

## Improving Advertising Design Education and Learning by Using Digital Game Based Learning

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### **Abstract:**

Using digital games based learning is a way of learning from experience, the key of using digital games is students who became active participants rather than passive Observers. Using education through digital games allow students to be embedded in the game in an entertaining way, having the ability to go backward in some steps and rehearsing, under the supervision of professors specialists provide advice required.

Video games can be used at home so learning time is not limited to timing for the student in the lecture, but it can allow him for continuous training and hence improvement.

The research aims to examine the possibility of employing the video games technology to be used in education and learning in the field of advertising design and highlight its potential functional in education and learning aspects in different fields of education.

The researcher assumes that by employing this technology, we can use game based learning as a new way of teaching and learning in the advertising design field to improve our ways of teaching especially for theoretical courses. The researcher contribution will be by presenting a scenario through a story board for experimental steps of converting a curriculum into video game based learning in a simple way to be more attractive for students in learning, giving the overall visuals a game need, but actually we need a team of programmers and developers in addition to game designer to have a real video game.

### **Keywords:**

Digital game based learning, advertising design education and learning, Video games

### **Introduction**

Due to what the world witnesses in changes and challenges in various scientific and technological fields, abound questions appear on how to cope with these in teaching and learning field. Modern technology gave us many variables that influenced our lifestyles and that was not away from patterns of teaching and learning ways, as we can say that using computer software to display scientific articles like power point or using different methods of education as group working, case studies are not enough to keep up with the continues development provided by science. Changes began to appear with the enormous increase in and effectiveness of information technology and computer use, but there is an even more significant change emerging now, digital games and simulations, artificial intelligence and virtual reality with interactive technology. Our students today are seeing power, performance learning in their

popular culture than they see in their colleges and this due to this revolution in social networks and video games and online gaming [11]. They are accustomed to use YouTube, Facebook, iTunes and android mobiles, which lead them to exam the digital environment indifferent fields

Employing simulation in teaching and learning methods is used to engage the theoretical and practical part of science together; digital simulation provides effective virtual-learning experiences for learners in many fields as medicine, police training, engineering, physics, the military and aviation.

Video games hold great potential for teaching people for almost many situations. In fact, education researchers have determined that people, especially adults, learn better by experiencing than through reading or lecture, and video game's experiences can be just as valuable a training tool as the real life.

Digital video games aren't only a way of

entertainment; they go farther to be we way of live and thinking. And, this gives the opportunity to use these digital games in education as a tool to teach and reinforce skills important for future jobs such as collaboration, problem-solving, and communication. Video game skills transfer to and lead to greater comprehension of scientific simulations, due to increased ability to decode the iconic representation of computer graphics. Playing video games enhance players' skills at "divided attention" tasks, such as monitoring multiple locations simultaneously, by helping them appropriately adjust their "strategies of attentional deployment." Players get faster at responding to both expected and unexpected stimuli [6].

Using games is effective not because of what they are, but because of what they embody and what learners are doing as they play a game. In a game what you must learn is directly related to the environment in which you learn and demonstrate it; thus, learning is not only a relevant, but applied and practiced within that context. Learning that occurs in meaningful and relevant contexts is more effective than learning that occurs outside those contexts, as is the case with the most formal instruction [7].

One other attractive element of the gaming experience as a learning tool is that it provides opportunities for continued practice because negative consequences are not typically associated with failure, and this encourages players to improve through repeated practice either by advancing within a game or replaying parts of a game.

Digital games for learning process are built with clear goals and provide instant feedback. And, this allows players to change their ways in order to improve their performance and reach their goals, having direct feedback while they are playing to allow active discovery and develop new kinds of comprehension. In this context, digital games based learning can create a learner guided environment. The student has control over where he goes and what he does within the game. The game also allows the freedom to freely explore and experiment within the environment. As the student plays the game, he may adapt to the environment, pick up the game vocabulary, and undertake tasks, so he can progress to more complex levels. As the student continues to play, he must constantly readjust expectations and interactions based on the causes and consequences of each interaction [2].

Katie Larsen McClarty, Aline Orr and others

claim that using digital games in education are built on sound learning principles, and provide more engagement for the learner, with personalized learning opportunities, besides teaching 21st-century skills, and providing an environment for authentic and relevant assessment [15].

And according to the surveys and studies, digital based learning (DGL) is already in practice in various fields and subject areas. It is used in business, in economics, engineering and going powerfully in higher education. Some Companies who works in the field of marketing are using games already to teach subjects ranging from options trading to customer service.

### **Review of literature:**

#### **1- Digital games based learning:**

##### **1.1 Digital video games:**

Digital games are considered the largest and fastest-growing market segment of the multimillion-dollar entertainment industry. Salen and Zimmerman's defined digital games, as a "system in which players engage in artificial conflict, defined by rules that result in a quantifiable outcome," the elements of "gamification" which means the use of games like mechanisms, applied to increase motivation and engagement or as an extrinsic reward system to increase motivation [9]. The success in digital games require many skills such as thinking, planning, learning, and technical skills. Digital games provide those kinds of skills where you can think, understand, prepare, and execute actions, and this is due to playing in a simulated environment.

Video games are the most likely digital games simulating to real live. They are aspects of society in which they are produced. They are a reflection of our dreams and reality and by this concept; video games went through player's life. During playing people became an embodied subject whose identities are shaped by the cultures in which they are situated.

Revolution of video games rose through the technology of Xbox Kinect or simply Kinect (originally known by the code name Project Natal). It is a "controller-free gaming and entertainment experience" for the Xbox 360 video game platform; it enables users to control and interact with the application/game without the need to touch a game controller, through a natural user interface. In addition to addition to

responding to how you move, once you wave your hand to activate the sensor. Your Kinect will be able to recognize you and access your Avatar besides ignoring background. Kinect uses gestures and spoken commands, by mapping the gestures to meaning and commands.

### **1.2 Digital Game based learning (DGBL)**

According to Kolb experiential learning consists of four elements, concrete experience, observation and reflection, the formation of abstract concepts, and testing in new situations. He suggested that the learning process begin with carrying out a specific action and then seeing the effect of the action in this situation. Second, is to understand this effect in the particular instance enough to understand what follows if the same action is taken in similar situations. The third step is to understand the general principle under which the particular instance falls, and last is to transfer what is obtained into real life [11].

Because experiential learning is often equated with high levels of learner activity, researchers begin to suggest that computer games can help to stimulate a successful learning environment and provide motivational learning contexts that suit many learners. That's why game based learning is thought to be ideal, especially for those who may be less motivated to learn with traditional materials. The contextual content of games allows the learner to "learn by doing" [11].

The term game based learning (GBL) refers to this type of game play that has defining learning outcomes. It is designed to balance subject matter with game play with the ability of the player to retain and apply said subject matter to the real world [8] This term refers to the use of video games to support teaching and learning. Game based learning offer opportunities for appropriate practice within contextualized learning environments that are not bound by what is safe, reasonable, or sometimes even possible in real life.

We can say that it is a powerful educational tool that is becoming more widely used due to their effectiveness in providing powerful learning experiences [14].

Wagner (1994) argued that "interactions are reciprocal events that require at least two objects and two actions, and it occurs when these objects and events mutually influence one another, and this is what games provide, as due to this interaction, there is a self-direct experience in

this interactive relation with a continues process of automating analysis and personalized feedback [10].

### **1.3 Classifications of digital games and their relation to learning**

It is interesting to observe that some general types of games have some educational potential. Nevertheless, which genre would best fit to a certain educational context would depend on several parameters such as the learning subject, the study material, the pedagogical objectives, etc.

- **Action:** Action games usually present a conflict that must be solved by the player, it require good hand-eye coordination and fast reflexes. They usually promote resource planning, spatial abilities (orientation, mental mapping) and, depending on the setting, can be used to immerse the player in historic or professional environments. Although action games can improve several types of skills, their application in educational settings is quite controversial because of their sometimes relation with violence [20].
- **Role-playing:** These games promote strategic thinking and problem solving skills, as the player usually depends on a group of characters, cooperation and resource management are promoted. This type of games usually includes points systems that can be adapted to be used in education as a means to evaluate the players' performance within the game, or to provide social recognition.
- **Adventure:** Here, the player has to solve a series of problems and puzzles embedded within a narrative structure to progress in a story. They encourage exploration and problem solving skills, and promote the establishment of relations between different concepts. The use of puzzles also helps to establish a challenge and generates a problem solution- effect cycle that helps both in the entertainment they provide and as a learning vehicle.
- **Strategy:** Usually set in historic or fantasy environments, these games force the player to plan the use of resources and face an enemy following an established set of rules. Thus, they encourage short and mid-term planning, as well as the understanding of a usually complex set of rules. Depending on their realism and environment, they can be used in educational settings in order to recreate


- historic events [20].
- **Simulations:** These games simulate real processes, events or environments, through the use of a simplified model. They allow the player to freely modify the environment and perceive the results of his actions on this environment. This type of games achieves a high educational value in the simulated field, by allowing exploration and theory confirmation through the observation of the different interactions and their results.
  - **Fighting and sports:** Some people would

- argue that fighting and sport games belong to the action type. However we consider sport and fighting games as another type because of the number of the titles the industry produces every year. However, in spite of their important commercial success, they have limited educational value [20].
- The table (1) below summarizes the learning possibilities in relation with the different game types described. Different examples are also provided for each type of game.

**Table (1) show different types of digital games**

Game type	Examples of games of this type	Educational value
<b>Action</b>	Mirrors Edge, Super Mario Bros, Re-Mission, Need for Speed, Mario Galaxy, Pac-Man, Asteroids	Resource planning, spatial abilities and immersion
<b>Role-playing</b>	Fable, Dragon Age: Origins, Dragon Age 2, Never winter Nights, The Elder Scrolls, Baldur's Gate	Cooperation and resource management, strategic thinking and problem solving
<b>Adventure</b>	Braid, Portal; Monkey Island, Maniac Mansion, Zelda; Indigo Prophecy, Heavy Rain; King's Quest; Spyro, Callout	Tell stories , encourage exploration, problem solving and the establishment of relations between different concepts
<b>Strategy</b>	Civilization, Lemmings, Starcraft 2, Supreme Commander, Age of Empires, Dune II, Warcraft, Command and Conquer.	How to solve problems / encourage planning / understanding of complex set of rules / recreation of historic events
<b>Simulations</b>	The Sims, Sim City, Angry Birds, World of goo; RollerCoaster Tycoon, Theme Hospital; F-16 Allied Forces, Il-2 Sturmovik, X-plane, Flight Simulator.	Live in virtual worlds / exploration and theory confirmation / observation of the different interactions and their results
<b>Fighting and sports</b>	Fifa Soccer Saga, Pro Evolution Soccer, NBA Live, Tekken (saga), Street Fighter (saga).	Teamwork, sport practice / hand-eye coordination and reflex

Here is a description of some used digital based learning

Game name	Concept	photos
Civilization III	<p>A historical simulation game that has sold many millions of copies, and it was used as the basis for units and activities exploring world history (this game was successfully used with students who had a little interest in studying history). On the other hand, for educators they used this game in order to engage students to develop historical understandings as well as to become more affiliated with school-based learning in general.</p> <p>The game shows the date or year where the wheel was made or the alphabet was discovered. The experience of playing Civilization III is a cerebral blend of planning, building, managing, and competing with other Civilizations. Civilization III is Packing 6000 years of history into one game; it also includes hundreds of game concepts, ranging</p>	

from its six government types (anarchy, despotism, monarchy, communism, republic, and democracy) to 13 terrain types (grassland, mountains, etc.... to play Civilization III successfully, players must not only understand these terms, but understand the strategic significance of each variable [5].

Power up

Using this game focuses on engineering, diversity and using energy. The objective of the game is to generate clean energy while racing to save the planet from ecological disaster. The game is designed for students with the recommended age 12 to 16 years. The home page has a recommendation for the planned orders of the lessons. The first two lessons review concepts that are integral to the game's back story and provide students with an insight into the diversity of the Engineering field [13].



Dimenxian-Algebra

It is a single player game developed directly for educational purposes with a curriculum content driven from USA National Council of Teachers of Mathematics and state standards. There are two categories of the game have been produced, the first Category, Dimension M, includes games for learners of mathematical subjects. The second category includes science-based, online multiplayer game under the name of Dimension S. During the game; the player (the student) has to translate real-world data onto a graph in order to complete given tasks and missions. In addition to, the player has to know his position in x and y coordinates in order to find given weather station coordinates and takes decisions by solving mathematical problems [13].

Global Conflicts palestine

It is an educational game inform people about the Israeli-Palestinian conflict in social studies and history classes. The game helps to facilitate teaching of communication skills, specific skills and competences in terms of critical thinking in relation to news sources and other competencies of the journalism profession. Using this game help student to build different perspectives on the ideological conflict [13].

**Capitalism II** Capitalism II is a business strategy simulation game. It was published in 2001 by Ubisoft. The players have the aim of managing and building their own company by developing a creative strategy to create a virtual business empire. The players are asked to cover the different business processes that characterize real business life: retailing, marketing, financial planning, purchasing and manufacturing. The goal of the game is teaching the player how to become the richest businessman through challenging other competitors, direct and indirect, and face several business scenarios (e.g. computer sector and food sector). The game requires skills in decision making, strategy and problem solving, due to the complex scenario in which the player is expected to act [13].



#### **1.4 Using of game based learning on higher education:**

Since the year 2006 Scotland schools went through an experience of employing digital game based learning in their schools classrooms, a range of games based technologies are now being used to help make teaching and learning experiences within Curriculum for Excellence challenging, demanding and appealing [16]. The Consolarium\*<sup>1</sup> (has been working with teachers across Scotland to explore the benefits of game based learning. And, due to using digital games as a non-traditional method of education teachers found an increased focus on self-improvement and self-determination, increased engagement in writing and mathematics and more imaginative responses to learning tasks once they begin using gaming in the classroom. Education Scotland has supported schools by loaning them a range of games based resources that include games and consoles for example, Nintendo Wii, Nintendo DS, Sony PS3 and Xbox360[17].

Using game based learning on education does not stop at early years of school or primary and secondary grades, but it goes through to take place on differ universities and colleges, Purdue, Michigan State, University of Wisconsin at Madison, Bristol University, University of Connecticut and many other universities

\* The Consolarium is a center where education managers, head-teachers and teachers can visit in order to try out a range of computer games and game design technologies in order to discuss the relevance and practical application of them in their schools.

introduced game based learning in their classes. Ten colleges have been chosen as the best game based learning, and we will introduce part of their experience.

- a- “Cool it” a game that had been designed at UW-Madison campus, it is an interactive engineering game that has been designed to be used in teaching cryogenics. “Melody Mixer” allowing music majors to experiment with different sounds and materials to learn music theory [18].
- b- Purdue University - West Lafayette urban that is ranking in the 2014 edition of best colleges is National Universities had another experience for using game based learning on education through its serious games center for developing and studying educational games and digital environments to enact in their own classes and to share with schools for K-12. Standout classes at Purdue include “Introduction to Aerospace Design,” a School of Aeronautics course that featured gaming in its curriculum, also computer science and educational departments have offered courses with game-based learning.
- c- The Wharton School, University of Pennsylvania presented games and simulation as an integral part of the curriculum. The Alfred West Jr. Learning Lab has adopted the development of more than 30 games for supplementing education in courses for economics, finance, legal studies and management. There’s “Fare Game,” in which students engage in a simulated airline war over fair prices. “Future View” let’s

- marketing students learns how to market a completely new product by putting them in the virtual shoes of consumers.
- d- Michigan State University is one of the few to provide course to prepare students to work as game designers of serious games. This course is part of its master's degree in telecommunication, information studies, and media.
  - e- Through a STAR Classroom Simulator the University of Central Florida introduced its experience with game based learning by which students trap on a headset and face down five virtual students at an urban middle school, projected on a large screen. Actors a mile away lends their voices and motions to the virtual kids through motion capture, and can see the teacher through cameras and adapt their behavior accordingly. An in-class operator can throw curveballs at the teacher by raising or lowering the volume of the class [18].
  - f- Professor Rogin Angotti from University of Washington – Bothell allows here students to come as close as humanly possible to literally getting their hands-on math, using their bodies to move graph lines around on a screen using Xbox Kinect.
  - g- World of Warcraft, a Video game that was used as a game based learning on Mercyhurst College at the intelligence studies department professors find out that the tactics and strategies needed to successfully play the game are a perfect fit for the intelligence studies program, which involves the disciplines of law enforcement and national security.
  - h- Florida State University College of Medicine The Department of Geriatrics at FSU's College of Medicine is making smart use of games for its graduate students. Students enrolled in the program play ElderQuest, a role-playing game in which players have to nurse the gray Sage, a wizard with a number of health issues, back to his full power. The game helps students to learn geriatric-care principles while still having fun, and even incorporates some of the staff members of the school into game play [19].
  - i- Texas A&M University- Corpus Christi branch is using games to help students in health-care majors learn valuable on the job skills. Called Pulse, the game provides a virtual-learning space for training health care professionals in clinical skills. Students can

- guide a 3D avatar through the medical setting to care for patient needs and to practice some of the most critical patient-care skills they will need once they move into traditional clinical practice [19].
- j- Many students have a hard time embracing a dead language like Latin on University of Connecticut, but not when it's made to be exciting and fun through game-based learning. A game program called Operation Lapis was created by one graduate whose name is Karen Zook with the help of his friend Roger Travis. The game is being used in both undergraduate and graduate courses in the language, and Zook has said that while students resisted using games in classes at first, they eventually came to appreciate the opportunity to game for homework.



Figure (1) the 10 best colleges for game –based learning [19]

## **2- Advertising design education and learning**

### **2.1 Advertising design an over view**

A competency is the knowledge, attributes, skills, behaviors and attitudes that enable an individual to perform a specific set of tasks or objectives to a given standard.[4] Learning at the field of advertising design focus on integrating knowledge, skills and developing competencies across courses. It is based upon this competency of skills between students to reach to the best performance in both creative and critical thinking and application of knowledge, communication skills, resulting in the development of more interdepartmental courses. Anna Moore postulates that “deciding what students need to know and should be able to do in the context of a changing panoply of computing, information, and communications technologies – is a critical first step, next step will be rigorous assessments that demonstrate

the manner and degree to which learning takes place” [1].

Advertising design is the profession of designing print or electronic forms of visual information, as for an advertisement, publication, or website. It is termed commercial art, with all the connotations that it involved. Advertising design encompasses complex problem-solving initiatives, strategic partnerships with communities and businesses, and accountability for success measured in quantitative numbers [3]. It is usually directly about persuasion, intellectual, logical, aesthetic, and emotional. Thus, the balance of practice and analysis of rhetoricians clearly makes sense for advertising design [8].

Advertising design is a kind of visual communication where we can share ideas through the visual display of information and Computer graphics programs are visualization systems which can be used to create visual ideas that can be analyzed by using systems and analytics that focuses on human information (interaction) within massive. Also, they are a dynamically changing information spaces as part of a larger process of data analysis.

Advertising design education curriculum’s focuses on teaching design theories, application studies, production skills in addition to thinking skills with the idea of long-term complex learning which require the use and integration of knowledge and skills from multiple domains.

However, there was always a discussion and debate on what we should care more about in teaching students in this field. And, what the market needs to be full field in our graduates.

A survey done by Laurie Churchman in 2003 who works as an assistant professor for graphic design in University of Pennsylvania to answer a major question about what do employers really value more in design students, thinking skills or computer production skills, Churchman found that there is disconnect between areas in which the profession perceives students to be most prepared, and areas in which they would like students to be most prepared [3]. One hold the opinion that design should be about meaning, and how meaning can be created, it’s about the relationship of form and communication where science and literature meet. That is why strong conceptual, analytical skills, problem solving, typography, and intellectual breadth are certainly a plus on most desired competencies in recent graduates. And, that one’s software skills will get stronger with practice.

On the other hand, we can find that others see it is more important to focus on design theory and computer skills in college as the graduates strengthen their problem-solving skills as they grow, and as they face design challenges. Clearly, many design teachers and many design learning students see “academic” classes as a time stolen from their true purpose, which is the design studio.

### 2.2 Using digital video games in advertising design education and learning

Due to the argue about what is the best way for students in the advertising design program to be a well-educated advertising designer, the researcher see that there must be this integration between communication and practical skills and computer production skills, but here we can ask an important question does the way of educating of advertising design theoretical courses lead us to this integration?

The answer may be no, as it is clear for professors that students at advertising dep. prefer practical studies than theoretical ones. And, some of them see that studying theoretical lessons is very boring for them, and may go farther that it’s a west of time and asking why it does not transfer to a practical course.

That is why I choose a theoretical curriculum with a practical side for students of advertising dep. In order to present it in a new way of a digital game to be more interesting and to learn in an entertainment way in addition that this may lead to save the need for workshops and laboratories. But actually to lunch a game, we will need a programmer and a game designer to translate this data into a real digital videogame.

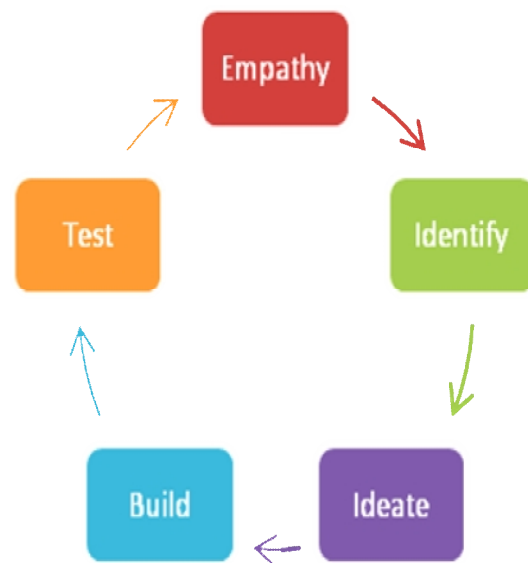


Figure (2) Five- step design thinking



### **3. A contribution for a game based learning in advertising design Field:**

This study is an attempt to contribute to this field by introducing a scenario for a videogame to be used as a game based learning in advertising design education and learning.

The study follows a five step design thinking process that was first presented by kembel 2009 as it goes through a related steps(as shown in figure 2). [4]

- A- Empathy for the stakeholders by having a deep understanding for their wants and needs who are in our case (students, graduates, advertising agencies, schools of advertising). Students need ways of education to cope with their electronic lives and to have more entertainment will learning their courses. Graduates suffer from lack on some aspects due to lack of practicing them as learning with practice especially on our field is a great value.
- B- Identification of problem definition (as we mentioned before that students at advertising dep. prefer practical studies than theoretical ones. And, some of them see that studying theoretical lessons is boring and west of time, theoretical courses are stuff).
- C- Ideation is the seeking of potential solutions to the identified problems (by presenting those courses through a videogame providing both entertainment and educating in a new way of learning).
- D- Prototyping: where solutions are built and it is known as walking skeleton as it provides enough structure to engage in some critical application behavior but without being fully fleshed out (the researcher designed a storyboard for steps of work , graphical samples for the game features in order to narrow the design space)
- E- Tested (the step of testing and evaluation will take place when the game is actually built and this does not happen as my contribution is to exam the ability to convert our courses to a digital game including both education and entertainment , and actually due to testing a rebuilt and redesigning for the game feature can take place.

#### **The Suggested Idea:**

A course under entitled (printing systems techniques1) has been chosen. The course goes through the history and development of printing systems theories. It offers an overview of the

scientific theories of different printing systems and development of technical and technological characteristics of each system. The course also deals with the properties, applications and the use of printing systems in advertising production. Our students learn it on their second semester in advertising dep., the course is a pre-requisite for another course (printing systems techniques 2) which continues with the development of printing theories and techniques in modern industry. So the game is produced for both syllabuses on 2 CDs each of them present types of printing systems related to the syllabus. The reason for choosing this course was

- a- Different advertising products (indoor and outdoor posters, brochures, books, giveaways, stationary, clothes, transit ads) and all kinds of printed advertisements requires different printing systems, so designers should be aware of them and differentiate between their use with different products.
- b- Printing is the most very important part of knowledge and experience advertising designer should not only be aware about but also good in dealing with different printing systems in order to choose the suitable type for his design production.
- c- To practice different types of printing systems it requires varies type of equipment's and tools that should be available on the workshop which is actually not available on most of our laboratories even if it is available it's not up to date , which means that students cannot cope with recent technology.
- d- Actually students cannot practice on some types of printing systems as in the Offset type and this is due to that this type requires huge printers found on printing houses so for this type our students only know it through field visit to printing press houses in order to see it in realty.
- e- Most of design production problems are due to the lack of knowledge in printing systems.
- f- The course consists of 2 integrated parts a theoretical part with application but in fact students don't like to study and actually they only remember applicable information. By introducing the course for them as a game all information's even theoretical ones should be practiced.

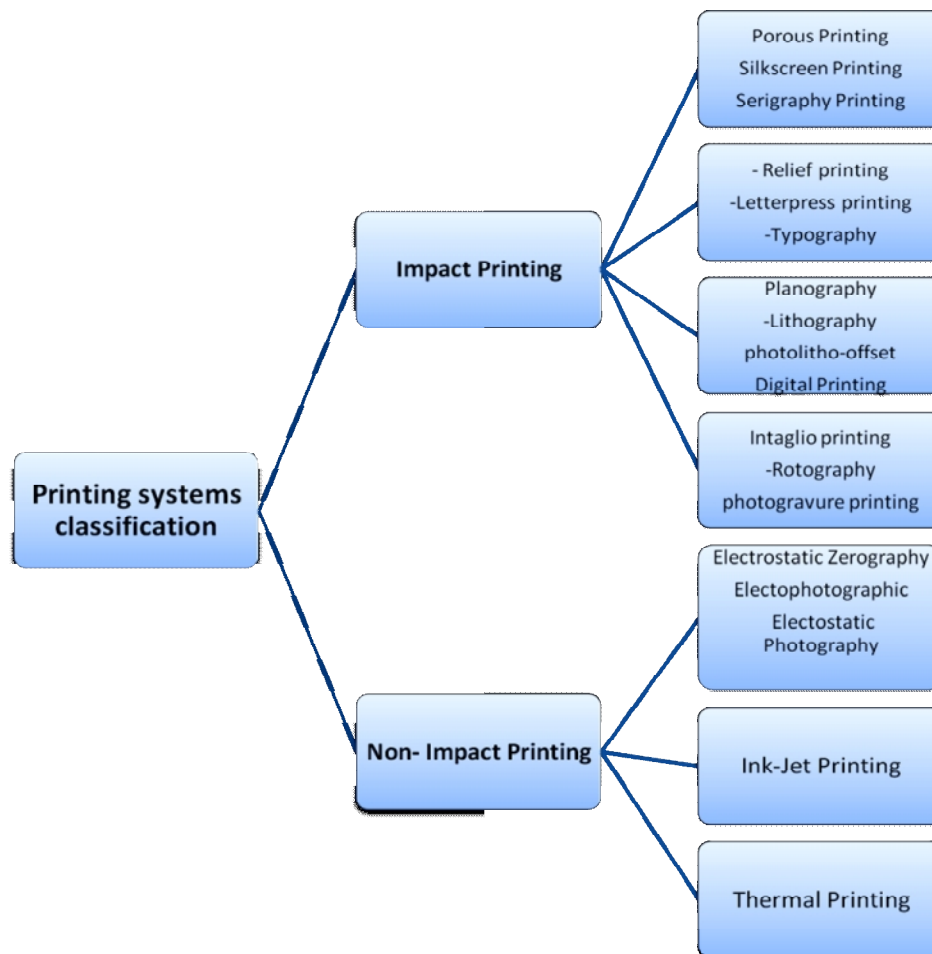


Figure (2) show printing system classification

### 3.1 Game description

**-Game name:** Printing systems techniques

**- Age Range and grade of the learners:** The game is targeting students' age from 16-20 years old, collage learners .

**- The context of the game:** Game will be played online connected to the collage server; the game will be developed to the PC framework and will be presented in 2D animation (using one of the two game authority tools that have been specifically created for education: **EUTOPIA** and **e-Adventure**. Presented by proactive team [20]

But in our case e-Adventure will be used as it is an educational game authoring Platform centered in the creation of point and-click adventure games and simulations. In these games, the player explores the game world using the mouse. When the mouse pointer is over an interactive element (e.g. a character the player can talk to) visual feedback is provided. Then the player can trigger the interaction by clicking the mouse. **e-Adventure** provides teachers with a user-friendly game editor that allows them to define the characters, items, and scenes that will

compose the game. Then they also define how they are linked within the game.

e-Adventure includes two features that are very interesting from an educational perspective. First, it includes a configurable tracking system to monitor students' interaction with game, and by this way the students' progress can be recorded and used for evaluation, in addition that traced data can be used to modify the game flow. Second e-Adventure games can be easily distributed through the web [20].

**-Settings and materials**

- a- Computer lab
- b- One computer per student
- c- Internet connection

- The game can be copied on DVD for students to use it at home.

- The game will be in **Arabic and English** versions to suit students who learn in different languages.

- **User will have a user name and password** in order to access to the game and due to playing online he will be transferred to the last step he stopped on last time.

- The game feature will be based on competitive exercises, as the game will get the students to challenge themselves in order to motivate them to learn better, in addition that the students will monitor their colleagues scores which will motivate them to pit against each other (by pitting the score of colleagues).
- Players collect points during playing (points collected related to time of each order) and answering quizzes at the end of each level.
- Lecturer has a role during the game by explaining, questioning and evaluate through the game, and to guide the students in their discovery process

**-Narrative description of the game plot**

1-The game will open on providing the player with an avatar presenting him on the game where he /she can choose its feather ( gender- skin color- eye color- dressing-hair style ) also he will have the ability while playing to change its feather.



Figure (3)

2-Each type of printing will be presented as a level on the game depending on its Chronology.  
3- Level open by presenting important keywords and concepts.

Avatar of a narrator appears at the beginning and during playing providing student with important information about the printing system he will go through and instructions of the game and the steps he have to go through.



Figure (4)



Figure (5)

4-Each level will consist of no. of orders, student has to fulfill orders to complete the level and has the right to be transferred to the next type of printing in the level.  
And by doing all the orders relating to timing for each order a level is completed and student transfer to another one.



Figure (6)

5-Due to the historical chronology of printing system and in order to see how printing systems take place in different countries, the player (student) will be transferred to these countries to know and deal with practicing with different ways of printing systems that take place in these countries (Egypt, china, Europe.....etc.)

- This will take place during the lecture.
- After finishing all the steps he will be transferred to another country.



Figure (7)

6-Example: in ancient Egypt, egyptian used relief printing to record their daily life on papyrus. Recording by engraving shapes and hieroglyphic writing on wood or mud blocks while they are wet and left them to dry and then use ink to transfer it on paper.

- Player will go to the place (Egypt)
- Know tools and materials used by them (found in the game market)
- plant papyrus and wait to collect it (5 min)
- choose symbols (design) to engrave
- make a combination of these symbols to make his own design (a counting down time for each step will take place and who finish faster gain more points , slowing down will make the player lose points)
- choose wood, mud, rock or any other material used.
- transfer symbols to surface
- spread ink to transfer the design on paper or clothes or any material.
- wait for printed material to dry



Figure (8)

7- After the student finish the steps of the level and in order to move to the next level of the game (which presents a different type of printing), the new level will not open until the students answer some question about the level he finished in addition to some refreshing questions on the previous levels he finished.

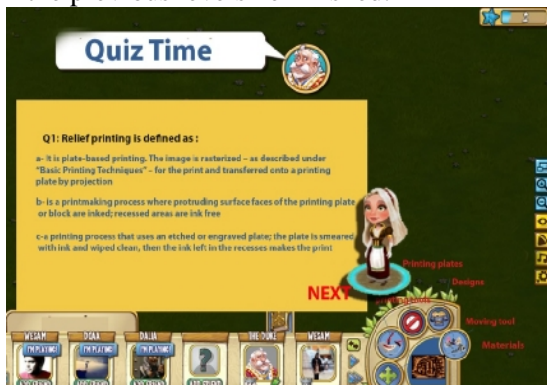


Figure (9)

8-The next level will open when the student passes a score not less than 60% of right answers for the questions.



Figure (10)

9- If the student cannot get a score less than 60% of right answers, he will be asked to follow the steps on the game level once more and to rehearse again.

10-The game will contain some different designs by which the student can use in order to practice in the game on how to print them with differ types of printing.

11-A recording process will take place so a report for the student attitude during playing can be monitored

- 12- Evaluation approach will go through
- a- Assessment reports produced by the game
  - b- Monitoring during game play

### 3.3 Example of playing steps on other level:

Level 3: Offset printing

- 1- Know important keywords and concepts ( appear when starts in a graphical shapes)
- 2- Level open on the most historical issues related (said by narrator) with moving around using a camera in a 3d space showing graphical shapes for what he is lessening to( the stage will be a printing press house with old and new machines including doors inside which player can enter to prepare his product to be printed )
- 3- On the game stage there will be different offset printers when his avatar moves toward the printer (the printer will display its components and the products it can give).
- 4- According to the product the player need to print, he will choose between (poster, magazine, newspaper, and book) he/she will choose the paper size, number of copies and depending on this he will choose the printer model to do his order.

- 5- He/ she will choose the design and prepare it for printing( go to the market and pick samples to prepare a design)
- 6- After making a design ,choose the order for the color separation ( player design will appear in front of him separated on four colors CMYK , on transparent film sheets)
- 7- Go to the market to choose chemicals used in preparing the plates
- 8- player will be asked to go to the market and to choose the suitable paper kind and weight for his product
- 9- On the game stage he will see printing machines models and the player will choose one of them to give order for printing his product for each color by schedule (CMYK) and wait the actual time it will take in real printers for all the copies to come out.
- 10- After going through printing different types of products the level is completed.
- 11- Level will end when the student finish all the steps of production
- 12- A message will appear announcing the finishing of all steps.
- 13- player have to click on level complete bottom in order for the questions on the level to appear after finishing answer the score he gain will appear and a message of new level will be displayed.
- 14- If his score is low the player will be asked to replay the level again.

### **Results**

- Theoretical curriculum can be transmitted to a videogame to be more entertaining for our students and to help them learn by interaction not by listening especially when their studies depend on practical side in most of it as in advertising design education and learning.
- Entertainment and engagement is available here, competing with his colleges to reach a high performance skill in the game.
- Using games as Based learning can reduce the need of laboratories and workshops that students need to practice through.
- Learners will take responsibility for their own improvement and advancement; experiential learning is expected to increase and deepen understanding of a subject, and to increase self-efficacy and motivation.
- Using video games as a based learning platform in the field of advertising design

- education and learning can bring a great deal of utility, help, and enjoyment to students in theoretical studies.
- Due to the availability of recording process, the full environment as well as individual's interactions with that environment will be reviewed, and this will help in the process of backups, indexing, searching and reporting, which is important for academic programs and student credentialing continues to grow.
  - Among the benefits are practice-based development of procedural knowledge, motivational self-directed experiences, inquiry-based trial-and-error learning with immediate feedback on progress, and tangible results.
  - All kinds of printing systems can be practiced which in fact was very difficult during the semester.
  - Answers of quizzes at the end of each level will provide professors with any shortage on the student data collection for the course.
  - Students can practice on opened levels at home for more improvement.
  - The game will be provided with the latest printing machines found in the market and can always be updated which may not be found except on some printing houses, so student will be updated with the most recent technology on the field.
  - Provision of financial resources for colleges, which are spent on laboratories and workshops, which require continuous development takes years to be implemented as a result of administrative obstacles
  - The possibility of the continued development of these games and ease of appropriate amendments to keep pace with on-going technological development

### **Discussion:**

There is a fact that games offer advantages in terms of motivation, as students are motivated to learn material, so using digital based learning in education can help to reach a high level of effectiveness and efficient through creating this type of familiarity with different skills among the students in advertising field, promoting long-term memory and providing practical

experience, even for theoretical courses (actually theories had been reached through thinking and doing. Using digital games as a based learning in advertising design will provide our students with both the ability to apply within known steps but they have to think about, and do actions by which they can fulfill their goals.

Learners will be able to try a number of options in a safe environment that helps them gain confidence, build knowledge and establish the reasoning behind decisions for more complete learning, in addition to encourages them to learn from their mistakes through exposing students to real-life scenarios, transferring them to different countries, testing different tools and machines. Using video games at learning will prove a flexible content and delivery in teaching different skills, which will reduce mistakes and by the way, reduce costs.

. Finally in spite of the high cost of creating a videogame based learning in the field of advertising design, but in fact, the large number of institutions and colleges teaching advertising design in the world in addition to individuals who care to take it as a career, can cover the high cost of production besides that the evolution of new games will make its cost decreasing.

### **Recommendations :**

- Directing the financial resources of the advertising design institutions for the implementation of digital video games due to its great impact in improving education and learning of students
- Universal use for all educational and training students on the advertising design field to set measuring criteria for all graduates.

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