

Faculty Members Degree of Awareness of the Augmented Reality Concept in the College of Basic Education, Public Authority for Applied Education and Training in Kuwait

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Abstract

The study aimed at measuring Faculty members degree of awareness of the augmented reality concept in the College of Basic Education, Public Authority for Applied Education and Training in Kuwait. The researchers used the descriptive analytical method, and prepared a four domains questionnaire to measure the awareness degree of the augmented reality concept among faculty members. The study sample consisted of (100) faculty member of the in the College of Basic Education. study results showed that the arithmetic average of the degree of awareness of the faculty members augmented reality concept came medium, where the arithmetic average of the degree of awareness as a whole (3.33). The study revealed that the arithmetic average of the domains has ranged between (3.15-3.48), where quality standards Use came in the first rank with the highest arithmetic average of (3.48), and the goal came in the second rank with an arithmetic average of (3.37), and the nature of concept came in the third rank with an arithmetic average of (3.25), while the type s came in last place and a the average hit (3.15), thus the degree of awareness in all areas was moderate.

Keywords: Faculty Members Degree, Awareness of The Augmented Reality Concept, College of Basic Education, Kuwait.

1. Introduction

In recent times, the virtual world has spreaded in different types and recently a new term appeared which is Augmented reality that work as a technique that adds a virtual creatures through enabling the missing information addition in real life. it also can solve the lack of resources problem in many fields including education field.

The augmented reality came as a result of the openness of education to technology and its pioneers seeking to take advantages of the latest technology benefits in motivating the learners to learn and make the education process more fun and excitement.

this technology has found its way easily to education field in order to redefining the education and make it more meaningful.

the difference between the augmented reality technology and virtual reality technology is that the virtual reality interested in displaying information and alterative experiences to present reality precisely to be similar to real reality but the augmented reality produce a component show for the user by merge the real scene that he's looking at and the virtual scene which created by the computer that enhance the real scene with extra information. (Opary,2015)

These days, the augmented reality technology is used in entertainment, military training, geometric designs, robots and other industries. it will also merge into education gradually. The augmented reality motivates the developed countries to care about it because of its benefits in education also they give it a big attention to make education more interactive and motivated.

The success of employing the augmented reality in education depends on the teacher's awareness and his knowledge of having a necessary skills to use this technology and how to deal with it. it provides an innovative education space by merging the digital education materials into various media forms of means and tools which is a direct part of the physical space or physical environment to create the opportunity for learners to enjoy education also it translate the structural theory to a reality that can be applied. (Al-Khalifa,2010, Atara and Kensara, 2015).

Beside what mentioned before, that made the augmented reality role and its awareness degree more clear in education, it increase the educational effectiveness which can achieve concrete results in collaborative and experimental learning processes. It includes the augmented reality techniques that provides a physical and mental work, it also adds a new information to teaching concept compared to other teaching method, in addition to increasing the teacher's qualifications in education, where the augmented reality technology plays a key role in making the information more simple and clear. (Lee, 2012; Ivanova&Ivanova, 2011; Xiangyuwang, 2012).

The importance of augmented reality lies on not separate its users from their real world but it's quite the opposite, it transfer this world into a digital world that would raise the level of curiosity for the learners and encourage them to discover.

we can say here , this technology can produce many benefits that increases the education process qualification especially, high education .except many challenges that faces the teacher , learner and society aside from material , techniques , awareness challenges that hinder its employment . here comes the responsibility of decision makers to take a serious step in order to increase the efficiency of learning and teaching in high education and make an extra efforts to apply this experience in Kuwait universities , where paying an extra attention to education quality considered as an indicator for country development .

1.1 Theoretical framework

our current reality is witnessing many rapid changes which touches the needs that increasing with technology innovations to fill the gab between hope and reality as well as contribute in finding solutions to integrate technology in education effectively and efficiently to reform and develop education , perhaps the interest of editing the educational message by the information mediator with specific standards considered as a way to satisfying the needs of learners , in addition to upgrade the educational level to raise the rate of achievement and thinking skills .That was the beginning of E-learning . It's one of the modern trends in education which focus on the learner , where it includes new modes and technique for example the augmented reality which appeared with wireless , industrial revolution and modern technological development then this technology moved to teaching and learning fields.

Recent years witnessed an effective start to augmented reality technology , its appearance associated with virtual reality emergence , it's just a reflection of it . The augmented reality considered as one of the new interactive learning types , also it has entered into general and high education after several experiments by developed countries . As the openness of education to technology and its pioneers sought to take advantages of the latest technology benefits in encouraging the teachers to make the education process more fun and exciting , it has found its way easily to the education field to redefine and guide education to the right direction .

(**Al-Failkawi , Al-Enezi. 2016**) :- There are many terms that refers to Augmented Reality which it considered as one of the modern concepts, after viewing the theoretical literature which showed that there are many terms came as a result of translation process like translated English terms .

The following terms are the synonymous of the augmented reality concept and all of them leads to it : Added reality , Improved reality , Enhanced truth and Built-in reality.

We can define it as follows :-

(**Azuma, 1997: 365**) define it as :- Interactive asynchronous technology that integrates real world properties with virtual world bilaterally or three-dimensional .

(**Dunleavy & Dede, 2006: 7**) defined it as :-A term describes a technique that allows mixing computer objects with the real world .

(**Larsen, Bogner, Buchholz & Brosda,2011: 41**) define it as :- add , install and illustrate digital data using digital methods for the real reality of the human surrounding environment and from the technical perspective the augmented reality is often linked with computer devices that can be worn or smart devices that can be carried .

(**While Atara & Kensara 2015 :186**) defined it as :- Transform reality into digital data by installing and illustrating it using digital display methods that reflect the real reality for the surrounded environment of the digital object .

(**Lee, 2012: 14**) Lee considered the augmented reality as kind of technology which attract researchers and designers in the field of interaction with computers by devices linked with computers that can be worn like Glasses , Screen or Smart phones that allows doing an important scientific experiments focus on simple methods to deliver knowledge as well as focus on intellectual and emotional development of the viewer .Recent point of views confirm that learning environments in augmented reality have the ability to present high value for both educational and entertainment environments .

Augmented Reality mechanism use is limited in two methods (**Dunleavy&Dede, 2014 , Atara&Kensara , 2015.**)

Method one :- By using markers , so that the camera can capture and recognize them in order to display the information associated with them .

Method two :- it's special because of not using markers (markers less) but using the geographical location of the Camera by GPS service or using image recognition program to display information .

In order to understand how the Augmented Reality work in General , you have to take into consideration its variety forms (**Scheinerman, 2009**) , where the methods track of the markers are different from each other , it's two-dimensional marks programmed to show digital content , these marks maybe are two color marks or colored marks on GPS sensors or its different techniques . while they sharing that each item of them is associated with indicator during tracking it by the camera , then the interaction takes place with this element (**Tmizi,2010**) .

The followed steps of the augmented reality technology work are similar , Regardless if it was following a mark or a selected location (**without a mark**) ,but if there is a mark it will be identified , then a three-

dimensional shape will appear on the surface of the mark , if there is not it will discover the place then determine the digital information to a set of network coordinates (**Kipper & Rampolla, 2013**) and looking for a unique objects that having a compatible mode in the real environment .This is the general of how the augmented reality works .

So, the augmented reality technology depends on knowing the system and link the landmarks of reality with the appropriate virtual element that is stored in its memory as geographic coordinates or information about the place , demonstration video or other information that enhance the real reality .

The augmented reality programs depend on using camera phone or computer tablet to see the real reality then analyzing it as required in the program and working on merge the virtual elements in it .

Its importance lies in embodies a three-dimensional real virtual reality ,it can distinguish the sites and visibility that enhancing the capabilities of smart phones through location and camera determination and recognizing the particle then following it to create an interesting education experiments within the physical environment , it also provide teachers with new transformational tools that will benefit the teaching process so there are no limits to the possibilities offered by this technology in education (**Al- Nafi'I,2016**) .

Many of developed countries used this technology in general and high education , the results of experiments , researches and studies by many countries have shown the great importance of using this technology in teaching students , also the results indicate that the augmented education system led to enhance the students' education and achievement , In addition to encouraging them to learn . (**Rainer 2014 , Shang 2014 , Solac 2015**) .

The augmented reality plays a positive role in inspire the learners and attract them to learn , also involve them to education process and transform the learners experiences from intangible to tangible after augmented reality cognition. It leads to meditation , perception and thinking in addition to develops the learners' mental and creative skills by seeing its environments .

In spite of the modernity of the augmented reality , these days it's used a lot in education field especially in scientific laboratories in order to make different scientific experiences in real classrooms because this technique plays a key role in encouraging the students and attracting their attention as well as making the study subject more simple in order to understand it easily , also it's interested in saving efforts for teaching and raising the education level and its quality .

That's the reason why the developed countries pay extra attention to it and provide a huge sums of money for its researches . The EU is financing a huge project to teach the Europe history by clicking in the historical areas in the phone screen to show the visitor the related events for that area , there is also a similar project that use the games in augmented reality to increase the students' interaction with educational material . At US Wisconsin University the ARIS program is using for creating a virtual games environment that can be employed at curriculum . (**Al- Al-Failkawi & Al-Enazi ,2016 .Al-Ahmadi,2015**).

Moreover ,in the last few years the augmented reality books began to take place in education , here we can mention the Metaio German company that developed books which contain augmented reality elements that looks like it's full of life .

There are many augmented reality applications that are specialized for education purposes and the most widespread app in schools and universities is the AURASMA App which is used effectively for designing an enjoyable augmented reality educational environment , that is accessible for teachers and students through multiple electronic platforms like personal computers , smart phones , tablets and lances even through electronic glasses . This technology enables teachers to contact with digital content such as pictures in the books and wall on classrooms (**Al-Ahmadi, 2015**) .

(**Anderson & Liarokapis, 2014**)pointed out that the augmented reality features increased its importance , in spite of resisting it in the educational process by the teachers .

Some of these features , the availability of clear information and data entry in an easy way in addition to the possibility of interaction between two parties (teacher, student) , Even it's easy to use but it provide an important information that makes the complex steps easy to the users ,also it's cost-effective and easily expandable .

(**Azuma, Baillot, Behringer, Feiner, Julier&Machntyre, 2001**) each one of them confirmed that the augmented reality combines reality and virtualization in a real environment and it's interactive at the time of use , in addition its most important features that it is a three-dimensional 3D.

There are many reasons that require using the augmented reality by the teacher compared to learning experiences without it , it can be illustrated by what (Radu.2012) mentioned as follows:-

- 1- it increases the scientific content understanding in specific topic and it has an effective effect in teaching students compared to other means effect ,such as Books, Videos and Desktops .
- 2- keeps information for a longer period , where the content in the augmented reality application will firmly rooted in memory more than what the students earns through traditional means without using this technology .

- 3- students high enthusiasm when they will apply it in education , feeling more satisfied and their desire to re-experience these applications .
- 4- improving the cooperation relation between the group members , students and teacher .
- 5- participate and motivate students to discover information from more than one side .
- 6- it helps the students by teaching them some materials that can't be easily touched or understood, but only through a real direct experience such as Geography and Astronomy .
- 7- encourage the learner's creativity and expand his imagination to realizing the facts and concepts .
- 8- it helps the students to control the learning method according to their favorite one and to their comprehension .
- 9- there is a reliable learning environment which is suitable for multiple learning methods and different ages .
- 10- Although it , the teachers' awareness of the augmented reality concept depends on its use and employment in the educational process, where it faces many obstacles refers to the teacher and learner as well as physical , social and technical challenges such as :

(Atara & Kensara '2015 'Al-Husseini '2014 'Kelly, Misty, & Corinne)

- 1- poor teachers' awareness of the augmented reality concept .
- 2- teachers' lack of augmented reality mechanism and the too many required burdens with incentives lack.
- 3- methodology lack to reduce the unlimited information .
- 4- it needs an experts and professional designers to help the teacher to find the appropriate content for the augmented reality .
- 5- teachers are not convinced of this type of education and not activated it as required.
- 6- the number of experimental local studies which measure the technology effectiveness in education field still very a few.
- 7- teachers are not convinced of this type of education and not activated it as required.
- 8- only limited to a small group of learners and not widely available .
- 9- augmented reality may not be an effective teaching strategy for some learners .
- 10- focusing on a large number of overlapped information may effects the brain and leads to the dispersion of the learner's vision .
- 11- learners' different abilities in dealing with modern technologies .
- 12- the financial deficit to start using modern technologies project.
- 13- Augmented reality sometimes unable to get GPS signals at classrooms.
- 14- the great reliance on wireless technologies to communicate makes this technology as a power consumption .
- 15- the rapid development of this technology makes keeping up with it not easy thing .
- 16- linking the augmented reality usage in education with other factors , such as :efficiency and availability of network .
- 17- lack of hardware and software .
- 18- the augmented reality technology imposes on ethical concerns generally and wearable equipment particularly .
- 19- technological ignorance in society and awareness lack of augmented reality technology .
- 20- the society doubt in its effectiveness compared with the traditional methods .
- 21- it considered as a privacy violation of others and it may affect the human communication and interaction .

it seems clear that using the augmented reality in high or general education still far away , those obstacles considered as a real challenges to the technology use in the educational process , if we take a look to the Arab experiences we will find it under developing compared to what developed countries achieved .

also ,if we count the number of those experiences we find that it doesn't exceed a few experiences in KSA (**King Abdul-Aziz University**)and the UAE through ABOVE AND BYOND exhibition , when we think about those experiences we will discover that we are at the top of backwardness compared to developed countries experiences which effectively employed the augmented reality in schools and universities such as Japan ,Britain and USA .

When it comes to the integration of technology into education , the human mind start to think in creative ways without a limit and produces an innovative ideas that will influence our lives and make science fiction a reality .

So, we have to put plans to serve hope and reality in order to insert augmented reality in high education and overcome all obstacles forms , also doing a research that measure the faculty members awareness for the importance of augmented reality concept in high and general education

1.1.1 The study problem

Through the two researchers work in teaching education technology in General Authority For Applied Education And Training in Kuwait , they notice a lack of awareness of faculty members of augmented reality concept and they often have never heard about it a technique , that's clear because of the absence of putting up an idea to follow an advanced teaching method and there are many specializations need this kind of technology in learning .

There is a reduction in students' achievements and a desire lack in learning many subjects . so , the augmented reality use become more and more a necessary in educational process in order to keep up with development and technology , in addition to introducing new teaching methods that enhance teaching and learning effectiveness and create a creative spirit for students by an interactive environment and employing it according to the education goals , also using it to improve the educational process quality .

After the two researchers acquainted to the augmented reality technology literature and studies , they found no Arabian study talking about it , also noticed lack of previous studies (according to the two researchers).

Through the two researchers observation and their reality vision , they noticed the urgent need to do a study that aims to discover the awareness degree of faculty members of augmented reality concept in the Faculty of Basic Education .

This question will be answered by the following study :

What is the amount of faculty members awareness degree of the Augmented reality Concept in the Faculty of Basic Education , Public Authority for Applied Education and Training in Kuwait?

1.1.2 Study Objective

it aims to achieve the following points :

- Knows the faculty members awareness degree of the Augmented reality Concept Public Authority for Applied Education and Training in Kuwait .
- Indicate the faculty members awareness degree of the Augmented reality Concept and its types, quality of use criteria and its goal

1.1.3 Study importance

The importance of this study lies on the following points :

- scientifically , the current study may enrich the educational literature in educational technology field for the augmented reality role in the educational process .
- highlights the importance of the faculty members awareness degree of this concept and its types , quality of use criteria and its goals .
- highlight the importance using this technology in education .
- provides a questionnaire that helps the researcher in similar studies and develop it.
- Practically , it will help the officials to know if the faculty members use this technology in teaching .
- this study may develop the education process in Kuwait using augmented reality technology , after highlight the use of this technology in teaching by the faculty members .
- This current study may be helpful for the faculty members in universities by training them on how they can use this technology in teaching .

Study Limits

- 1- the study was only limited in discovering the awareness degree of faculty member of the augmented reality concept .
- 2- the study was only limited to the Faculty of Basic Education in the Public Authority for Applied Education and Training in Kuwait (second semester 2016/2017).

1.1.4 Study Terms

The two researchers used these following terms in the study :

- Concept : an idea or mental image composed through the successive experiences that the individual went through whether if these experiences are direct or indirect.
- Augmented Reality : a system that merges the virtual reality environments by special methods and techniques. (Novell :60,2016) , Procedurally, the two researchers defined the augmented reality concept as " Merge the reality with multimedia such as Three-dimensional images or sound effects by the successive experiences of idea or mental to create a semi-realistic virtual learning , i.e. " using the real reality that surrounding the user and enhance it with texts or images depending on the application use for the technology .

1.1.5 Previous studies

(Perez-Lopez &Contero, 2013) Conducted a study aimed to use the augmented reality to deliver multimedia content to support learning process also teaching digestion and circulatory system at primary schools in Spain because of its impact on keeping the information for a longer period .

The study used the semi-experimental methods and students were tested after each lesson through questionnaires . The study consisted of 39 students from the fourth grade then the results showed greater knowledge retention by the students who used multimedia content with augmented reality technology than the students who used traditional methods which shows that this technology is a magic stick to improve students'

motivation and interests in addition to improve teaching process in different courses .

(El-Sayed ,2011). Conducted a study aimed to investigate the application of augmented reality methods in education field through providing the student an augmented reality card as a technological application in the educational field . The researcher used the semi experimental method , also a pre and post test was prepared and an orientation scale for this technology.

The study consisted of 51 students that the result showed an increased in recognition and visualization ability through 3D models as well as increase self-learning and interactive .it also showed a positive impact for the augmented reality technology and it was a widely accepted experiments .

(Al-Husseini,2014). Conducted a study aimed to investigate the effect of using the augmented reality in the computer unit course on the educational achievement and guidance of secondary students .The researcher used the semi experimental method and prepared the study tools represented by achievement test, measure scale and design the augmented reality technology for the computer network unit .

The study consisted of 55 students in the third secondary grade in Mecca city and it divided into two groups (Control group and experimental group) . The study result showed that , Statically there are significant differences between the two groups average . The experimental group as well as control group in post collecting as (Remembering , understanding and analysis) for the third grade secondary students after set the pre collecting . also the result showed statistically , there are significant different between the before and after measurement average for the experimental group students in measuring orientation towards technology .

The study recommended using augmented reality technology while teaching and providing schools with equipped classrooms that have all the equipments and screens that will enable the teacher to use this technology in teaching .

Shea , 2014 Conducted a study aimed to know the amount of the students' awareness of the use of augmented reality game in language and its impact on communication . The researcher used the semi-experimental descriptive approach also the questionnaire, note card for the game , game log and interviews were prepared .

the game consisted of 9 students in Japanese language course in the second year at the high education institute in California then it showed that the augmented reality game is a successful way to learn a language outside the classrooms and has a positive impact on students .

The current study was characterized as it is the first of its kind (according to the research) that investigated the augmented reality use in teaching by the faculty members so that what makes it more special than previous studies .

The differences between the current studies in terms of the goal, sample and the used method . but all of them measure the use of augmented reality in teaching .

2. Methods and Procedure

2.1 Study approach

The search followed the survey descriptive method that focuses on presenting the measure phenomenon as it is , so it's appropriate for the current search purposes .

2.2 The study Community and its sample

It consists of 680 faculty members in faculty of Basic Education in the General Authority for Applied Education and Training in Kuwait for the second semester 2016\2017 .

The sample of the study was chosen carefully and consisted of 100 faculty members in faculty of Basic Education for the second 2016/2017.

2.3 Study instrument

To achieve the study goal ,the two researchers prepared a questionnaire to measure the using of augmented reality by the faculty members in teaching according to their knowledge of the theoretical literature and previous available studies despite it's a few.

The questionnaire consisted of 16 paragraphs divided into four fields , the first field is the Concept Nature , the second field is the Types , the third field is The Quality of Use Criteria and the fourth field is Its Goal .The indicators of honesty and consistency of the instrument have been verified .

2.4 Construct Validity

The extract of construct validity signs for the scale , the correlation coefficients of the scale item was extracted with the total degree in an exploratory sample outside the study sample . it consisted of 15 of faculty members where the scales items were analyzed and calculate the correlation coefficient of each item where the correlation coefficient represents a validity indication for each item as a correlation coefficient between each item and total degree as well as between each item and with its association with the field that it belongs to , also between each

field and the total degree .

The item correlation coefficients have ranged with the instrument as a whole between (0.89-0.46) and with the field (0.91-0.49) .

The following table shows this :

Table 1 : The correlation coefficient between items , total degree and the field it belongs to

Item Number	The correlation coefficient with the field	The correlation coefficient with the instrument	Item Number	The correlation coefficient with the field	The correlation coefficient with the instrument
1	.90**	.87**	9	.68**	.76**
2	.78**	.76**	10	.82**	.71**
3	.91**	.83**	11	.85**	.71**
4	.69**	.72**	12	.68**	.64**
5	.75**	.70**	13	.90**	.89**
6	.87**	.66**	14	.49**	.46(*)
7	.90**	.67**	15	.68**	.71**
8	.87**	.77**	16	.73**	.67**

*The sign statistic at the level of significance (0.05).

** The sign statistic at the level of significance (0.01).

It should be noted that all correlation coefficients were an acceptable grade and statics , that's why none of these items have been deleted .

Table 2: The correlation coefficients between fields with each other and the total degree

	Concept nature	Types	Quality of use criteria	The goal	Awareness degree as a whole
Concept nature	1				
Types	.640**	1			
Quality of use criteria	.830**	.571**	1		
The goal	.903**	.730**	.845**	1	
Awareness degree as a whole	.958**	.754**	.914**	.966**	1

*Sign statistic at the level of significance (0.05)

**Sign statistic at the level of significance (0.01).

2.5 Stability tool

To ensure the stability of study instrument , the Test and Retest method have been verified by applying the measurement and reapplying at after two weeks on an outside group of sample study consist of 15 people then calculate Pearson correlation coefficient between their estimates at both times also the stability coefficient was calculated in the internal consistency method according to Cornbach's Alpha.

Table 3

Shows the internal consistency coefficient according to Cornbach's Alpha and the repetition stability for fields as well as the instrument as a whole ,these values were considered as appropriate for the study purposes.

the internal consistency coefficient according to Cornbach's Alpha , the repetition stability and total degree .

The field	Repetition stability	Internal consistency
Concept nature	0.87	0.86
Types	0.91	0.70
Quality of use criteria	0.90	0.81
The goal	0.92	0.73
Awareness degree as a whole	0.91	0.93

2.6 Statistical standard

The Pentecostal Likert ladder was adopted to correct the study instrument by giving each item one of its five grades (very large , large , medium , weak , very weak)and represented in the numbers (1,2,3,4,5) respectively .

The following scale has been adopted for analysis results

From 1.00 2.33 a Few

From 2.34 3.67 Medium

From 3.68 5.00 Large

Etc

The scale was calculated by using the following equation :

$$\frac{\text{Scale highest rate (5)} - \text{Minimum scale (1)}}{\text{Categories number (3)}} = \frac{5-1}{3} = 1.33$$

Then add the answer (1.33) at the end of each category.

2.6 Conducting search procedures

To active the search goals , follow the following steps :

- prepare the search instrument and present it to the arbitrators to take advantage of their observations and work on them .
- the two researchers distributed a questionnaire to specific sample of faculty members in the Public Authority for Applied Education and Training in the Faculty of Basic Education then after extract the validity and consistency , the questionnaire was distributed to the sample .
- the researcher emptied the questionnaire and conducted the statistical analysis by using appropriate statistical processers to view and discuss results and making recommendations .

2.7 Statistical processing

in the light of the study question , the researchers use the appropriate statistical processing through analyzing it on SPSS program also they the Arithmetic mean , the Standard deviation , the internal consistency coefficient Cornbach's Alpha and repetition stability , in addition to quadratric variance analysis to show the study variables and Scheff's test for post hoc companies for the variance effect .

2.8 View results

first question : what is the amount of awareness degree of Faculty Members of the Augmented Reality Concept in The Faculty of Basic Education in Public Authority for Applied Education and Training in Kuwait?

To answer this question , the arithmetic mean and standard deviation of the faculty members awareness degree of the augmented reality concept were extracted in The Faculty of Basic Education in Public Authority for Applied Education and Training in Kuwait .

The following table show this :

Table 4 : the arithmetic mean and standard deviation of the faculty members awareness degree of the augmented reality concept in The Faculty of Basic Education in Public Authority for Applied Education and Training in Kuwait .

Rank	Number	Field	Arithmetic mean	Standard deviation	Degree
1	3	Quality of use criteria	3.48	1.279	Medium
2	4	The goal	3.37	1.065	Medium
3	1	Concept nature	3.25	1.292	Medium
4	2	Types	3.15	1.098	Medium
		Awareness degree as a whole	3.33	1.128	Medium

Table 4 shows that the arithmetic mean ranged from (3.483.15-) where the quality of use criteria came first in the highest total of (3.48) , the goal came in the second place with a total of (3.37) then the concept nature came in third place with total of (3.25) and types cane in final place with a total of (3.15) as well as the arithmetic mean of awareness degree as a whole reached (3.33) .

The arithmetic mean and standard deviations were calculated to estimate the study sample members on the item of each field separately , as follows :

First field : concept nature.

Table 5 : the arithmetic mean and standard deviation related to concept nature field Descending order Arithmetic mean calculations

Rank	Number	Items	Arithmetical mean	Standard deviation	Degree
1	2	Augmented reality depend on blending real reality with virtual reality .	3.34	1.451	Medium
2	4	The goal of blending augmented reality with real reality is enhancing the real reality .	3.28	1.498	Medium
3	3	augmented reality enable its users in all education fields.	3.24	1.571	Medium
4	1	Augmented reality considered as an educational technology concept.	3.21	1.387	Medium
5	5	Augmented reality can be applied in teaching by wireless technology .	3.17	1.364	Medium
		Concept nature	3.25	1.292	Medium

Table 5 shows that the augmented reality ranged from (3.343.17-) , where item (1) which confirms that " Augmented reality depend on blending real reality with virtual reality" came in first place with a total of (3.34) , item (4) which confirms that " The goal of blending augmented reality with real reality is enhancing the real reality " came in second place with total of (3.28) ,item (3) which confirms " augmented reality enable its users in all education fields" came in third place with total of (3.24) and item (5) which confirms " Augmented reality can be applied in teaching by wireless technology" came in final place with total of (3.17) . Finally , the concept nature total reached (3.25).

Field two : Types

Table 5

Rank	Number	Items	Arithmetical mean	Standard divination	The arithmetic means and standard devotions for the items related to types field Descending order according to arithmetical means . Degree
1	7	Augmented reality depends on linking the real reality landmarks with the appropriate virtual elements by selecting the geographic location using image recognition software .	3.16	1.269	Medium
2	6	Augmented reality depends on linking the real reality landmarks with the appropriate virtual elements by the camera , it called (Markers)	3.14	1.146	Medium
		Types	3.15	1.098	Medium

Table 5 show that the arithmetic means ranged from (3.163.14) Where item (7) which confirms " Augmented reality depends on linking the real reality landmarks with the appropriate virtual elements by selecting the geographic location using image recognition software " came in first place with total of (3.16) then item 6 which confirms " Augmented reality depends on linking the real reality landmarks with the appropriate virtual elements by the camera , it called (Markers)" came in final place with total of (3.16) and the arithmetic means for types as a whole reached (3.15) .

Third field : The quality of use criteria .

Table 6 : The arithmetic mean and standard deviation for items that related to the quality of use criteria , Descending order according arithmetic mean .

Rank	Number	Items	Arithmetical mean	Standard divination	Degree
1	11	The use of augmented reality requires computers , tablets or smart phones .	3.55	1.298	Medium
2	10	There is no need to classrooms while using augmented reality in teaching	3.54	1.306	Medium
3	9	The augmented reality requires a teacher who knows how computers and tablets.	3.46	1.396	Medium
4	8	The augmented reality requires a student who knows how computers and tablets.	3.39	1.651	Medium
		Quality of use criteria	3.48	1.279	Medium

Table 6 shows that the arithmetic mean ranged from (3.553.39-) where item 11 which confirms " The use of augmented reality requires computers , tablets or smart phones" came in first place with total of (3.55),item 10 which confirms " There is no need to classrooms while using augmented reality in teaching " came in second place with total of (3.54) , item 9 which confirms " The augmented reality requires a teacher who knows how computers and tablets "came in third place with total of (3.46) and item 8 Which confirms " The augmented reality requires a student who knows how computers and tablets " came in final place with total of (3.39). the arithmetic means for the quality of use criteria as a whole (3.48)

The fourth field : its goal

Table 7 ; the aritmatic mean and standard deviation fot items that relate to its goal . Descending order according to arithmetic mean .

Rank	Number	Items	Arithmetical mean	Standard divination	Degree
1	16	Using augmented reality in teaching increases the creative ability of students .	3.62	1.179	Medium
2	12	Using augmented reality in teaching increases the imagination ability of students.	3.40	1.341	Medium
3	13	Augmented reality enhance the students with real reality.	3.29	1.465	Medium
4	14	Augmented reality reduces the risk of interacting in real life	3.28	1.296	Medium
5	15	Augmented reality is less expensive in interacting with real reality	3.24	1.280	Medium
		Goal	3.37	1.065	Medium

Table 7 shows that the arithmetic mean ranged from (3.623.24-) where item 16 Which confirms " Using augmented reality in teaching increases the creative ability of students " came in first place with total of (3.62) , item 12 Which confirms " Using augmented reality in teaching increases the imagination ability of students" came in second place with total of (3.40) , item 13 which confirms " Augmented reality enhance the students with real reality" with total of (3.29) and item 15 which confirms " Augmented reality is less expensive in interacting with real reality " came in final place with total of (3.24) .the arithmetic means for goal as whole reached (3.37) .

2.9 Results discussion

The result of the study were discussed and interpreted according to the main study question includes the recommendations.

The question confirms : What is the amount of the members awareness degree of the augmented reality concept in The Faculty of Basic Education in Public Authority for Applied Education and Training in Kuwait ?

The current study results showed that the arithmetic mean of the faculty members awareness degree for augmented reality concept was medium where the arithmetic mean of awareness degree as a whole reached (3.33) .

This result attributed to the fact that faculty members understanding for augmented reality concept and its importance and usefulness make the augmented reality more attractive because it plays a key role in a wide range of application . but this result seems weak compared to what is expected in faculty members awareness degree of the augmented reality concept also it seems like there is no awareness of the concept , its importance realization ,the urgent need for understanding augmented reality concept and training the faculty members on

using it in teaching.

The current study results showed that the arithmetic mean for fields ranged from (3.483.15-) where the quality of use criteria came in first place with the highest total of (3.48) .

The goal came in second place with total of (3.37) ,the concept nature came in third place with total of (3.25) where types came in final place with total of (3.15).

Then the awareness degree in all fields was medium and the total reached (3.33).

The result of this question indicate that the awareness degree of faculty members of augmented reality concept is close and medium ,where the four fields was medium .

This indicates a medium awareness degree of faculty members for the concept because of the lack of training courses , attending a conferences to raise the teachers' skills in augmented reality concept and gain experiences and skills in how to use and produce it .

The arithmetic mean and standard deviation of the estimates of the sample members of the study were calculated separately in the items of each field where it was.

The first field :

Concept nature Item 2 that confirms that the" augmented reality depends on joining the reality with the virtual reality" in the first place with a total of (3,34) while the forth item which confirms that the gall behind integrating the augmented reality with the true reality is to in able the true reality came in the second place with a total of (3,28).

The Item 3 which confirms that the" augmented reality can enable its users in all fields of education" came in the third place with a total of 3,24

The item 5 which confirms that the" augmented reality can be applied for all fields of teaching using the (wireless technique) "came in the final place with a total of (3,17) , while the total of the concept as a whole reached (3,25)

The result might be returned back to the importance of the augmented reality and to recognition of the teachers towards this importance in the fields of education and also to the ability of the augmented in developing the true reality through integrating the two realities with the students , the hall behind using it and how easy it is to use it by the teachers in all fields of education which comes as a result of using the wireless technique in applying the augmented reality in education which activates the attractiveness and suspense with both students and teachers during using it , increasing the interaction of the users which has a large affect on behavior and life for them through using the applications of augmented reality and through increasing the quality of self education and group education for students .

The second field :

the types , the item 7 which confirms that "ability of augmented reality to join the features of true reality with the suitable virtual elements through identifying the geographic location using (GPS) or through the program of image recognition to present information " came in the first place with a total of (3,16) , this result indicates the convention of the teachers that the augmented reality offers a discoverable education to specific places such as historical places etc s

It seems that the reason for this is that the type of education may help disabled students to identify the locations in both higher and public education also relying on the augmented reality to identify geographic location and to present information through joining the features of the true reality with its suitable virtual elements, which doesn't require a physical effort that'll help with the education of this group of students with attractiveness and flexibility and helps allow them for education in different levels

This comes with the recognition of the teachers of the need of this in providing a suitable technical education for all levels and ages and applying the ideas of thinking and creativity for the students.

While the item 6 which confirms that the" augmented reality depends on joining the features of the true reality with the its suitable elements through camera and this way is called (markers)" came in the final place with a total of(3,14) , while the total of the types as a whole reached(3,15)

This result might be returned back to the teachers' less recognition of this type of augmented reality and of the possibility of using it in education also for the lack of experience of this type in the state of Kuwait in the field of augmented reality in education which helps increase their experience

The third field:

quality of use , the item 11 which confirms that the" use of augmented reality in education needs computers, smart birds or smart phones" came in the first place with a total of) 3,55)

This result might be returned back to the teachers' recognition that applying this field needs an environment that has the suitable technological ability which consists of computers and other smart technological devices and materials that augmented reality cannot be used without computers and smart devices and applications . but the amount of experimental local studies the measure the effectiveness of this technique and its need in education field still simple because it's not activated in education to become essential as required and provide the necessary technology for quality of use .

Providing the required technology such as computers and smart devices leads to enhance the learners to discover more in educational content because it combines between enjoyment and knowledge in the same time , that's what augmented reality achieve.

item 10 which confirms that " augmented reality doesn't need a classroom in teaching " came in the second place with a total of (3.54) .

This result might be returned back to using the augmented reality as educational experience anywhere outside classroom and the reason seems to be GPS weak signals inside classroom sometimes, which consider as the main factor in simulation in augmented reality , but it can be use inside the classroom by using Mobile phones as the study result showed (Fonseca.2013) .

Item 9 which confirms "using augmented reality need a teacher who knows how to use computers and tablets " came in third place with total of (3.46) , This result might be returned back to linked the education using augmented reality with technological factors such as communication network efficient and ease of availability as well as the augmented reality mechanisms lack in schools because of the too many burdens required and the lack of incentives , it also require professional experts and designers to help the teacher find the right content for augmented reality technology , so the teacher must be good at using computers , tablets and other technologies .

While item 8 which confirms that " using augmented reality needs a student who knows how to use computers and tablets " cam in final place with total of (3.39)while the total of quality of use criteria as whole reached (3.48) From the faculty members point of view his result returned back to the differentiated abilities of learners in dealing with modern technologies and its applications .

There are many students who don't have experience in using computers and tablets which need to develop their compute and technology skills .teachers seem to be unconvinced in the important of students' knowledge of how computers and tablets are used , but the truth is learners must acquire knowledge about how to deal with them in order to increase the control of learners during the augmented reality lesson and reduce their physical and mental burdens .

The fourth field :

its goal Item 6 Which confirms that " using augmented reality in teaching increases the students' creative abilities " came in first place with total of (3.62) , This result might be returned back to faculty members conviction that the augmented reality enhance students' thinking and its ability to develop their creative abilities in order to conduct an educational experiences through augmented reality and develop students' exploration , meditation and thinking by using it .

Item 12 which confirms that " augmented reality increases the students' imagination ability " came in second place with total of (3.40) , This result might be returned back to that the augmented reality technology has a positive role for students in acquiring knowledge and developing their abilities to acquire and analyze information which gives students greater motivation to acquire knowledge . it spread the enthusiasm , pleasure and desire to educate students .

Item 13 which confirms " Augmented reality increases the student's ability with real reality " came it third place with total of (3.29) . This result might be returned back to the teachers' conviction that the augmented reality helps the students to deal with facts , concept and scientific generalization in scientific way which leads to increase its association with real reality and understanding of content .

While item 15 which confirms that :using augmented reality in teaching is less expensive to interactive with real world " came in final place with total of (3.37) while the total of the goal as a whole reached (3.37). This result might be returned back to the teacher's convocation of the augmented reality expensive cost not the opposite in interactive with real reality .

This result might be returned back to the lack of faculty members awareness of the augmented reality cost compared with interactive real world ,where it seems more expensive than interactive with real reality because it needs technology , applications and programs to enhance augmented reality in teaching .The overall score for fields and faculty members awareness degree for the augmented reality concept was medium.

Which is unsatisfactory result because of technique , material challenges and other challenge that faces the teacher and learner , also the reason of this result seems to be the rapid and progressive development of augmented reality technology and its forms that make it difficult to cope with also its great adoption on wireless technologies to communicate which makes these a significant consumption of energy as well as the availability of technology factors of the use of augmented reality in education , the availability of devices and programs that it's required, training the teachers on how to use it and the way to produce it in addition to the need of a teacher that knows how to use computers and smart devices which is required a faculty members awareness of augmented reality to accept it in the educational process .

according to the two researchers , no previous Arab or Foreign studies were found that related to variables and measurement of the study but the studies that have been used indicate the faculty members awareness of the augmented reality concept such as (Perez-lopez & Contero .2013) , (Al sayed.2011) , (Al-Husseini .2014) and (Shea.2014) where a sample of students was used and the experiment was conducted on them and to investigate

the effect of using the augmented of the students' achievement then applying it on the Mobile phones in several stages of study and proved the positive impact and use of the augmented reality .

This indicates the teachers' awareness of this concept and its use in all its forms and types in all study fields.

2.10 Recommendations

in the light of the results ,the two researchers recommend the following points :

- 1-Conduct training programs for educational technology innovations especially for augmented reality and the technologies that can be use in education also it has an effect as proven in previous studies to raise awareness of faculty members for augmented reality concept .
- 2- Training the faculty members on how they can use augmented reality and produce it after realize its concept .
- 3- conduct a searches and studies in subject of current study investigate the awareness degree and add other variables as the awareness degree of student for augmented reality concept .
- 4- work on interring augmented reality and relevant innovations as teaching methods in high education .

References

Arabic references :

- Adnan Al-Ahmadi (2015) "using augmented reality technology in education ", Manhal educational culture website , the source : <http://www.manhal.net/articles.php?action=show&id=20172>
- Timizi , James 2010 . "e-learning and its tools .America .Philips publishing group ".
- Opare Al-Huseeini (2015) . "what is the augmented reality technology ?and what is their applications in education ?New education" website , Source :
<http://www.new-educ.com/%D8%AA%D9%82%D9%86%D9%8A%D8%A9-%D8%A7%D9%84%D9%88%D8%A7%D9%82%D8%B9-%D8%A7%D9%84%D9%85%D8%B9%D8%B2%D8%B2-%D9%81%D9%8A-%D8%A7%D9%84%D8%AA%D8%B9%D9%84%D9%8A%D9%85>
- Tosti shang (2014) ."educational system in augmented reality based on Mobile in order to enhance students and their achievements also the motivation in survey activities in natural sciences ".the technology of teaching and learning magazine.352-(4)17365
- Maha Abd Al-momen Al-Husseini (2014) "the effect of any natural reality use in unit of computer courses in the achivment and orientation of high schools students". Master Thesis from Umm Al Qura University : Mecca .
- Hind Al khalifeh , (2010) . "Augmented reality and its applications in education. An article published in Al-Riyadh Newspaper". Number 15264 , fate of publication 9/10/2010.
- Jonathan Riner , (2014) , "does the augmented reality effect students' learning outcomes ?Unpublished Ph.F thesis ". Grand canyon university .USA
- Akram Solak (2015) ."explor the impact of materials designed in augmented reality in order to learn vocabulary and words for language students" .e-learning ,agazine JEO,
- Abdullah Ishaq Attar ,Ihsan Mohammad Kinsara , (2015)" Educational objects and nono technology ", King Fahed National Library For Publishing and Distribution Riyadh .
- Ahmed Al Anzi and Abdulaziz Al-Failkawi , (2016) "Educational Technology Encyclopedia" . First edition , Kuwait.
- Taghreed Al Nafi'e , (2016) "The effect of using augmented Reality in teaching science for third-grade students".Unpublished Master thesis . King Saud University ,Riyadh.
- Khaled Mahmoud Nofel ,2010 . "The virtual reality technology and its educational use" . Dar Al-Manahj for publishing and distribution, Amman.

Foreign References

- Anderson, E., Liarokapis, F., (2014). "Using Augmented Reality as a Medium to Assist Teaching in Higher Education". Coventry University. Uk Retrieved Feb 3, 2015.
- Azuma, R. (1997). A Survey of Augmented Reality. "Presence: Teleoperators and Virtual, Environments",1(6): 355-385
- Azuma, R., Baillet, Y., Behringer, R., Feiner, C., Julier, N&MacIntyre, G. (2001). "Recent Advances in Augmented Reality". Retrieved on 1/4/2015, from:<http://www.cc.gatech.edu/~blair/papers/ARsurveyCGA.pdf>
- Dunleavy, M & Dede, C. (2006). "Augmented Reality Teaching and Learning". Augmented Reality, USA: Harvard Education Press.
- El Sayed, N. (2011). "Applying Augmented Reality Techniques in the Field Of Education. Computer Systems Engineering". unpublished master's thesis, Benha University. Egypt.
- Fonseca, D., Marti, N., Redondo, E., Navarro, I., & Sanchez, A. (2013)." Relationship between Student Profile,

Tool Use, Participation, and Academic Performance with the use of Augmented Reality Technology for Visualized Architecture Modles", Computers in Human Behavior, pp. 434-445.

Ivanova, M, & Ivanov, G. (2011). "Enhancement of Learning and Teaching in Computer Graphics Through Marker Augmented Reality Technology", International Journal on New Computer Architectures and Their Applications , (IJNCAA) , 1(1): 176-184.

Kelly, S., Misty, A & Corinne, B . (2014)," Augmented Reality. Applications in Education", The Journal of Technology Studies. Retrieved on 18/3/2015, from: <http://scholar.lib.vt.edu/ejournals/JOTS>.

Kipper, G., & Rampolla, J. (2013). "Augmented Reality: An Emerging Technologies Guide to AR", Elsevier.

Lee, K. (2012). Augmented Reality in education and training. "Tech Trends: Linking Research & Practice to Improve Learning", 56(2): 13-21.

Perez-Lopez, D., & Contero, M. (2013)." Delivering Educational Multimedia Contents Through an Augmented Reality Application: A Case Study on its Impact on Knowledge Acquisition and Retention", The Turkish Journal of Educational Technology, 1(24): 92-124.

Radu, L. (2012)." Why Should My Students Use AR? A Comparative Review of the Educational Impacts of Augmented Reality", IEEE International Symposium on Mixed and Augmented Reality, Atlanta.

Scheinerman, M. (2009). "Exploring Augmented Reality", Retrived 20/9/2016, from: <http://s.v22v.net/h6DH>.

Shea, A. (2014). "Student Perceptions of a Mobile Augmented Reality Game and Willingness to Communicate in Japanese". Education in Learning Technologies, unpublished Doctor's thesis, Pepperdine University. California- United States.

Xiangyu, W. (2012)." Augmented Reality: A new way of augmented learning". Int. J. on Recent Trends in Engineering and Technology, Vol. 11, No1. July 2014 .

Final question form
 Faculty of Basic Education

Dear Dr.....

Peace , Mercy and blessing of God be Upon you

The two researchers conduct a studies under the following title " Faculty Members Degree of Awareness of The Augmented Reality Concept in The College of Basic Education, Public Authority for Applied Education and Training in Kuwait " in order to chive its goal , they made a questionnaire composed of sixteen items . divided into four Fields which is :

First field: Concept nature , Second field: Types . Third field : Quality of use criteria . Fourth field its goal .In order to achieve the purposes of the study , the researcher put in your hand a questionnaire to read the items carefully and answer them objectively by Marking the appropriate one(✓) . Knowing that the information that will be collected will only be used for scientific research .

Thank you very much

Dr. Ahmed Hussein Al-Failkawi

Dr. Abd Alaziz Dakheel Al-Enezi

please place (✓) beside the appropriate answer

Number	Item	Very large	Large	Medium	Weak	Very weak
First field : Concept nature						
1	Augmented reality considered as education technology concept					
2	Augmented reality depend on merging real reality with virtual reality .					
3	Augmented reality can be used in all educational field .					
4	The aim of merging real reality with virtual reality is enhance real reality .					
5	Augmented reality can be applied in teaching by using wireless technology .					
Second field : Types						
6	Augmented reality depends on linking the real reality landmarks with appropriate virtual elements by camera and it is called (Markers)					

Number	Item	Very large	Large	Medium	Weak	Very weak
7	Augmented reality depends on linking the real reality landmarks with appropriate virtual elements by determine the geographic location using GPS or image recognition to view information.					
Third field : Quality of use criteria						
8	Augmented reality required a student who knows how to use computers and tablets in teaching .					
9	Augmented reality required a teacher who knows how to use computers and tablets in teaching					
10	Augmented reality doesn't need a classroom in teaching .					
11	Augmented reality needs computer and tablets or smart phones in teaching.					
Forth field : Its goal						
12	Using augmented reality in teaching increases the students' imagination ability .					
13	Augmented reality increase the students' ability with real reality .					
14	Augmented reality reduce the risk ratio which the interactive with real reality need.					
15	Using augmented reality is less expensive to interactive with real reality .					
16	Using augmented reality in teaching increase the students' creative ability .					

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