamental role in cognitive development. The individual has to learn any subject through social interaction, as he affects and is affected by the surrounding environment (learning environment) during learning and this is achieved in collaborative learning groups.
2. The Cognitive Flexibility Theory: This theory emphasizes that the methods that rely on memorization do not allow acquisition of higher-levels of knowledge, and that the

learner needs to deal with the information to know something or solve a specific problem (he has a motive) thus it will be easier and has a longer retention.

3. Conversation Theory: this theory emphasizes that the conversation between the participants in the group benefits them in kind and degree differently from one to another, and that conversation goes through three levels beginning with a general discussion, and then topic discussion, and then talk about the learning that has occurred.

From the above, it is clear that the success of collaborative learning depends on social interaction, and conversation among the participants as well as their prior knowledge and its role in the acquisition of new knowledge and also the fundamental motive behind the acquisition of this knowledge.

The Second Axis: Hypermedia and its Role in Teaching and Learning Processes:

High-media plays an important role in the improving and developing instruction and achieving the objectives efficiently and effectively. Through reviewing literature and previous studies relating to that axis, it became very clear to the researcher its importance in the instructional process, as it provides various and different information resources that can be scanned and roamed easily and freely by the learner. Student teachers' acquisition of the skills of designing and producing hypermedia software during their preparation in the Faculty of Education is very important and necessary skills for carrier.

Hypermedia is considered as one of the interactive media, which developed rapidly and became popular in educational areas as it enables the learner to move and roam in the tutorial to access the content across multiple paths variously including written texts, fixed and animated drawings, sounds and videos, within the required information. It also provides the learner with the freedom and independence to choose the information (Khamis, 2006.19).

Hypermedia definitions have varied from the viewpoint of many researchers, including Salem's definition (2001 258 259) "an Instructional strategy that is used in transferring and presenting information in a non-linear way, and take advantage of the learner's sensory entries "audio and visual", and in providing interaction between him and a range of the instructional media that store information in a written form, fixed and mobile footage, stable and animated images, movies and harmonious colors, and voice and music recordings. It also enables the learner to control the access to information quickly and easily to achieve the instructional objectives efficiently. "

Kayenda (2003, 25) defines it as correlated, non-linear and non-sequential forms of accessing to information. It includes text information, graphs, sounds, animations, and video.

Through previous definitions it is clear that Hypermedia is an integration and interaction between the multimedia system and the hypertext linked with each other in a non-linear style.

Elements and Components of Hypermedia

The Database:

It is the tool by which all the information and all its different forms, presentation methods, and interactions styles, are stored and saved, on condition that this information is stored separately (data).the database provides capacity for storage, preservation, retrieval and modification through adding, omitting, or changing all the units and elements of separate minute information (data) that is entered into the database in any form or style (video, photos and texts, stable or animated graphics and sound clip) (Hindawi et al., 2009, 302).

Information Minute Stations (Nodes):

It is the unit of building hypermedia where the nodes act as data network compilers. Each node is considered an integrated small self-contained unit interrelates with each other forming a larger and more comprehensive entity in the amount of information, elements and the media contained (Marei, 2009).

Connections and Hyperlinks:

It is tool that connects between the minute informatics stations i.e. it's a mean of communication and connectivity between different nodes in the software through which moving and roaming occur freely and easily between these nodes. It is one of the top two units in addition to the informatics nodes in hypermedia system that is characterized in its work of being similar to the human brain that contains and stores information in abstract units that are linked with each other (Paul de bra, 2000,115).

Methods and Means of Navigation:

It is all possible eventualities of learner's progress in the software, and all the means and tools used in that progress, such as lists, icons and other including hyperlinks themselves which must be taken into the designer's consideration when carrying out the design and during the implementation of the program, through which the learner may move around and roam the entire software or determine a specific track that suits his needs and experiences according to his own philosophy in roaming and sailing inside the software (Amin, 2000, 204).

Features and Characteristics of Hypermedia:

Hypermedia has many features and characteristics that abound in many of the studies and literature that made it of the searching worthy technological innovations among the most prominent features (Almzmomci, 2015; Fares, 2007; Al-Sayed, 2007):

1. **Flexibility in the provision of information:** hypermedia systems allow freedom of movement with great flexibility for the learner within the program. The learner can track the topic following the style that fits his abilities and interests, as he moves freely from an idea to another without any restrictions. So hypermedia is considered as flexible environment that requires decision-making from the learner, i.e. it involves higher-order thinking skills to develop cognitive aspects of the learner.

2. **Taking into account individual differences among learners:** hypermedia systems contribute, due to its ability, to provide opportunities for the learner to control the learning topic and examining and absorbing information according to his abilities and aptitudes.
3. **Interconnection between information:** hypermedia works to connect between all the elements of information and contributes to discover new ideas or information through creating links between information.
4. **The possibility of individual learning:** hypermedia individualizes instructional situations to commensurate with the learner's prior experiences. As it takes into account, when designing this type of software, that they rely on self-stepping of the learner.
5. **The diversity of interaction forms:** hypermedia programs are rich of plenty of multiple alternatives for interaction. The interaction can occur through numerical and diverse audio, visual means in the program. It may be through interaction with navigation and roaming patterns within the program.
6. **Multiple Navigation styles:** hypermedia provides multiple styles to navigate inside the program, according to the requirements and characteristics of each learner. It is also a free learning tool that does not put restrictions on learner progress throughout the program, or its presentation time or the amount of information and resources within the program.
7. **Providing a tremendous amount of knowledge in various ways:** hypermedia systems allow huge aggregations of the information stored in different formats and templates. The linking between this huge mass is made through diverse correlations and ties. So it offers the learner multiple styles and various forms of knowledge.
8. **The development of teamwork skills:** hypermedia systems help to encourage teamwork. Learning through

online hypermedia provides the opportunity for consultation, competition and exchanging views with others.

From the above, the researcher concludes the extent of hypermedia effectiveness and its positive role in learning due to its high instructional and technical capabilities that enable it to achieve effectively the desired instructional goals including: the efficiency of the learners and their activity during the learning process - attracting the learners' attention and constantly raising their motivation - Considering the individual differences among learners through the diversity of the presented stimuli - encouraging individual learning which leads to learn to mastery - the possibility of learning in large and small groups - strengthen learner responses through providing him with instant feedback during learning).

Hypermedia Programs Production Requirements:

Hypermedia systems preparation needs for using modern technology that helps to organize data and produce more effective instructional programs. They are also characterized by using instructional programs such as words Coordinator, simplified photographs, and communication via satellites and other devices and instructional tools. From all of that, we can find that hypermedia is composed of (Gharib, 2012, 35):

1. **Data Systems or Information Management:** is managing the information that makes up the instructional program, includes the basic knowledge that is segmented into the smallest units and also determines the learner's performance and his interaction with the program through special files according to his response by using authoring systems programs for producing instructional software.
2. **Authoring Systems Programs:** information is handled and transferred in hypermedia via authoring programs that have the tools and capabilities needed for producing the tutorial in order to deliver the information to the

learner, and there are two categories of authoring systems, those are:

1. Authoring systems: they are the templates that can hold directions and texts by using the computer as a tool for producing programs, which helps the learner navigate the text through hypermedia, the program usage depends on the computer type in use.
 2. Authoring languages: they are languages that require a system and continuous construction to issue commands i.e. it requires a series of successive commands, such as Amiga Vision and Visual basic.
3. **Instructional tools and devices:** the preparation of hypermedia systems requires many instructional tools and devices as follows:
1. Tools: It is used by the learner to input his response and track and control information within the program, and it includes keyboard- Mouse- Light Pen- touch screen.
 2. Instructional devices: include computer, central processing unit, storage facilities, monitors, and associated audio and video devices.

Levels of Using Hypermedia:

Through reviewing the literature and previous studies related to hypermedia, the researcher found that there are three levels to use hypermedia in the education, these three levels are presented below (Ismail, 2008: 167)

1. **The First Level: Hypermedia Reading:** the learners at this level have no control on the program, and this is suitable for the learners who cannot decide what they want or what they need to do, and this level is very similar to the reading books.
2. **The Second Level: Participation in hypermedia:** Learners are active at this level and participate in the learning process. Hypermedia at this level is closest to the library, including the book as there are many available

information resources that can be used freely by the learner to choose any subjects or information. Learners can use these resources to write their own subjects or to evaluate other individuals' work.

- 3. The Third Level: Exploratory Hypermedia:** Learners at this level possess the ability of exploring and composition of their education. They have access to any kind of information. This method is characterized of limiting the restrictions that arise as a result of determining the time and place, and also more useful and successful with learners who have prior knowledge about a particular concept about which they are seeking more, because this method provides a higher level of control over learning.

Many studies have agreed on the effectiveness of hypermedia on developing cognitive achievement among learners in a better way than the common methods of classroom teaching, regardless of the type of hypermedia software, its organization, its content organization, or its navigation styles, including (Khalaf, 2009; Hassan, 2007; Al-Sayed, 2007; Ahmed, 2006). A lot of studies, including (Khalaf, 2009; Abulrahman, 2009; Ebrahim and Abdul Aziz, 2008; Othman, 2008; Al-Sayed, 2008) have also confirmed on the effectiveness of Hypermedia on developing the learners' practical skills, despite the differences of research samples, types of skills, Methods of experimental manipulation among these programs. This emphasizes the importance of using these types of software for developing the learners' skills in various fields because of their effectiveness.

Thus, it is clear that, when instruction is accompanied by educational programs that grab the learners' attention through providing and presenting diverse stimuli of scientific content, it may contribute to raise the learners' levels of achievement and equip them with the skills, and this is what was confirmed by the results of previous studies.

Phases of Designing Hypermedia Software:

The designing and production process of Hypermedia instructional program, via using an appropriate program such as: Power Point, Front Page, Author-ware, Flash - Director - Switch - Dream Weaver-Photoshop, passes through several stages, each stage has a series of steps that are integrated with each other to build the tutorial. The designing and production phases include three phases: Planning - Designing - Production and Distribution. According to the model presented by Nabil Azmi (2000), these steps of designing and production of instructional software:

Firstly: The Planning Phase: This phase includes several steps as follows: (estimating needs - determining the overall / general objectives - identifying procedural goals - selecting the content and its organization - determining the pre-requirements - formative assessment).

Secondly: The designing Phase: This phase includes the following set of steps : (designing the scenario in its first draft - designing windows / screens - determining response and feedback methods - formative assessment).

Thirdly: The Production and Distribution Phase: At this stage, computer is used to convert scenario design into a real program, and this is done by following these steps: (determining production requirements - preparing the required multimedia - producing the program in its initial design - formative assessment of the program - the program in its final case - publishing and distribution).

The Third Axis: Learning Styles and their Relationships with Collaborative Learning:

Learning and thinking style is a set of behavioral, cognitive and psychological characteristics, which represent relatively stable indicators of how the learner recognizes the instructional environment and his interaction and response to it (Rawashdeh et al., 2010.361). Torrance and others define a learning style as "The individual's ability to use one half of the right and left brain and in the cognitive mental process "(Kassem, 2011.115 to 146).

Learning styles models are continuously and successfully used to help both teachers and learners design an effective instruction process. It helps learners reach a better understanding of their own learning processes. It also helps both teachers and learners recognize that not every individual is supposed to be like them, but rather the differences among individuals are a natural, should often be advertised and even glorified (Asha and Absi 2013.1274).

The educational literature indicates that there are several taxonomies for learning and thinking styles. These taxonomies are similar in many general areas of classifying those styles, but may differ in the dimensions or levels of those areas. Torrance taxonomy of learning and thinking or mind control styles is one of the most famous classifications, in which Torrance and his colleagues discriminated between three styles of learning according to the half of the brain used in manipulating the received information, namely: the learning style associated with the left half of the brain, the learner of that style, is characterized of being logical, planner, easily remember names and meanings, verbal and analytical; as for the learning style associated with the right half of the brain, the learner, of that style, is characterized of being able to determine the spatial relationships, intuitive, easily remember faces, responsive to visual and kinetic instructions, and is capable of doing more than one task at the same time; the integrated learning style in which the learner can use the two hemispheres of the brain together in the implementation of mental tasks without preference for any of the previously mentioned styles on the other (Asha and Absi, 2013.1275).

Sternberg attributes the learners' success and failure to the extent of harmony and consensus between the teaching methods used and their styles of thinking and learning, more than attributing one's success or failure to the students' abilities themselves (Al-Atoum et al., 2007.34).

Vygotsky believes that higher mental functions are gradually formed through a series of social interactions, this view

is based on resources that claim that conditions and mechanisms of cognitive development exist outside the individual and this growth is achieved through the participation of the individual in various social and cultural activities, and that interaction with others and with environmental culture contributes in cognitive development of the individual if he takes his position in the so-called individual potential development area ZPD which is the distance that separates the possible level from the actual level of growth (Al-Namy, 2012, 34).

Learning and thinking styles effect on the way students learn, through which they do various mental functions, as well as the way teachers teach their students (Nofal, 2007.3).

From that, we can take advantage of the learners' interaction with each other electronically in addition to the convergence of their characteristics and general thoughts on learning by collaborating in knowledge construction rather than relying on the teacher to get the information, thus teachers can adapt their teaching methods with their learners' learning styles, consequently learners are expected to become more capable of learning and dealing with curriculum activities, which can lead to positive predictions and better outputs of the instructional process.

Several studies have tried to determine the preferred style among learners including Rawashdeh's, Nawafleh, and Al-Amry (2010) study, which aimed to survey the learning styles among ninth-grader and their impact on achievement in chemistry. The results of this study noted that 82% of the study sample has a dominant-preferred single learning style. The results also showed that achievement in chemistry varies depending on the learning style, in favor of the style D compared to other two styles.

Qasim (2011) conducted a study that aimed at measuring the associated with the right and left hemispheres of the brain among the preparatory stage students and their relationship with divergent thinking. The results of this study have shown

differences in the styles of thinking in favor of students with left-hemisphere style compared to those of the right one. The results have also indicated the positive relationship between right thinking and divergent thinking, while that relationship was negative between the left thinking and divergent thinking.

The current research comes to complete the theoretical literature and previous studies in measuring the common learning styles among female students and their relationship with collaborative learning. The current research uses Torrance scale of learning styles within three styles (the left style - the right style - the Integrated style).

Second: The Methodological Procedures of the Study:

Sample of the Study:

The research sample consisted of students, of the seventh-level from the Faculty of Education at the University of Hail, registered for the course of the production and use of teaching aids (WSL 250), including (30) students.

Experimental Design of the Study:

Based on the independent variable that is represented in the collaborative learning based on web 2.0 tools and the dependent variable represented in designing and producing interactive hypermedia according to the learning style, the researcher has chosen the experimental research method known as the factor design (1×3) to answer the research questions.

Tools of the Study:

1. Achievement test of the concepts involved in designing and producing hypermedia course (prepared by the researcher).
2. Students' performance of designing and producing hypermedia assessment checklist (Prepared by the researcher).
3. Torrance's learning and thinking styles Scale.

Procedures of the Study:

The researcher used the (ECLE) model to design collaborative learning environment (Habishi, et al., 2012). The structure of this model has adopted several environments suitable for e-learning, including: model of (Alsherkaoui, 2008), model of (Ali, 2006), Morrison's model (Morrison, Ross and Kemp, 2004), model of (Khamis, 2003), model of (Al-gazar, 2002), and Carey's Model (Carey and Dick, 2001). The ECLE model has been extracted from these models and it includes six phases described as follows:

The First Phase: Study of the Current Reality

This stage aims at studying all the circumstances and factors surrounding collaborative learning environment before constructing it, it includes the following steps:

- 1. Identifying the problem:** Through studying the current situation, there is a need to design a collaborative learning environment based on web 2.0 applications and to measure the impact of its effectiveness on the development of the skills of designing and producing hypermedia among students in the Faculty of education registered for the course of producing and using teaching aids according to their learning style.
- 2. Analyzing the characteristics of learners:** The characteristics of the seventh level students, at the Faculty of Education in Hail and they are 30 students, have been identified, and there is harmony among them in terms of mental and skills maturity and that was perfectly remarkable through the convergence in their scores during the previous levels.
- 3. Determining the educational needs of the students:** to determine the most important educational needs of students, the researcher has reviewed some of the literature, previous studies, conferences, books interested in the field of hypermedia in general, and the recruitment of collaborative learning based on web 2.0 tools, and has prepared a list of procedural objectives proposed for the

skills of designing and producing hypermedia through the tools of collaborative learning environment. In light of that, there was a need among the students of the seventh level registered for the course of producing and using teaching aids to link between the theoretical and practical side of designing and producing hypermedia using collaborative learning environment through the Web.

4. Determining the reality of the available educational resources: The characteristics of the learning environment have been analyzed by observing and naming the material and human resources at the faculty, that are the availability of computers connected to the Internet for students' easy access to collaborative learning environment (location); where the faculty contains 7 coefficient computer labs, each lab includes 30 computer and a data projector (smart projector), and a white board. The laboratories are equipped in terms of electricity sources and appropriate seats, curtains, fans, and the availability of software such as (operating systems programs, and programs for Web browsers).

The Second Phase: Thinking and Choosing the Best Solution

At this stage, we think in the desired performance requirements depending on the current reality, and propose a range of solutions to solve the problem of lack of performance skills among students at level seven enrolled in the course of producing and using teaching aids, and then choosing the best out of them:

1. **Suggesting a set of proposed solutions to solve the problem:** in this step, a range of solutions proposed to solve the problem is offered as follows:

The First Solution: preparing a list of the stages of designing and producing hypermedia and then distributing it among students at the beginning of the lecture.

The Second Solution: Designing software for students through which the stages of designing and producing hypermedia are viewed.

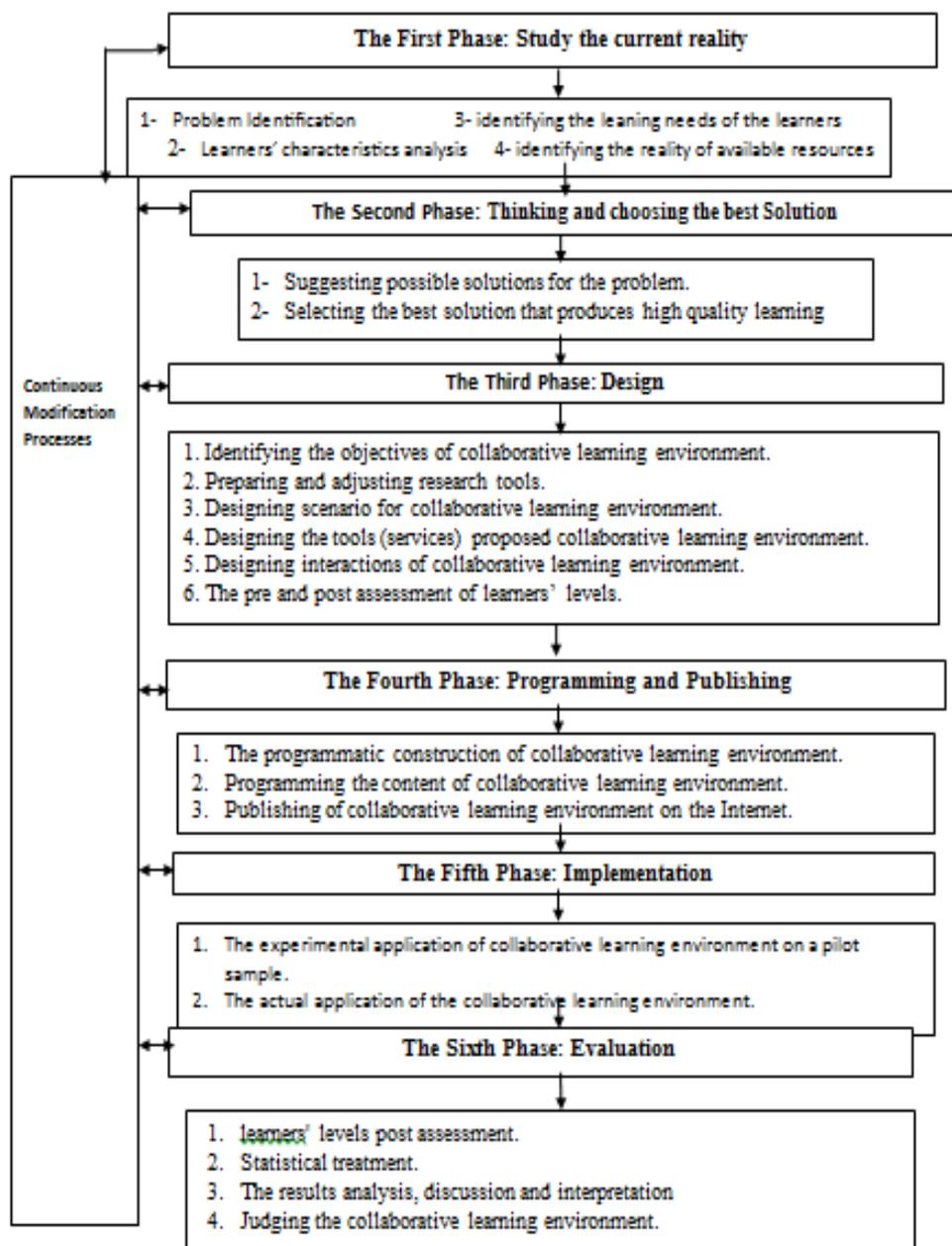


Figure (2): Collaborative Learning Environment Designing Model (ECLE)

The Third Solution: Designing and publishing a collaborative site that contains some second-generation tools such as: Collaborative Web Editors (Wiki), RSS, and Blogger. Students are allowed to collaborate in developing the skills of designing and producing hypermedia.

2. **Choosing the best proposed solution that provides a high-quality educational product:** in this step, the analysis of the proposed solutions and selection of the best of these solutions and the most suitable one, take place as follows:
 1. The first solution: it is blamed for only writing down the skills of designing and producing hypermedia in a booklet without being in practice and application.
 2. The second solution: it is limited to presenting a software about the designing and producing hypermedia skills without giving them an opportunity to express their views and social interaction, which limits creativity and innovation.
 3. The Third Solution: It is considered the most up-to-date with modern scientific innovations in the field of educational technology; it also allows participation and social positive communication to collaboratively build new knowledge.

From the foregoing, it is clear that the third solution is the most suitable solution that enables us to obtain meaningful learning outcomes that match the nature of the sample and the technological innovations of this era.

The Third Phase: Design

This phase includes the following steps:

Identifying the goals of collaborative learning environment:

A list of general goals of collaborative learning environment required for the design and production of hypermedia was prepared. Those goals are represented in providing a range of facts, information, and skills related to designing and producing hypermedia. The most important objectives can be explained as follows:

1. The general Overall Goal: Providing the seventh level students registered for the course of producing and using instructional media with the designing and producing hypermedia skills.
2. Specific Goals:
 - The Cognitive Goals:
 1. The student recognizes hypermedia.
 2. To multiply elements of hypermedia.
 3. To count hypermedia properties in education.
 4. The student should identify the stages of hypermedia design and production.
 5. The student should classify the steps necessary for analyzing the design and production of hypermedia.

The Skillful Goals:

The student should design a hypermedia software that includes:

1. To design the program screens.
2. To designed control buttons within the program.
3. To design screens of the instructional objectives of the program.
4. To design calendar screens.
5. To list all the media in the program.
6. To design the main menu screen of the program.
7. To design the instructions and helping screens.
8. To design reinforcement screens.

Preparing and adjusting the searching tools:

The current research adopts the following tools:

The first tool: Achievement test to measure the facts and information contained in hypermedia design and production:

1. The steps of the test design: -
2. The test aims to measure the concepts involved in the design and production of hypermedia of the research sample, the test included students' concepts of the following topics (the concept of hypermedia-

characteristics of hypermedia-hypermedia components-design and production of hypermedia.

3. Two subjective questions are used: multiple choice, true and false, and the test items are in light of behavioral objectives, clearly, and the test items in its initial form were (25) , (15) item true and false , (10) multiple choice type with changing the order of test items in the pre and post testing .
4. The content validity of the test has been verified .The test has been verified by a panel of six experts in curriculum and instruction and educational technology to give their opinion concerning (suitability of the test objectives-covering questions of goals – the modification either by addition or deletion), then the test modification have been conducted according to the experts of the jury members to be set in its final form before application.
5. The test was applied to exploratory sample strength (22) student in order to calculate the test reliability, easy and difficult of the instructions, calculate the average time to answer test, identify the clarity of the test items, instructions, the average time to answer the test has been estimated by calculating the average time spent on the first and last answer by students. Then, the time required for the test is 40 minutes..
6. To estimate the coefficient of easy and difficulty of the test items the researcher regarded the test items answered less than (20%) by students are very difficult and therefore should be deleted, whether the test items that were answered over (80%) by students are very easy to delete, ranged from easy to difficult transactions between (0.25%) (0.75%).(
7. For verifying the test reliability ,it was reapplied after three weeks of the first application the same exploratory sample, and correlation coefficient has been calculated through correlation equation of spearman, equal (0.82), then it is clear that the test was reliable , thus the test became finalized and ready to be applied to the sample research (Appendix 1)

The second tool: Observational Checklist to evaluate the design and production of hypermedia

The observational checklist assigned the following steps :

1. The objective of the observational checklist of design and production of hypermedia, it included (6)main skills: (preparation and planning for the hypermedia – the skill of dealing with text-editing skill to deal with photo-editing software – the skill of dealing with video-editing software – the skill of dealing with Flash design program- and the skill of tutorial production).
2. the researcher analyzes the main skills to a sub-skills, these skills In the form of procedural statements. Each one describes what students should do .Each one has followed the following standards (described the actual performance that will be estimated and the clarity of the items).
3. The instructions of the observational checklist have been framed correctly concerning its clarity and the methods of grading and calculated for each student .
4. The researcher used quantitative analysis to assess the performance of students and were distributed according to the two levels (do the skill = 1, don't perform the skill = 0) in order to determine the level of mastering the student objectively .
5. The researcher investigated the validity of the observational checklist by verifying it according to the opinions of 4 panel of experts in educational technology to determine its validity to be applied. The modifications have been performed according to their opinions to include six main skills and 48 sub skills. (Appendix 2)
6. The researcher used cooper equation to determine the reliability of the observational checklist by applying it to (10) students with three other researchers. Then the researcher calculated the percentage of agreement between observers using equivalent Cooper (Cooper) to calculate the percentage of agreement, correlation

coefficients ranged between (0.74:0.91) which is significant statistically and indicated the high reliability of the observational checklist and its application to the study sample.

The third tool: A scale to measure the learning styles and thinking

1. **This scale was designed by Torrance** et al, 1977) to determine the dependence of the individual on the left or right hemispheric of the brain or both of them together and to categorize individuals in the light of the concept of spherical half brain, after analysis of the functions of the brain hemispheres based on the results of several studies from (1974-1978) and the results of those studies have resulted in the preparation of three images of the scale (a-b-c) (Murad, 1994).
2. The researcher adopted image (a) of the scale and carried out some modifications to suit the research sample consisted of scale (38) each item consists of three alternatives, the first concerning the alternative left, and the second concerning the right half, and the third was for the two halves functions together, and has translated to Arabic by Anwar Riad and Ahmad Ebada in 1986 .Moreover ElhamElbelal has translated it to be applied on the Saudi Arabia environment in 1423 (Alhazmi, 2006)
3. The scale of learning and thinking styles has been used in many of Arabic and foreign studies. Its reliability has been verified in various ways ,those values showed stability coefficients of reliability ranging from acceptable to good, and from these studies (Torrance et al., 1979), study of (Al Bilal, 2003), and the study of (Alhazemy, 2006) and the stability coefficients of reliability in these studies of the learning and thinking styles scale ranging from (0.40-0.95) to the left style and (0.50-0.97),to the right style and (0.84-0.87) for the two together style, which are acceptable transactions. .
4. The scale based in its design upon the results of many previous studies and research in the area of identifying

Glob sections of the brain hemispheres functions, so it includes the face or logical validity (Appendix 3)

5. scale is corrected by giving each student degree according to the item that she choose of the three styles, and classified according to the control of a specific pattern by using the standard classification depends on the student if she got a degree equal to or greater than the sum of both average respondents in style-standard deviation of one) (Al Bilal, 2002).

Designing collaborative Learning Environment Structure:

The main steps for the design (ECLLE) can be explained as follows:

Step 1: Design the home page:

The home page for collaborative learning environment has been designed and contained the following:

1. Buttons to control generally in collaborative learning environment (home-site map-members list-search-logging).
2. Contents of collaborative learning environment: key elements for dealing with that environment (home-collaborative web editors-Rss News-Blogging-Usage Guide)

Step 2: Registration and access to the site in preparation for handling the registry button uses:

The registration button is used so that students can register into collaborative learning environment, where the registration form is appeared to fill out the form to enter and which contains the email address and password.

Step 3: The manual for collaborative learning environment:

The manual contains a screen that includes a detailed explanation to enable students to use the tools of collaborative learning environment, with the possibility of downloading it to the student computers so they can deal with them.

Step 4: The search into the collaborative learning environment:

Through pressing the button search after typing the topic or words to search, so the screen appears displaying search results containing the names of topics and a summary of each topic.

Step 5: Collaborative learning environment design tools:

Three tools have been designed in collaborative learning environment: weblogs, Rss news tool, tool of collaborative web editors Wiki:

Blogging tool (Blogger):

Purpose: showing skills to design and produce the hypermedia.

Its content: the researcher upload a set of Power Point presentations contain images and videos for multimedia design and production skills.-

Rss news tool:

Purpose: link this tool to the previous tools (Wiki, Blogger) to inform students of news, comments and notations that are visible in the new collaborative learning environment.

Content: this tool includes summaries and the new information through the collaborative learning environment such as the title, the description of the news and the date of adding any news.

Tool: Rss tool is added to the collaborative learning environment and prepare newsreader on computer, then click on the link for Rss tool then copies the page title within the News Reader program.

Tool of Collaborative Web Editors (Wiki):

Objective: to supply students 7th level college education background theory on how to design hypermedia, where the students lacked this information due to the absence of a manual guide during the design and production.

Content of the tool: The researcher found some references for hypermedia design and production, and then draw a set of facts and information.

Designing interactions within collaborative learning environment:

Collaborative learning environment included three types of interactions: interaction of the students with the content of the collaborative learning environment, students interact with each other, and the interaction of the students with Professor of the course.

The pre-Measurement of learners' Levels:

The measurement focused on two areas: performance of students study sample in dealing with collaborative learning environment and their performance in of designing and producing media skills.

The fourth phase: programming and publishing:

In this phase the collaborative learning environment is designed practically through using texts and videos that match the content, then add suggested content within collaborative learning environment so that students begin building new knowledge through the exchange of views and comments on the design and production of hypermedia, Then choose a Server to upload the collaborative learning environment and specified (URL) address was assigned to the location.

The fifth phase: application

Where the collaborative learning environment was applied and designed practically according to the following steps:

1. **The experimental application for collaborative learning environment:** in order to know the difficulties that could face actual application of collaborative learning environment, and the receptivity of the female students, and the pilot study sample consisted of (12) student from 7th level students of the Faculty of education. The pilot study asserted the clarity of the material displayed within

collaborative learning environment, and how students accepted them.

2. **The actual application of collaborative learning environment:** the final application of collaborative learning environment was applied to (30) female students of the seventh level in the first semester of the academic year (2015/2016), by dividing the sample into six groups and leave them free to choose a name for each group to deal with this name, then give the groups the site name and password, the involvement of the researcher in their groups, and then followed in accomplishing the tasks required of them and finally post-application of the research tool (the achievement test -the observational checklist – a scale of the learning styles) .

The sixth stage: Evaluation:

In this stage the collaborative learning environment was evaluated through judgment of panel of jury members and the post measurement to the learners' levels and analyzing results, this phase includes the following steps:

1. **The post measurement of the learners' levels:** in which the research tool has been applied (achievement test-observational checklist -a scale of learning styles) to ensure the development of designing and production of hypermedia skill after an exchange of views and comments together through collaborative learning environment to build new knowledge, and the effect of their learning styles.
2. **The statistical treatment:** the researcher used the statistical package program of the social sciences, SPSS and used the following statistical methods:
 1. Quantitative statistical-methods: to determine the frequency and percentage distributions , mean and standard deviation
 2. Calculate the value of t (T-test): for measuring the improvement of the pre and post assessment of

search tools to prove the effectiveness of collaborative learning environment.

3. One sample (T-test) to compare average percentage grade.
4. Independence test (Dependency chi): to study the relationship between skills development and learning style.
5. Eta Square (n^2) test: which demonstrates the impact of collaborative learning environment in the cognitive aspects and functional aspects of designing and production media. skill

3. Analysis and discussion of the results and their interpretation:

The following section is specified to the research results and its discussion.

Judging the Collaborative Learning Environment:

In light of results analysis and interpretation, the validity of collaborative learning environment is done. The results showed the impact of Collaborative learning environment on the development of the skills of hypermedia designing, as well as changing their learning style.

Thirdly: Analysis, Discussion and Interpretation of the Results:

Following is a search results, and interpretation and discussion:

The answer of the first question: "what are the facts and information included in the design and production of hypermedia skill?"

The answer of that question has been identified by presenting the concepts of hypermedia design and production in this research, where the concepts of design and production skills hypermedia formed on the following topics (the concept of hypermedia-characteristics of hypermedia-hypermedia components - design and production of hypermedia.

The answer of the second question: "What are the skills of designing and producing hypermedia?"

This question has been answered by displaying skills of design and production of hypermedia in this research, where formed list of skills (6) main skills, and (48) sub-skill.

The answer of the third question: 'what is the effect of using collaborative learning based on web 2.0 on the development of facts and information of designing and production hypermedia skills? '

And it represents the first hypothesis "there is a statistical significant difference ' (0.05) between the mean score of the study sample in the pre and post assessment of the achievement test to assess the facts included in designing and production of hypermedia in favor of the post assessment".

For verifying this hypothesis' the researcher used paired sample -T-test and the following table (1) presented the results of the test:

Table (1) presented the results of paired sample -T-test

Measurement	N.	Mean	S.D.	D.F	t-value	Sig.
Pre	30	4.80	0.714	29	73.40	0.01
Post	30	23.33	1.241			

It shows that the mean scores is (4.80) for the pre assessment and (23.33) for the post assessment and the standard deviation is (0.714) for the pre-assessment and (1.241) for the post assessment. As shown in the table (1)"there is a statistically significant difference between the mean scores in the study sample in the pre-post assessment of achievement test in favor of the post assessment ", where the ($t=73.40$, $p<0.01$) which is significant at the (0.01) level of significance .Thus, the first hypothesis was supported.

The researcher attributed this result to the nature of collaborative learning and which provided an opportunity for each student to exercise performing tasks for each skill, along with sharing and exchange of experiences between colleagues within groups pushing to create an atmosphere of intimacy and

constructive cooperation that has led to a lack of fear of participation while learning

These results are consistent with the results of a study (Junco and el al., 2010) which showed the effectiveness of using social networking to increase student participation and attainment compared to students who have studied in the traditional manner, and the study of (Balkeese, 2013) which asserts the higher educational attainment for students deployed more messages in electronic discussion forums for courses, as these results are consistent with the results of (Alsayed, 2013), and the results showed a statistically significant level (0.01) between the experimental group that used the electronic environment and the second experimental group that used the collaborative electronic learning in favor of the second experimental group, that demonstrates the effectiveness of collaborative learning in increasing the achievement of facts.

Answering the fourth question: 'what is the effect of using collaborative learning based on web 2.0 on the development of design and production of hypermedia skills?

that was identified by the second hypothesis that "there is a statistical significant difference (0.05) between the mean scores of the study sample in the pre and post application of the observational checklist for designing the hypermedia in favor of the post assessment " '.

For verifying this hypothesis' the researcher used paired sample -T-test and the following table (2) presented the results of the observational checklist:

It is clear of the previous table that the mean score of the total pre -assessment was (4.70) for the post assessment was (46.60) with 29 degree of freedom and t-value was (1.121) which is significant at (0.01) which is lower than (0.05) and therefore the hypothesis was supported and that means there was a significant difference between the mean scores of the female students in the observational checklist in favor of the post assessment

Table (2) presented the results of paired sample -T-test

Skill	Measurement	Mean	S.D.	Mean-diff	D.F	t-value	Sig.
Preparing the soft	Pre	1.40	0.93	5.33	29	29.38	0.01
	Post	6.73	0.45				
Dealing with text editor	Pre	1.33	1.11	3.43	29	23.01	0.01
	Post	4.76	1.11				
Dealing with image editor	Pre	0.73	1.14	7.07	29	46.76	0.01
	Post	7.80	1.11				
Dealing with video editor	Pre	0.63	1.19	7.07	29	60.50	0.01
	Post	7.70	1.16				
Dealing with flash design program	Pre	0.56	1.11	9.24	29	74.49	0.01
	Post	9.80	1.11				
Production of the tutorial program	Pre	0.56	1.12	9.24	29	74.49	0.01
	Post	9.80	1.11				
The total skills	Pre	4.70	1.14	41.90	29	1.121	0.01
	Post	46.60	1.22				

Previous results can be attributed to the nature of collaborative learning and which provided an opportunity for each student to perform tasks themselves, along with sharing and testing tasks, finishing with a reward, as well as activities and interactions under collaborative learning environment worked on developing the students skills of designing and producing hypermedia..

These results are consistent with the results of (Uribe, 2003), (Labib, 2007), (Shihata, 2008), (Wally, 2010), (Panitz, 2010), the results confirm the effectiveness of collaborative learning to master the various skills in General, and to improve interaction and communication between learners.

The answer of the fifth question: It states ' what is the size of effect of collaborative learning in cognitive and functional aspects of designing and production hypermedia skills? It is represented by the third hypothesis "the collaborative learning environment achieves the effect size (≤ 0.14) in cognitive functional aspects of designing and production hypermedia skills" '.

For verifying the hypothesis the researcher used q square and the third table represented the results:

Table (3) the eta value and effect size

The research tool	D.F	T-VALUE	d.value	Size effect
The achievement test	29	0.78	8.6	Great
The observational checklist	29	0.87	28.5	Great

It is clear from the table that the ETA box value to test grades (0.78) while the value of ' d ' which expresses the effect size (8.6), a higher value of (0.14) indicating that the effect size of test grades, and ETA box amounted to observational checklist (0.87), while the value of ' d ' which reflects the magnitude of the impact (28.5), a higher value of (0.14) indicating that the effect size of the observational checklist , the researcher attributed that to the diversity of learning stimuli in The collaborative learning environment., as well as cooperation and sharing of tasks, thereby increasing the size of the impact of collaborative learning environment, and this reflected positively on how much there is a difference in the mean scores of the test pre and post the experiment in favor of the post experiment .

The answer of the sixth question: ' Is there a difference between learning styles and thinking among students sample research?

To answer this question the researcher applied the Torrance scale of learning styles to the students sample, then calculate the means and standard deviation for the performance of students 7th level, to determine the Dominator style in the pre- application and the comparison between the means of the three styles:

Table (4) Mean Scores and the Standard Deviation to determine the prominent style of thinking and learning

The learning and thinking style	Mean	Standard deviation	The prominent style	sample	
				The sample number	percentage
The left side	17.27	1.22	18.49	14	46.7%
The right side	8.78	2.75	11.62	7	23.3%
The integrated side	9.26	1.23	10.49	9	30%
Total				30	100%

It is clear from the preceding table that the 7th students prefer the left side more than the two others as their performance in the left one was (17.27) and the number of students with the left style was (14) student (46.7%) of the total sample search, followed by integrated style as the mean of their performance was (9.26) and the number of students with integrated mode (9) student rate (30%) Of the total sample, and then followed by right one, mean average of performance was (7.87) and the number of students with the right style (7) student (23.3%) of the total sample search

It is clear from the previous result that focus was on the left style, the researcher attributes this to the traditional teaching methods that rely on memorization by teacher, conservation and retrieval of information by the learner, which is one of the functions and capabilities of the left half of the current search result is consistent with the findings of the study results (Hassan; Karim, 2001), (Chua et.al., 2001), (Al-hazmi, 2006), (Al-Harbi, 1421) as it demonstrated the control of the left side and returned it to the way of teaching that addresses left side of the brain of learners, on the other hand the focus in the tests systems on the direct questions and the response to the instructions and the verbal administration of the information.

The answer of the seventh question: "What is the effect of using the collaborative learning in developing learning style and thinking of 7th level students of, and represents the fourth hypothesis, ' there is statistically significant difference (0.05) between the mean scores of the study sample in the pre and post assessment of learning and thinking styles during the collaborative learning environment in favor of the post assessment ".

For verifying the hypothesis the researcher used (paired sample – T-test) and table (5) represented the results of thinking and learning styles test.

Table (5) Results of Learning and Thinking Styles Test

Style	application	sample	d.f	m.	S.D	T-Value	Significant
The left side	pre	30	29	17.27	1.22	16.336	Pre
	post	30	29	9.13	2.67		
The right side	pre	30	29	8.87	2.75	3.852	Post
	post	30	29	14.10	4.22		
The integrated one	Pre	30	29	9.26	1.22	5.864	Post
	post	30	29	15.20	4.23		

It is clear from the table that there are statistically significant differences at a level (0.05) between the mean scores students a sample search for experimental group on the pre and post applications to test of learning and thinking styles in the left side in favor of the pre application as the mean score of the pre application was (17.27), standard deviation (1.22), and the mean scores of the post application (9.13) and standard deviation (2.67), the amount of shortfall in post application to left style was (8.14) by more than 25% and this value is reduced as a result of teaching students using collaborative learning and the development of learning style half spherical right brain that led to reduced use of the left style and increase the use of the right style, functions as the T- value was (16.336) is greater than its value ,where significant level (0.000) and this value is smaller than (0.05) and smaller than (0.01) indicating that it is a statistically significant.

There are also significant differences at a level (0.05) between the mean scores of the study sample students a sample search for experimental group on the pre and post applications to test of the learning styles and thinking in the right style in favor of the post application where the mean scores of the pre application was (8.87) and standard deviation (2.75), and the mean scores of the post application was(14.10) and standard deviation (4.22), the development for the post application of the right side was (5.23) by more than 25% and this value is increased as a result of teaching students using collaborative learning, the t- value ' equals (3.777) is greater than its stem value table where significant level (0.000) and this value is smaller than (0.05) and smaller (0.01) indicating that it is a statistically significant .

There are also significant differences at a level (0.05) between the mean scores of the experimental group of the study sample students on the pre-post applications to test the learning and thinking styles of integrated style in favor of the post application .As the mean scores of the pre application was (9.26) and standard deviation was (1.23), and the mean scores of the post application was (15.20) and standard deviation (4.23), and the amount of the increase in the post application of the integrated style was (5.94) by more than 25% and this value is increased as a result of teaching students using collaborative learning, The t- value ' equals (4.963) which is greater than the value of ' c ' table where significant level (0.000) and this value is smaller than (0.05) and smaller than (0.01) indicating that it is a statistically significant.

The researcher attributed these results to effect of using the collaborative learning Web development design and hypermedia production which helped to modify the left style of learning and thinking of students and the enhancement of the right and integrated style, by reducing the use of female students' mental processes and functions of the left style, and increasing the use of right and integrated functions..

This research results are consistent with the findings of other studies such as the study of (Ahmad and Karim, 2001) Used optical spatial approach) and the study of (Solomon, 2001) (use a proposed program of activities for the development of learning styles and thinking), and study of (Saman, 2002) use concept maps), and study (Elhazemy, 2006) (used the proposed program based on learning technologies ' educational films and computer graphics , images ,designs and models) and the results of these studies confirmed the effectiveness of using specific teaching method in modify the prominent left style and the enhancement of the right and the integrated ones.

Recommendations and Suggestions for Further Studies

Recommendations: in the light of the study results, the researcher recommends:

1. Using collaborative learning in developing the performing skills related to the design of interactive media.
2. Using the software based on web 2.0 throughout the study of the course to develop the students' educational capabilities to keep in touch with the age of knowledge.
3. Providing training sessions on web 2.0 technologies (weblogs - News tool RSS- Wikietc.) for both the students as well as faculty members.
4. Using hypermedia in developing the learners' multiple intelligences.

Suggestions for Further Studies: the researcher suggests the following:

1. Studying the impact of Collaborative learning and its relationship with the learners' cognitive and non-cognitive techniques on some other learning outcomes.
2. Studying the effectiveness of collaborative learning on the development of achievement and thinking skills in other courses.
3. Studying the effectiveness of the independent variable of this study on the development of the skills of website designing.
4. Studying the effect of varying the interaction techniques within the environment of collaborative learning based on web 2.0 on some learning outcomes among university students.
5. Similar studies to the present one on students of different educational stages.

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Descriptive study to identify the relationship between emotional intelligence and self- efficacy among a sample of female students at King- Abdulaziz University

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Abstract

Introduction: A consideration of emotion has been traditionally neglected in the context of teaching and teacher education. This has begun to change with the recent research on emotional intelligence (EI). It is highly likely that emotionally intelligent individuals could provide help in how to manage emotions to less emotionally intelligent individuals. The aim of this study is to identify the relationship between emotional intelligence and self- efficacy among a sample of female students at King- Abdulaziz University. Additionally to identify if there is a statistical significant relationship between self-awareness and self- efficacy among female students. We also hypothesized that students with high EI, will develop more self-motivation and increase their levels of self- efficacy and vice versa. **Methodology:** The sample was composed of 180 female students from King Abdulaziz University. Random sampling technique was used to select the study participants. Both Emotional Intelligence scale (2005) and Self-Efficacy scale (2001) were individually administered to all the research participants. To assess if there is a relationship between the Emotional Intelligence including, "self-awareness, emotional management, personal motivation and emotional sympathy" and Self-efficacy including their ways of dealing with daily stresses. The author obtained all necessary approvals. **Results:** Results showed that The study has proved that there is a statistical significant relationship between emotional intelligence and self-efficacy which confirm the main hypothesis. Also there was no statistical significant relationship between personal motivation and self-efficacy, also there was no statistical significant relationship between self-awareness and self-efficacy. **Conclusion:** Academic performance, schooling, personal life, social relationships are in line with the emotional intelligent, so programs that enhance the emotional intelligent will enhance the quality of life of the future generation. In short, when a stressful situation arises in the study place, preventive strategies could include the enhancement of students' emotional intelligence and self-efficacy.

Introduction

A consideration of emotion has been traditionally neglected in the context of teaching and teacher education. This has begun to change with the recent research on emotional intelligence (EI). It is highly likely that emotionally intelligent individuals could provide help in how to manage emotions to less emotionally intelligent individuals.

Intelligence quotient (IQ) has long been considered as the main factor of academic success and achievement, but some critics assert that intellectual abilities are too much emphasized in IQ opinions ⁽¹⁾.

Emotional intelligence is a concept first introduced by Meyer and Maludy in the early 1990s ⁽²⁾. This element is a set of linked cognitive and emotional abilities ⁽³⁾. This cognitive structure has four components: emotional self-assessment, self-expression assessment, identification of others' emotions for emotional self-regulation, and the use of emotion to facilitate performance ⁽⁴⁾. The findings of a study indicated that emotional intelligence had twice the power of cognitive intelligence to predict academic achievement explanation ⁽⁵⁾. But in another study, EI did not appear to reliably predict future academic performance. Future studies should define the role of EI in admission decisions ⁽⁶⁾.

Socio-biological scholars have pointed out that emotions play the most important role guiding us in the face of difficulties. lately, the traditional perception of intelligence as a cognitive variable has no longer existed, instead, it is the emotional dimension of intelligence that is taking more attention as scientists have recognized its importance and influence on man's life represented in his way of thinking and sympathy with others, and this is the reason it is considered as milestone of successful social relationships, the capability of understanding others' emotions and responding to it appropriately ⁽⁷⁾.

Students in higher educational institutions are viewed as leaders of tomorrow. They have academic success as their major goal. For this goal to be achieved, it requires dedication,

sacrifices, self-discipline, motivation and cordial relationship between students and lecturers. Students at this level are saddled with a lot of responsibilities and challenges ⁽⁸⁾ which may sometimes result in stress. They need good mental health to be able to succeed in their academic pursuit. As academic demands increase and new social relations are established, students become uncertain of their abilities to meet these demands ⁽⁹⁾. Difficulties in handling the ensuing stressor often lead to decreased academic performance, increased psychological, distress, and negative attitudes toward learning ⁽¹⁰⁾. All these invariably pose challenges to the much sought quality in education.

Accordingly, leaders are expected to have emotional skills so that they can inspire and influence others, these skills are emotions management and sympathy with others.

Scholars in the field of educational psychology postulate that students' learning and their academic achievement are substantially influenced by the beliefs they hold about their capabilities to organize and successfully complete a task, i.e., the sense of self-efficacy beliefs ⁽¹¹⁾. A plethora of studies pointed to the facilitative role of self-efficacy beliefs in various academic and educational contexts ⁽¹²⁻¹³⁾. In a similar vein, emotional skills have recently received considerable research interest in the field of education and psychology. Previous research demonstrated that emotional intelligence is associated with success in many areas, including effective teaching ⁽¹⁴⁾.

Emotional intelligence, self-efficacy, and psychological well-being (happiness, life satisfaction and depression) are important resources for enhancing students' learning, success and quality in education. Emotional intelligence ⁽¹⁵⁾ and psychological well-being Khramtsova, & Salami, ⁽¹⁶⁻¹⁷⁾ have been shown to predict students' attitudes and academic performance in higher educational institutions. Thus, the overall question of interest in this study was how changes in emotional intelligence, self-efficacy and psychological wellbeing (happiness, life satisfaction and depression) are related to students' behaviors and attitudes.

Little attention have been paid to how emotional intelligence, self-efficacy, psychological well-being (happiness, life satisfaction & depression) differentially predict various facets of students' behaviors and attitudes. One way of filling the gap created in knowledge in this area is to examine the predictors of students' behaviors and attitudes and their implications for enhancing quality in education. In this study, I examined the extent to which emotional intelligence, self-efficacy, and psychological well-being (happiness, life satisfaction & depression) jointly and separately contribute to the prediction of students' behaviors and attitudes⁽¹⁸⁾.

In the academic life of students in tertiary institutions especially universities, colleges of education and polytechnics, students' intrinsic motivation, self-discipline and attitudes toward their lecturers or professors are perhaps the three most important domains to consider in students' behaviors and attitudes. Intrinsic motivation is the desire to study based on personal interest and satisfaction rather than for a grade. Self-discipline is having self-control over ones behaviors and attitudes (e.g. studying, getting to class on time). Attitude towards lecturers and professors refers to thinking highly of lecturers' professional level and showing them respects ⁽¹⁶⁻¹⁷⁾.

Trait emotional intelligence (trait EI) refers to individual differences in the perception, processing, regulation and utilization of emotional information. It is a constellation of emotion-related self-perceived abilities and dispositions located at the lower levels of personality hierarchies ⁽¹⁸⁾. Individuals with high trait EI scores believe that they are in touch with their emotions and can regulate them in a way that promotes well-being ⁽¹⁹⁾. These individuals should enjoy higher levels of happiness ⁽²⁰⁾.

Self-efficacy determines an individual's resiliency to adversity and his/her vulnerability to stress and depression ⁽¹¹⁾. General self-efficacy aims at a broad and stable sense of personal competence to deal effectively with a variety of stressful situations ⁽¹⁵⁾.

Perhaps for an individual who has low happiness and life satisfaction and high depression, having high self-efficacy will help him/her in displaying appropriate behaviours and positive attitudes as regards his/her academic work.

Therefore, it is expected that self-efficacy will moderate the relationship of psychological with students' behaviors and attitudes

The research hypotheses was to explore if

1. There is statistically significant relationship between self-confidence and self-concept among the research group.
2. There is statistically significant relationship between self-confidence and the physical perception among the research group.
3. There is statistically significant relationship between the self-confidence and personality self-confidence among the research group.
4. There is significant relationship between self-confidence and social perception among the research group.

There are several reasons why this study is important:

As per Bar-On 2005 ⁽²⁰⁾ emotional intelligence is a key factor of person's academic, social, and professional success, this has been proved through experimental researches which were conducted to develop emotional intelligence skills and its effect on academic, social and professional achievements / performance.

Golman ⁽²²⁾ has pointed out that emotional intelligence helps predicting professional success in 80% proportion compared to academic intelligence that helps predicting the professional success with a proportion of 20%.

Austin, ⁽²³⁾ has ensured that high emotional intelligence levels have positive effect on person's feeling of personal and emotional happiness and that it extends to his / her health and mental condition as well as his sense of quality of life.

Methodology

This is a descriptive study to identify the relationship between emotional intelligence and self- efficacy among a sample of female students at King- Abdulaziz University.

Additionally to explore if there is a statistical significant relationship between self-awareness and self-efficacy among female students. We also hypothesized that students with high EI will develop more self-motivation and increase their levels of self-efficacy and vice versa.

Research sample consists of 180 female students of King Abdul-Aziz University, their ages vary between (18-23), they were selected in a simple random way where every single member of the researched population has the chance to be a unit of the sample.

Tools:

During this study, we used two tools,

1. Emotional intelligence scale by Dr. Rasha Abdel-Fattah (2005), the scale dimensions;
 1. Self- awareness which means the ability to observe and understand man's own feelings as well as his emotional condition and realizing its meaning.
 2. Emotions management and organization which means the ability to deal with emotions in its appropriate context and realizing what would be behind these emotions and finding ways to treat fears, worries, anger, and sorrow.
 3. Personal motivation which means the ability to direct person's emotions to serve a certain goal
 4. Emotional sympathy which means the level of person's sense towards others' feelings and taking them into consideration as well as understanding / respecting differences between people.
2. Self-efficacy scale by Dr. Amany Abdel-Maqsod and Dr. Sameera Mohamed (2001)

It is a single-dimension scale that aims at estimating the realized general feeling of self-efficacy of adults including (teens over 12) and predicting their ways of dealing with daily stresses alongside to their level of adaptation following different types of stressful life event. The scale has a proven benefit in clinical practice and behavior change.

Definitions as per the scales, Emotional Intelligence is a type of social intelligence which includes the ability to watch / observe man's and others' emotions and to be kind to others and use cognitive abilities to guide his thoughts and actions. Self-efficacy is person's own belief of how to achieve a task or a group of tasks based on his acquired abilities and cognitive, mental, motivational, emotional, and sensory information which enables him to achieve the targeted / required performance ⁽²²⁾.

Both scales were individually administered to all the research participants. To assess if there is a relationship between the Emotional Intelligence including, “self-awareness, emotional management, personal motivation and emotional sympathy” and Self-efficacy including their ways of dealing with daily stresses. The author obtained all necessary approvals.

This scale was tested in previous studies against both validity and reliability of the tool.

Before the administration of both scales, the participants were briefed about the nature and purpose of the study. Rapport was established with the respondents assuring them of confidentiality of their personal information to elicit their true responses. They were assured that their information would be used for research purpose exclusively. A consent form was also obtained from each participant. Both scales were individually administered to all the research participants in order to determine the level of their self-concept and self-confidence.

The SPSS (version 17) was used to analyze data. Independent sample t- test was applied to determine the differences among the study sample.

Results

Results were assessed against the research hypothesis, and findings were as follows, the main hypothesis was that there is statistically significant relationship between emotional intelligence and self-efficacy among the research group.

For testing this hypothesis, we used Pearson correlation between emotional intelligence and self-efficacy among the study population.

Table 1 relationship between emotional intelligence and self-efficacy

Variable	Sample	Mean	Standard deviation	Pearson correlation	P value	Significance
Emotional intelligence	180	187.63	19.04	0.57	0.05	Significant
Self-efficacy		54.86	8.62			

Table 1 showed that the average of score of study population against the emotional intelligence scale was (187.63) and the standard deviation was (19.04), the average score against the self-efficacy scale was (54.86) and the standard deviation was (8.62). Pearson correlation was (0.57) and P value (0.05) which denoted that there is a statistically significant relationship between emotional intelligence and self-efficacy among the study population, and this confirm the main hypothesis as R calculated (.57) is more than R expected (.30)

The first sub hypothesis was that there is statistically significant relationship between self-awareness and self-efficacy among the research group.

For testing this hypothesis, we used Pearson correlation between self-awareness and self-efficacy among the study population.

Table 2 relationship between self-awareness and self-efficacy

Variable	Sample	Average	Standard deviation	Pearson correlation	P value	Significance
Self-Awareness	180	21.13	4.65	-0.18	0.45	Non-significant
Self-efficacy		54.86	8.62			

Table 2 showed that the average of score of study population against the self-awareness score was (21.13) and the standard deviation was (4.65), the average score against the Self-efficacy was (54.86) and the standard deviation was (8.62). Pearson correlation was (-0.18) and P value (.45) which denoted that there is no statistically significant relationship between self-awareness and self-efficacy among the study population as R calculated (-.18) is less than R expected (.30)

Another sub hypothesis was that there is statistically significant relationship between emotions management and self-efficacy among the research group.

For testing this hypothesis, we used Pearson correlation between emotions management and self-efficacy among the study population.

Table 3 relationship between emotions management and self-efficacy

Variable	Sample	Average	Standard deviation	Pearson correlation	P value	Significance
Emotions management	180	19.23	5.67	-0.10	0.61	Non-significant
Self-efficacy		54.86	8.62			

Table 3 showed that the average of score of study population against the emotions management score was (19.23) and the standard deviation was (5.67), the average score against the Self-efficacy was (54.86) and the standard deviation was (8.62). Pearson correlation was (-0.10) and P value (.61) which denoted that there is no statistically significant relationship between emotions management and self-efficacy among the study population as R calculated (-.10) is less than R expected (.30)

Another sub hypothesis was that there is statistically significant relationship between self-confidence and social perception among the research group.

For testing this hypothesis, we used Pearson correlation between self-confidence and social perception among the study population.

Table 4 relationship between personal motivation and self-efficacy

Variable	Sample	Average	Standard deviation	Pearson correlation	P value	Significance
Personal motivation	180	20.68	5.17	-0.02	0.77	Non-significant
Self-efficacy		54.86	8.62			

Table 4 showed that the average of score of study population against the personal motivation score was (20.68) and the standard deviation was (5.17), the average score against the Self-efficacy was (54.86) and the standard deviation was (8.62). Pearson correlation was (-0.02) and P value (.77) which denoted that there is no statistically significant relationship between emotions management and self-efficacy among the study population as R calculated (-.02) is less than R expected (.30)

Discussion

The primary aim in this study was to investigate the relationship of emotional intelligence and self- efficacy in line with students' academic behaviours and attitudes.

It was found that, for the main Hypotheses based on the data presented in table (1), there is a statistical significant relationship between emotional intelligence and self-efficacy, this hypotheses was accepted and justified by the researcher as the person who enjoys high levels of emotional intelligence has also high level of positive social relationships, self-motivation, empathy and emotions management, which all enhance his self-efficacy. Additionally, emotional intelligence includes several emotional skills that positively affects self-efficacy. So based on the mentioned above, the findings denoted that there is a positive relationship between emotional intelligence and self-efficacy.

This result goes in line with previous studies that addressed the relationship between emotional intelligence and self-efficacy such as Mohamed Gouda's ⁽²⁴⁾ which concluded a statistical significant relationship between emotional intelligence and cognitive center, as well as Bastian and Others (2005) which concluded a positive relationship between emotional intelligence and some life skills and cognitive capabilities, particularly, the ability to solve problems and academic achievement, alongside to Patrides and others ⁽²⁵⁾ which concluded a significant relationship between emotional intelligence and life satisfaction, Engelberg ⁽²⁶⁾ which concluded a significant positive relationship between emotional intelligence and self-efficacy, DeWitz and others ⁽²⁷⁾ which concluded a significant positive relationship between self-efficacy and goal of life, and last but not least, the study concluded a statistical significant relationship between self-efficacy and emotional intelligence and achievement motivation.

It was found in other studies that students who had high self-efficacy, high emotional intelligence and who were happy were motivated to participate in relevant academic activities and developed positive attitudes that led to success in college. That psychological well-being (depression, happiness and life satisfaction) predicted students' academic behaviours and attitudes- intrinsic motivation, self-discipline and respect for lecturers- support the findings of previous researchers who reported similar results ⁽²⁸⁾.

Depressed students usually are less intrinsically motivated to learn, they lacked self-control over their studies and were not motivated to show respect for and appreciation to their lecturers.

Conclusion

Emotional intelligence and self-efficacy are two important structures to be taken into account while studying the causes of academic success or failure. Emotional intelligence is positively related to self-efficacy and both of these variables can predict each other.

The stress management failure and increased ineffective anxiety and stress are direct results of low self-efficacy and the practical importance of the findings is when a stressful situation arises in the study place, preventive strategies could include the enhancement of students' emotional intelligence and consequently self-efficacy.

Teachers in schools and universities should learn how to deal with children and teenagers by improving their emotional intelligence consequently build up their self-efficacy which will enable them to be better prepared for stressful situation and manage it efficiently.

Academic performance, schooling, personal life, social relationships are in line with the emotional intelligent, so programs that enhance the emotional intelligent will enhance the quality of life of the future generation.

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