Using Video Games To Increase Motivation Of Saudi Students Learning English

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USING VIDEO GAMES TO INCREASE MOTIVATION OF SAUDI STUDENTS LEARNING ENGLISH

by

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Approved By:

__________________________________________

Advisor Date
DEDICATION

This work is dedicated to my mother and father,
my husband, Maher Alrashed,
my children (Arwa, Mohammed, Fatima, and Zainab),
my brothers and sisters,
and my friends and classmates.
Your support and encouragement made my dream come true.
ACKNOWLEDGEMENTS

بسم الله الرحمن الرحيم

In the Name of Allah, the Beneficent, the Merciful

اللهم اجعلنا من الشاكرين والمشكورين

Oh God make us thankful and thanked.

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CHAPTER 1: INTRODUCTION

Currently, more universities are moving from face to face learning to online learning environments for several reasons which include students health from carrying the books and the money that students spend to buy a lot of books (Annetta, 2008). With an increasing trend towards an online learning environment and the rise of technology, most researchers believe that using video games in the classrooms is considered a good source of entertainment in the classroom that helps students learn and interact with given material in order to learn and acquire a new language. Video games could change the way students are accustomed to learning while they sit passively in a classroom and expect the teacher to give them the needed information in order to learn the English language.

Video games can also be used to aid the students in overcoming difficulties and issues that they face during the learning process. Research reveals that vocabulary acquisition is the key for proficiency in a language. Interventions that focus on improving vocabulary have demonstrated a positive impact on the academic performance of English as a Second Language (ESL) learners in several different environments, including Vietnam (Tuan, 2012), Malaysia (Abu Bakar and Nosratirad, 2013) and Taiwan (Chen, 2012). When foreign children are learning the English language, they are acquiring new vocabulary, which they need to be able to retain for future use, in order to commit the new vocabulary to long-term memory. Games, from classic children's games to high-quality video games, are a valuable addition to a school’s ESL program. The use of games in a learning environment is an effective tool to ensure vocabulary acquisition and language proficiency (Tuan, 2012).

This section will discuss articles that describe how games can be used as a vehicle to motivate foreign students to learn the English language, and how these games aid them to
overcome difficulties and issues faced during the learning process. The benefits of using games to improve conversation skills of foreign students to prepare them for integration into university life will be highlighted. Furthermore, what makes computer games fun and a rewarding experience will be discussed. This research supports studies such as a study that examined learners using the computer game SIM 3 and whether playing the language game would develop additional English vocabulary or not (Abu Bakar and Nosratirad, 2013). In another study, of international nursing students studying in Australia encountered some difficulty when they studied medical terminology. With the use of video games, they had ability to overcome those difficulties (Muller, 2012). Moreover, teachers' views of using learning games in classroom through a study of ESL learners in Taiwan presented at the European Conference on Game Based Learning (Chen, 2012) will be explained.

**Background**

Games can be used as an effective tool to enhance students learning a new language because the use of games breaks up the monotony of instructions, offers a change in routine and atmosphere, and gives students opportunities to practice English in a safe environment. One of the theories that supports this research is the ARCS Motivation Model by Keller. The model addressed the elements of Attention, Relevance, Confidence, and Satisfaction and also contains strategies that can help an instructor stimulate or maintain each motivational element.

The ARCS model is divided into four categories that make learners motivated in the learning process. The first category is attention. This category is important for attracting a student’s attention such as changing the level of the tone or using a device to grab a student’s attention. The most important thing in this category is to arouse the students’ curiosity toward the learning material. The second category is relevance where the information is related to a learner’s
experience. This will allow the learner to enjoy and achieve the learning goal. For example, the instructor finds out what the learner likes and makes a connection to the instruction. The third category is confidence. In this category students will have a chance to become independent and have the opportunity to practice new skills on their own which will build their self-confidence toward the learning material. The last category is satisfaction. Students will feel good about what they achieved from the instruction because if the students are satisfied, they will remain motivated about what they have been taught (Keller, 2010).

Although the video games enhance motivation in the learning process, it is important to look at the game characteristics to know which video games attract students to learn. Do the characteristics of the game make students motivated to learn or not? Woo illustrated in his research the integration between Mayer’s Multimedia Learning principle and Keller’s ARCS Model by conducting a study called operating a small factory using computer-aided manufacturing.

Operating a small factory (Cam operating procedures) tied the ARCS Model with different game characteristics such as fun, play, rules, goals, interactive, adaptive, outcomes and feedback, win states, etc. Also, the game applied various design strategies such as role-playing, learning task design and real-time display design. All strategies that have been used in this game are based on Mayer’s Multimedia Learning Principle to increase learners’ cognitive load to help the learner involved with the game and understand the concept and motivate students to increase learning performance.

Woo’s study includes 63 participants of which 48 are females and 15 are males. The participant ages are between 19 and 21 years. The measurement of motivation is based on the IMMS questionnaire of Keller’s ARCS Model that covered attention, relevance, confidence, and satisfaction. The measurement of cognitive loads is based on symmetric 9-point Likert scales. In
this study the learner gets an idea about camera operating procedures that enable students to select appropriate tools and select appropriate lens that needed to produce a camera. Although the Mean score of attention was 5.77 where the fun and curiosity takes a good place in this game, the Mean score of relevance was higher at 6.37. This is because learners are most likely involved when they participate in relevant material that is involved in the game. The overall average of total ARCS result was 6.02. This showed a significant number on how using the ARCS Model in the game could increase motivation to increase the performance and showed how the use of Mayer’s Multimedia Learning Principle could increase cognitive loads which have positive effects on learning (Woo, 2014).

There are many emerging technologies that appear in the world and can be used as a tool to facilitate learning such as mobile learning. Mobile learning are mobile devices that can be used at any time that is convenient for the learner or at any location (El-Hussein, 2010). One approach that is used in mobile learning is Mobile Assisted Language Learning (MALL). MALL is used to help teach language through portable devices such as an iPhone or iPad. It is a way that enables learners to access and exchange language components with instructors or classmates at the learners convenience (Hulme, 2007).

Thus Yu Liu and Lin Chi conducted a study on using ubiquitous games in English listening and speaking to see the impact and the motivation on giving material through using games to teach students the English language (Yu Liu & Lin Chi, 2010). Ubiquitous games are designs that allow players easy access from different devices such as mobile devices, laptops, or computers. The framework of the games corresponds to the school setting (Klopfer, Sheldon, Perry & Chen, 2011).

Yu Liu and Lin Chi applied the ARCS model to their study. The research design of the case study was a quasi-experimental design, where the participants were 64 seventh grade students.
Two groups of student’s participated, one group was the experimental group and the other was the control group. Each group had four teams and each team had eight members. The study ran for eight weeks and each week they spent 45 minutes. Students had the opportunity to learn by themselves by using the HELLO game that was installed on a PDA device. The experimental played ubiquitous learning games with HELLO, the control groups used printed materials and audio CDs. Both groups took a post-test.

The result was that players who used ubiquitous game had a better result than those who used printed materials and audio CDs. The score average of learning outcome and learning motivation were higher in experimental groups. The technique of using ubiquitous games in learning the English language can have positive impacts and make students more motivated to learn the material (Yu Liu & Lin Chi, 2010).

**Purpose and Research Question**

Michigan is home to a large number of people from the Middle East. In the population, 41.7% come from Saudi Arabia, Lebanon, Iraq, and Yemen. Many of these people are students. Also, many Middle Eastern students come here specifically to attend universities. Therefore, there is a need to conduct a study in Michigan institutes to see if the use of games could make students more motivated to learn English as a second language. The main purpose of my research is to find what motivates students to learn the English language in the shortest time using games instead of using traditional methods such as books.

**Research Question**

What game designs or characteristics will motivate students to learn more English language?
Problem Statement/ Literature Gap

There are a lack of studies targeting Middle Eastern students in Michigan that address the design of games to increase student motivation to learn English as a second language. This will be accomplished by answering the following research question: What game designs or characteristics will motivate students to learn more English Language?

Significance of the Study

This study would be significant to the instructor to provide another way to teach English language by using a variety of methods in teaching through the use of games to make the students interact with the language and support language proficiency. Furthermore, English institutes would be able to use the results to support innovative, game-centered language instructional methods to earn a reputation and attract a larger number of learners to enter the institute.
CHAPTER 2: LITERATURE REVIEW

Purpose of Using Games

Games are often used in learning environments to develop patterns of thinking about and interacting with instructional content through active interactions with the materials rather than through passive learning in which the information is deposited into the learner’s mind. The diversity of tools available through an online learning environment, of which games are an example, can be leveraged in such a way as to motivate the learner not just to interact with the material, but to also retain it more effectively (Greenblat, 1973). The ESL environment is a perfect setting to investigate the effectiveness games may have on the motivation to learn.

The number of ESL students enrolled in university programs abroad are increasing, particularly in health fields such as nursing, however, ESL students in Canada, Australia and the USA are also much more likely to withdraw from these programs than their native-speaking counterparts. ESL students are also more likely to experience poor academic performance. Most of these challenges are directly related to English language proficiency. English proficiency is the key to success in any academic programs, and therefore ESL interventions should focus on the challenges most often blamed for poor academic performance: writing, exam questions, following lectures, digesting the large amounts of assigned reading, and locating and understanding relevant sources (San Miguel, Townsend & Waters, 2013). Immersion games that are content-focused (rather than simply vocabulary games) can play a role in a new approach to ESL instruction.

Computer games are self-learning tools. Learners, therefore, need to have a basic grasp of English in order to understand the instructions, but once this is accomplished and the game progresses, language learners will begin to absorb vocabulary as the game is conducted. The
enjoyable nature of computer games may increase motivation to play the game and increase vocabulary acquisition (Abu Bakar and Nosratirad, 2013).

For example, computer spelling games have been proven to help students overcome low performance on spelling tests. In research conducted on elementary ESL students, results indicated that the experimental group relegated to the spelling game spent more time preparing for the spelling test than the control group (Randel, et al, 1992).

**Advantages of Using Games**

Research reveals that the traditional way of learning vocabulary in ESL programs, which often consists of presenting word lists for memorization, is not very effective in developing students' vocabulary. In a study conducted on English as a second language and English as a Foreign Language (EFL) ninth graders (third intermediate), students were randomly selected for certain vocabulary games, including Twenty Questions, Passwords, and Crossword Puzzles. While some of these games were in-class games, others were computer-based. A comparison of the treatment groups and the control groups supported the conclusion that games are an important technique for vocabulary retention (Alemi, n.p.).

Games used to teach foreign language learners the English language present a safe learning platform that addresses the issues of shyness, allowing learners to practice a language in the safety of the gaming environment. Particularly sensitive students may find it discouraging to practice their language in the classroom. Fear of failure may cause some students to refrain from using their oral language, while students with stronger language skills may monopolize the classroom discussion. When teachers use games in the classroom, all students will be given an opportunity to practice in a safe learning environment, free from sarcasm or judgment from other students.
Research suggests that in order for English language learners to fully comprehend written text, they need to be able to figure out 98% of the vocabulary. For the same learners to understand spoken communication, they must have a similar high percentage of vocabulary accuracy (95%). However, academic texts and instruction have an inherent assumption that language will be learned incidentally, through exposure to large amounts of reading materials and vocabulary lists. This may be the case for relatively high-frequency words (words that are encountered often in language), but this is often not the case for low-frequency words. Research does not support the conclusion that these traditional methods of language instruction result in greater vocabulary retention (Loucky, 2010). Indeed, more interactive and motivating alternatives must be considered for challenging vocabulary.

In a study of international nursing students studying in Australia, it was found that the most difficulty was encountered with low-frequency words (medical terminology, for example, are often difficult low-frequency words). This problem is usually addressed by providing more textbook resources for international students--glossaries, word lists and dictionaries. However, the more difficult the words are for the students, the less likely they are to use more written materials to try to figure out the words (San Miguel, Townsend and Waters, 2013). Gaming offers a solution to this challenge, wherein visual displays and clear rules of play require learners to complete a set of tasks or activities that build the desired learning skills, in this case vocabulary, while at the same time providing clear feedback on performance. The psychological response to visually exciting game play, when paired with learning content, will help stimulate the motivation to learn (Qian, 2014).

Video games, for example, provide a similar learning experience to the “active learning” environment of a classroom, in which a student is participating in the teaching process and where
they are able to meaningfully contribute to their own learning process (Brad, 2005). The same outcome was reinforced in a study on the effectiveness of 3D game-based learning for the instruction of software engineering concepts. This study revealed that students’ achievements was significantly correlated with motivation, and that the highly interactive, game-based learning design resulted in greater motivation (and, consequently, achievement), as compared to the traditional instructional model (Cheng and Su, 2013).

There are numerous Computer-Assisted Language Learning (CALL) programs and websites available on the internet, so many that it's difficult to choose which ones are the most useful for developing an online learning program for language learners. CALL programs are increasingly being used to supplement traditional language programs. The problem, however, is to evaluate the available resources to determine which ones are most complementary and sensible for a school's language program. Loucky, in her comprehensive study of CALL resources, developed a framework for teachers and school systems to evaluate these online resources to see which ones were the best fit for ESL programs (2010).

Baltra determined that one of the most desired instructional design elements of computer-based language acquisition game was sufficient practice in a safe environment, which enabled students the freedom to use vocabulary even if the language had grammatical errors (1990). Other studies demonstrated that students learn more effectively when they are able to use context to discover new words in the visual environment within the game and when students are able to learn new vocabulary from one another when the game included group play or group interaction. Such instructional design elements give the student an opportunity to practice language skills and communicate with other students both inside and outside the classroom (Carbonell, et al, 2001).
Godwin discovered that language acquisition games that include opportunities to combine various communication skills, such as reading, writing, listening and speaking, were more effective at encouraging and motivating learning retention. Research performed at the University of Wisconsin examined how participants engaged with the website called cardcaptor.com. The game enabled participants to create fame fiction about anime characters, which included opportunities to incorporate several communication skills together. The fame resulted in improved writing proficiency (Godwin, 2005).

The ability to speak English fluently and with proficiency is directly related to a learner's ability to learn vocabulary. ESL learners, in particular, must be exposed to a large amount of language to help develop their vocabulary. Most computers worldwide are developed and run in English; therefore, the computer has become a valuable tool for learning vocabulary. In a study conducted in an ESL learning environment in Malaysia, researchers Abu Bakar and Nosratirad were interested in discovering whether ESL learners using the computer game SIM 3 would develop additional English vocabulary as a result of playing the language game (Abu Bakar and Nosratirad, 2013).

SIM 3 is an off-the-shelf English vocabulary game that offers a variety of characters. The learner chooses the character, the environment, occupation, living arrangements, etc. and, as the game progresses through different life situations, the learner is exposed to the vocabulary of that situation. It is highly responsive to the tastes of the people playing the game. A learner interested in fashion, for example, will be exposed to the vocabulary of that subject. Through computer game-contact time of 6 hours per week over the span of two months, the participants in the study learned on average 116.66 words each (Abu Bakar and Nosratirad, 2013).
Disadvantages of Using Games

Some teachers, especially senior teachers generally unfamiliar with or reluctant to use different instructional technology, find that the use of games interrupts student attention and wastes valuable classroom time. Some of the weaknesses of using simulation in the classroom is that simulation requires a long learning experience that does not readily fit into a shorter class period. It requires a teacher to have experience in how to use simulations. Some roles in the game requires a student to speak more and some roles in the game require students to speak less, so the student who speaks less will not benefit from the simulation because they will not practice the language (Jung and Levitin, 2002).

Some teachers believe that using a game in the classroom as a learning method will not give positive results, so they rely on the traditional method which is the use of a text book as a learning method to teach students English language. Based on the research conducted in a Hungarian school, it was evident that teachers did not have the right training to motivate students to learn the English language, and as a result chose not to use games as a learning method (Halap and Saunders, 2002).

The use of games and other online learning tools is growing rapidly, but there are challenges to measuring the effectiveness of skill transference from the virtual world created in the game to the real world. One major obstacle is that the companies devoted to gaming are not necessarily skilled in the application of educational theory to gaming. As such, they favor the entertainment value (which will ultimately translate into sales) at the expense of the educational content, while companies that specialize in educational content may underestimate the entertainment value. The key is finding the perfect marriage between instructional design and entertainment, but in the world of commerce, this balance is hard to find (Qian, 2014).
Some of the long-held attitudes and opinions against using online learning games in the classroom may be cultural as well as generational. Older teachers, for example, as a statistical percentage are much more reliant on textbook learning, as compared to online games, compared to their younger colleagues. When examining cultural differences, countries with a historically poor rate of technology adoption when teachers were themselves students tend to produce teachers who also shy away from the use of technology in the classroom. This research points to the need for proper training of teachers and appropriate introduction of instructional technology in order to overcome deeply ingrained bias or personal preferences (Gaudart, 1999).

**ARCS Instructional Design Model and Motivation**

In traditional instructional systems design (ISD), motivation is a precursor to the instruction. Less emphasis is given to the development and leveraging of intrinsic motivation, which focuses on creating motivation throughout the design of the learning event (Brad, 2005). The ARCS Model identifies four areas in which motivation can be achieved: attention, relevance, confidence and satisfaction. Applying the ARCS model to game design would include developing a learning experience that offers appropriate challenges (to the learner’s skill level), specific goals, control over the pace of the content, and clear and relevant feedback, all of which would in turn intrinsically motivate the learner (Brad, 2005).

In the development of online learning for San Diego Zoo’s animal care professionals, the following design elements were incorporated in the online learning experience to address each area of motivation in the ARCS model: case studies (attention and relevance); visual aids (attention and confidence); model organization (confidence and satisfaction); interactivity (attention, confidence and satisfaction); and learning guidance (attention, confidence and satisfaction). The
result was online learning that promoted course completion, learner persistence, and e-learning content mastery (Marshall and Wilson, 2012).

The same findings can be applied to language learning. Games create a motivating and engaging way for students to interact with difficult, low-frequency vocabulary in a realistic environment. Because high quality gaming graphics are now available to construct a very realistic medical environment, and this environment can also offer complete immersion, video games have proven to be a motivating instructional tool for vocabulary retention (Muller, p. 125-126).

To ensure that students get engaged in the game, game design elements such as timing, scoring, problem solving and, competition should be employed to help students learn the English language (Hubbard, 1991). The student will have the ability to understand the vocabulary used in the game when they interact with the tools used in the game (Tomlinson and Masuhara, 2009).

To give an example, a study of ESL learners in Taiwan presented at the European Conference on Game Based Learning, 2012, reveals the changing attitudes of ESL teachers regarding the use of computer games in language acquisition. Teachers in the study were selected and evaluated on their perception of the value of games in education, particularly for language learning.

Role-play is one of the games that enhance the student’s ability to learn English. It breaks the routine and atmosphere, and gives students the opportunities to practice English in a safe environment. An example is the treasure Hunt Game. It improved both reading and writing skills. The students were given a set of directions to go from one place to another place. The student task is to describe one or more objects in each place and write the description of the object. The winner is the group who has the most correct answers (Gaudart, 1999). Therefore, practicing English is very important because the fluent use of language requires that information stored in the brain is
quickly retrieved from the brain without thinking or taking a long time to remember the information (Macedonia, 2005).

Some researchers seek to describe and quantify the instructional design characteristics that result in exciting game play. Baltra reported on a study of more than 100 participants who provided extensive feedback on the qualities of different games they experienced to generalize a set of “fun” characteristics for gaming. He discovered that the most essential components of game play were fantasy and curiosity (Baltra 1990).

Garris, Ahlers, and Driskell illustrated in their research that many motivation models such as Keller’s ARCS model, Malone’s motivation model, and the Deci and Ryan motivation model emphasize that the primary goal of using games in the learning is that the learner becomes self-directed and self-motivated. The BOTTOM GUN game is a good example of game based training. The function of the game is that players use a periscope to scan whether or not other ships will come and hit the submarine. If a ship is very close to the submarine, the player will use the gun to destroy the ship. Two versions of the game were used in this study. The first version included six game dimensions which were fantasy, rules, sensory stimuli, challenge, mastery and control. The second version included fewer game dimensions.

The results showed that players who used first version performed better than players who used the second version. Garris, Ahlers and Driskell, mention that some motivation models emphasize that intrinsic motivate have a better effect in terms of learner behavior. For example, some learners are playing the game just for fun, curiosity and challenge. Moreover, some motivation models emphasize that both intrinsic and extrinsic motivations have a better effect in learner behavior. For example, some learners are playing the game for fun and achieve a particular
goal or outcome. The input and outcome game model considers both intrinsic and extrinsic motivation of learners when designing instructional games.

**Input-Process-Outcome Game Model**

The input and outcome game model consists of three components. The first component is the input which includes instructional content and game characters such as fantasy, goals, sensory stimuli, challenge, mystery and control. The second component is the game cycle. It is considered a key component for the game. It includes user judgment where the learner decides whether the game increases interest or not. If the game increases interest, it will reflect on user behavior, which leads to system feedback. The third component is learning outcome that includes declarative knowledge, procedural knowledge and strategy knowledge which are described below in table 2 (Garris, Ahlers and Driskell, 2002).
## Input and Outcome Game Model, Learning Outcome Component

<table>
<thead>
<tr>
<th>Descriptors</th>
<th>Skill-based</th>
<th>Declarative</th>
<th>Cognitive</th>
<th>Procedural</th>
<th>Strategic</th>
<th>Affective</th>
</tr>
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<tbody>
<tr>
<td>Performance of technical or motor skill</td>
<td>Knowledge of the facts and data required for task performance</td>
<td>Knowledge about how to perform a task</td>
<td>Ability to apply rules as strategies to general, distal, or novel cases</td>
<td>Belief or attitudes regarding an object or activity</td>
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### Related Research
- Gopher, Weil, & Bareket, 1994
- White, 1984
- Whitehall & McDonald, 1993
- Wood & Stewart, 1987
- Thomas, Cahill, & Santilli, 1997;
  Wiebe & Martin, 1994

There is a relationship between Keller’s ARCS model and the input and output game model. Both models illustrate that game characteristics could increase learner curiosity and grab learner attention, which would increase learner motivation, as Keller explained in his model.

### Capabilities- Individual Skills

![Flow Diagram](Diagram.png)
Csikszentmihalyi (1975) stated when the game is not challenging the players become bored; whereas, when the game is too difficult the players experience anxiety. Kiili, therefore, modified the relationship model between challenges and skills by including Vygotsky’s zone of proximal development into the model in order to keep a player involved in the game (Kiili, 2005). Vygotsky introduced this theory to note what a learner can do with or without help from his instructor. Ideally, the learner should be able to complete tasks without assistance of the teacher, which advances the learner’s skill sets. In addition to the level of challenge, there is a degree of unpredictability in the online gaming environments. Motivation to learn increases when unpredictable outcomes are present in the game. A game that exceeds the learner’s skills or abilities, on the other hand, could create frustration. Therefore, a balance must be achieved through learner ability and challenge (Baltra, 1990). Such a platform exists in today’s gaming world through the participant’s control over the level and the challenge, which is yet another element of the ARCS model.
CHAPTER 3: RESEARCH DESIGN

Method

This research study used a quasi-experimental design and was supplemented with quantitative and qualitative methods. A quasi-experimental design is a type of evaluation that attempted to determine the intended outcome (for example, an anticipated effect) of a specific intervention or treatment on a defined target population. A true experimental design should have three elements: a pre/post test design, a treatment group and a control group that does not receive the treatment, and random assignment of participants to either group. As the root quasi means “having some, but not all of the features of” (Trochim, 2006), a quasi-experimental study design will lack one or more of these three components. A quasi-experimental study is an appropriate design for many social science experiments, particularly when random assignments of participants is impractical or impossible (Trochim, 2006). The study applied the ARCS motivation model that consists of attention relevance, confidence and satisfaction. In addition, students had an opportunity to use the language to complete the task based on the task-based learning approach. This approach gave the students an opportunity to reflect on and to connect what they learned in the classroom and applied it outside the classroom (Littlewood, 2004).

For this research study, 30 adults who were Saudi students, were randomly selected from a low-level ESL group. All of the students used a computer game to learn prepositions of places (i.e. in, on, behind, under, next to). Both groups had games with the same learning objectives, but different designs. This method was used in order to answer the question of which game designs or characteristics would motivate students to learn more English.

The design used two methods to measure students’ quantitative and qualitative motivation. The quantitative method involves performance facts, attitude facts, observational facts, and
statistical analysis and qualitative methods which includes open-ended questions, interview, observation facts, document facts, and video and recorded speech (Creswell, 2013). For the quantitative measurement, students took a post-test while the qualitative measurement consisted of an interview to measure motivation after the students played the games. Questions for the qualitative interview were translated into Arabic. The game had different designs to present the different levels of difficulty (i.e. random vs. easy to difficult), timing, and visual cues.

Before students were assigned to a group, there was a bowl with 30 small pieces of paper with either a 1 or 2 on each piece. The students chose a paper from the bowl based on the number they chose that was their group. The first group used the game that presented multiple-choice questions plus a visual cue, while the other group used the game that presented only multiple-choice questions without a visual cue. Based on the ARCS model, the first game had a colorful spinning wheel that grabbed the student’s attention because they did not know whether the question coming to them was difficult or easy. This design built anticipation. The pyramid game required learners to click on a level to make the question appear. The learner also knew that the next question would be more difficult than the previous level. The spinning wheel game may be a better representation of attention that ARCS model described because it grabbed and maintained the student’s attention. On the other hand, the pyramid game was a good representation of relevance because the learner saw a picture of how the preposition was used to describe a real life situation. Both games designs were in line with the satisfaction and confidence components of ARCS model. The pyramid game presents the questions with increasing levels of difficulty while the spinning wheel design presents the questions in random level of difficulty; however, both games stay within a range that is not too difficult or too easy for the learner, so they maintained their confidence.
Data Analyses

This research used the Instructional Materials Motivation Survey (IMMS) developed by John Keller, designed expressly to measure the four elements of the ARCS model. The IMMS is specific to a self-paced print module or a self-directed learning event. The tool included 35 Likert scale questions designed to measure learner perceptions following the guidelines of the IMMS scoring guide (Keller, 2006). The following survey questions were used for quantitative measurement and how they were related to ARCS model.
Gaming Questionnaire

(For all questions, please circle your response)

Student ID____

1. Age: ____

2. Gender
   a. Male
   b. Female

3. What is the highest degree or level of school you have completed?
   a. High school
   b. Bachelor’s degree
   c. Associate degree
   d. Master’s degree

   a. Married
   b. Single
   c. Separated

5. Do you play video game?
   a. Yes
   b. No

6. How many times per week you play the video game?
   a. 0 - 1 per week
   b. 2 – 3 per week
   c. More than 3 per week

7. The number of minutes that you spend in the game per week.
   a. 1-5 minutes
   b. 5 - 10 minutes
   c. More than 10 minutes

8. When I first looked at this game, I had the impression that it would be easy for me.
   a. Strongly disagree
   b. Disagree
   c. Uncertain
   d. Agree
   e. Strongly agree

9. There was something interesting at the beginning of this game that got my attention.
   a. Strongly disagree
   b. Disagree
   c. Uncertain
   d. Agree
   e. Strongly agree
10. The questions of the game was more difficult to understand than I would like for it to be.
   a. Strongly disagree   c. Uncertain   e. Strongly agree
   b. Disagree   d. Agree

11. After reading the introductory information, I felt confident that I knew what I was supposed to learn from this game.
   a. Strongly disagree   c. Uncertain   e. Strongly agree
   b. Disagree   d. Agree

12. Answering the questions in this game gave me a satisfying feeling of accomplishment.
   a. Strongly disagree   c. Uncertain   e. Strongly agree
   b. Disagree   d. Agree

13. It is clear to me how the content of this game is related to things I already know.
   a. Strongly disagree   c. Uncertain   e. Strongly agree
   b. Disagree   d. Agree

14. Completing this game successfully was important to me.
   a. Strongly disagree   c. Uncertain   e. Strongly agree
   b. Disagree   d. Agree

15. The quality of the questions helped to hold my attention.
   a. Strongly disagree   c. Uncertain   e. Strongly agree
   b. Disagree   d. Agree

16. As I played this game, I was confident that I could learn the content.
   a. Strongly disagree   c. Uncertain   e. Strongly agree
   b. Disagree   d. Agree

17. I enjoyed this game so much that I would like to know more about this topic.
   a. Strongly disagree   c. Uncertain   e. Strongly agree
   b. Disagree   d. Agree

18. The content of this game is relevant to my interests.
   a. Strongly disagree   c. Uncertain   e. Strongly agree
   b. Disagree   d. Agree

19. There are explanations of how to play this game.
20. The questions in this game were too difficult.
   a. Strongly disagree     c. Uncertain     e. Strongly agree
   b. Disagree       c.    d. Agree

21. This game has things that stimulated my curiosity.
   a. Strongly disagree     c. Uncertain     e. Strongly agree
   b. Disagree       c.    d. Agree

22. I really enjoyed playing this game.
   a. Strongly disagree     c. Uncertain     e. Strongly agree
   b. Disagree       c.    d. Agree

23. The amount of questions in this game caused me to get bored.
   a. Strongly disagree     c. Uncertain     e. Strongly agree
   b. Disagree       c.    d. Agree

24. The content and style of writing in this game convey the impression that its content is worth knowing.
   a. Strongly disagree     c. Uncertain     e. Strongly agree
   b. Disagree       c.    d. Agree

25. I learned some things that were surprising or unexpected.
   a. Strongly disagree     c. Uncertain     e. Strongly agree
   b. Disagree       c.    d. Agree

26. After playing this game for a while, I was confident that I would be able to pass a test on it.
   a. Strongly disagree     c. Uncertain     e. Strongly agree
   b. Disagree       c.    d. Agree

27. This game was not relevant to my needs because I already knew most of it.
   a. Strongly disagree     c. Uncertain     e. Strongly agree
   b. Disagree       c.    d. Agree
28. The wording of feedback after answering the questions in this game, helped me feel rewarded for my effort.
   a. Strongly disagree   b. Disagree   c. Uncertain   d. Agree   e. Strongly agree

29. The variety of illustrations, helped keep my attention on the game.
   a. Strongly disagree   b. Disagree   c. Uncertain   d. Agree   e. Strongly agree

30. I could relate the content of this game to things I have seen, done, or thought about in my own life.
   a. Strongly disagree   b. Disagree   c. Uncertain   d. Agree   e. Strongly agree

31. There are so many words on game that it is irritating.
   a. Strongly disagree   b. Disagree   c. Uncertain   d. Agree   e. Strongly agree

32. The content of this game will be useful to me.
   a. Strongly disagree   b. Disagree   c. Uncertain   d. Agree   e. Strongly agree

33. I could not really understand quite a bit of the questions in this game.
   a. Strongly disagree   b. Disagree   c. Uncertain   d. Agree   e. Strongly agree

34. The good organization of the content helped me be confident that I would learn this material.
   a. Strongly disagree   b. Disagree   c. Uncertain   d. Agree   e. Strongly agree

35. It was a pleasure to work on such a well-designed game.
   a. Strongly disagree   b. Disagree   c. Uncertain   d. Agree   e. Strongly agree
For the qualitative method, students from both groups were interviewed after the games. The developed interview protocol tool was based on ARCS model of motivational design. The following table shows the open-ended questions used for qualitative measurement and how they are related to ARCS model.

<table>
<thead>
<tr>
<th>ARCS Model</th>
<th>Questions</th>
<th>Relationship to ARCS Model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attention (A)</strong></td>
<td>What did you like the best about the game?</td>
<td>Visual stimuli, humor (dog, table and sound, color)</td>
</tr>
<tr>
<td></td>
<td>How did the game grab your attention?</td>
<td>Visual stimuli, humor (dog, table and sound, color)</td>
</tr>
<tr>
<td><strong>Relevance (R)</strong></td>
<td>How did the game relate to using English in everyday life</td>
<td>See how they can use prepositions in their daily life.</td>
</tr>
<tr>
<td></td>
<td>How did the game help you to correctly use the prepositions?</td>
<td>Tying together what they know in Arabic to what they will need to express while reading, writing and speaking in English?</td>
</tr>
<tr>
<td><strong>Confidence (C)</strong></td>
<td>What made you continue to play the game?</td>
<td>They remain motivated to learn if they are confident that they can succeed in the game. They should view the game as not too easy and not too hard.</td>
</tr>
<tr>
<td></td>
<td>How did you feel about your control of the speed at which you played the game?</td>
<td>One strategy for the Confidence factor is to allow for personal control in order to maintain motivation.</td>
</tr>
<tr>
<td><strong>Satisfaction (S)</strong></td>
<td>How did you feel about the feedback provided when you chose an incorrect answer?</td>
<td>This response indicated the level of satisfaction with the feedback provided by the game. They might respond that it gave them the right to answer but it did not explain why their answer was not correct.</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>How did you feel about your score at the end of the game?</td>
<td>Were the learners happy with the score or not? If they are happy with score, they remained motivated to learn.</td>
</tr>
</tbody>
</table>

**Procedures**

After collecting my findings from the interview, I coded the students’ answers into categories.

**Population Sample**

The English Language Institute is a program that prepares international students to learn English as a second language. For this research study, the design was applied at the ESL institute which was one of ESL’s Major Arabian Universities in Michigan. The participants were adults which means 18 years and older. The participants were drawn from both men and women to make sure that the research would be valid for both genders. The participants were Saudi Arabian students from lower-level ESL classes. The research study topic was prepositions of place games because prepositions were basic English grammar skills needed by low level students to help them learn the English language correctly. The sample size for this study was 30 participants divided into two groups. Each group consisted of 15 participants and would use a game that had a different design for each group, but with the same topic and concept.
Treatment

The English teacher of the English Language Institute made a brief announcement about the research study and asked Saudi students if they were willing to volunteer to participate in the study. Those who agreed to participate in the research study needed to write his/her contact information in the Language Learning Motivation Study sign-up sheet to indicate that they will meet with the principal investigator in the computer lab the following week during the lunch break at 12:00 PM. The participants received a Saudi lunch as a reward for being a volunteer for participating in the research study.

There were three sessions with 10 students participating in each session. When the participants entered the computer lab, a hard copy of the consent form was given to students to sign. The participants were asked to take a number from the bowl with 30 small pieces of paper with either a 1 or 2 written on each. If he/she chose the number 1, he/she played Game A which had the game visual cueing. If he/she chose number 2, he/she played Game B which was the game that did not have visual cueing.

The participants received a number tag that matched the game he/she was participating in. For example, Game A1, Game A2, Game A3, Game A4, Game A5, Game B1, Game B2, Game B3, Game B4 and Game B. This was the participant’s student I.D that he/she wrote down in the survey and the post-test. At the end of the session, a sign-up sheet was passed out in order to schedule student interviews, based on their convenience. The interview took about 20 minutes for each student, and was conducted by phone, and face to face based on the student’s choice. For the survey, the participants answered all multiple choice questions, leaving none unanswered. For the interview, the participant asked to answer the open-ended questions. All the information was saved in the principal investigator laptop with a secure password.
Trustworthiness

In terms of credibility, an expert checked data and checked all the questions that were translated into Arabic. For example, the questions written in Arabic were sent to a member to translate the questions to English, and the questions written in English were sent to another member to translate the questions to Arabic. In terms of dependability, the questions were reworded and placed in different positions to make sure that the students read the questions and did not just answer randomly without reading and understanding. In terms of transferability, the use of the ARCS model with low level students were transferable and used with different learning levels. The following table shows examples of some studies that used the ARCS model in different learning situations such as ESL students, college students and elementary school children.
### Studies using ARCS Model

<table>
<thead>
<tr>
<th>Training Objective</th>
<th>Age Group</th>
<th>Brief Overview of the Game</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase the Vocabulary</td>
<td>ESL Students</td>
<td>Use vocabulary game called SIM 3 (Malaysia)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Learner chooses the game</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Character,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Environment,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Occupation,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Living arrangements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Learner is exposed to the vocabulary through different life situations</td>
</tr>
<tr>
<td>Increase the Performance Outcome</td>
<td>College Students (Art and</td>
<td>Use game to operate a small factory (Camera operating procedures)</td>
</tr>
<tr>
<td>(Design Skills)</td>
<td>Design)</td>
<td>- Learner get idea about the operating procedures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Select appropriate tool</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Select appropriate lens</td>
</tr>
<tr>
<td>Vocabulary Enrichment</td>
<td>Elementary Students</td>
<td>Self-study Game (HELLO) game through personal digital assistant phone device (PDA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Student access songs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Listen to the materials</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Conversation materials</td>
</tr>
</tbody>
</table>
CHAPTER 4: RESULTS

Chapter four illustrates all the results of the data analyses that were drawn from 30 low level ESL Saudi students in order to know what game designs or characteristics motivated students to learn more English language. Research results indicated that, the design for both of the games were effective regardless of the game having visual cueing or not having visual cueing. Furthermore, students did better with the games that did not have visual cueing; however, these games dealt with daily conversations more.

The research used Keller’s ARCS Model, which addresses attention, relevance, confidence, and satisfaction. The method of this study was a quasi-experimental design supplemented with quantitative and qualitative methods. This chapter includes two sections that illustrate the results of the students from Group A with visual cueing and Group B with no visual cueing. The first section illustrates the results from the gaming questionnaire survey. This section includes three portions. In the first portion, Microsoft Excel software was used to record the results of the first four questions. In the second portion, SPSS data analysis software was used to calculate the result of the rest of the questions on the gaming questionnaire survey. For the third portion, SPSS data analysis software was used to compare the results of post-test from the two groups. The second section will illustrate the results from the interview. The interviews were conducted by phone and face to face.

First Section: Gaming Questionnaire Survey

Portion 1: Record the Data Using Microsoft Excel

In this portion Microsoft excel software was used to record the results of the first four questions of the gaming questionnaire survey.
Summary of Student Ages

In the gaming questionnaire survey, the students were asked to identify their ages. For Group A, six out of fourteen students were between the ages of 18 to 24, five out of fourteen were between the ages of 25 to 31, while three out of fourteen students preferred not to answer. For Group B, ten out of fourteen students were between ages 18-24, three out of fourteen students were between ages 25-31, while one out of fourteen students preferred not to answer. All the responses are shown in Figure 4.

Summary of Student Genders

The students were asked to identify their gender. For Group A, eight out of fourteen students were males, four out of fourteen students were females, while two out of fourteen students preferred not to answer. For Group B, seven out of fourteen students were males, six out of fourteen students were females, while one out of fourteen students preferred not to answer. All the responses are shown in Figure 5.
Summary of Student School Completions

The students were asked to identify the highest degree or level of school they had completed. For Group A, nine out of fourteen students completed high school, three out of fourteen students had completed bachelor’s degree, while two out of fourteen had completed a master’s degree. For Group B, eleven out of fourteen students had completed a high school, while three out of fourteen students had completed a bachelor’s degree. All the responses are shown in Figure 6.
Summary of Student Marital Status

The students were asked to identify their marital status. For Group A, nine out of fourteen students were single, five out of fourteen students were married, while zero out of fourteen students were separated. For Group B, seven out of fourteen students were single, seven out of fourteen students were married, while zero out of fourteen students were separated. All the responses are shown in Figure 7.
Summary of Student Video Game Activity

The students were asked to identify whether or not they played video games. For Group A, nine out of fourteen students answered Yes, while five out of fourteen students answered No. For Group B, eight out of fourteen students answered Yes, while six out of fourteen students answered No. All the responses are shown in Figure 8.

Portion 2: Using SPSS Data Analysis for Gaming Questionnaire Survey

Summary of Time Spent Playing Video Games by Students

The students were asked to identify the number of times they played games per week. For the Group A, five out of fourteen students played games zero to one time per week, five out of fourteen students played games two to three times per week, while four out of fourteen students played games more than three times per week. For Group B, eight out of fourteen students played games zero to one time per week, two out of fourteen students played games two to three times per week, while four out of fourteen students played games more than three times per week. All the responses are shown in Figure 9.
Summary of Minutes Spent Playing Video Games by Students

The students were asked to identify how many minutes per week they spent playing video games. For Group A, one out of fourteen students chose one to five minutes, four out of fourteen students chose five to ten minutes, while nine out of fourteen students chose more than ten minutes. For the Group B, four out of fourteen students chose one to five minutes, three out of fourteen students chose five to ten minutes, while seven out of fourteen students chose more than ten minutes. All the responses were shown in Figure 10.
Jon Keller’s 2010 ARCS Measurement Survey scoring guide was used during the study as a guide line on how to deal with the results. For the reverse coding questions, there are 6 questions that Keller used in the survey (Q10, Q20, Q23, Q27, Q30, and Q31). Therefore, in the gaming questionnaire survey, if the student selected the answer strongly disagree, it became strongly agree which corresponds to Keller’s 2010 ARCS Measurement Survey where number 1 became number 5. If the student selected the answer Disagree, it became Agree which corresponds Keller’s 2010 ARCS Measurement Survey where number 2 became number 4. If the student selected the answer Uncertain, it became Uncertain which corresponds Keller’s 2010 ARCS Measurement Survey where number 3 became number 3. If the student selected the answer Agree, it became Disagree which corresponds to Keller’s 2010 ARCS Measurement where number 4 became number 2. Finally, if the student selected the answer Strongly agree, it became Strongly disagree which corresponds Keller’s 2010 ARCS Measurement Survey where number 5 became number 1 (Keller, 283).
The internal consistency for each scale was computed. Cronbach’s alpha is a measure of reliability or internal consistency. The value of .7 or above is considered acceptable. There were seven questions related to attention but did not show acceptable reliability because the alpha value was low (0.0375). There were seven questions related to relevant that showed acceptable reliability because the alpha value was 0.632. There were eight questions related to confidence that showed acceptable reliability because the alpha value was 0.648. There were five questions related to satisfaction but did not show acceptable reliability because the alpha value was low (-0.077). Therefore, for attention and satisfaction, no further analyses needed to be done for the two scales due to low reliability. The low reliability indicates that the scale did not reliably measuring the concept, and the results will have limited validity.

After computing the scale scores of confidence and relevance, I compared the mean score between Group A and Group B using independent sample t-test. For confidence, the mean score for Group A was 4.10 and the SD was 0.497. The mean score for Group B was 4.09 and the SD was 0.522. Levene’s test for equality of variances showed that equal variances summed is met because $p = 0.930 > 0.05$ therefor the results of independent sample t-test shows $t (26) = 0.093$, $P = 0.927$ which was greater than 0.05. This means the difference between the two groups was not significant. Relevantly, the mean score for Group A was 3.46 and the SD was 0.578. The mean score for Group B was 3.910 and the SD was 0.0461. Levene’s test for equality of variances showed that equal variances summed was met because $p = 0.339 > 0.05$ therefor the results of the t-test showed $t (26) = -2.257$, $P = 0.033$. This figure was less than 0.05 which means that the difference between the two groups was significant. This indicates that Group B’s game was more relevant than Group A. All the responses are shown in the following tables.
### Test Group Statistics

<table>
<thead>
<tr>
<th>GROUP</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence</td>
<td>A</td>
<td>14</td>
<td>4.1071</td>
<td>.49725</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>14</td>
<td>4.0893</td>
<td>.52217</td>
</tr>
<tr>
<td>Relevance</td>
<td>A</td>
<td>14</td>
<td>3.4643</td>
<td>.57893</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>14</td>
<td>3.9107</td>
<td>.46105</td>
</tr>
</tbody>
</table>

### Independent Samples Test

<table>
<thead>
<tr>
<th></th>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
<td>t</td>
</tr>
<tr>
<td>Confidence</td>
<td>Equal variances assumed</td>
<td>.008</td>
<td>.930</td>
</tr>
<tr>
<td></td>
<td>Equal variances not assumed</td>
<td>.093</td>
<td>25.938</td>
</tr>
<tr>
<td>Relevance</td>
<td>Equal variances assumed</td>
<td>.950</td>
<td>.339</td>
</tr>
<tr>
<td></td>
<td>Equal variances not assumed</td>
<td>-2.257</td>
<td>24.760</td>
</tr>
</tbody>
</table>
Portion 3: Using SPSS for Post-Test

The students were asked to take the post-test after the playing games. After the grades between the two groups were compared using the SPSS in order to find the mean score and standard deviation for Group A and Group B and the Levene’s test for equality of variances to see if the assumptions were met or not. Alpha is the cut-off value for determining significant or insignificant results. The value is usually 0.05. When p-value is less than 0.05, the result was significant. When p-value was more than 0.05, the result was not significant.

The mean score for Group A was 7.93 and the standard deviation for Group A was 0.917. The mean score for Group B was 7.50 and the standard deviation for Group B was 1.787. Levene’s test for equality of variances indicated that the equal variance assumption was met, p = 0.051. The independent-samples t-test shows that t (26) = 0.798, p = 0.432. The two groups were not different in term of grade. Based on the post-test results the design of the two games that the students played were effective for both group no matter if the game had visual cueing or did not have visual cueing as well as the game having random questions or if it was difficult. Students felt confident even if the game had visual cueing or did not have visual cueing. On the other hand, students did even better with Game B that had no visual cueing, however, pertained to the conversations of daily lives. All the mean scores are shown in Figure 11.
Second Section: The Interview

In this section, the students were asked to answer open ended questions. The interviews were conducted via phone and face to face based on the student’s choice. Group A’s answers are illustrated, then Group B’s answers are illustrated.

Attention

The students were asked two questions related to attention to see what things drew their attention in the game.

Open-Ended Question 1

The first question was: What did you like the best about the game? In Group A, which played the game with visual cueing, five out of fourteen students liked the correction of the wrong answer at the end of each question, eight out of fourteen students liked the pictures that appeared in each multiple choice question, while one out of fourteen students liked that the game was the shape of a pyramid.
In Group B, which played the game with no visual cueing, six out of fourteen students liked the correction of the wrong answer at the end of each question, four out of fourteen students liked that multiple choice questions randomly appeared in the game, one student out of fourteen liked the applause when they got the right answer, while three out of fourteen students liked the challenge of some questions. All results are shown in Table 6.

Open-Ended Question 1

<table>
<thead>
<tr>
<th>What did you like best about the game?</th>
<th>Student Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Game A with Visual Cueing</td>
<td></td>
</tr>
<tr>
<td>Correction of the wrong answers</td>
<td>5</td>
</tr>
<tr>
<td>Visual cueing</td>
<td>8</td>
</tr>
<tr>
<td>Pyramid shape</td>
<td>1</td>
</tr>
<tr>
<td>Game B with No Visual Cueing</td>
<td></td>
</tr>
<tr>
<td>Correction of the wrong answer</td>
<td>6</td>
</tr>
<tr>
<td>Random difficulty of questions</td>
<td>4</td>
</tr>
<tr>
<td>Applause with the correct answers</td>
<td>1</td>
</tr>
<tr>
<td>Challenging questions</td>
<td>3</td>
</tr>
</tbody>
</table>

Open-Ended Question 2

The second question was: How did the game grab your attention? In Group A, which played the game with visual cueing, two out of fourteen students stated that the colors of the game grabbed their attention, eight out of fourteen students felt the picture next to each question grabbed their attention, while four of fourteen students liked the sequence of the questions moving from an easy level to a difficult level.

In Group B, which played the game with no visual cueing, seven out of fourteen students stated that the colors of the game grabbed their attention, three out of fourteen students felt that
the spinning wheel grabbed their attention, while four out of fourteen students liked the format of
the question and how it appeared on the screen and how the questions are clear and organized. All
results are shown in Table 7.

### Open-Ended Question 2

<table>
<thead>
<tr>
<th>How did the game grab your attention?</th>
<th>Student Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Game A with Visual Cueing</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>2</td>
</tr>
<tr>
<td>Visual cueing</td>
<td>8</td>
</tr>
<tr>
<td>Increasing the difficulty</td>
<td>4</td>
</tr>
<tr>
<td>Game B with No Visual Cueing</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>7</td>
</tr>
<tr>
<td>Spinning wheel</td>
<td>3</td>
</tr>
<tr>
<td>Questions organized</td>
<td>4</td>
</tr>
</tbody>
</table>

### Relevant

The students were asked two questions related to relevancy to see how they can use the
prepositions in their life.

### Open-Ended Question 3

The first question was: How did the game relate to using English in everyday life? In Group
A, which played the game with visual cueing, twelve out of fourteen students stated that the game
was very helpful and relevant to what they learned in class or outside of class, while two students
stated that the game is very helpful and relevant to what they learned in class only.
In Group B, which played the game with no visual cueing, fourteen students stated that the game was very helpful and relevant to what they learned in class or outside of class. All results are shown in Table 8.

### Open-Ended Question 3

<table>
<thead>
<tr>
<th>How did the game relate to using English in everyday life?</th>
<th>Student Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Game A with Visual Cueing</td>
<td></td>
</tr>
<tr>
<td>Helpful and relevant to what they learned in class or outside of class</td>
<td>12</td>
</tr>
<tr>
<td>Game B with No Visual Cueing</td>
<td></td>
</tr>
<tr>
<td>Relevant to what they learned</td>
<td>14</td>
</tr>
<tr>
<td>Not relevant to what they learned</td>
<td>0</td>
</tr>
</tbody>
</table>

### Open-Ended Question 4

The second question was: How did the game help you correctly use prepositions? In Group A, which played the game with visual cueing, eleven out of fourteen students stated that the game helped them use prepositions when they write an essay or when they speak, while three students stated that although the game was helpful it did not make any difference in the use of prepositions because they already knew how to use the prepositions correctly.

In Group B, which played the game with no visual cueing, fourteen students stated that the game helped them correctly use prepositions when they write an essay or when they speak. All results are shown in Table 9.
Open-Ended Question 4

<table>
<thead>
<tr>
<th>Game A with Visual Cueing</th>
<th>Student Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use prepositions correctly when they write an essay or when they speak</td>
<td>11</td>
</tr>
<tr>
<td>Did not make any difference</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Game B with No Visual Cueing</th>
<th>Student Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use the prepositions correctly</td>
<td>14</td>
</tr>
<tr>
<td>Not use the prepositions correctly</td>
<td>0</td>
</tr>
</tbody>
</table>

Confidence

The students were asked two questions related to confidence, to determine if they remained motivated to learn. If they were confident they could succeed in the game. They should view the game as not too easy and not too hard. One strategy for the confidence factor was to allow for personal control in order to maintain motivation.

Open-Ended Question 5

The first question was: What made you continue to play the game? In Group A, which played the game with visual cueing, ten out of fourteen students stated that the questions were not too hard or complicated, especially when they saw a picture next to each question, one student out of fourteen students was curious about what score they got at the end of the game and wanted to see whether or not they won in the game, while three out of fourteen students stated that the game was exciting.

In Group B, which played the game with no visual cueing, nine out of fourteen students stated that the questions were not too hard or complicated, three out of fourteen students stated
that the use of prepositions was a very important topic for them and they want to see if they know how to answer the questions or they do not, while two students out of fourteen were curious about what score they got at the end of the game and want to see whether they won in the game or not. All results are shown in Table 10.

### Open-Ended Question 5

<table>
<thead>
<tr>
<th>What made you continue to play the game?</th>
<th>Student Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Game A with Visual Cueing</td>
<td></td>
</tr>
<tr>
<td>Not too hard</td>
<td>10</td>
</tr>
<tr>
<td>Score curiosity</td>
<td>1</td>
</tr>
<tr>
<td>Exciting game</td>
<td>3</td>
</tr>
<tr>
<td>Game B with No Visual Cueing</td>
<td></td>
</tr>
<tr>
<td>Not too hard</td>
<td>9</td>
</tr>
<tr>
<td>Important topic</td>
<td>3</td>
</tr>
<tr>
<td>Score curiosity</td>
<td>2</td>
</tr>
</tbody>
</table>

### Open-Ended Question 6

The second question was: How did you feel about your control of the speed at which you played the game? In Group A, which played the game with visual cueing, seven out of fourteen students stated that the time speed of the game was appropriate, four out of fourteen students stated that the time speed of the game should be less because the picture next to each question helped them answer the question, while three out of fourteen students stated that the time speed of the game should be long enough to give them time to read and answer the questions.

In Group B, which played the game with no visual cueing, eight out of fourteen students stated that the time speed of the game was appropriate, four out of fourteen students stated that the
time speed of the game should be less to make it more challenging for them and to help them learn how to answer questions faster, while two out of fourteen students stated that the time speed of the game should be long enough to give them time to read and answer the questions. All results are shown in Table 11.

**Open-Ended Question 6**

<table>
<thead>
<tr>
<th>How did you feel about your control of the speed at which you played the game?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Game A with Visual Cueing</strong></td>
</tr>
<tr>
<td>Time appropriate</td>
</tr>
<tr>
<td>Time should be less</td>
</tr>
<tr>
<td>Time should be longer</td>
</tr>
<tr>
<td><strong>Game B with No Visual Cueing</strong></td>
</tr>
<tr>
<td>Time appropriate</td>
</tr>
<tr>
<td>Time should be less</td>
</tr>
<tr>
<td>Time should be longer</td>
</tr>
</tbody>
</table>

**Satisfaction**

The students were asked two questions related to satisfaction to see if the response indicated the level of satisfaction with the feedback provided by the game. They might respond that if the game gave them the right answers but did not explain why their answer was not correct to see if the learners were happy with the score or not? If they are happy with the score, they remained motivated to learn.

**Open-Ended Question 7**

This first question was: How did you feel about the feedback provided when you chose an incorrect answer? In Group A, which played the game with visual cueing, twelve out of fourteen
students stated that the feedback after each question helped them know the correct answer. This could make them learn from their mistakes as well as keeping them motivated to learn more, while two out of fourteen students stated that the feedback should not be provided when the answer was wrong in order to keep them challenged and playing the game over and over until they know the right answer.

In Group B, which played the game with no visual cueing, twelve out of fourteen students stated that the feedback after each question helped them know the correct answers. This helped them learn from their mistakes as well as keeping them motivated to learn more. One out of fourteen students stated that he liked the idea of the feedback but he thought this could interrupt his attention, so he would rather see all the feedback when the game was over, while one out of fourteen students stated that the feedback should not be provided when he answered the question wrong in order to keep him challenged and playing the game over and over until he knows the right answer. All results are shown in Table 12.

### Open-Ended Question 7

<table>
<thead>
<tr>
<th>How did you feel about the feedback provided when you chose an incorrect answer?</th>
<th>Student Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Game A with Visual Cueing</td>
<td></td>
</tr>
<tr>
<td>Feedback helped</td>
<td>12</td>
</tr>
<tr>
<td>Feedback should not be provided</td>
<td>2</td>
</tr>
<tr>
<td>Game B with No Visual Cueing</td>
<td></td>
</tr>
<tr>
<td>Feedback helped</td>
<td>12</td>
</tr>
<tr>
<td>Feedback should not be provided</td>
<td>1</td>
</tr>
<tr>
<td>Feedback interrupted attention</td>
<td>1</td>
</tr>
</tbody>
</table>
Open-Ended Question 8

The second question was: How did you feel about your score at the end of the game? In Group A, which played the game with visual cueing, nine out of fourteen students were satisfied with the results and got between one to two answers wrong, while five out of fourteen students were satisfied with the results and got between two to three answers wrong.

In Group B, which played the game with no visual cueing, seven out of fourteen students were satisfied with the results and got between one to two wrong answers, six out of fourteen students were satisfied with the results and got between two to three wrong answers, while one out of fourteen students were satisfied with the results and got four answers wrong. All results are shown in Table 13.
### Open-Ended Question 8

<table>
<thead>
<tr>
<th>How did you feel about your score at the end of the game?</th>
<th>Student Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Game A with Visual Cueing</td>
<td></td>
</tr>
<tr>
<td>Satisfied, with one or two wrong answers</td>
<td>9</td>
</tr>
<tr>
<td>Satisfied, with two to three wrong answers</td>
<td>5</td>
</tr>
<tr>
<td>Game B with No Visual Cueing</td>
<td></td>
</tr>
<tr>
<td>Satisfied, with one to two wrong answers</td>
<td>7</td>
</tr>
<tr>
<td>Satisfied, with two to three wrong answers</td>
<td>6</td>
</tr>
<tr>
<td>Satisfied, with four wrong answers</td>
<td>1</td>
</tr>
</tbody>
</table>

**Summary of Findings for the Attention Questions of the Survey**

Based on the low reliability of the seven questions that are related to attention in Chapter 4, the questions were low quality, so the data was not analyzed from these questions. Thus, no conclusions can be drawn about attention. To further research attention, questions of the survey could possibly be improved for another research, use another survey to measure attention, or measure a larger sample size.

**Summary Findings for Confidence Questions of the Survey**

The findings of confidence indicated that the eight questions related to confidence were acceptable reliability, students in both groups felt confident. One of the students stated that Game A which had visual cueing next to each question, gave him a sense of confidence that he was able to select the correct answer, as shown in Figure 12.
One student stated that Game B which had no visual cueing next to each question, the grades that she obtained from the correct answers gave her a special feeling on her ability to answer all the questions right and finish the game successfully as shown in Figure 13.
Summary Findings for Satisfaction Questions of the Survey

The findings of satisfaction indicated that the five questions related to satisfaction are low reliability, therefore the data was not analyzed using SPSS. Thus, no conclusions can be drawn about satisfaction. The satisfaction questions of the survey could possibly be improved for another research, or another survey could be used to measure satisfaction.

Summary Findings for Relevant Questions of the Survey

The findings of relevance indicated that the seven questions related to relevance were acceptable reliability, therefore, the data was analyzed using SPSS software. When mean scores were compared, Group B which had only the multiple-choice answers with no pictures were more relevant than Group A which had visual cueing. Group B which had only the multiple-choice answers felt that the meaning of the questions were more relevant to their life and relevant to students interests. These questions helped the students start conversation with other people. For example, one of the question in Game B asked “Too much smoking is bad ___ you”, one student mentioned that he heard this question more often when he watches movies or when he smokes in front of people, so he enjoyed hearing what he watched in the movies and what he heard from people. One student mentioned that when she rides in a taxi with other passengers, the cab driver asks the passengers where they live. She heard this statement often when passengers answered,” I live in Dearborn.”
The questions in Game A, which had visual cueing only, asked about different positions of dogs which students could not relate their interests. For example, “Where is the dog?” Students only see different positions of the dog. Thus, Game B was more relevant because it deals with daily conversations, while Game A was like a multiple choice exam, as well as not having anything to do with conversations. Therefore, the students participating in Game B did much better and had more interest to learn because that game involved things that would help them more because it included questions that they would see on a daily basis.
The explanations of the questions in Game B are relevant to what students learned in the classroom. According to Author John M. Keller of the article Development and Use of the ARCS Model of Instructional Design “Relevance can come from the way something is taught; it does not have to come from the content itself.” (Keller, 7). This correlates to my findings because the content is the same for classrooms and in the different kinds of games, however, each group of students did better in learning the content from the way it was presented to them.

**Summary Findings of Post-Test**

The post test results from the SPSS data analyses software showed that there is no difference between Group A which had the game visual cueing and Group B which had only the multiple-choice answers. This indicated that students remained motivated regardless of the game having visual cueing or not having visual cueing, as well as if the game presented questions of random difficulty or questions of increasing difficulty. These characteristics motivated students to learn English.
Post-Test Scores per Group

<table>
<thead>
<tr>
<th>Group</th>
<th>Post test score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>7.93</td>
</tr>
<tr>
<td>B</td>
<td>7.5</td>
</tr>
</tbody>
</table>

Attention

Summary Findings of Open-Ended Question 1

The findings of Group A, which had the game visual cueing indicated that some students in the group liked the correction of the wrong answer at the end of each question. Students stated that the corrections helped them learn from their mistakes and avoid future incorrect answers as shown in Figure 16.

Feedback for Incorrect Answer

Some students liked the picture of the dog that appeared next to each question and felt the picture helped them learn the prepositions of places. When they saw the dog on the table, they knew which preposition they needed to select. One student liked the pyramid design of the game because it reminded him of his favorite game show that he watched on TV when he was a child.
The findings of Group B, had only the multiple-choice answers with no pictures indicated that there were students liked the correction of the wrong answer at the end of each question. The students thought that the feedback correction of the wrong answer helped them learn from their mistakes and avoid further wrong answers. There were three out of fourteen students liked the challenge of the questions because they did not see any pictures to help them select the answer as the students in Group A saw the pictures. There were students who liked multiple choice questions that appeared in the game. Students think if the questions appear randomly, it would keep them challenged because they don't know whether or not a hard question was coming next as shown in Figure 17.

There was one student who liked the applause when he would get the right answer because he used to hear clapping from his mom when he played a game with her and won the game as shown in Figure 18.
Summary Findings of Open-Ended Question 2

The findings of Group A which had the game visual cueing indicated that there were students who thought that the colors of the game grabbed their attention. The students stated that music made them feel excited to play the game, the colors brought joy and pleasure as they were playing, and the dog on the table or in front of the table created curiosity about the next question. There were students who felt like that the pictures next to each question grabbed their attention. Some students stated that they loved the graphics or picture illustrations because it helped them answer the questions. Some students stated that the transition of dog positions in each question attracted their attention. For example, in the first question, they see the dog in the front of the table and the next question they will see the dog behind the table as shown in Figure 24. These transitions grabbed their attention.
Game A with Transition of Dog Positions

There were students who liked the sequence of the questions moving from an easy level to a difficult level because they will know what to expect in the next questions. For example, the bottom level of the pyramid would be an easy question, so the transition of the questions from easy to hard kept them focused, as shown in Figure 20.

Game A with Increasing Levels of Difficulty

The findings of Group B, which played the game with visual cueing indicated that there were seven out of fourteen students who thought the color of the game grabbed their attention. They felt that the game broke the routine and changed the atmosphere, especially while playing
the spinning wheel which contained mixed colors. There were students who felt that rotational movements of the spinning wheel and waiting until the question appeared on the screen grabbed their attention. There were students who liked the format of the questions and how they appeared on the screen. When the students pressed the button, the wheel would start to move until the arrow of the spinning wheel stopped at the question and the question appeared on the screen. Figure 21 offers a visual representation of the data included in Table 7 above.

**Summary of Open-Ended Question 2 Responses (Attention)**

![Graph showing how the game grabbed attention for Group A and Group B](image)

**Relevant**

**Summary Findings of Open-Ended Question 3**

The findings of Group A, which played the game with visual cueing indicated that there were students that stated that the game would help them when they worked at a store. They can put or move the stuff to the correct location when asked by the manager. There were students who thought the game helped them make a connection between what they learned in the classroom and what they played in the game.
The findings of Group B, which played the game with no visual cueing indicated that the use of the prepositions of place game was very helpful. There were students who have a maid at home who speaks English. They knew how to use the prepositions of places when they asked their maid to clean a room. For example, they can ask her to put the rug under the table or move the couch in front of the TV. There were students that stated that the game made sense for them between what they learned in the classroom and what they played in the game. There were students stating that the game would help them understand the directions to the mall if they asked someone where the mall was located. Figure 22 offers a visual representation of the data included in Table 8 above.

Summary of Open-Ended Question 3 Responses (Relevance)

![Bar chart showing responses for Group A and Group B regarding how the game relates to using English in everyday life.]

Summary Findings of Open-Ended Question 4

The findings of Group A, which had the game visual cueing, indicated that the game helped them use prepositions correctly when they wrote an essay or an assignment. They knew how to use the correct prepositions to connect ideas. For example, one student mentioned that she now understands the difference between the preposition and the preposition or. There were students
stating that the prepositions of place in the game helped them give the right directions to the restaurants when someone asked the location of the restaurant. One student stated that the game using a picture of a dog was especially helpful. For example, the dog appeared between the table and the chair, so the student now knows how to describe to someone that the pizza store was located between the ice cream store and the barber shop. One student said he already knew how to use the prepositions correctly, but the game was a good practice.

The findings of Group B, which played the game with no visual cueing indicated that prepositions of place in the game would help them correctly put parts together inside a machine when they become a mechanical engineer. One example that was given was to follow the instructions to put a thermal insulation in the front of a machine. This was an example of the process of learning, transferring the knowledge to develop competencies and then extending those competencies into new contexts (Bransford Brown & Cocking, 2010). Figure 23 offers a visual representation of the data included in Table 9 above.
Summary of Open-Ended Question 4 Responses (Relevance)

Confidence

Summary Findings of Open-Ended Question 5

The findings of Group A, which had the game visual cueing indicated that the structure of the questions was not too hard or complicated, especially when they saw a picture of the dog next to each question. The picture helped them select the best answer. The questions were clear enough to understand the answer and apply it to what they learned from the game to daily life. There were students who were excited and curious to see if they had won in the game.

The findings of Group B, which played the game with no visual cueing indicated there were students who emphasized that prepositions were considered basic English language that they need to learn in order to understand English and know how to use it in their daily life as well as in school. There were students who were curious about what score they got at the end of the game because some of them had a feeling that they knew all the answers, but they wanted to keep playing the game until the end to see if they really did know all the answers. Figure 24 offers a visual representation of the data included in Table 10 above.
Summary Findings of Open-Ended Question 6

The findings of Group A, which played the game with visual cueing indicated the time for playing the game was appropriate because they were able to answer the questions in a timely manner. Other students preferred that the time should be shorter because the picture next to each question helped them answer the question quickly, and they did not think the questions needed a lot of time. Students who were new in the ESL program and had low level reading skills preferred a longer time so they can read and answer the questions correctly. Only one student did not care that there was a time limit in the game because he just wanted to answer the questions and see whether he won the game or not.

The findings of Group B, which played the game with no visual cueing indicated the time for the game was appropriate for them because they were able to answer the questions in a timely manner. Other students preferred that the time should be shorter in order to make the game more challenging for the player. This would help them answer the questions faster when they take the TOEFL (Test of English as a Foreign Language) test. This test for foreign students depends on answering questions quickly and correctly. The rest of the students preferred that the speed of the game should be longer to give them time to read and answer the questions, especially because the
game is multiple choice which required them to read all the answers and then select the best answer. Figure 25 offers a visual representation of the data included in Table 11 above.

### Summary of Open-Ended Question 6 Responses (Confidence)

| How did you feel about your control of the speed at which you played the game? Group A |
|---------------------------------|---------------------------------|
| Time appropriate | Time should be less | Time should be long |
| 8 | 2 | 1 |

| How did you feel about your control of the speed at which you played the game? Group B |
|---------------------------------|---------------------------------|
| Time appropriate | Time should be less | Time should be long |
| 5 | 2 | 3 |

### Satisfaction

#### Summary Findings of Open-Ended Question 7

The findings of Group A, which played the game with visual cueing indicated that the feedback after each question helped them know the correct answers. This made them learn from their mistakes and also kept them motivated to learn more. It made the students feel rewarded when the correct answer appeared on the screen along with a loud cheering sound when they got the correct answer. Other students felt like the feedback did not keep them challenged. They wanted to keep playing over and over until they knew the correct answers.

The findings of Group B, which played the game with no visual cueing indicated the feedback after each question showed them the correct answer. This kept them motivated to learn and continue to play the game when the correct answer appeared on the screen with the sound of the applause. One student felt the feedback interrupted his attention because he needed to stop and read the feedback after each question. He preferred to see the feedback after the game was
complete. The rest of the students did not want feedback. In line with Vygotsky’s zone of proximal
development, they just wanted to play the game over and over without assistance and learned from
their mistakes. Figure 26 offers a visual representation of the data included in Table 12 above.

Summary of Open-Ended Question 7 Responses (Satisfaction)

Summary Findings of Open-Ended Question 8

The findings of Group A, which played the game with visual cueing indicated that all
students were happy with their scores. Some felt the questions were not too hard, while other
students felt like they would have gotten a better score if they had had more time to answer the
questions. The multiple choice questions required them to read all the possible answers in order to
select the right answer, but they could not read quickly enough to choose the correct answers.

The findings of Group B, which played the game with no visual cueing indicated the
questions were fair and they were able to answer most of the questions in order to win the game.
Other students indicated that the answers were similar on some of the questions, so they had
difficulty selecting the correct answer. Figure 27 offers a visual representation of the data included
in Table 13 above.
Summary of Open-Ended Question 8 Responses (Satisfaction)

![Graph showing satisfaction with scores]

Summary

The target for collecting the data from the students was to find out what game designs or characteristics motivated students to become more proficient in English. Based on the results of the post-test, there was evidence that indicated that the design of two games that students played were effective for both groups no matter the if game had visual cueing or did not have visual cueing and games with random questions or games with increased difficulty. In addition, students also felt more confident after they played the game. Students remained motivated in learning the language. On the other hand, students did even better with games that had no visual cueing but pertained to the conversations of daily lives. All the results in this chapter will be discussed in Chapter 5.
CHAPTER 5: DISCUSSION

The research for this study was to determine what game designs or characteristics would motivate students to learn the English language by using Keller’s ARCS model for Saudi students. This chapter discussed the findings from Chapter 4, which were based on surveys, interviews, and post-tests. The chapter included the limitations, issues and difficulties, practical implications, and recommendations for future research.

**Summary**

The research study illustrated that the students interact to play games no matter if the game had visual cueing or did not have visual cueing and if the game had random questions or games with increased difficulty. Students tended to be more motivated with games that included questions related to the conversation. Therefore, the design in Game B motivated students to learn more of the English language.

**Possible benefits after playing the game**

Train students to answer questions in a short period of time which helps them get used to answering questions faster on a test. Build / improve reading and writing skills when the students play the games. Students are challenged and better to face difficult questions in the future. Give students the opportunity to practice what they learned in the classroom. Provide a good opportunity for students to learn about other games available on the website that teaches English language. Active students mind to focus in the material. Improve memory through practice on the use of prepositions of place. Gives an opportunity for students to have fun as well as to learn English. Gives students who are interested in design experience in case they want to design games in the future.
Limitations

The study may not be valid for different motivation models because I used only the ARCS model. Students came from different backgrounds and they had different levels of English Language experience. Although, students were low level; some of them spoke more English than others who did not know any words at all. For example, there were students who knew how to write sentences, while other students did not know basic, English words to communicate with other students. Although all of the students had basic computer skills, some of them had no prior knowledge of how the game worked, while others were familiar with the games. Moreover, the research study may not be valid for universities that don’t have computer language learning labs. The sample size of participants in this study was low. There were 50 participants scheduled, but only 30 students participated in the research study. It was hard to find significant numbers in the post-test because the sample size was so low. There were two scales that were not analyzed due to the low reliability of the scores when SPSS data analysis software was used. When the students played the game for only a short period of time the results showed both games to be effective, but if the students played the game for longer periods of time the results might not be as effective.

Issue and Difficulty

The only issue was the availability of students for the study. Although students had volunteered for the study and agreed in advance to an appropriate meeting time to play the games and take the post-test in the computer lab, they failed to appear. The reason could be that the ESL classes were too long. Students started class at 9:30 AM and finished at 3:30 PM. The only long break they had was their lunch break of one hour. Students normally used the break to work on their assignments for the coming classes, while other students used the break to go to the gym.
Practical Implications

Implications for Teachers

In this study, two game designs were used, one presented questions of increasing difficulty to students and pyramid formation while the second used a spinning wheel to present students with questions of random difficulty. For teachers, specifically ESL teachers, who want to include technology in their teachings and want to include games as an essential method of teaching ESL, this section illustrates what game designs or characteristics should be used. The interviews and the surveys of students indicated that they played games often in their daily life. They enjoyed learning English not just from the book, but they also wanted to use other available features of technology to keep them motivated. Teachers must make sure to select games that contain these characteristics. The game should be similar to games students have already played and then have them play the games as an activity to keep students motivated such as games with visual cueing vs. no visual cueing, games with random questions vs. games with increased difficulty, and games which proved feedback. In this research, most of students were familiar with both games from watching them on TV. Teachers should stay alert to any new research related to game design and other studies in order to find other characteristics at the minimum. Teachers might find other games that have more features that are not covered in the games they have already played. For example, Game A has a picture of dog next to each question, so teachers might find a game that has both pictures and sound where the question is read to the students. This could motivate students to improve their listening skills while they play the game with new elements.

The findings of this study will benefit future teaching methods that pertains to technology. It will help instructors with the use of other activities to teach English. Teachers should adapt to these ideas to better help the students learn English. The reason being is mainly because students
are showing that they are motivated, students are showing that these methods keep them engaged and interested to learn. Visual cueing helped students have a continuous motivation in learning the material being presented to them. The results of the game that had no visual cueing also had good results because it was something of their interest because they needed that information for their daily lives. The study showed that the difference if the games were just about the same because they both were game based and that thrill was something different and interesting. Furthermore, because most people’s life revolves around technology, for example one can track their fitness and health from their phone which makes it more convenient and also motivates people to stay fit and healthy. Therefore, the findings of the study reveal the interest people have for technology which will help motivate them and keep them interested to learn.

**Implications for an ESL Institute**

The ESL institute should provide all necessary computer equipment that English teachers need in order to use games to motivate students to learn English as a second language. The institute should hold monthly or weekly meetings with English teachers to discuss and evaluate what games teachers are using that keep students motivated. The institute should also have teachers attend workshops and conferences related to the use of games and student motivation. They could invite experts and game designers to meet with the teachers and discuss what other game elements should be included in future games according to teacher observations during the semester.

**Implications for ESL Students**

Students who want to study on their own can select games that have either visual cueing or no visual cueing, games with randomly difficult questions or increasingly difficult questions, or games that provide feedback in order to keep them motivated, precisely games that involve things that would help with daily conversations not games that are similar to a multiple choice exam
which would not help with daily conversations, especially lower level students who have difficulty in learning language. The game should be a good facilitator that keeps them motivated to learn English on their own. Traditionally students watch TV, listen to the radio, and read newspapers, however, based on my study, I found that games could ease some difficulties and motivate students to learn English. Therefore, students should use the games as an advantage to help them improve their English. Students should try different games that contain other elements not included in my study.

**Recommendations and Future Research**

There are other games with different designs and different elements that can be used to motivate students to learn English. The results and the findings for this research were only drawn from Saudi students at one of the ESL Major Arabian University in Michigan, so the results and the findings might be different if applied to other Saudi students in a different university or if applied to students from different nationalities. Therefore, my recommendation for those who are interested in doing further research is to apply the games to students of different nationalities and then compare results to results of the Saudi students in this study. This research studied only students with low levels of English, so my recommendation is to apply the research to students with more advanced levels to see if the results might be different or stay the same.

**Conclusion**

In conclusion, the research study that has been done was to use video games to increase the motivation of Saudi students learning the English language. The findings provided details about what game designs or characteristics can be used in order to keep students motivated to learn English such as visual cueing versus no visual cueing, games with random questions versus increase difficulty, and games that provided feedback. Based on the post-tests, surveys and
interviews, the results showed that there was not much difference between the two groups. All these results showed that games motivate students to learn more English. As to the question of what game designs or characteristics will motivate students, the research includes all. One game used in this study contained pictures and was designed as a pyramid, while the other had no pictures and was designed as a spinning wheel. Because there was so little difference between the two groups in the results we cannot draw any conclusions about game design or characteristics. Students enjoyed playing the games and were willing to see more ESL games activities to break the routine and take advantage of available technologies on the computer.
APPENDIX A: RESEARCH INFORMATION SHEET

Title of Study: Using video games to increase the motivation of Saudi students learning to learn the English Language

Principal Investigator (PI): Wadeeah Alshawi
Administrative & Organizational Studies
313-577-1741

Purpose:
You are being asked to participate in a research study that uses video games in order to find what motivates student to learn the English language in shortest time, using video games instead of traditional methods such as books. This study is being conducted at Wayne State University, English language institute. The estimated number of study participants to be enrolled are approximately 50 students from lower-level classes.

Study Procedures
If you agree to take part in this research study, you will be asked to play the video game based on your selection from the bowl with 50 small pieces of paper with either a 1 or 2 written on each. If you choose the number 1, you will play Game A. If you choose number 2, you will play Game B. There will be two sessions with 25 students participating in each.
When the participants enter the computer lab, I will give them a hard copy of consent form to sign it. The participants will be asked to take a number from the bowl with 50 small pieces of paper with either a 1 or 2 on written each. If he/she choose the number 1, he/she will play Game A. If he/she choose number 2, he/she will play Game B. The participants will receive a number tag that matches the game he/she will be participating in. For example, Game A1, Game A2, Game A3,
Game A4, Game A5, Game B1, Game B2, Game B3, Game B4 and Game B5. This will be the participant student ID that he/she need to write it down in the survey and the post-test. At the end of the session, I will pass out a form in order to schedule student interviews, based on their convenience. The interview will take about 20 minutes for each student, and can be conducted by phone, face to face and Skype based on the student’s choice. For the survey, the participants need to answer all multiple choice questions, leaving none unanswered. For the interview, the participant will be asked to answer the open-ended questions. All the information will be save in the principal investigator laptop with a secure password.

**Benefits**

The possible advantages of taking part in this research study are, the participants will benefit from the game-based learning experiences for ESL learning, and may become more comfortable with related computer skills and game-based learning in general. College/university ESL institutes would be able to use the results to support innovative, game-centered ESL instructional methods to improve learning outcomes at WSU and elsewhere.

**Risks**

There are no known risks at this time to participation in this study.

**Costs**

There will be no costs to you for participation in this research study.

**Compensation**

You will not be paid for taking part in this study.

**Confidentiality:**

You will be identified in the research records by a code name or number. There will be no list that links your identity with this code.
Voluntary Participation /Withdrawal:

Taking part in this study is voluntary. You may choose not to take part in this study, or if you decide to take part, you can change your mind later and withdraw from the study.] You are free to not answer any questions or withdraw at any time. Your decision will not change any present or future relationships with Wayne State University or its affiliates

Questions

If you have any questions about this study now or in the future, you may contact Wadeeah Alshawi at the following phone number 503-758-1701. If you have questions or concerns about your rights as a research participant, the Chair of the Institutional Review Board can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call the Wayne State Research Subject Advocate at (313) 577-1628 to discuss problems, obtain information, or offer input.

Participation

By completing the video game, questionnaire and, interview, you are agreeing to participate in this study.

Additionally, participation in this research is for residents of the United States over the age of 18; if you are not a resident of the United States and/or under the age of 18, please do not complete this survey.
Gaming Questionnaire

(For all questions, please circle your response)

Student ID___

36. Age: ____
37. Gender
   a. Male    b. Female

38. What is the highest degree or level of school you have completed?
   a. High school       c. Associate degree
   b. Bachelor’s degree  d. Master’s degree


40. Do you play video game?
   a. Yes    b. No

41. How many times per week you play the video game?
   a. 0 - 1 per week    b. 2 – 3 per week    c. More than 3 per week

42. The number of minutes that you spend in the game per week.
   a. 1- 5 minutes    b. 5 - 10 minutes    c. More than 10 minutes

43. When I first looked at this game, I had the impression that it would be easy for me.

44. There was something interesting at the beginning of this game that got my attention.

45. The questions of the game was more difficult to understand than I would like for it to be.
46. After reading the introductory information, I felt confident that I knew what I was supposed to learn from this game.

47. Answering the questions in this game gave me a satisfying feeling of accomplishment.

48. It is clear to me how the content of this game is related to things I already know.

49. Completing this game successfully was important to me.

50. The quality of the questions helped to hold my attention.

51. As I played this game, I was confident that I could learn the content.

52. I enjoyed this game so much that I would like to know more about this topic.

53. The content of this game is relevant to my interests.

54. There are explanations of how to play this game.
55. The questions in this game were too difficult.

56. This game has things that stimulated my curiosity.

57. I really enjoyed playing this game.

58. The amount of questions in this game caused me to get bored.

59. The content and style of writing in this game convey the impression that its content is worth knowing.

60. I learned some things that were surprising or unexpected.

61. After playing this game for a while, I was confident that I would be able to pass a test on it.

62. This game was not relevant to my needs because I already knew most of it.

63. The wording of feedback after answering the questions in this game, helped me feel rewarded for my effort.
64. The variety of illustrations, helped keep my attention on the game.

65. I could relate the content of this game to things I have seen, done, or thought about in my own life.

66. There are so many words on game that it is irritating.

67. The content of this game will be useful to me.

68. I could not really understand quite a bit of the questions in this game.

69. The good organization of the content helped me be confident that I would learn this material.

70. It was a pleasure to work on such a well-designed game.
عنوان الدراسة: استخدام ألعاب الفيديو لزيادة تحفيز الطلاب السعوديين لتعلم اللغة الإنجليزية

الباحث الرئيسي: وديعة ابراهيم الشاوي

القسم: الدراسات الإدارية والتنظيمية

الهدف من الدراسة:

أنت مدعو للمشاركة في هذا البحث، وهو يستخدم ألعاب الفيديو من أجل الوصول على ما يحفز الطلاب على تعلم اللغة الإنجليزية في أقصر وقت، وذلك باستخدام ألعاب الفيديو بدلاً من الطرق التقليدية مثل الكتب. وتعتبر هذه الدراسة في جامعة واين ستيت، معهد اللغة الإنجليزية. ويقدر عدد المشاركين في الدراسة إلى أن التحق ما يقرب من 50 طالبًا من المستويات الدنيا.

إجراءات الدراسة:

إذا وافق على المشاركة في هذا البحث، سوف يطلب منك أن تلعب لعبة الفيديو التي تتمented على اختيارك من الوعاء الذي يحتوي على 50 قطعة صغيرة من الورق تحمل رقم 1 أو 2 في كل قطعة. إذا انت/انتي اختارت الرقم 1، انت/انتي سوف تلعب لعبة A. إذا انت/انتي اختارت رقم 2، سوف تلعب لعبة B. المشاركون سيحصلون على رقم طلابي يتناسب مع اللعبة التي انت/انتي سوف تكون مشارك فيها على سبيل المثال، لعبة A1، لعبة A2، لعبة A3، لعبة A4، لعبة A5، لعبة B1، لعبة B2، لعبة B3، لعبة B4، لعبة B5.

هذا تكون الرقم الطلابي الذي تحتاج أن تكتبته في الاستبيان والاختبار. في نهاية الجلسه، سوف يتم توزيع مقترح وقتي لل مقابلة حسب ما يناسب وقت الطالب. سوف تستغرق المقابلة حوالي 20 دقيقة لكل طالب، ويمكن أن تتبع مقرر وقتی للمقابلة حسب ما يناسب وقت الطالب. سوف تتم مقابلة كل مشارك.

الفوائد المحتملة ليشارك في هذه الدراسة البحثية هي، سيستفيد المشاركون من تجارب التعلم القائم على لعبة لتعلم اللغة الإنجليزية كلغة ثانية، ويمكن أن تصبح أكثر راحة مع مهارات الحاسوب ذات الصلة، والتعلم القائم على لعبة بشكل عام. أن معاهد اللغة
الإنجليزية كلغة ثانية الكلية / الجامعة سوف تكون قادرة على استخدام النتائج لدعم المبتكرة، التي تركز على لعبة ESL أساليب التدريس لتحسين نتائج التعلم في جامعه وبين ستنت أو أماكن أخرى.

المخاطر

لا يوجد مخاطر معروفة في هذا الوقت لمشاركة في هذه الدراسة.

تكاليف الدراسة

وستكون المشاركة في هذه الدراسة أن تكون من أي تكلفة عليك تعويضات.

لن تدفع لك لمشاركتك في هذه الدراسة.

خصوصية

يتم التعرف عليك في سجلات البحث عن طريق اسم رمز أو رقم. لن يكون هناك قائمة التي تربط الهوية الخاصة بك مع هذا الرمز.

المشاركة الطوعية / السحب

مشاركتك في هذه الدراسة هو تطوعي. ولك الحق في اختيار عدم المشاركة في هذه الدراسة. لك الحرية في الإجابة على الأسئلة التي تريدها . أنت حر في الانسحاب من المشاركة في هذه الدراسة في أي وقت. وقراراتك لا يؤثر على أي علاقة الحالية أو المستقبلية مع جامعة واين ستات أو الشركات التابعة لها، أو خدمات أخرى يحق لك الحصول عليها.

الأسئلة

إذا كان لديك أي أسئلة حول هذه الدراسة في الوقت الحالي أو في المستقبل، يمكنك الاتصال بالباحث الرئيسي وديعه الشاوي على رقم الهاتف التالي. إذا كنت غير قادر على الاتصال بموظفي البحوث، أو إذا كنت ترغب في التحدث مع شخص آخر من موظفي البحوث، يمكنك الاتصال أيضا على رقم 3135771628 للاستفسار أو تقديم تعليق أو شكاوى.

المشاركة
من خلال استكمال لعبة فيديو، والاستبيان، المقابلة، فإنك توافق على المشاركة في هذه الدراسة. بالإضافة إلى ذلك، والمشاركة في هذا البحث هي لسكان الولايات المتحدة الذين تزيد أعمارهم على 18 عامًا؛ إذا لم تكن مقيما في الولايات المتحدة أو الذين تقل أعمارهم عن 18 عامًا، يرجى عدم استكمال هذه الدراسة.
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<th>رقم الطالبي</th>
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<td>الجنس</td>
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<td>أ. ثانوي</td>
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<td>ب. بكالوريوس</td>
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<td>ج. شهادة جامعية</td>
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<td>د. درجة الماجستير</td>
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<td>أ. متزوج</td>
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<td>ب. عازب</td>
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<td>ج. منفصل</td>
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<th>هل كنت تلعب العاب فيديو؟</th>
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<td>أ. نعم</td>
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<td>ب. لا</td>
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<tr>
<th>كم مرة في الأسبوع كنت تلعب العاب الفيديو؟</th>
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<td>أ. 0-1 مرة في الأسبوع</td>
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<td>ب. 2-3 مرات في الأسبوع</td>
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<td>ج. أكثر من 3 مرات في الأسبوع</td>
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<th>عدد الدقائق التي تقضيها اثناء اللعب في الأسبوع.</th>
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<td>أ. 1-5 دقائق</td>
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<td>ب. 5-10 دقائق</td>
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<td>ج. أكثر من 10 دقيقة</td>
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<th>عندما نظرت الي اللعبة كان لديك انطباع أنه ستكون سهلة بالنسبة لك.</th>
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<td>أ. لا أوافق بشدة</td>
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<td>ب. لا أوافق</td>
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<td>ج. غير متأكد</td>
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<td>د. أوافق بشدة</td>
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<th>كان هناك شيء مثير للاهتمام في بداية هذه اللعبة شد انتباهي.</th>
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<td>أ. لا</td>
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<td>ب. لا</td>
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<td>ج. غير متأكد</td>
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<td>د. أوافق</td>
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استبيان حول اللعبه
(لجميع الأسئلة ضع دائرة على جميع اجاباتكم)
لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق

10. الأسئلة الخاصه باللعبة أكثر صعوبة للفهم مما كان متوقع.

لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق

11. بعد قراءة المقدمه، شعرت بالثقة من أنني أعرف ما هو المتوقع أن أتعلم من هذه اللعبة.

لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق

12. الإجابة على الأسئلة في هذه اللعبة أعطاني شعور مرضي بالإنجاز.

لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق

13. من الواضح بالنسبة لي كيف محتوى هذه اللعبة له علاقة بالأشياء التي اعرفها.

لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق


لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق

15. نوعية الأسئلة شد انتباهي.

لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق

16. اثناء لعبى هذه اللعبة اننا واثق من أنني سوف أتعلم المحتوى.

لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق

17. لقد استمتعت هذه اللعبة كثيرا لدرجة أنني أود أن أعرف المزيد عن هذا الموضوع.

لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق

18. إن محتوى هذه اللعبة منصا باهتماماتي.

لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق

19. وهناك شرح عن كيفية لعب هذه اللعبة.

لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق

20. الأسئلة في هذا اللعبة صعبة جدا.

لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق
21. هذه اللعبة تحتوي على أشياء نبهت فضولي.
أ. لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق  
22. لقد استمتعت لعب هذه اللعبة.
أ. لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق  
23. كمية الأسئلة في هذه اللعبة جعلتني أشعر بالملل في بعض الأحيان.
أ. لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق  
24. المحتوى وأسلوب الكتابة في هذا اللعب يعطي انطباع بأن مضمون اللعب يستحق أن يعرف.
أ. لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق  
25. تعلمت بعض الأشياء التي كانت مدهشة وغير متوقعة.
أ. لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق  
26. بعد لعب هذه اللعبة لفترة من الوقت، أنا واثق بأنني سأكون قادرا على اجتياز اختبار.
أ. لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق  
27. هذه اللعبة ليست متعلقة باحتياجاتي لأنني كنت أعرف أكثر من ذلك.
أ. لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق  
28. صياغة تصحيح الاخطاء بعد الإجابة على الأسئلة في هذه اللعبة، ساعدني بالشعور بمكافأة مجهودي.
أ. لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق  
29. التنوع في الرسوم التوضيحية، ساعدني في البقاء مهتم لهذه اللعبة.
أ. لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق  
30. أنا قادر على ربط مضمون هذه اللعبة مع أشياء رأيتها، فعلتها، أو فكرت فيها في حياتي الخاصة.
أ. لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق  
31. هناك كلمات كثيره مزعجة في اللعبة.
أ. لا أوافق بشدة  ب. لا أوافق  ج. غير متأكد  د. موافق  
32. إن محتوى هذه اللعبة مفيد بالنسبة لي.
أ. لا أوافق بشدة
ب. لا أوافق ج. غير متأكد و موافق
د. موافق بشدة

33. لا أستطيع فهم الأسئلة في هذه اللعبة على قدرًا كبيرًا.
أ. لا أوافق بشدة
ب. لا أوافق ج. غير متأكد و موافق
د. موافق بشدة

34. التنظيم الجيد للعبة ساعدني أن أكون واثقًا سوف أتعلم المادة.
أ. لا أوافق بشدة
ب. لا أوافق ج. غير متأكد و موافق
د. موافق بشدة

35. من دواعي سروري لعب مثل هذه اللعبة مصممة تصميمًا جيدًا.
أ. لا أوافق بشدة
ب. لا أوافق ج. غير متأكد و موافق
د. موافق بشدة
APPENDIX B: IRB APPROVAL

CONCURRENCE OF EXEMPTION

Wadeeah Alshawi
Administration & Organization Stud

Dr. Deborah Ellis C. Zeledek / 2-1
Chairperson, Behavioral Institutional Review Board (B3)

August 14, 2015

IRB #: 073815B3X
Protocol Title: Using Video Games to Increase the Motivation of Saudi Students Learning the English Language
Sponsor:
Protocol #: 1507014172

The above-referenced protocol has been reviewed and found to qualify for Exemption according to paragraph #2 of the Department of Health and Human Services Code of Federal Regulations [45 CFR 46.101(b)].

- Social/Behavioral/Education Exempt Protocol Summary Form (revision received in the IRB office 07/15/15)
- Research Protocol (received in the IRB office 07/07/15)
- Research Information Sheet - Arabic (revision dated 04/08/15)
- Research Information Sheet - English Translation (Not to be used in study, for reference only), (revision dated 07/16/15)
- Verbal Consent, the invitation to participate in the Study
- Data Collection Tools (2): i) Gaming Questionnaire (English & Arabic Versions), ii) Preposition of Place Post Test

This proposal has not been evaluated for scientific merit, except to weigh the risk to the human subjects in relation to the potential benefits.

- Exempt protocols do not require annual review by the IRB.
- All changes or amendments to the above-referenced protocol require review and approval by the IRB BEFORE implementation.
- Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the IRB Administration Office Policy (http://irb.wayne.edu/policies-human-research.php).

NOTE: Forms should be downloaded from the IRB Administration Office website http://irb.wayne.edu at each use.
REFERENCES


ABSTRACT

USING VIDEO GAMES TO INCREASE MOTIVATION OF SAUDI STUDENTS LEARNING ENGLISH

by

WADEEAH ALSHAWI

May 2016

Advisor: Dr. Ke Zhang

Major: Instructional Technology

Degree: Doctor of Philosophy

The use of games in various stages of education has become an accepted method among instructional designers who are interested in adding technology to their designs. This research would benefit game designers and instructional designers who want to see what motivates students to learn English. The research used Keller’s ARCS Model, which addresses attention, relevance, confidence, and satisfaction, to investigate what game designs or characteristics will motivate students to learn more English language. The method of this study was a quasi-experimental design supplemented with quantitative and qualitative methods. The results indicated that both games used motivated students to learn because there was not difference between the groups when students took the post-test. The survey indicated that relevance and confidence showed acceptable reliability, while attention and satisfaction did not show acceptable reliability. The open-ended questions showed there was no preference for the different designs or characteristics of the games used. The results show that there was no significant difference between which game was used by a group, however both games motivated students to learn the English language.
AUTOBIOGRAPHICAL STATEMENT

WADEEAH ALSHAWI

EDUCATION:

Ph.D. 2016 Wayne State University
Instructional Technology
Detroit, Michigan, USA

M.A. 2009 Lawrence Technological University
Engineering Management
Business Administration
Southfield, Michigan, USA

B.S. 1998 King Faisal University
Home Economics
Al-Hasa, Saudi Arabia

PROFESSIONAL EXPERIENCE:

Wayne State University
2015-2016 Teaching Assistant
Detroit, Michigan, USA
Al-Kafah School
2001-2002 Elementary School Teacher
Al-Hasa, Saudi Arabia
King Abdulaziz School
2000-2001 High School Teacher
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