

## QR Codes in Education : A Review

Anita Sondhi<sup>1</sup>, Dr. Ravindra Kumar<sup>2</sup>

<sup>1</sup>Research Scholar, Department of Education, Kalinga University, Chhattisgarh, India

<sup>2</sup>Professor, Department of Education, Kalinga University, Chhattisgarh, India

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### ABSTRACT

Mechanical advances carried utilizations of developments to schooling. Ordinary schooling progressively prospers with new advancements joined by more student dynamic conditions. In this continuum, there are students favoring self-learning. Customary learning materials yield alluring, spurring and innovatively improved learning materials. The QR (Quick Response) Codes are one of these advancements. The point of this review is to overhaul an illustration unit upheld with QR Codes and to get the student sees about the upgraded material. For this reason, the overhauled example unit was conveyed to 15 students in Balikesir University in the scholastic year of 2013-2014. The students were approached to concentrate on the material. The students who had advanced mobile phones and Internet access were picked for the review. To give sectional variety, three gatherings were made. The gathering students were from Faculty of Education, Faculty of Science and Literature and Faculty of Engineering. Later the semi-organized meetings were held, the students were gotten some information about their pre-information about QR Codes, QR Codes' commitment to learning, hardships with utilizing QR Codes about and configuration issues. Spellbinding information examination was utilized in the review. The discoveries were deciphered based on Theory of Diffusion of Innovations and Theory of Uses and Gratifications. Later the exploration, the subjects found were attention to QR Code, kinds of QR Codes and applications, commitments to learning, and expansion of QR Codes. By and large, the students taking part in the review detailed that they knew about QR Codes; that they could utilize the QR Codes; and that involving QR Codes in schooling was valuable. They likewise communicated that such elements as visual components, allure and direct steering emphatically affected learning. What's more, they for the most part referenced that they didn't have any trouble utilizing QR Codes; that they enjoyed the plan; and that the substance ought to incorporate both shallow and inside and out data.

Keywords: Mobile learning, QR Code, Communication, Distance education

## I. INTRODUCTION

It is feasible to say that more extensive utilization of the Internet and the abatement in the costs of cell phones has expanded the utilization of these gadgets. Individuals can work with next to no limitation of spot and utilize these gadgets for various purposes. As indicated by Al-Khalifa (2011), perhaps the main parts of cell phone is their capacity to get to the Internet anyplace, which makes it conceivable to arrive at the data whenever they need. Versatile, in particular pervasive learning is reshaping the learning climate. From SMSs to Smart Phones, it has changed the method of cooperation among students and the learning materials. Students can arrive at learning objects (video, text, sound and so on) quicker than at any other time. Since correspondence learning, printed version materials (course books) are the base materials of learning for open and distance learning courses at Anadolu University ("Acikogretim Sistemi - Tarihsesi," 2012).

As indicated by ABI research (2013), there were 1.4 billion PDAs in the World. A raport about the utilization of advanced mobile phones, which was distributed in 2014, shows that the number had reached to 1.75 billion (eMarketer, 2014). Another review uncovered that 89% of the advanced mobile phones are utilized the entire day (Smartphone clients all over the Planet, 2012).

Figure 1 presents the purposes behind utilization of PDAs in the last part of 2011 all over the Planet. As indicated by the information introduced in the Table, PDA proprietors use their telephones for gaming, which is trailed by interpersonal organizations, music and news. Involving PDAs for instructive designs is around 11%.

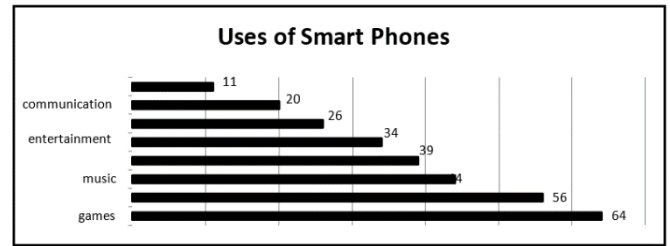


Figure 1 : Uses of Smart Phones

Figure 2 presents the month to month information use for 2013 and 2014. As per the information, there was an increment of 69% in a year. Figure 3 shows the complete Internet traffic information in 2000 and versatile Internet traffic information in 2014. As indicated by Figure 3, versatile traffic information in 2014 were multiple times more than the all out Internet traffic information in 2000.

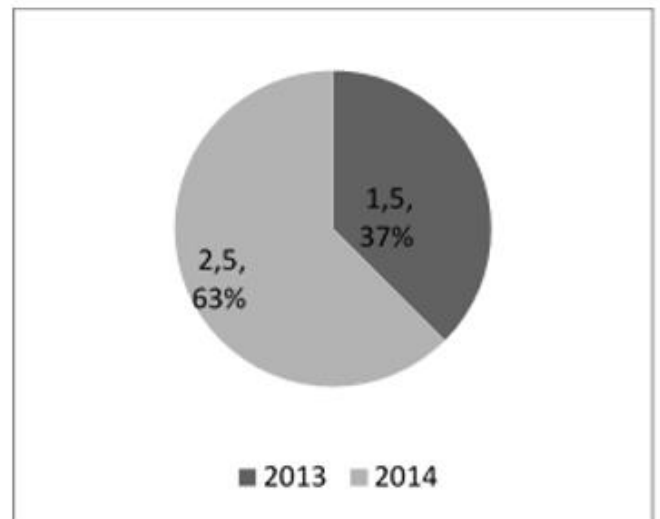


Figure2: Monthly data use in Exabytes (Cisco, 2015)

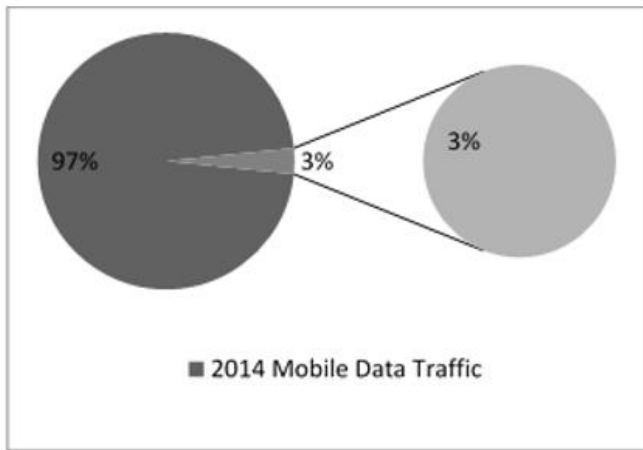


Figure 3: Year 2014 Mobile and year 2000 Total Internet Traffics by percentage (Cisco, 2015)

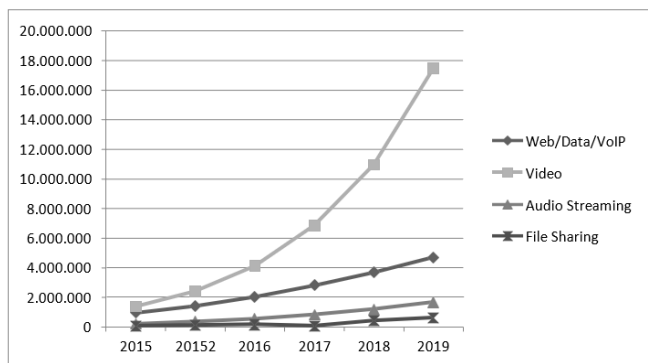


Figure 4. 2015 – 2019 Mobile data traffic by application TB by month (Cisco, 2015)

When the graph in Figure 4 is examined, it is seen that two-third of the mobile data traffic will be of videos.

## II. THEORETICAL BACKGROUND

This review is grounded upon the Theory of Diffusion of Innovations and Theory of Uses and Gratifications. The information in this review were deciphered based on these speculations.

### Hypothesis of Diffusion of Innovations

The Theory of Diffusion of Innovations set forward by Rogers depends on four variables: advancement correspondence channel, time and social framework. As per Rogers (2003), this dissemination is a course of correspondence by means of specific channels

between the individuals from the social framework with respect to the "new".

In his hypothesis, Rogers characterized 'advancement' as a thought, an application or an item viewed as new by an individual or association. An advancement doesn't need to be an idea or a plan that is certainly obscure. It is enough that the individual or association has not utilized it previously (Berger, 2005). There are five stages in Roger's model: Knowledge, influence, choice, execution and affirmation.

- ✓ Information: The individual gets educated with regards to the advancement and its utilization.
- ✓ Influence: The individual assesses the positive and negative parts of the advancement and shapes his/her mentalities likewise.
- ✓ Choice: In this stage, the individual chooses to acknowledge or dismiss the advancement.
- ✓ Execution: This stage exists assuming the choice stage is finished emphatically.
- ✓ Affirmation: The Individual certifies and reinforces the reception choice.

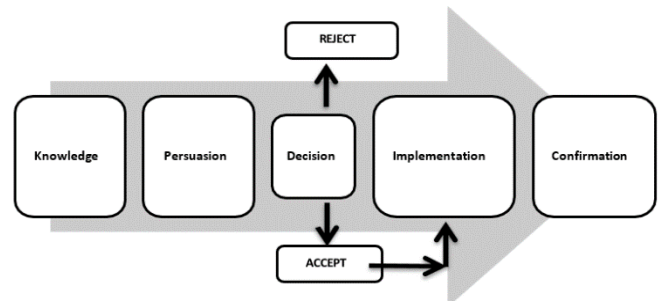


Figure : 5. The innovation-decision process (Rogers, 1995)

### Theory of Uses and Gratifications

The hypothesis of Uses and Gratifications was first declared by Elihu Katz. As per Katz, research on correspondence consistently centered around the subject of 'How does media help individuals?' however the genuine inquiry ought to definitely be 'How individuals manage media?' (McQuail and Windahl, 2010, p.167).

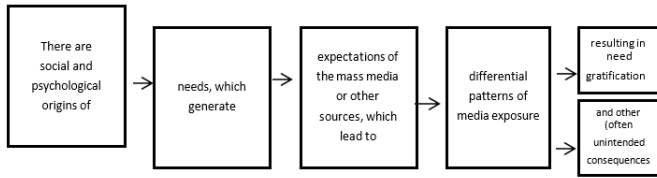


Figure 6. The Uses and Gratifications approach (McQuail & Windahl, 2010, p.168)

In many examinations dependent on the hypothesis of Uses and Gratifications, delights acquired were seen as inspirations essential for specific web exercises. Studies in related writing showed that delights for the most part included looking for data, diversion, observation, correspondence between people, character, obtaining status and gains (Charney and Greenberg, 2001; LaRose, Mastro and Eastin, 2001; Papacharissi and Rubin, 2000).

## QR CODES

QR Codes comprise of dark modules organized in a square example on a white foundation. They are intended to translate the information rapidly. It is very simple to make and utilize these codes (Pons, 2011).

Involving QR Codes for schooling is one more method of utilizing the Internet. Speedy Response (QR) codes are flexible. A piece of long multilingual text, a connected URL, a computerized SMS message, a business card or practically any data can be implanted into the two-layered standardized identification. With moderate prepared cell phones, QR Codes can interface clients to the data rapidly and effectively (LAW, SO, and 蘇永華, 2010).

Beginning around 2011, utilizing QR codes has been utilized in various structures. As indicated by comScore MobiLens (2011), 1 out of 5 PDA proprietors in U.S. examined QR codes. Canada and Germany both saw close 16% of advanced cell proprietors filtering QR codes in a month, while the UK and Spain (home to the most entered PDA markets) saw only 12% of their members checking

QR codes. (Source: comScore MobiLens, 3 mon. avg. finishing Dec-2011)

QR codes are utilized in a wide scope of regions like media, road flags, all spots prompting sites, music, video and interpersonal organizations (Arslan, 2011). As per Walsh and Andrew (2011), a portion of the gainful employments of QR Codes incorporate crossing over printed materials to electronic materials, arriving at voiced materials, opening inserted recordings, furnishing libraries with outside assets and arriving at proper assistance.

## QR Codes in Education

It very well may be expressed that reviews on utilization of QR Codes in training were for the most part directed in the field of portable learning. Survey of the connected writing uncovered that cell phones were utilized while utilizing QR Codes. As per So (2008), the main part of portable learning is the trilogy of 'area freedom', 'time autonomy' and 'significant substance'. These three essential highlights are among qualities of portable learning, and they vary from e-learning and electronic learning because of these elements (Law and So, 2010).

The rising pace of versatile innovation is expanding and infiltrating all parts of human existence. Hence, this innovation assumes an imperative part in learning various components of data. Today, a reasonable shift from instructor focused figuring out how to understudy focused learning makes understudies find innovation more viable and fascinating than any time in recent memory (Miangah, 2012).

In a trial review directed on the utilization of QR codes in instruction (Rikala and Kankaanranta, 2012), the perspectives on 76 students and of their instructors from four distinctive level not set in stone. The consequences of the review uncovered that the students were excited and persuaded to utilize the QR

codes. With respect to the their instructors, they drew nearer mindfully to the utilization of QR codes in schooling and referenced the probability of different hardships to be knowledgeable about connection to the arrangement of example units and time. Moreover, in the review, it was observed that QR codes could spur students and cause them to notice class since these codes support learning and give openings both to autonomous learning and for helpful learning.

In one more review did by McCabe and Tedesco (2012), QR codes were utilized by means of advanced cells for direct association with the subjects inside the extent of the course of science. In the review led with 14 students, every one of the students revealed positive perspectives about the QR codes ready for the course of science. In such a course interaction, 83% of the students expressed that they arranged for the accompanying illustration better and got their work done all the more beneficially, and 67% of them expressed that there was an increment in their course stamps and that they thought that it is not difficult to utilize QR codes. Furthermore, as uncovered by the main finding acquired in the review, 83% of the student experienced less pressure when they read up for the examples with the assistance of QR codes. As per the students, the explanation was that it was quickly conceivable to get to the fundamental data through QR codes without asking their friends or educators.

Hernández-Julián and Peters (2012), in their review led to contrast doing schoolwork on the web and doing schoolwork on paper, observed that an electronic climate could make it simpler to get to an educational material and that it didn't altogether impact learning.

Al-Khalifa (2011) fostered a Mobile Snapshot Response framework with QR Codes. The framework pointed toward working on the correspondence among educators and their understudies. Streams

(2010) planned an undertaking based QR Code framework for English language instructing. In the review, the scientist clarified how the framework was created, applied and tried. It was viewed as in

the review that the students appreciated and profited from the framework while utilizing it to do the course exercises. Liu, Tan and Chu (2007), in their review, fostered a learning framework to further develop students' English language levels with the assistance of QR Codes. The review uncovered that the QR Code framework learned English.

Chen, Teng, Lee and Kinshuk (2011) led a review to permit admittance to computerized materials through QR Codes in paper-based understanding errands. The outcomes proposed that immediate admittance to computerized assets utilizing QR codes doesn't altogether impact understudies' understanding appreciation.

In their review, Ozcelik and Acarturk (2011) pointed toward diminishing the spatial space among printed and online assets utilizing QR Codes. In this observational review did with 44 college understudies, the understudies were partitioned into two gatherings (paper + cell phone and paper + PC). In the review, it was inferred that gratitude to QR codes found in course books, cell phones add to learning since it is effectively conceivable to get to data on the web.

Bread cook (2010) involved QR Codes in his review named "Making Physical Objects Clickable: Using Mobile Tags to Enhance Library Displays". The specialist detailed that libraries ought to contain both physical and electronic media and that the versatile naming innovation between these two conditions will give a strong premise to new age libraries.

Hwang, Wu, Tseng and Huang (2011) fostered a learning stage utilizing QR codes through phones which are low-valued and which have a camera and



web association. This exact review showed that the students involving the stage exhibited significant enhancements as far as learning proficiency and learning accomplishment.

#### Planning a Lesson Unit Supported with QR Codes

In this review, QR Codes were added to an illustration unit of Computer-101 course book for Anadolu University Open Education Faculty. As should be visible on figure 7, we made a twitter account, a Facebook support page and QR connects to the computerized type of the course book. As Bolter and Grusin (2000) referenced, hypermedia targets tending to various and various feelings of human. Utilization of more faculties for hearing, seeing, smelling and contacting, learning expands learning. Rather than the medium, the informative techniques cause the learning (Clark and Mayer, 2008), yet utilizing various media gives capacity to utilize various methodologies.



Figure: 4. Cover page showing Twitter and Facebook Support pages

In Figure 8, there are two different QR Codes from the lesson unit? The upper one leads to a video about the subject, and the other leads to a Wikipedia page.

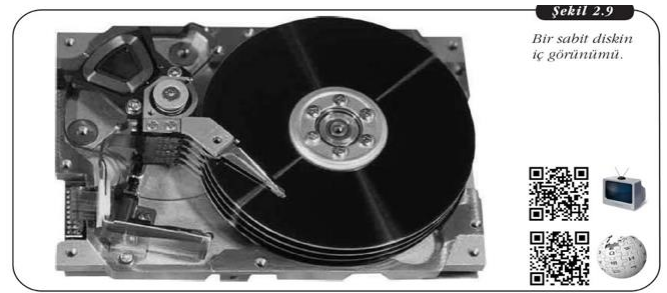


Figure 8. Using QR Codes in the lesson unit

In Figure 9, the QR Codes link to Google images and Flash videos.

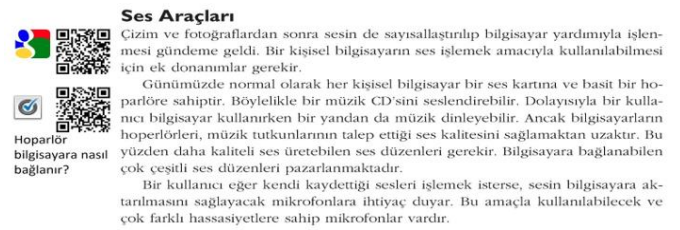


Figure : 9 Google images and Flash videos

### III. METHODOLOGY

The current review was planned as a contextual analysis. As indicated by Creswell (2009), contextual analysis is a subjective methodology where the examiner investigates a limited framework (a case) or different limited frameworks (cases) after some time through point by point, top to bottom information assortment including numerous wellsprings of data (e.g., perceptions, interviews, varying media material, archives and reports) and reports a case portrayal and case-based topics.

In this review, the scientists updated an illustration unit of the course book by adding QR codes. The QR codes connected the student to sites, applications and informal organizations connected with the subject to be instructed.

#### Members

The members in the review were 15 understudies from Faculty of Education, Faculty of Science and Literature and Engineering Faculty of Balıkesir University in the scholastic year of 2013-2014. In the

review, the deliberate inspecting technique was utilized. In this technique, the specialist chooses whom to remember for the review and picks the members generally fitting to the reason for the examination (Balci, 2004).

The understudies who were picked for the review met the models of having a "savvy" telephone and approaching the Internet utilizing their telephones. These understudies were isolated in three gatherings:

- ✓ Bunch 1: Second-grade understudies from the Department of Computer and Instructional Technologies in Necatibey Education Faculty
- ✓ Bunch 2: Third-grade understudies from the Department of Mechanical Engineering in of Engineering Faculty
- ✓ Bunch 3: Students from the branches of Physics, Chemistry and Biology in Faculty of Science and Literature

The reason for picking these gatherings was to break down alternate points of view of understudies from various offices.

#### Information Collection

In this review, the scientists pointed toward deciding the students' perspectives about the example unit upheld with QR Codes. For this reason, semi-organized inquiries questions were ready. As indicated by Ozguven (2004), semi-organized meetings give a chance to roll out certain improvements during the meeting for unusual circumstances.

The most common way of setting up the inquiries questions started with draft questions and proceeded by hearing master point of view. Later well-qualified sentiments, the vital changes were made, and the inquiries questions were applied to three understudies as a pilot study. The reason for the pilot study was to comprehend assuming the inquiries were clear, open-finished and steady with the point of the review.

In accordance with the motivation behind the review, there are six inquiries:

- ✓ What was your level of information about the subject before the review? Later this illustration unit, what do you think your level of current information about the subject is?
- ✓ Did the QR Code upheld example unit have positive effect on your learning? How viable it was on your learning?
- ✓ What should the substance of QR Codes be? (Text, Links to recordings, texts, sounds or pictures)
- ✓ What issues did you encounter while utilizing the QR Codes?
- ✓ What is your take on the plan of QR Codes on pages? What are your ideas?
- ✓ Should QR Codes be utilized for subtleties or for improvement? (Improvement; with same trouble however with alternate points of view, similar to a basic video, itemizing; additional data for whom it might concern)

#### Information Collection Process

Interviews were held in one of the analyst room in Necatibey Education Faculty fundamental grounds. Complete of 15 understudies took part the review. In the main stage, the members were educated with regards to point of the examination. During the gathering, definite data was given to the members about the motivation behind the review and about the examination technique. The members were additionally educated with regards to such subjects as establishment regarding the vital programming, connection to the help page and contact data. The understudies were requested their assent and informed that the meeting would be recorded and the accounts will not be utilized for some other reason.

Following the main gathering, the course material (the PC course example unit upheld with QR Code) was given to the members, and they were approached to read up the material for a long time. What's more, a gathering was framed on an interpersonal

organization site, and the understudies joined to this gathering. The point of the gathering was to offer specialized help for the students experiencing difficulty with QR Code application.

Following fourteen days, the appropriate setting for the still up in the air as per the members' decisions. Each meeting required around five minutes. Later the meetings, the sound records were deciphered. As per the pre-arranged coding draft, the inquiries and the understudies' responses were dissected and inspected.

#### Information Analysis

For the examination of the information, inductive coding and graphic investigation were utilized. Inductive coding was utilized to uncover the ideas from the information and the associations between the ideas. In elucidating examination, the information are summed up as indicated by beforehand set topics. To underscore the perspectives, direct citations are every now and again utilized. The discoveries got are deciphered dependent on the circumstances and logical results relations (Yildirim and Simsek, 2008).

The scientists, without rolling out any improvements on the records, changed over them into composed texts. For legitimacy issues, a specialist was requested his viewpoint. As indicated by Yildirim and Simsek (2008), in the event that more than one scientist breaks down the information together, coding unwavering quality should be considered. It is an absolute necessity to reach .70 or higher for the dependability of the information.

The specialists and the master autonomously coded the information into proper topics. The codings were thought about, and it was observed that since the dependability esteem was higher than .70. Along these lines, the coding was seen as solid. The information, which were put by the meeting graph, were characterized, and the outcomes got were upheld with direct citations.

#### Discoveries

Later the investigation, the information were coded, and the topics were made. The discoveries were deciphered by the hypotheses of Diffusion of Innovations and Uses and Gratifications. The discoveries acquired by means of the examination questions were as per the following: Awareness of QR Code advancements, types and points of utilizing QR Codes, QR Code commitment to learning, and expansion of QR Codes.

#### Consciousness of QR Code Technologies

At the point when the members were gotten some information about their consciousness of QR Code innovation, the accompanying discoveries were acquired :

Table: 1 Awareness of QR Code

<b>Themes</b>	<b>Frequency (f)</b>
<b>No knowledge</b>	<b>6</b>
<b>Awareness</b>	
<b>Advertisements</b>	<b>3</b>
<b>Medicine Boxes</b>	<b>5</b>
<b>Posters</b>	<b>3</b>
<b>TV – Internet</b>	<b>2</b>

#### Types and Aims of Using QR Codes

According to participants' answers about their preferences of using QR Codes and about what their contents should be, the following findings were obtained:

Table : 2. Types and Aims of Using QR Codes



Themes	Frequency (f)
<b>Preferences of use</b>	
<b>Video</b>	<b>14</b>
<b>Image</b>	<b>5</b>
<b>Leading to social networks</b>	<b>7</b>
<b>Audio files</b>	<b>4</b>
<b>Download links</b>	<b>5</b>
<b>Preferences to content</b>	
<b>Surface information</b>	<b>3</b>
<b>Deep information</b>	<b>1</b>
<b>Surface and deep information</b>	<b>11</b>

At the point when the members' perspectives about utilizing of QR Code were dissected, it was observed that practically each of the understudies settled on video coordinating. Different thoughts were connecting to pictures, informal communities, sound documents and download joins.

### QR Code Contribution to Learning

The members were gotten some information about in the event that involving QR Codes for schooling had beneficial outcome on their learning. Provided that this is true, which elements of QR Codes were adding to their learning? The discoveries are introduced in the Table underneath.

Table : 3. QR Code Contribution to Learning

Themes	Frequency
<b>No positive effect on learning</b>	<b>-</b>
<b>Positive effect on learning</b>	<b>15</b>
<b>Visuals</b>	<b>9</b>
<b>Ease of use</b>	<b>5</b>
<b>Direct leading</b>	<b>8</b>
<b>Attractiveness</b>	<b>9</b>
<b>Updatable information resource</b>	<b>5</b>

With regards to the reasons and constructive outcomes on learning, each of the members had the very thought that QR Code upheld illustration unit effectsly affected learning. At the point when the reasons were examined, the accompanying subjects were found: constructive outcome of visuals, convenience, direct driving, engaging quality, and updatable data asset. An understudy named Mansur said:

"Obviously it effectsly affects learning. It is more fascinating than a customary book, so we can invest more energy. Also, there is a more straightforward and updatable substance. It is rapidly updatable. I think I lean toward somebody training me to perusing. That is the reason I thought that it is helpful".

### Multiplication of QR Codes

The members were requested their thoughts regarding multiplication of QR Codes to look at whether or not they would utilize QR codes; regardless of whether utilizing QR Codes were powerful; which variables would be the causes and which elements would control the utilization. The Table shows the discoveries acquired.

Table : 4 Proliferation of QR Codes

Themes	Frequency
<b>The factors that would restrain the use</b>	
<b>Difficulties and technical problems in the process of transition to new technologies</b>	<b>5</b>
<b>Lack of academic staff who know how to use QR Codes</b>	<b>10</b>
<b>Preference of different technologies</b>	<b>2</b>
<b>Lack of necessary equipment</b>	<b>9</b>
<b>Need for technological knowledge</b>	<b>14</b>
<b>It will be effective to use QR codes</b>	
<b>Boredom with course books can be avoided</b>	<b>8</b>
<b>Direct links reduce the loss of motivation</b>	<b>7</b>
<b>Using multiple media together enriches the content</b>	<b>11</b>

What's more, the members recorded the purposes behind not involving this innovation as follows: absence of instructors/scholastic staff who know how to utilize the innovation; other accessible advancements to like, absence of fundamental gear to utilize the innovation, and provided that this is true, there is a requirement for mechanical information.

At the point when the issues with respect to the utilization of QR Codes in the illustration unit were inspected, it was seen that as the vast majority of the students didn't encounter any issue. The people who had issues revealed that they encountered issues with respect to fixing the cam point, goal and association issues. The members leaning toward the utilization of

QR Codes announced that QR Codes behaved like media and that they could in this way help decrease the routinized design of books. What's more, as per the students, they encountered less inspiration misfortune, and improved substance would have beneficial outcome on learning. One understudy, Alper, communicated his thoughts as follows: "... at the point when I become an instructor, I am wanting to utilize QR codes. They assist with making learning more significant. Direct connecting to the assets doesn't cause any deficiency of time helps arrive at where you need to We don't lose time looking on the net Furthermore, recordings and sounds accessible are extremely useful." Mansur said "I believe it's great. Youngsters might get exhausted while understanding books, I suspect as much, and I lean toward this technique."

#### IV. DISCUSSION

This review pointed toward distinguishing the perspectives on the members about the QR Code upheld example unit. The outcomes uncovered that the members accomplished an agreement on the constructive outcomes of QR Code on learning. They expressed that they would involve QR Codes later on. This outcome could be clarified with the hypothesis of dispersion of advancements. As per the hypothesis of advancements, through five phases of the hypothesis understudies got educated with regards to QR Codes on the off chance that they haven't previously, created uplifting perspectives, acknowledged the development, implemented by utilizing the QR Code application and affirmed the would like use it later on. Furthermore, the finding got is corresponding to those announced in different examinations directed by Susono and Shimomuro (2006), Liu, Tun and Chu (2007), Hwang, Wu and Huang (2011) and Law and So (2010). As indicated by the discoveries, members track down QR Codes successful as far as visuals, convenience direct connecting, appeal and updatable data sources. Furthermore the consequences of different

investigations completed by Miangah (2012), Rivers (2010) and Law and So (2010) additionally support the outcomes acquired in the current review.

It was seen that as a large portion of the members knew about QR Codes. Utilization of QR Codes in instruction was viewed as an advancement. This outcome shows comparability with the %65-reaction of 'YES' to the topic of "Have you at any point seen a QR Code" coordinated in a review named QR Code Usage and Interest Survey directed by MGH (2011). The members' reactions were recorded as advertisements, medication boxes and TV-web. This outcome is additionally steady with the discoveries detailed by MGH (2011).

The members concurred that the QR Code innovation ought to be utilized for the spread of QR Codes. This finding is predictable with those gotten in different investigations completed by Ozelik and Acarturk (2011) and by Rikala and Kankaanranta, (2012). In this specific circumstance, the members' assumptions and satisfaction of these assumptions were compelling.

The principle factor forestalling the utilization of QR Codes is the requirement for enough innovative information to introduce and utilize the application. Different elements can be summed up as challenges experiencing significant change to another innovation, absence of scholastic staff who knows how to utilize QR Codes, learners' preferencing different advancements, and absence of vital equipment. Cell phones and enhancements in Internet, both as far as speed and content, have positive impact on dissemination of QR Codes.

Comparative discoveries were additionally acquired in a review completed by Rikala and Kankaanranta, (2012). The distinction from the this review is Rikala and Kankaanranta (2012) referenced the plausible challenges to be knowledgeable about planning QR code substance and called attention to that such

applications were probably going to take a ton of time and that there was a requirement for additional models in regards to its utilization.

The members for the most part had a similar thought regarding utilizing the QR Codes detailing that they liked to get to the recordings. Likewise, the members additionally preferred the component of being coordinated towards interpersonal organizations that drives students to collaborate. Contingent upon this assertion, it very well may be expressed that the components of correspondence and participation are important for learning. The elements of correspondence (Al-Khalifa, 2011) and collaboration (De pretro and Frontera, 2012) are discoveries gotten in investigations led on the utilization of QR codes in instruction. When considered according to the viewpoint of organizations, it very well may be expressed based on Uses and Gratifications Theory that the members were happy with simple admittance to the learning content, direct connecting and getting to rich substance utilizing QR Codes.

The dissemination of development hypothesis has five stages specifically information, influence, choice, execution and affirmation (Rogers, 1995). In the information stage, the students were generally acquainted with QR Codes. In spite of the fact that they referenced that they had never seen QR Codes in the field of schooling. The members and the analyst talked about whether or not involving QR Codes for schooling would be compelling. Every one of the understudies expressed that there will be beneficial outcome on learning. This can be named as influence stage.. At the choice stage, the members were requested the reasons that made them utilize course material upheld with QR Codes. It was tracked down that rich media, high inspiration, convenience and direct connection impacted their decision of utilization. The discoveries got in this stage were like those announced in different investigations directed by Law and So (2010) and Rikala and Kankaanranta,

(2012) (simple use and inspiration). During the fourteen day survey of the illustration unit, each of the students utilized every one of the QR Codes. There is a period contrast between clients, some did it in a quicker than the others. At the affirmation stage, the members were coordinated inquiries concerning whether they were considering involving QR Codes later on. Each of the understudies addressed responded to that if conceivable they could involve QR Codes later on. The meetings uncovered that involving QR Codes for instruction would be advantageous and alluring. That would have constructive outcome on learning. This outcome is steady with the view announced by Rikala and Kankaanranta (2012) that students need to re-experience QR code-helped learning and that such applications should be utilized for training.

It is feasible to say that the students who had surveyed the QR Code upheld illustration unit encountered the affirmation stage. The members recently knew about what the QR Code is, the thing that is it utilized for and how it very well may be useful for learning. They offered positive viewpoints about expanding QR Code use for instructive purposes. Furthermore, it is likewise conceivable to say that QR Codes finished its dissemination among the students who assessed the example unit.

## V. CONCLUSION

Its' feasible to contend that expanded reality applications offer novel interations among human and climate utilizing cell phones. The pervasiveness of data frameworks weakens the limits of electronic and non-electronic devices, gadgets and conditions. The period of data social orders requires handling, communicating and putting away more information and data in an expanding pattern. QR Codes can contain more data when contrasted with a customary standardized identification. Computerized supplies like camera prepared cell phones and related

applications lead the multiplication of QR Codes. Then again the printed or the paper-based materials are as yet fundamental for organization of data like books, papers, research papers, letters and so on Utilizing QR Codes on printed materials like course books might improve the appealing and elucidative parts of pieces of literature.

Albeit relatively few related examinations have been directed in the field of training, they are for the most part utilized for strong purposes. The examination on QR Codes shows that they were inclined toward on account of direct connecting, blending rich substance and making them more charming. Inspiration is one of the vital variables of learning for open and distance-learning students. QR Code upheld pleasant learning conditions might assist students with keeping up with their inspiration. QR Codes particularly utilized in libraries are turning out to be more normal worldwide by utilizations and satisfaction (of QR innovation?). It goes about as a scaffold connecting the actual climate to the virtual climate. As in the remainder of the World, as far as Turkey, it is for the most part utilized in wellbeing related conditions, advertisements and announcements.

Despite the fact that it is more straightforward to utilize QR Codes, it is beyond the realm of possibilities to expect to utilize them without mechanical necessities. It is likewise conceivable to contend that being familiar with an innovation might make the new innovation more straightforward to learn and utilize. In this viewpoint the utilization of QR Codes would increment in accordance with the expansion in the connected advancements like PDAs and tablets.

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