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The Use of Video Games in Teaching EFL Students to Write Arguments

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by

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Abstract

This study aims to investigate how playing an online digital video game, *Quandary*, during a university writing course affect the quality of argumentative writing produced by adult EFL students in Kuwait and how playing the same video game is different between male and female adult EFL students when learning how to write argumentative essays. The sample of the study consisted of 42 students who were enrolled in English composition 2 at Gulf University for Science and Technology, Kuwait. The students were divided to control and experimental group and were part of the study for 3 weeks. Students in the control group learned how to write arguments through their course books while students in the experimental group played each episode of Quandary in each class period. At the end of the experience, both groups were given the same test in which they were asked to write an argumentative essay based on a topic that was chosen by the class instructor. Results showed that although all students had written essays with good qualities, there was no significant data difference between the two groups or between male and female students.

Chapter One: Introduction

Problem Statement

Prior research suggests that the teaching of English as a foreign language necessitate effective strategies that could aid students to comprehend the target language better; therefore, language teaching must not only cover theoretical theories in the classroom but also how the language is practiced properly outside of the classroom walls (Anwas et al., 2020). The emerging necessities for learning English in today's world has required the integration of teaching English as a foreign language in most academic settings. Several countries, including Kuwait, are integrating English in their curriculums to meet the vast requirements of human resources for globalization. Therefore, mastering a language like English requires its learners to be exposed to authentic and real-world materials as much as possible.

Since learning tends to be acquired by practicing, learning a language and its four skills (reading, writing, listening, and speaking) are acquired through directly being exposed to authentic materials on a regular basis. Researchers who study foreign-language education have long been interested in how to engage adult learners in course content using new technologies, which then led them to applying game-based learning in foreign language teaching and learning. A study conducted by Othman and Shugair (2013) and Rehman et al. (2013) showed that the use of digital games in learning a foreign language enhanced the learner's concentration, motivation, and creativity. As a result, games are viewed as one of the most important means in obtaining a foreign language as they can mirror activities that are fun and resemble real-world experiences.

Games have also been proven to prevent the lesson from being perceived as boring and mundane (Gozcu & Caganaga, 2016).

Given the importance of argumentative writing, recent research has explored how English language learners might use digital, online technologies to learn how to craft arguments not just for learning to write, but to also become literate participants in a democratic society (Sherry & Lawrence, 2019). Some studies have also addressed whether and how gender and access to technology may limit the use of such tools for language learning due to several existing constraints like mobile phones having small screens, limited memory, and limited access to Wi-Fi connections (Hılao & Wıchadee, 2017). Other similar research has shown that males are more likely to play video games than females and that males have the advantage of having access to technologies, and such, access is associated with gender differences (Borgonovi, 2016).

With the advancement of technology and the fact that today's students are acquainted with using their smart phones, they can download video gaming apps that assist them in learning the target language for the learning experience to take place inside and outside of the classrooms. Literature shows that video games tend to promote and enhance language learning because it uses a variety of language modes in its depiction (Reinders & White, 2010, p. 66). However, there remains to be a lack of research completed on how digital, online video games can be used to help English language learners learn to write arguments.

In terms of gender differences, it has been suggested that females tend to perform better in argumentative writing. Asterhan et al. (2012) states that females normally attain higher scores than males in terms of the quality of their arguments, and that females tend to elaborate more on their argumentative points. With that said, the present study explores whether gender plays a role in determining how successfully participants can learn through video games on how to write

arguments, and to further explore how playing video games can affect the quality of writing argumentative essays.

Purpose and Research Questions

There are several purposes behind this study. The first purpose of this study is to contribute to the field of education by developing methods to teaching English as a Foreign Language (EFL) students to write arguments through video games, which will not only enhance their capabilities of writing arguments, but it will also help in shaping them as proficient speakers who express their viewpoints, list their arguments, and convince their audiences in today's democratic world. The second purpose of this study is to measure the consequences of implementing new practices in language teaching and, as a result, test treatment effects and measure outcomes. Moreover, the third purpose of this study is to evaluate new ideas in how implementing video games can actually teach EFL students to write arguments. Finally, the last purpose of this study is to explore whether gender plays a role in determining how successfully participants can learn through video games, especially when being stereotyped by cultural beliefs.

The empirical data was collected to answer the research questions below; however, it is important to mention that the second research question is based on a response to cultural bias relevant in Kuwait in which stereotypical beliefs depicts that males not only dominate the gaming world, but females are expected to not be involved in gaming based on their cultural and societal expectations and roles.

Although a study conducted by Al-Hunnaiyyan et al. (2016) revealed that students in Kuwait have positive perceptions about the application of mobile learning, another study conducted by Baker et al. (2007) revealed that when gender segregation exists in such

educational systems for a country like Saudi Arabia (a country that has the same societal and cultural beliefs as Kuwait), the religious and cultural norms will tend to have a noticeable effect on the behaviors, which will influence the attitudes towards the implantation of technology. Therefore, the second research question aims to find whether the two genders gain the same benefits through game-based learning or does culture play a role and the use of video games is not as effective.

Research questions:

1) How did playing an online digital video game, *Quandary*, during a university writing course affect the quality of argumentative writing (as measured by an assigned rubric) produced by adult EFL students in Kuwait?
2) How is playing an online video game, *Quandary*, different between male and female adult EFL students (in a writing course at university in Kuwait) when learning how to write argumentative essays?

Chapter Two: Literature Review

Technology dominates daily life for many young people. Laptops, smartphones, tablets, Smart TVs, and even smart watches provide the capability for 24-hour connectivity. Many high school students use laptops and tablets daily in their classes to read, complete, and submit their assignments online. For this generation, leisure time often involves playing video games online in competitions with other teams or individuals they have never met. This new generation of tech savvy individuals is so accustomed to using technology since childhood that they are known to be as the 'Net Generation'. As university faculty are well-aware, these students arrive in Freshman Composition undermotivated and quickly bored by the often-used traditional approaches used to teach academic writing techniques. Add to this the challenges that EFL students face in developing university level writing skills and the resulting recipe produces frustrated faculty and unmotivated students interested only in "getting the grade" rather than in improving writing skills. In recent years, many studies have explored and examined the use of technology as a teaching tool in the classroom. The studies have focused on the faculty, students, and outcomes of including technology as an enhancement to traditional methods. Recently, research has begun to investigate "gaming" and the use of games as a viable teaching tool in university classrooms. The stakeholders of this study include faculty members, students, and game developers in which all parties will benefit in how well-designed games can lead to exceptional academic teaching. Researchers interested in video games and language learning has identified several factors that may lead to positive effects of students learning English as a foreign language via video games. For example, students seem to enjoy playing video games in

class rather than following traditional learning approaches to reach the learning objectives. However, more research is needed on how video games can lead to teaching EFL students to write arguments, as arguments are important not only for learning but to prepare students for debating, stating their opinions, and persuading their audience in today's democratic world. This literature review will focus on the evolution of technology use in language learning from its beginning to the present day and how this leads to the question of how to best utilize video games in the teaching of composition skills for EFL students, as well as how gender differences play a role in video game playing.

Computer-Assisted Language Learning (CALL)

In today's world, the new generation is accustomed to using technology since childhood. This 'Net Generation," as they are called refers to people who are familiar with using all sorts of technology and are considered digital natives. Also, these individuals view technology as an essential part of their lives and often appear completely dependent on it. Such dependency also impacts teaching and learning in new and unique ways (Abunowara, 2014). According to Saavedra and Opfer (2012):

> technology offers the potential to provide students with new ways to develop their problem solving, critical thinking, and communication skills; transfer them to different contexts; reflect on their thinking and that of their peers; practice addressing their misunderstandings; and collaborate with peers—all on topics relevant to their lives and using engaging tools. (p. 16)

Putri (2015) also argues that "with technology, teachers can also make students their own researchers. Teachers may instruct students to find out anything regarding EFL by themselves using their own technology devices or gadgets" (p. 102). Teachers become facilitators rather than

information givers. Students are no longer passive recipients of information but researchers. This leads students down the path of independent learning. There exists a considerable body of literature on how technology has affected the way people communicate with one another, teach, and learn. During the 1980s and 1990s there has been a change in education where technology was integrated for the purpose of providing authentic materials in the classroom and for technology to provide meaningful interaction (Abunowara, 2014). Despite the various kinds of technology available worldwide, the computer is regarded the most effective technological tool available. Moreover, prior research has emphasized the use of technology especially in language learning. This is known as Computer Assisted Language Learning (CALL). The emerging need in today's world for learning English has required the integration of CALL in academic settings in order to bring more authentic materials within the classroom and to the learning experience. Many countries are integrating English in their curriculums in order to meet the growing requirements of human resources for the purpose of globalization. The integration of the computer in language learning has made the process more dynamic and fun by offering students authentic materials and exposing them to the real world of the target language.

There are several studies that examine computer assisted language learning and gender inequality. Such research has shown that females tend to know less about technology use (computers) and tend to perceive issues when working with technological equipment. Such reason behind this issue includes, but is not limited to lack of parental support, and therefore having limited access to technology (Reinen & Plomp, 1997). Further, it was also proven by research that such gender discrimination and access to technology could be prevalent in educational settings in different parts of the world (Reinen & Plomp, 1997). Other research has proven that there is a gender gap when it comes to having access to technology, especially in

developing countries (Moghaddam, 2010), and that roles that are defined for females to have within a certain society underlies one of the many reasons of why females don't have access to technology, creating a digital divide between the two genders (Antonio & Tuffley, 2014).

Benefits of CALL

There exists a considerable body of literature on how CALL benefits both teachers and students. Previous research also showed that using computer assisted language learning modalities serve several functions including increasing student interactions, creating a positive learning environment, and meeting students' different learning styles. The implementation of CALL in the classroom is proven to lower student anxiety levels and to promote autonomy in students' learning. The use of CALL also redirects the teaching environment from a teacher-centered approach to a student-centered approach, thus changing the learner into an active member of the classroom instead a passive entity (Alsied & Pathan, 2013). This also illuminates the importance of motivation in learning, as creating tasks that are challenging to the learner was proven to promote and increase learner motivation. In addition, as seminal contributions have been made on how motivation is considered one of the driving forces for students' learning (Dornyei, 1994), the implementation of CALL is viewed necessary by many pedagogues, scholars, and luminaries in foreign language teaching and learning.

Theoretical Background on CALL

Originally, the use of computers in language learning was supported by the behavioristic approach in which computers were used for students to practice language drilling (Warschauer, 1996). Therefore, CALL was used with the implementation of software in computers that served as a compliment for language learning by allowing students to practice by repeating materials and by being exposed to the target language (Warschauer, 1996). From the late 1970s to the early

1980s, the second phase of CALL emerged and was affected by the constructivist approach (Chirimbu & Tafazoli, 2013). According to constructivism, computer assisted language learning should focus on using the language more than the language itself. In other words, this approach encouraged students to focus on producing the language rather than only focusing on its form. Constructivists would argue that it is through tools that aid students to construct and reconstruct the knowledge that true learning occurs. The learning principles of constructivism mandate that for learning to take place, the learner should already possess prior knowledge for the new knowledge to be obtained. For this to happen, computers are considered crucial for learning as they are known to offer real learning and communication. Furthermore, according to Fotos and Browne (2004), the software programs that the computers offered contributed to stimulating "students' motivation, critical thinking, creativity, and analytical skills" (p. 6), which helped in the emergence of the communicative language approach. It is through the communicative approach that social contexts tend to formulate; thus, emphasizing Vygotsky's (1930) assumption about learning which entails that social interaction plays a pivotal role in cognitive development. Vygotsky (1930) also claimed that learning occurs in two levels which includes the learners interacting with one another and for learning to be integrated in the learner's existing schema. This affirms the crucial role of the computer in learning, and particularly in language learning, as it helps create a learning environment that is both dynamic and interesting.

Teacher Considerations in CALL

The previous research showed how teachers could implement computer-assisted-language learning in their classrooms to open up a door of communication for the target language by presenting their students with authentic materials that, according to Brinton (2001), reinforces students' relationship between the language used in the classroom and the outside

world. Also, on top of CALL presenting students with language inputs, according to Warschauer and Meskill (2000), using technology successfully is not dependent on the hardware or software available but in how teachers plan, design, and implement the activities using the hardware and technology. In addition, for teachers to best implement CALL in their teaching, training is required to ensure that they can foster and integrate technology in language learning for them to transform the English language teaching environment into a digitally rich one (Anas, 2019). With the advancement in technology teachers started to think of ways in which they could take advantage of the class time to maximize students' learning experiences with an emphasis on constructivism. These new trends emphasized student-centered instruction which shifts responsibility for learning to the student and encourages participation, problem solving, group work, and meaningful interactions rather than rote memorization (Alsowat, 2016). It was at this point that the flipped-classroom idea surfaced.

Flipped Classroom and CALL

Flipped instruction is a type of blended learning in which delivery of instruction is taken place online through utilizing technology while the class time is solely dedicated for student work. As described by Sohrabi and Mohammadi (2019), what used to be the lecture is done at home by students viewing teacher created videos and what used to be homework is done in class. Gürlüyer and Elkiliç (2020) consider the flipped classroom to be a rotation with students viewing a video about concepts and subjects outside the classroom but implementing and talking about the knowledge in the classroom atmosphere. The process is circular as they then view other videos for fresh subject matter in a continuous process. This new educational environment has appeared in the last few years yet is vastly gaining popularity among educators from all over the world (Obari & Lambacher, 2015). With this shift in teaching, the role of the teacher has also

transformed from being the one who provides the information to one who facilitates and the guides (Basal, 2015). The flipped classroom model is beneficial in language teaching because it enables students to become acquainted with the language outside of the classroom walls. This also provides the teachers with the advantage of using the class time for discussion, critical thinking, group activities, and other student-centered activities (Alsowat, 2016). Moreover, "the flipped classroom is an instructional approach that educators use to turn the traditional classroom lecture model into a more active learning classroom" (Keengwe et al., 2014, p. xviii). It is in the flipped classroom that learning tends to become more individualized and personalized based on the students' needs; it also encourages students to take control of their own learning (Cross & Board, 2014). Teachers can also use the flipped classroom to serve as an adaptable environment for their teaching styles which serves their strengths as educators (Bergmann & Sams, 2014a). Teachers must remember three key ideas when implementing the flipped classroom technique. These include the use of prior knowledge to help in scaffolding deeper learning, the importance of engagement in students learning, and that the flipped classroom promotes a continued learning experience even after the class is over (Schell & Mazur, 2015).

It was also reported in literature that the application of a flipped classroom technique can aid in promoting higher order thinking skills for the purpose of training students for real-life situations outside the classroom (Conklin, 2012). Moreover, it was proven that higher order thinking skills tend to increase students' achievement, motivation, and sense of control (Brookhart, 2010). A recent study by Alsowat (2016) concluded that a flipped classroom model tends to increase students' foreign language higher order thinking skills, enjoyment, and commitment. Therefore, it is the teacher's responsibility to create a classroom environment that best ignites student motivation and satisfaction for the purpose of maximizing their learning. For

example, recent research showed that students gained statistically significant development in classes where the flipped classroom model was implemented (Leung et al., 2014; McLaughlin et al., 2013). Other research studies have proven that the flipped classroom can aid in advancing students' class attendance, in improving and promoting students' beliefs about themselves, and in cultivating skills (McLaughlin et al., 2013). A study conducted by Gürlüyer and Elkiliç (2020, p. 1473) proved that "the experiment groups instructed with the flipped model were found to be better than the control groups with the traditional method and the difference between groups was meaningful". The same study showed that students in the experimental group were assuming more responsibility for their learning, were more self-directed, and exhibited better critical thinking and problem-solving abilities. Finally, it is said that the flipped classroom "serves the principles of personalized-differentiated learning, student-centered instruction, and constructivism" (Basal, 2015, p. 29). The research findings related to CALL implementation in language learning classrooms suggest that video games or "gaming" will also yield similar benefits. While prior research has established the benefits of implementing a flipped classroom technique in teaching, opportunities remain to examine how smartphones aid in language learning and whether there is a gender divide when it comes to smartphones attainment.

Mobile-Assisted Language Learning (MALL)

With the advancement of technology, new wireless devices began to emerge and eventually assisted in language learning. These wireless devices were known to be portable and included several gadgets like cellular phones, personal digital assistants (PDAs), and audio players. This opened a new door for learning which is called mobile-learning or M-learning (Bachmair et al., 2009). Previous literature showed that learners have positive attitudes toward such technical devices and that there is a good potential of such devices to be used in formal and

informal learning contexts (Gholami & Azarmi, 2012). Each of the previously mentioned devices has special facets and characteristics, but with the profound attributes that the mobile phone has, the focus on language learning via the mobile phone has covered all other devices' functionalities (Kress & Pachler, 2007), and thus led to mobile assisted language learning. It is also important to note that mobile assisted language learning (MALL) is considered a subarea of the expanding field of mobile learning (mLearning) research (Viberg & Grönlund, 2012).

According to Kukulska-Hulme and Shield (2008), what differentiates mobile assisted language learning from computer-assisted language learning is its portability, spontaneity, and continuity of access to learning resources that it offers for the learner. According to Ali and Miraz (2018), the endorsement of using mobile phones is viewed to be the most practical way in delivering m-learning (mobile learning) for the current and upcoming future as it allows learning to take place at anytime and anywhere which aids in accommodating the different approaches and conditions of learning. Moreover, the use of mobile learning provides opportunities for learning to take place inside and outside of the classrooms (Martin & Ertzberger, 2013). According to Kukulska-Hulme & Shield (2008), mobile assisted language learning has moved to the field of language acquisition for the purpose of advancing the different levels of proficiencies of the language learner. There exists a considerable body of literature on how mobile assisted language learning can shift the classroom environment from teacher-centered to student-centered. Such learning context is characterized to be free from time and space as students can access the learning information anywhere and anytime (Levy & Kennedy, 2005). Mobile assisted language learning is also known to be providing scaffolding to learners whenever needed (Naismith et al., 2004). The ownership of a mobile/smartphone has become globally popular among teens whether male or female. According to a Pew Research Study that was conducted in

2018 by Anderson and Jiang (2018), “95% of teens now report they have a smartphone or access to one. These mobile connections are in turn fueling more-persistent online activities”; also, “smartphone ownership is nearly universal among teens of different genders, races and ethnicities and socioeconomic backgrounds” (p.3).

Today’s youths seem to be overly connected to their smartphones than they are with anything else; some youths are even starting to exhibit signs of behavioral addiction which, as a result, can lead to many serious outcomes (Walsh et al., 2008). However, teachers can best make use of this phenomenon by establishing teaching and learning strategies that best implements such devices in maximizing students’ academic potentials both inside and outside of educational settings. What makes mobile assisted language learning even more practical than computer assisted language learning is the portability in its form, thus making English language learning more fun and easier to access allowing learning to take place inside and outside the classrooms. Also, what makes mobile learning more popular than other technological devices is the fact that they are low in cost and are more feasible than other technological devices like the laptops and computers (Gholami & Azarmi, 2012).

According to Ali and Miraz (2018), the use of a mobile phone aids in making the language learning experience more mesmerizing; moreover, using mobile phones for learning is far cheaper than having to actually be present in the country where the target language is used. For quite some time mobile devices have played a vital part in our lives—which made teachers implement the use of such devices in the field of language learning. Such use helped students to have access to authentic material with the purpose of helping them to get a sense of real-world situations. Curricular writing can be taught by teachers through the implementation of mobile use in teaching and learning. It is through online applications that teachers can best make use of

teaching students academic writing. A study that was conducted in Saudi Arabia illustrated that students' vocabulary and ideas had improved while using a mobile application (WhatsApp) in providing feedback and reflective comments for the work of their peers (Alsaleem, 2013). This same study had noted that by implementing such techniques with using mobile applications for learning that students were being immersed into the academic culture. A similar study that was conducted by Bataineh et al. (2018) revealed that when using WhatsApp as an educational platform to aid in developing writing performances for EFL students, better writing achievements were attained for students who used such a platform, with females outperforming the males.

Another study that was conducted by Jai Shree et al. (2014) was performed to examine the use of mobile learning with the purpose of improving argumentative writing skills for 27 trainee teachers in Malaysia. The research had discussed that the participants of the study were already facing some issues in writing like having weak vocabulary choice, weak content, and weak organization of sentence structure. The researchers also mentioned that the participants were facing some difficulties in relating their ideas in writing as they were only focused on the end result of the essay. Further, the participants also couldn't grasp the skills required for writing due to having little collaboration with their peers. Therefore, the study recommended the integration of mobile learning as it can help in developing argumentative writing skills which, as a result, the participants will be exposed to more collaborative learning without space and time constrains. Furthermore, a study conducted by Lee and Kim (2013) also utilized mobile-based learning techniques on EFL Korean students with the purpose of improving their writing skills. The research study proved that students' skills on grammar have improved due to checking their grammatical mistakes through utilizing mobile applications for learning. Finally, a recent study

that was conducted to test the effect of MALL as opposed to paper-based instruction on EFL Iranian students, specifically on their writing skills, proved that students who received their instruction via their mobile had significant results outperforming students who received instruction through paper (Gharehblagh & Nasri, 2020). However, despite the many studies that exist in regard to MALL and writing, there still exists a need to examine how such ideas are implemented on adult EFL students in Kuwait in regards to gender differences.

Benefits of MALL

Mobile assisted language learning offers several benefits to language learners that previous studies have emphasized. Such advantages include allowing learners to access the information anywhere and at any time in which learners don't have to be at a certain place at a certain time to have access to language materials (Ally, 2009). Also, mobile assisted language learning offers flexibility and user-friendliness for its users (Huang et al., 2012) as opposed to other learning devices. Other advantages are evident in how mobile assisted language learning tends to transform the learning environment from teacher-centered to student-centered which helps in promoting student learning autonomy (Díaz-Vera, 2012) and it is through this that a richer learning environment would be provided for students, as most researchers agree that mobile assisted language learning has a tremendous impact on students learning the target language. Moreover, according to Miangah and Nizarat (2012), in MALL multiple learners can swap their knowledge and skills through interacting with their peers and such interaction can help students to support and motivate one another to achieve their maximum opportunity in learning. On top of the previous mentioned advantages of using mobiles in language learning, previous literature reviews discussed the considerable number of characteristics that MALL obtains. Such characteristics include the learning process being spontaneous and informal—thus

allowing the learner to take control of his/her own learning, progressing at their own pace based on their mental state (Miangah & Nezarat, 2012). With such characteristics that mobiles have to offer for language learning, it is no doubt that such profound technological devices are being implemented and used in learning a language. Several studies have also examined and revealed that the use of mobile applications tend to improve the learning of English as a foreign language (Anwas et al., 2020).

Theoretical Background

Mobile assisted language learning is known to be supported by many theoretical backgrounds. Such theories include cognitive developmental theory and sociocultural theory. In 1985, Jean Piaget developed the cognitive development theory in which he proposed that knowledge is constructed when the individual actively manipulates and explores the outside world. Also, in Piaget's theory of cognitive development he focused on adaptation in which schemes are built through direct interaction with the environment. Such application of Piaget's theory can be witnessed when MALL is used for students to have access to authentic materials in the real world in the target language. Piaget is also known to be cognitive constructivist since he viewed that learning could occur when the individual is immersed in the real world and is exposed to authentic materials for the purpose of constructing and discovering his/her knowledge. The other theory that MALL is also influenced and supported by is a theory conducted by Lev Vygotsky. According to Vygotsky (1978), for learning to occur the tasks that the learner is exposed to should be within the individual's zone of proximal development (ZPD). This means that such tasks should be about difficult enough to be performed alone by the learner, yet with the assistance of the teacher and peers it becomes easy to execute. Therefore, it is

through MALL that the teacher is able to administer different tasks that lie within students' ZPD in order to maximize all students' learning.

Teacher Considerations in MALL

There are several things that teachers should keep in mind when deciding to implement MALL in their teaching. Such things include considering students' readiness for using such technology for the purpose of learning the target language, developing tasks that best fits the technology being used to fully maximize the learning experience, and considering the importance of supplementing data collection tools in order to know the effect that a certain technological tool has had on the learning experience (Stockwell & Hubbard, 2013). It is also worth mentioning that with the accessibility that students have to mobile phones they will be more exposed to all kinds of multimedia in which it can play a positive role in language learning.

It was proven by previous research that the use of multimedia can increase students' interests and motivation towards learning the target language and that multimedia tends to boost students' creativity and communication among themselves, thus providing them the opportunity to be exposed to different learning styles. Moreover, it is through being exposed to authentic materials that it best provides understandable input for students to be able to work collaboratively among each other to learn and apply content and knowledge. Finally, in today's globalized world and with the application of the mobile assisted language learning approach, language learners are able to learn from the context and tend to have the privilege of being offered assistance once needed. Such assistance can be viewed as scaffolding (Naismith et al., 2004). When teachers decide to implement such approaches in their learning, they need to keep in mind several issues. Such issues include tools availability and accessibility to make sure that

all learners have the same potential in reaching the highest forms of language learning (Anas, 2019) and to apply the principle of equity among all learners.

Other things that teachers need to keep in mind is how to successfully choose the applications that they are going to implement in their teaching and that best fits the student's learning objectives, interests, and social context and culture that they are in. Although previous research, for example the study conducted by Hılao and Wıchadee (2017), has proved that both males and females do not differ in their behavior practices towards the use of smartphones in language learning and that the significant effects of usage between both genders is low, teachers need to keep in mind the gender differences that also exist in choosing an application that is considered appropriate for both genders. Prior studies did not find significant differences between perceptions and behaviors of both genders when it comes to smartphone usage for language learning in the classroom (Bao et al., 2013; Brown, 2018; Snell & Snell-Siddle, 2013). Yet, opportunities remain to explore whether there is a gender difference in using technology among EFL adult learners in one of the private universities in Kuwait.

Flipped Classroom and MALL

Since the nature of the design of a flipped classroom is to be highly interactive, teachers can apply the flipped classroom concept in their classrooms using a technological device that is considered inseparable with today's youth, which is their smartphones. It is through flipped classrooms that teachers will be able to further assess their students in the classroom and assign surveys and questionnaires that are easily analyzed once students answer them electronically through their devices. Furthermore, students can be administered tests through using their smartphones inside the classroom which tends to minimize the chances of students getting off topics and away from the lesson (Onodipe & Ayadi, 2020).

It is through the flipped classroom that students can also prepare for their lessons beforehand, having access to their class content on the go whenever and wherever they wish to access the materials. As a result, students can be part of deeper conversations and practices through being engaged in more in-depth learning (Bergmann & Sams, 2012). Finally, it is through applying the flipped classroom technique that instruction would best make use of seamless learning which is defined as "when a person experiences a continuity of learning, and consciously bridges the multifaceted learning efforts, across a combination of locations, times, technologies or social settings" (Wong et al., 2015, p.454). While prior research has established the benefits of implementing a flipped classroom technique in teaching through smartphones, opportunities remain to examine how the use of digital game-based learning through smartphone installation can aid in language learning.

Digital Game-Based Learning (DGBL)

With the technological blooming that the world has witnessed in the last decade of the 20th century, especially towards computer assisted language learning and mobile assisted language learning, a new approach towards language learning began to emerge called digital game-based learning (DGBL) that could be implemented in such previous approaches. With such advancement of technology, the "digital natives," individuals who were exposed to technology at an early age in their lives, required non-linear instructions that were based on discovery to be implemented in their learning. Setiadi (2018) argued that digital natives also required didactic methods that boost the development of meta-cognitive skills rather than traditional ways of teaching. The pervasiveness of mobile phones has led to games that can be accessed by players anytime, anywhere to be played in augmented reality situations (Schrier, 2007; Squire, 2010) to have access to authentic materials that represents real-life situations.

Digital games can be defined as interactive programs that players can use among themselves and with each other to interact for the purpose of entertainment (Hall & Marston, 2016). This makes digital game-based learning to be defined as functions using the attributes of video and computer games with the purpose of creating immersive and engaging learning experiences in order to achieve the learning objectives and goals (De Freitas, 2006, p. 9). According to Kapp (2012) and Prensky (2005), digital game-based learning can also be defined as the use of digital technological tools to be used meaningfully to promote a game or a collection of games in an educational setting with the purpose of enhancing student learning.

Digital games offer different collections of types and genres that individuals can play using different forms of technological devices. Scholars like Shaffer et al. (2005) also defined digital games as a type of game play that produces learning outcomes. There is an expanding and growing use of digital games in learning environments, called educational games (Vandercruysse et al., 2012) that tend to come in different forms and are applied in different educational environments.

However, when it comes to language learning the use of games in such contexts is called digital game-based learning (Cornillie et al., 2012). Previous research showed that using digital game-based language learning tends to promote intrinsic motivation and engagement between language learners. Further, it also tends to increase students' self-efficacy. Such traits, in return, can help in increasing students' academic achievements. In short, digital game-based learning is viewed as a new way of learning that can shelter modern "digital native" learners' demands (Setiadi, 2018).

When it comes to today's generation, who are already distinguished in being known as "digital natives," Annetta et al. (2009a) found that boys and girls have the same gaming

experience. Teachers today should take the advantage of implementing games in their teaching especially when it comes to language teaching as games can serve as a medium to enhance students' learning. Although there has been an active advocacy for applying games in today's language learning, it is important to note that games have been used for language learning for decades which made them a familiar means in foreign language learning. Digital games offer students the ability to interact in the target language as not having enough practice in language learning can result in inadequacy of language use (Office for Standards in Education, Children's Services, and Skills [OFSTED], 2011). Reinders (2012) argued that digital games offer the learners the opportunity of being engaged in the language use in order to communicate and interact. A study conducted by Othman and Shugair (2013) and confirmed by Rehman et al. (2013) indicated that the use of digital games in language learning enhanced students' concentration, creativity, and motivation. Previous studies have emphasized that games tend to offer positive effects at any point of the lesson since they offer students a chance to have fun with learning activities without noticing that they are practicing and applying the language.

Benefits of DGBL

There are numerous benefits that game-based learning tends to offer. Gozcu and Caganaga (2016) argued that games restrain the lesson from being dull and mundane. This claim of games preventing boredom in the classroom is not new. Coleman (2002) argued that games can be described as a factor of experiential learning, a source of catching students' attention, and help in converting the teacher's role to being a helper and a facilitator. Conversely, they create a successful and positive classroom environment where students and their learning are central. They attract their interest unlike the ordinary lessons. Other research proved that students who

used game-based learning as a learning methodology that they followed in class helped them in sustaining their attention in learning (Abbott, 2019).

Games help the students to learn the lesson and acquire the language simultaneously in a fun and amusing way as games tend to lessen the anxiety and stress towards learning the target language. Crookal (1990) also argued that games tend to increase self-confidence and positive emotions that the learner feels towards him/herself, which results in shaping a purposeful context for using the language. There are several additional reasons behind games being used in learning—such reasons include motivation, player engagement, and graceful failure.

Previous research showed that games used in learning tend to motivate individuals to stay engaged in the learning process over a noticeable amount of time. Games tend to offer a variety of engagement approaches for players that foster several theoretical foundations like cognitive, behavioral, and sociocultural (Plass et al., 2015). Game-based learning also offers the characteristic of engaging students in effortless learning by creating the appropriate balance between engagement and frustration (Csikszentmihalyi, 1990).

As digital game-based learning offers exquisite characteristics, it sure offers great advantages in return. Research has provided evidence regarding the amount of play that students spend playing games correlated with attaining high scores in learning and the level of enjoyment that such students experience while playing games for learning (Vandercruysse et al., 2012). A number of authors have also recognized that games are easy to comprehend by learners as they offer clear rules and objectives, and they tend to offer instant feedback for students and teachers (Gozcu & Caganaga, 2016). Bing (2013) argued that letting games provide feedback and assessment for students can make the teacher play the role of the supporter for the students rather than being their punisher or opponent.

As games aid in hindering negative feelings like fear and hesitation, Gee (2007) also argued that enjoyment can't be detached from profound learning. Digital game-based learning provides students with different abilities and ways for them to experience joy throughout learning. According to Prensky and Berry (2001), digital game-based learning can serve as a medium between teachers and students and can best assist students in learning since it 'speaks' their language. As games give students an opportunity to depart from the unusual, they are also considered extremely crucial in terms of triggering motivation. Game-based learning tend to provide students with the activities that they enjoy doing (Gee, 2003; Ryan et al., 2006; Zusho et al., 2014). According to Delacruz (2012), other than motivation that is trigged through student interactions with the game, cognitive processing is also proven to be fostered through interacting with the game content which enhances learning. Games are known to be adaptive by either decreasing or increasing their level of difficulties, which in turn, tends to scaffold the learning experience and boost motivation (Plass et al., 2015). Motivation elements whether intrinsic or extrinsic can therefore be implemented in the design of games to best enhance and improve the learning experience.

Theoretical Background on DGBL

Years ago, many pioneers have talked about the vitality of games and play and had emphasized the effects that they had on an individual since childhood. Two of the world's greatest pioneers like Piaget (1962) and Vygotsky (1978), for example, had talked about the importance of games and their effect on development and learning whether non-digital games, at their time, or digital games that are popular in today's globalized era. Piaget (1962) talked about the significance that play has over cognitive development at an early age, as he explained that play becomes more abstract and social as children mature in age. Furthermore, he mentions that

one way that is adding to a child's cognitive development is through the activation of his/her schema in a way that enables the child to transcend to his/her instance reality. As a result, this consideration of play that contributes to the child's cognitive development has shaped the understanding of what educational games have on learning. In a book that is written by Loftus and Loftus (1983) they argued that a characteristic of a good game is neither it being too easy nor too hard on the player; a good game should be challenging in which it triggers the "sweet spot" that enables the learner to eventually succeed in the game with only a little amount of struggle (Csikszentmihalyi, 1990). This leads to Vygotsky's (1978) theory on the zone of proximal development (ZPD) in which he argued that pedagogical tasks should be within the player's ZPD in order to enable the player to succeed at the task given that is slightly beyond his/her present capability and competence. The statements that were made by Piaget (1962) and Vygotsky (1978) had shaped the road for game makers as their statements paved the way for well-designed games whether digital or non-digital. Moreover, scholars like Prensky (2005) and McGonigal (2011) had also pointed out the importance that games have in promoting motivation which, as a result, can impact learning. Plass et al. (2015) argued that many of the concepts that are considered important in games have aspects related to different theoretical foundations. Therefore, game designers tend to use behaviorist, cognitivist, and constructivist approaches, and often an assorted mix of them, in the design of games for learning. Educators may therefore acknowledge and contemplate a design that goes over the basic design that most games should have. Such design consists of several elements, such as a challenge, a response, and feedback (Plass et al., 2015).

Teacher Considerations on DGBL

With that being said, teachers then need to look for games that are related to their objectives when teaching a lesson in order to maximize the learning experience. It was proven by previous research that it is throughout choosing the right game that students' satisfaction tends to reinforce their intrinsic and extrinsic pride when they reach the end note of the game. Therefore, it is throughout the design process of a good game to balance out the necessity to cover the subject matter, which is in this case learning the target language, with the ambition to keep game play in mind (Plass et al., 2010). Plass et al. (2015) argued that an affective perspective of game-based learning focuses players' experienced emotions, attitudes, and beliefs and considers how the design of the game environment impacts learners' affective state via affective engagement. It also considers how affect is related to, and impacts, cognitive, motivational, social, and cultural aspects of learning. Therefore, for effective game-based learning to take place there should be multiple considerations of what such game has to offer for its learners and the impacts that it proposes.

As digital game-based learning refers to the implementation of the positive power that games have over educational environments to serve an educational purpose (Prensky, 2001), there should always be a balance between learning and gaming elements (Nussbaum & Beserra, 2014). It is through games that learning can take place in a meaningful and purposeful context by providing information at the precise moment when it would be the most beneficial for the learner to maximize his/her learning experience (Plass et al., 2015).

Types and Effects of DGBL

There are two types of digital game-based learning which are educational and off-the-shelf commercial games. Unlike educational games which are designed solely for learning and

were established in the late 1970s, commercial off-the-shelf games are designed to maintain the player's interests while inserting them in confronting situations (Gee, 2003). Moreover, previous research emphasized the importance of communication between players in the game with the purpose of having authentic language input (Hung, 2016; Piirainen-Marsh, 2012; Steinkuehler, 2004; Stevens et al., 2008). Additionally, off-the-shelf commercial games have also been proven to be significant in prompting learning in a collection of areas being influenced by both game features and content (Peterson, 2013; Squire, 2011). There is no doubt that learners of both genders will be interested in digital game-based language learning. According to Pew Internet & American Life Project, about 99% of boys and 94% girls play digital games in the U.S. alone (Lenhart et al., 2008). Consequently, the youth spend about seven to ten hours per week playing digital games (Lenhart et al., 2008), which serves as evidence of how much time students are willing to spend on playing digital games. Therefore, when it comes to teachers applying such educational pedagogies to their teaching, there are several considerations that they need to keep in mind. When choosing a game to administer in their teaching, educators need to be familiar with the type of learning that the game can provide students. Also, "educators will need to be familiar with the game itself and know what kinds of supports to offer and when to offer them (…)" for the purpose of providing suitable scaffolding and support for students (Hung et al., 2018, p. 7). Gozcu and Caganaga (2016) also argue that games should focus on the use of the language, content of the game should be appropriate to its context of application, and that the game should be in accordance with the level and age of the learners.

According to Prensky (2001), digital game-based learning is considered to be an excellent trigger of motivation compared to formal academic education. Moreover, according to Gee (2003), games have the capability and capacity to train and educate students and are

considered an effective method of learning concepts and content that are hard for students to learn through rote memorization (Michael & Chen, 2006, p. 1). Therefore, the effects of games on learning that numerous scholars have witnessed are also significant compelling influences on motivation. Several studies suggest that the use of games, especially video games, in learning seem to trigger positive effects on students' performance. Games are viewed as high-tech and professional means that aids in creating a curriculum that is interactive and immersive. They are also considered an instructional tool that offers enormous educational possibilities (Vandercruysse et al., 2012).

Finally, according to Hung et al. (2018), games expose learners to credible linguistic input in which their use needs to be scaffolded and planned accordingly in order to accommodate students' needs. This means that for games to reach their ultimate capacity in teaching, educators need to be considerate on how to implement them to meet the lesson's goals and objectives. While games can be accepted as a fruitful tool that can positively affect language teaching, its use in EFL classrooms is considered advantageous in providing compelling and delightful language learning (Uberman, 1998). Educators should also keep in mind that depending on the style that games utilize, well-designed games are made for students to feel good while playing, thus allowing them to confidentially reach their goals while failing gracefully and trying again (Plass et al., 2015). Games also tend to develop affection for the curriculum and can let the learners imagine themselves acquiring the content (Barab et al., 2009). While prior research has established the effects of implementing a game-based learning approach in language learning through smartphones, opportunities remain to examine how video games assist in teaching adult language learners of how to write argumentative essays.

Second Language Acquisition Theories

There are multiple theories in the literature that have to do with second language acquisition. Such theories include behaviorist, innatism, interactionist, and communicative. The behaviorist theory originates from B.F. Skinner and focuses on how children replicate language through the people surrounding them. Therefore, correct attempts for children are followed by positive feedback and appraisal (Lightbrown & Spada, 2013, p. 12). Such positive appraisal and feedback would then result in those children further practicing the language until they formulate a habit of using it correctly. The quantity and quality of the language they hear along with the positive feedback that they receive will determine the child's behavior towards the language. This theory also influenced second language instruction in which students learned the language through route memorization and replication (Lightbrown & Spada, 2013, p. 103).

The subsequent theory in second language acquisition is the innatist theory. This theory is established by the hypothesis formulated by Chomsky that centers on how people are initially born with structures in their brains that are specifically made for language acquisition. This means that people self-identify the rules that underly the system of language based on a variety of samples of languages that they are faced with (Lightbrown & Spada, 2013, p. 20). The third theory in second language acquisition is the interactionist theory. The cognitive and the developmental experts in psychology have their attention on the interplay among the children's ability to learn innately and the situation that they advance in. This theory states that what the language learners need to be aware of is already available in the long hours of communication with their surroundings. Piaget (1951) thought that the language of children is constructed based on their cognitive development through interacting with the environment, while Vygotsky (1978) believed that language development is based on social interactions.

The fourth and last theory in second language acquisition is the communicative theory. This theory is based on the belief that a strong language acquisition consists of knowledge of structures and forms of the language along with the functions of the language that it proposes. This theory focuses on the meaning within communication for the purposes of interaction as opposed to having an emphasis on the grammatical forms of the language alone (Lightbrown & Spada, 2013, p. 215).

Impact of Second Language Acquisition Theories on Classroom Instruction

Second language acquisition theories have impacted classroom instruction in several ways including types of instruction, corrective feedback, and use of small groups. There are two types of interventions in second language acquisition: direct and indirect intervention. In the direct intervention, the instructor specifically tells the student what he/she will be learning and when the learning will take place; however, in indirect intervention, the goal of the instruction is to come up with conditions where the students will learn via learning how to connect and correspond on the target language. According to previous research, such as research conducted by Norris and Ortega's meta-analysis (2000), explicit instruction could be more effectual than instruction that is implicit.

The corrective feedback that is given to students by their teachers, to a certain degree, has been appealing to some researchers. Corrective feedback has the potential to aid learners in noticing linguistic forms that they might ignore. Therefore, the corrective feedback is said to be important in establishing efficiency in the second language. Previous research has showed the ramification of error correction in saying that instructors are likely to work on some students' mistakes more than others. In other words, the corrections that the instructors make are defined by inconsistency and imprecision (Ellis, 2005). Multiple studies, e.g., Panova & Lyster (2002)

and Sheen (2004), have concentrated on the repetition of which strategies of corrective feedback are used in a specific classroom setting, like communication classrooms. Such strategies are different in how the correction that is made by the teacher is explicit or implicit. These studies have also examined students' reactions towards such strategies and whether such reactions are accompanied with students' correcting their own mistakes. Language learners can also take advantage of small group work used by teachers for classroom activities. According to Jacobs (1998), there are several advantages that group work offers. Such advantages include more quantity and variety in learning, increased motivation and enjoyment, more learning and individualized instruction, and less anxiety.

Video Games and Teaching English as a Foreign Language (TEFL)

A series of recent studies have indicated that video games are an excellent source for language learning. Video games offer authentic materials that are both interactive and engaging. Nowadays, video games can be played on multiple devices whether portable or stationary, which increased its popularity among both children and adults considering that players can engage in playing anywhere at any time. This led to video games being implemented in educational settings supported by the claims that multiple scholars have made about video games enhancing language learning. Since students are slowly migrating from traditional approaches of learning, considering that the current generation are born as digital natives, there has been a demand for a shift in teaching practices for the purpose of engaging and motivating students to learn. Several studies suggest that video games hold significant impact, other than entertainment, for constructing new learning techniques for genuine goals inside and outside of school (Gee, 2006). They can also be used in teaching and learning since they tend to promote several positive attributes towards the learning process.

A study was conducted to investigate the effects of playing a video game on 35 college students in Taiwan. The results indicated that video games can play a vital role in enhancing students' different language skills and can also be a great source of increasing students' motivation (Chen & Yang, 2013). A similar study investigated the effects of a commercial video game on EFL high school students' motivation to learn the target language. The participants consist of 241 male Iranian students assigned to different treatments. The study showed significance in language learner motivation, thus proving the positive effects that video games can have on language learning (Ebrahimzadeh & Alavi, 2017). Another study that was also conducted on EFL Iranian students was aimed to explore the effects of video games as a tool for learning on 40 EFL students, both male and female. It proved that students who were in the experimental group had better learning performance than students who were in the control group (Vahdat & Behbahani, 2013). Moreover, video games tend to offer rich linguistic input that effects the enhancement of the learners' receptive language skills (Kasanić, 2017). It was reported in that when a person thinks of games, he/she often thinks of fun; however, when the same person thinks of learning this individual automatically thinks of work, therefore the use educational games shows that this thinking is wrong as they can bring out profound learning that is characterized in being fun and entertaining (Gee, 2013).

Several faculty members in Women's College at Ras Al Khaimah, UAE, have conducted a study about introducing video games to their students and their effects on language learning. One faculty member gave a vocabulary pre-test to the students and a post-test to measure the level of increase in students' vocabulary. The study witnessed an increase in the ESL students' vocabulary by 34% which proved that video games have a positive impact on students' language learning (Whittaker, 2013). While this study distinguished students by gender, it did not address

the use of video games on male ESL students to determine the impact of video games on their learning. Video games can manually adjust their level of complexity in terms of language and speed depending on the learner's language capability (Turkay et al., 2014). Therefore, practicing language learning in such virtual environments through playing video games can offer language learners a variety of assets. According to Squire (2003), video games are designed to bring meaningful and purposeful experiences to learning. For example, the hints that are available in video games are given to the player when he/she needs it the most, or "just in time," and that video game offers learners with a variety of skills and abilities that they should use for the purpose of accomplishing the goal as skills are viewed as strategies for conducting purposeful actions that one wants and has to do (Gee, 2013, pp. 30-34). While prior research has established the relationship between video games and leaning English as a foreign language, opportunities remain to examine whether such findings are applicable to adult EFL students in Kuwait and how gender plays a role in playing video games for language learning.

Effects and Characteristics of Video Games on Language Learning

As many research findings have affirmed the positive and beneficial effects that video games have on language learning, further research is being conducted in that area for further exploration. Several studies confirm that language learning occurs while the learner is engaged in playing video games. A study conducted in Malta by Misfud et al. (2013) studied the effects and attitudes toward the implementation of video games in language learning, specifically towards literacy attainment. The results of the study indicated that the EFL students who were in the experimental group that played the video game had significant gains in literacy as opposed to students who were in the control group and that followed their ordinary program. While this study distinguished female students, it did not address the effects and attitudes of male students

regarding the implementation of video games in language learning, since the study was conducted in a single sex school.

There are several characteristics that define what good video games are. For example, good video games administer intelligence between a real person and a virtual character in a game (Brown et al., 1989). Video games are also characterized to be very motivating for players as they spend hours of their day trying to win in order to reach the end of a game. Good games also adjust to the level of the player, therefore, staying on the "player's regime of competence" (Gee, 2004, p. 121). Gee (2004) also mentions a crucial point in the active learning that good games provide; for example, when the player faces a new dilemma while playing, he/she then tries to transfer skills already obtained from the previous episodes of the games in order to solve this dilemma, which is an example of "reflection in the midst of action" (Gee, 2004, p. 127). Several research studies have also shown that there is a constant positive effect that video games have on targeted learning outcomes (Gee, 2003; Gee, 2005). In a study that was conducted in Lithuania, two researchers administered a survey to 96 EFL students in order to explore the connection between English proficiency and video game playing. The conclusion that was made in this study is that video games have a strong and evident effect on language learning providing an atmosphere that is both motivating and positive (Rudis & Postic, 2018). Another research study investigated the link between a commercial off-the-shelf video game (*Uncharted*) and learning and teaching on four ESL students by utilizing a pre-experimental research design in Malaysia. The results of this study indicated that there are different narrative elements that the game enlisted which is different from the standard narrative structure that is normally offered by an English language teacher. Such elements were then transferred to the participants which, as a result, positively influenced their writing abilities (Bing, 2013).

When it comes to video games and gender differences the gender representation of the characters in video games are associated with stereotypical beliefs of how each gender should act. A study that was conducted by Kondrat (2015) examined the opinions of game players through an online questionnaire and conducted an interview with two professionals in the field of game design. The results of the study showed that there still exists a negative stereotyping of the female gender. Stereotypically, since most game players are considered males (Shaw, 2012), gender inequity would rise in education if teachers didn't address such gender differences accordingly. A study conducted by Ivory (2006) performed a content analysis using an internet website that heavily trafficked video game reviews with the purpose of investigating the portrayal of male and female game characters. The findings suggested that there was an underrepresentation for female characters as opposed to male characters. A similar study was conducted on a larger scale of content analysis on characters in different video games. The study that was conducted by Williams et al. (2009) included a sample of 150 games from different platforms. This study also showed that the extensive representation of male characters is evident in all games examined.

Features of Good Video Games

Features of good video games are evident in previous research performed by several scholars. According to Gee (2006), the role of failure that video games tend to provide for the learners is different than what failure means in school; for example, when players don't succeed, they can start over at their last saved game. One of the significant features that Gee (2006) has pointed out of good video games is that they are pleasantly frustrating. This means that good games tend to adjust their levels and provide feedback in a way that let the player feel as if the game is challenging yet doable. Players also tend to receive feedback that tells them whether

they are playing correctly or not (Gee, 2006). A recent study by Reyes-Chua and Lidawan (2019) proved that students who received direction with digital games had higher amounts of success in cognitive abilities as opposed to students who didn't use games while learning. Furthermore, learning tends to happen in playing video games even when failing occurs as learners are still being exposed to the target language.

Advantages of Video Games

There are several advantages that video games have to offer. According to Danan (2004), playing a video game can result in the language learner garnering a greater comprehension of how phrases are formed, how meaning is made, and how information can be processed more accurately through spoken and written language. Moreover, the persona that players tend to impersonate throughout playing the game consists of a spectrum of motivations and affectionate responses that can be trigged and lead to effective learning (Fiellin et al., 2016). Another advantage that video games offer lies within the interactivity that it provides its players. When it comes to students' perceptions about the use of video games in the classroom, the literature proves that students believe that the use of video games make learning more interesting and provide the opportunity for them to improve their problem-solving skills (Sandford et al., 2006; Tao et al., 2009). While previous research has proved that video games can aid in students' problem-solving skills, opportunities remain to examine how such video games aid in teaching adult EFL students on how to write argumentative essays.

Teacher Considerations in Choosing Video Games

Choosing the appropriate video game to meet the objectives of learning comes with several considerations that the teacher should keep in mind. According to Kasanić (2017), when choosing a video game, teachers have to be cognizant of the language used, it can't be too hard

or too easy. Also, they need to be aware of the game's difficulty level—it should be well-designed to challenge the player to a degree that he/she wants to continue learning and not make it too desperate for the player to stop playing the game (Whittaker, 2013, p. 9). This means that although the game should challenge the player, it shouldn't be too hard for the player to handle alone. Moreover, the video game chosen needs to be related to the class content with flexibility in mind so the game can meet the students' different levels of ability (Moreno-Ger et al., 2009). Teachers now have the opportunity to hold a class that is both joyful and entertaining while meeting their objectives due to the implementation of video games in their teaching. It is also important for teachers to prepare the students well before playing the actual video game to make sure that adequate language-learning opportunities take place with the implementation of a fruitful gaming experience (Whittaker, 2013). It is crucial for teachers to "remind themselves of not losing the essence of learning and straying away from the curricula and the course syllabi. For that matter, teachers are expected to be their students' supervisors along the learning process" (Putri, 2015, p.101). Therefore, teachers should listen to what their students want and engage them in their actual learning to maximize every student's learning experience. According to Putri (2014), a learning environment in which English is being learned as a foreign language should be fun and interactive so students can learn while enjoying themselves. It is through effective scaffolding and support from the teacher that students are able to complete tasks while being in charge of their own learning; it is proven that learning in this way would provide developmental advantages and expanded participation from students with low abilities (Newcombe & Brick, 2017). Previous research on the implementation of video games in language learning showed that the directions that teachers provide for students while playing video games ensures the maximization of language learning (Williamson, 2009, p. 30). Other

considerations like teacher viewpoints, the valuable content of the game, students' interest, and collaboration must be taken into account before choosing a video game for learning (Newcombe & Brick, 2017). Teachers must also consider the ethical issues and considerations of the cultural environment along with gender differences because what could work in one environment might not work well or be accepted in the other.

When it comes to living in a globalized world like the 21st century, certain requirements tend to shape the content of learning in educational settings. One such requirements is for students to acquire English in order to be able to communicate globally, as English is viewed to be the most used language worldwide. Therefore, since English is taught all over the world as a foreign language, scholars and educators emphasize the use of authentic materials as a way to aid language learners in acquiring the target language. So, when students are interested in playing a video game, they feel obliged to learn English since most games use English as a language of operation; therefore, English has to be learned in order to participate in the game (Yunus et al., 2012, p. 357). A series of recent studies has indicated the tremendous effect that video games have on language learning. Coller and Scott (2009); Echeverria et al., (2011); Green and Bavelier, (2003); Ke and Grabowski, (2007); Klopfer and Squire, (2008); Papastergiou, (2009); Peterson, (2010); Prensky, (2006) argued that there is a progressively boundless confirmation about the positive effects that video games have on language learning. Moreover, according to Ahmad (2012), improvements in student engagement, pronunciation, and writing are results of playing video games for the purpose of learning. It can be concluded then that the implementation of video games in language learning can aid in preparing future professionals who are ready to use their gained competencies to communicate profoundly in the globalized world. Research has also shown that with the appropriate teacher guidance, video games can not

only promote higher-level thinking skills, but they can also provide chances for students to further explore the language and the knowledge of experts (Gee, 2003). When it comes to choosing a game for adult language learners the teacher should be careful in not choosing a game that is too childish or a game that includes themes that are culturally unacceptable. In Kuwait, for example, the researcher needs to make sure that the video game's content is not offensive or has any linguistic structures that are inappropriate for cultural language use.

One of the demands of living in a globalized world is for individuals to be able to think critically. As a result, students need to be taught how to analyze, criticize, and explain their beliefs and points of view. Video games are considered a great source for students to write arguments from, as students can witness images and phrases that could result in students thinking critically. According to Prensky (2001) video games offer several characteristics that could make them possibly useful for teachers to instruct students to write arguments; such characteristics include having objectives, outcomes, interaction, challenge, and feedback. Previous research has also shown that students need to consider who their audience is and how they are going to explain their point of views to such audience. Video games can contribute to providing chances to develop critical literacy throughout players analyzing the game and, as a result, games tend to invite players into a plot and scheme that requires argumentation as a way to settle a problem within the game (Sherry & Lawrence, 2019).

The Writing Skill in English as a Foreign Language

When it comes to the four skills of the English language, writing is said to be the most difficult skill to obtain as it requires the user to establish an idea, outline a draft, and then edit it (Wallace et al., 2004). Similarly, Putri (2015) argued that English writing is viewed to be the most advanced level of EFL learning since it requires students to comprehend the writing rules

such as punctuation and grammar. However, as hard as it may be, digital native students might not find it too hard to comprehend as their lives have been involving texts; they are acquainted to writing text on their mobile phones as means for communication. Therefore, by using video games, which is a form that the digital natives are accustomed to, teachers can encourage students to advance their writing skills because video games can be used in and out of the classroom (Putri, 2015). Although, according to the previous studies, both genders tend to own smartphones which enable them to have access to different gaming applications, other studies state that males tend to spend more time than females in playing video games every week (Greenberg et al, 2010 & Media Analysis Laboratory, 1988). Moreover, males were extremely more likely to play video games for more than two hours every week as opposed to females (Ogletree & Drake, 2007), thus making it safe to assume that playing video games is mostly dominated by the male gender. This in turn make males the prime users in online gaming platforms (Eden et al., 2010). Some societal implications and stereotypes that certain cultures have regarding video game usage have made such games only associated with the male gender, and thus making them biased to a certain gender and not the other, which suggests that video games are viewed as predominantly made for males and not females (Greenfield, 1984). Sherry and Lawrence (2019) also argue that students should be given the opportunity to write arguments not just for learning to write, but to also become literate participants in a democratic society. It may therefore be advantageous to investigate the effects that video games have on students' writing abilities, specifically when it comes to writing arguments. While studies have shown that video game use is on the rise among young women, opportunities remain to investigate whether video games as a means of teaching argument writing might benefit male and female EFL

students differently, especially in cultural contexts where females are stereotypically looked at as having specific cultural roles that are not associated with video gaming.

Chapter Three: Methodology

Study Design: Description and Rationale

A quantitative approach incorporating a quasi-experimental design was utilized in this study to determine the effect of video games on learning how to write argumentative essays and to see whether gender differences have an effect on student performance. The current era is created of a modernized world where technology has taken over nearly everything, students find it rather boring to learn class content using rote memorization and recitation learning approaches. Therefore, the boredom that such students feel can be eliminated by the implementation of technology in learning. Moreover, as there had been several empirical research studies that support the positive effects that games have on students' learning, especially with students who are learning a foreign language, there needs to be further exploration on how the incorporation of such gaming techniques can benefit students' writing, as writing is considered to be one of the most difficult skills to attain in foreign language learning. Furthermore, as today's youth tend to spend several hours every day playing video games to compete with themselves or with individuals all around the world, combined with the need to prepare such youth for attaining argumentative skills in order to be able to explain their points of view, debate, and convince their audiences, it is then worth exploring how the application of video games in teaching English as a foreign language can prepare students to write arguments. In order to explore whether video games can help EFL students learn to write more effective arguments, and whether the use of video games may benefit male and female students differently, the present study used a quasi-experimental design because it seeks to test a cause-and-effect relationship between a dependent

and independent variable. The two research questions that this study explored, 1) determined how playing an online digital video game, *Quandary*, during a university writing course affected the quality of argumentative writing (as measured by an assigned rubric) produced by adult EFL students in Kuwait; and 2) how playing an online video game, *Quandary*, was different between male and female adult EFL students affecting the quality of their writing.

Participants

The unit of analysis for this study was the student individuals that were self-selected into two groups. The students chosen for this study were from two classes, and they were all Kuwaitis between 18 and 20 years of age. Moreover, the majority of students were scholarship students attaining internal full scholarships provided by the government, who were recent graduates of public and private high schools in Kuwait. There were two samples of students in this study: one sample was a class that was chosen to represent the control group that solely learned from the course book and the other class was chosen to represent the experimental group that received the instruction focused on a video game. Ideally, the selection of such classes into groups was randomly made through flipping a coin. The experiment was conducted at the same time for the two classes, which were taught by the same instructor. Both samples of students were enrolled in Freshman Composition II (ENGL 112), offered in the Gulf University for Science and Technology (GUST), Kuwait. This is a three-credit class that further introduced students to the composition of writing.

The total number of student participants in this study was 42, in which each group consisted of 21 students. Given the research questions, the participants of this study were an appropriate choice because they are adults who are studying English as a foreign language enrolled in a university in Kuwait. Adult students at GUST are expected to be fully

comprehensive in using the English language and its four skills to be able to successfully move forward in obtaining their diploma as all majors are taught in English. Therefore, English composition I and II are offered by the English department to fully prepare EFL students to excel in using English in their academic endeavors. The class sections that were chosen for this study consists of both male and female students, which enabled the researcher to test the second research question regarding male and female test performances.

Data Collection Procedures

Due to the current worldwide pandemic with COVID-19, class sessions for the English composition II class (ENGL 112) in spring 2021 at GUST were held online and synchronously, three times a week for one hour. After selecting which two courses were to be involved in this quasi-experiment, a random selection of the classes was made to determine which is the treatment or the control group. Once the selection was made both classes were then given a class lecture to talk about the components of arguing and the elements of writing an argumentative essay as a form of review. In the following class session, the participants from the experimental group were introduced to the assigned video game, provided with a demonstration of instructions for play, and given the form of consent that explained in detail what they would expect out of this experiment.

Once they were familiar enough with the game, each group of students, control and experimental, then began to practice learning how to write arguments either by the book or through playing the video game. Unlike the experimental group, the control group worked on developing argumentative points and therefore practiced writing argumentative essays through developing paragraphs based on topics that were provided to them by the instructor using notebooks. At the same time, students in the experimental group were busy playing the video

game *Quandary* that they downloaded on their smartphones. In order to ensure intervention fidelity, students in the experimental group were asked to turn in a gaming log after finishing each episode of Quandary. Questions on the gaming log included: how long did it take you to play the game? Was it easy or hard? Explain what the game was about? What arguments/counterarguments did you present to the colony? The gaming log was then submitted into the university's system for the researcher to have access to. However, no further claims or analysis was possible regarding such data due to the fact that the logs that were submitted were lost during an update on the university's LMS system between Summer and Fall semesters.

Overall, the learning in both sections lasted for a total of four days for one hour each day. On the second day of the third week a formal assessment of writing was given to all students in both groups to determine the level of accomplishment gained from this experience. It is important to note that the measurement of this experience was given through a Word processing software (Microsoft Word Document) since both classes are held online due to the current worldwide situation with COVID-19. The test contained one question that students had to respond to with a written argumentative essay regarding the assigned topic given to both groups. The scoring of essays was based on an analytic rubric provided by the English department at GUST. Finally, a questionnaire covering demographic, culture, and experience was given to students on the last day of the experiment as a form of a qualitative data collection tool in order to accumulate information about the participants educational, personal, and gaming background to contribute to attaining data analysis. The questionnaire was administered through Qualtrics.

Procedure's Timeline

Table 1. Data collection timeline

Week 1	**Procedure**
Day 1	Randomization of groups and providing a written consent to the experimental group.
Day 2	Review of argumentative essay to both groups.
Day 3	Demonstration of how to play the video game to the experimental group.
Week 2	**Procedure**
Day 1	Both groups learning the content according to their designated learning protocol.
Day 2	Both groups learning the content according to their designated learning protocol.
Day 3	Both groups learning the content according to their designated learning protocol.
Week 3	**Procedure**
Day 1	Both groups learning the content according to their designated learning protocol.
Day 2	Assessment: Argumentative essay writing
Day 3	Assigning questionnaire

The Game Used

The game used for this experiment is called *Quandary*. *Quandary* is a science-fiction educational game which enables players to interact with a set of characters and narratives from different perspectives. When faced with conflicts, players find themselves exploring facts, solutions, and opinions to come up with ideas that best fit the colony that they are responsible for. The game aims to develop and maintain several skills that aid in learning, which include but not limited to, critical thinking, decision making, communication, and global awareness. The game is free and can be downloaded to both IOS and android users. For this particular study, students in the experimental group played all four episodes in *Quandary*, completing one episode per class session. The game exposed students to different scenarios in which they were put in to listen to arguments, respond to them, and to also develop solutions and make decisions based on what they believe best fits the scenario. The scenarios in each episode in the game was highly applicable to everyday lives, thus making students as involved as possible while also becoming independent thinkers. The game selected also presents students with a variety of topics that they must address to help them better develop their arguments since they are faced with the topic through playing the game, and this aligns with the first research question that this study asks. Moreover, the game allows the student to choose between a male and female avatar to be the "captain," and while the engineer of the colony is a man, the technology expert in the colony is a woman offering gender equality in the game over male dominance. Therefore, *Quandary* best is the best fit for this experiment as it aided in answering the research questions asked earlier with the focus on the use of video games as a way to enhance students' abilities to write an argumentative piece of writing.

Text Level of Game and Instructional Materials

To ensure that the text used in the Quandary game by the experimental group was at an equal or lower level than the text material used by the students in the control group, a Flesh-Kincaid Readability analysis was conducted. The Flesch-Kincaid readability scores are the most widely used measurement of readability in the United States. The analysis provides information related to the reading ease of the text and the grade-level of the text analyzed.

Since Quandary is a video game, text samples from each of the three scenarios were randomly obtained, scripted, and then analyzed to obtain the measures of reading ease and grade-level equivalent. The Flesch Kincaid Reading Ease Score for the randomly selected text was 65.6 and the Flesch Kincaid Grade Level for the text was 7. 6 (sixth month of grade 7). The analyses of the text presented to participants as they are playing the Quandary game shows that it is below the level of the students enrolled in ENGL 112 and the reading ease score of 65. 6 is within the range (60-80) generally understood by 12- to 15-year-old students.

The students in the control group were using a Pearson e-text entitled as all instruction was done online due to the COVID pandemic. Flesch Kincaid analyses was performed on three randomly selected passages from the text. The analyses showed that the text was more difficult to understand with a Flesch Kincaid Reading Ease Score of 50.7 and a Flesch Kincaid Grade Level of 10. 7 (seventh month of grade 10) than the text material encountered by students playing Quandary in the treatment group. Both the text in the Quandary game and the Pearson text are within the instructional reading level of students in ENGL 112 as language skills of students in ENGL 112 are equivalent to an IELTS score of 6.0.

Questionnaire

The below questionnaire was assigned to all students involved in this experiment. The questionnaire is composed of a total of 21 questions: 16 multiple choice and 5 open-ended questions. The questionnaire is structured around two topic groups: demographic and culture and experience with the video game. Also, general information of students' current academic background is collected from the questionnaire, such as university ID, major, gender, and age. The open-ended questions below, especially questions 18-21, offer a context that aid in collecting answers and responses that help in explaining the circumstances that could have affected the results of data analysis.

Questionnaire Items

1. Indicate your class section
2. Are you born in Kuwait: yes or no
3. Are you raised in Kuwait: yes or no
4. What language do you speak at home?
5. High School Background: Public or Private?
6. Are you a scholarship student? yes or no
7. For how many years have you been studying English?
8. Indicate your preferred learning style: visual, auditory, read/write, or kinesthetic, none of the above
9. Have you taken ENGL 112 before? If so, indicate the number of times:
10. How many times do you play video games every week? (0-3) or (3-6) or (6 or more) or N/A?
11. At what age did you start playing video games?

12. Are you familiar with the video game *Quandary*? Yes or no
13. For the experimental group, indicate the amount of time that you spent practicing playing *Quandary* outside of class: (0-3) or (3-6) or (6 or more)
14. I feel that *Quandary* is easy to play: yes or no?
15. *Quandary* can help me in applying what I learned in different situations? Yes or no
16. I hope that other instructors use games in learning: yes or no
17. I enjoyed learning how to write an argumentative essay? Yes or no
18. I did/didn't enjoy learning how to write argumentative essay because___
19. Describe your experience in learning the lesson either through playing *Quandary* or through the book
20. How were you feeling on the day that you took the test?
21. Were you feeling anxious or demotivated to take the test?

Data analysis

In the analysis of the data collected from the final test grade and questionnaire assigned, a quantitative analysis method was used through SPSS 27 program. Within the opportunity of conducting a quantitative analysis, descriptive statistical methods such as mean, standard deviation, standard error of mean (SE_M), minimum, maximum, skewness and kurtosis, and median was provided for giving a description for the collected data and to compare between the experimental and control group in terms of the final essay grades. Descriptive statistics are normally used to describe or to provide a summary of the data presented. They also provide summaries of the data and are used to answer descriptive research questions. Moreover, further analysis was done when running the variables of the study for the purpose of answering the study's research questions in knowing how gender plays a role in playing video games to teach

adult EFL students to write arguments and how the implementation of video games in teaching adult EFL students affect the quality of argumentative essay writing; such analysis include Shapiro-Wilk Test, two-tailed independent samples *t*-Test, two-tailed Mann-Whitney *U* test, ANOVA, and linear regression analysis. For example, the linear regression analysis is used to anticipate the value of a variable based on the value that is given by another variable.

Chapter Four: Results

The purpose of this study was to answer the following questions: (1) How did playing an online digital video game, *Quandary*, during a university writing course affect the quality of argumentative writing (as measured by an assigned rubric) produced by adult EFL students in Kuwait? (2) How is playing an online video game, *Quandary*, different between male and female adult EFL students (in a writing course at university in Kuwait) when learning how to write argumentative essays? As mentioned in Chapter Three, the participants of this study are adult EFL students, consisting of both males and females, who are enrolled in English Composition II, which is a course that focuses on developing students' writing skills. Two class sections were involved in this study. After dividing the class sections into a control and experimental group, the control group learned how to write an argumentative essay by being given assigned topics to practice; while the experimental group was busy playing an online game, *Quandary*, that offered students different argumentative topics in each episode that they played. After that, an assessment was conducted in which both groups were asked to write an argumentative essay selected by the teacher, to compare their performances, along with administering a questionnaire to collect data that could better support the results. Finally, an analysis through SPSS27 was conducted in which descriptive analysis was performed to conclude the mean for both groups. Other statistical procedures were executed to also examine the variables that could have contributed to having such results—such analysis included: Shapiro-Wilk Test, two-tailed independent samples *t*-Test, two-tailed Mann-Whitney *U* test, ANOVA, and linear regression analysis.

Statistical Procedures

In order to properly conduct a quantitative analysis and procure the study's results, descriptive statistical methods such as mean, standard deviation, standard error of mean (SE_M), minimum, maximum, skewness and kurtosis, and median, was performed in order to provide description of the collected data and to compare between the experimental and control group in terms of the final essay grades. Descriptive statistics are normally used to describe or to provide a summary of the data presented. For the control group, the observations of Essay_Grade had an average of 90.90 (*SD* = 4.77, SE_M = 1.04, Min = 82.00, Max = 98.00, Skewness = -0.11, Kurtosis = -0.98, *Mdn* = 90.00). While for the experimental group, the observations of Essay_Grade had an average of 90.29 (*SD* = 4.52, SE_M = 0.99, Min = 78.00, Max = 95.00, Skewness = -1.19, Kurtosis = 0.86, *Mdn* = 91.00). If the skewness is greater than two in absolute value, the variable is treated to be asymmetrical about its mean. According to Westfall and Henning (2013), when the kurtosis is greater than or equal to three, the variable's distribution has a substantially diverse tendency to produce outliers than a normal distribution. The summary statistics can be found in Table 2.

Table 2. *Summary Statistics Table for Interval and Ratio Variables by Group*

Variable	*M*	*SD*	*n*	SE_M	Min	Max	Skewness	Kurtosis	*Mdn*
Essay_Grade									
Control	90.90	4.77	21	1.04	82.00	98.00	-0.11	-0.98	90.00
Experimental	90.29	4.52	21	0.99	78.00	95.00	-1.19	0.86	91.00

Note. '-' indicates the statistic is undefined due to constant data or an insufficient sample size.

According to Table 1, since the observations for both groups, control and experimental, in reference to the analysis show a very slight difference in performance, then the results indicate that there is no significance in performance among both groups. Thus, the obtained results

answer the first research question (How did playing an online digital video game, *Quandary*, during a university writing course affect the quality of argumentative writing (as measured by an assigned rubric) produced by adult EFL students in Kuwait?) by saying that the treatment given to the experimental group doesn't necessarily aid in enhancing students' performance in writing argumentative essays with better quality. A further discussion of the potential reasons will be discussed in Chapter Five.

Shapiro-Wilk Test

In order to effectively choose an accurate statistical test, it is necessary to assess the normality of data. This is because normal data forms the basis for parametric testing. When working with small sample sizes, the Shapiro-Wilk test is the best method to be used in assessing normality. In Table 3, it is shown that the Shapiro-Wilk significance value is more than 0.05 and this is an indication that the data is normally distributed. Given that there were no significant differences between the assumptions of normality and the normal distribution, the two tailed independent sample t-test was used in comparing the two groups for the final essay grads. When the data was split between the experiment and control group, it was discovered that the Shapiro-Wilk test is more than 0.05 for the control group, which showed normal distribution of the results. However, the Shapiro-Wilk was less than 0.05 for the experimental group, which shows that the results were not distributed normally. Therefore, instead of the two tailed independent sample t-test, the two tailed Mann-Whitney U test was applied.

Table 3. *Shapiro-Wilk Test Results*

Variable	*W*	*p*
Essay_Grade	0.96	.181

Results

A Shapiro-Wilk test was conducted in order to determine whether the distribution of the Essay_Grade was significantly different from a normal distribution. The following variables had distributions which did not significantly differ from normality based on an alpha of 0.05: Essay_Grade ($W = 0.96$, $p = .181$). The results are presented in Table 3 and they show that the results are normally distributed.

Two-Tailed Independent Samples *t*-Test

Introduction

A two-tailed independent samples *t*-test was conducted to examine whether the mean of Essay_Grade was significantly different between the Control and Experimental categories of Group. It is important to compare the mean of the control and experimental group to know how each group performed in the final essay assessment, which aligns with the first research question regarding how playing *Quandary* affected the quality of students' academic writing.

Assumptions

Normality. Shapiro-Wilk tests were conducted to determine whether Essay_Grade could have been produced by a normal distribution for each category of Group (Razali & Wah, 2011). The result of the Shapiro-Wilk test for Essay_Grade in the Control category was not significant based on an alpha value of 0.05, W = 0.96, p = .493. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for Essay_Grade in the Control category. The result of the Shapiro-Wilk test for Essay_Grade in the Experimental category was significant based on an alpha value of 0.05, W = 0.87, p = .012. This result suggests that Essay_Grade in the Experimental category is unlikely to have been produced by a normal

distribution. The Shapiro-Wilk test was significant for the Experimental category of Group, indicating the normality assumption is violated. This is related in choosing the most appropriate statistical test to compare between the control and experimental group, and based on this finding, the researcher found that it is important to apply the Mann-Whitney test for this comparison.

Normality. According to DeCarlo (1997), the normality assumption was tested by comparing the dependent variable's quantiles against the quantiles of a Chi-square distribution, sometimes known as a Q-Q scatterplot. The dependent variable's quantiles must not depart significantly from the theoretical quantiles to meet the assumption of normality. Points that are on or near the line in normally distributed data will appear on or very close to the line. Deviations from normality are indicated by points that are distant from the line. Figure 1 and Figure 2 present Q-Q scatterplots of Essay_Grade in each category of Group.

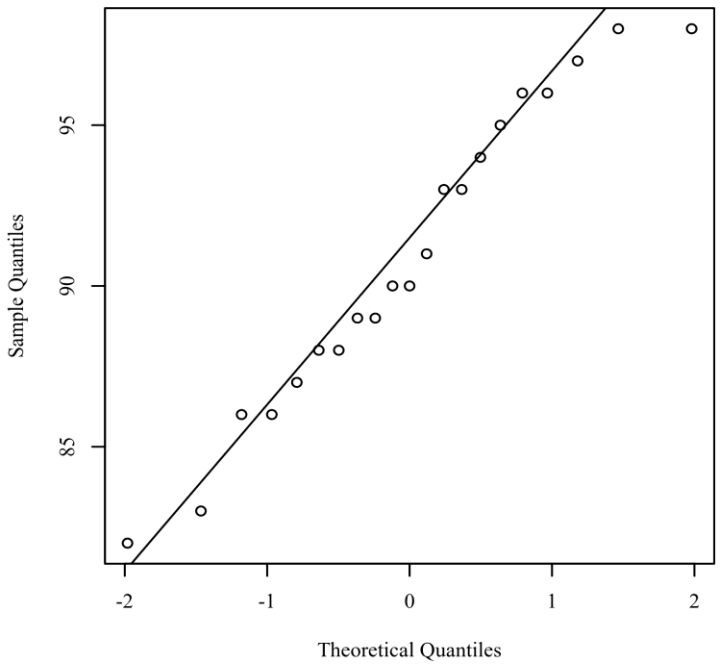

Figure 1. *Q-Q scatterplot for normality for Essay_Grade in the Control category of Group.*

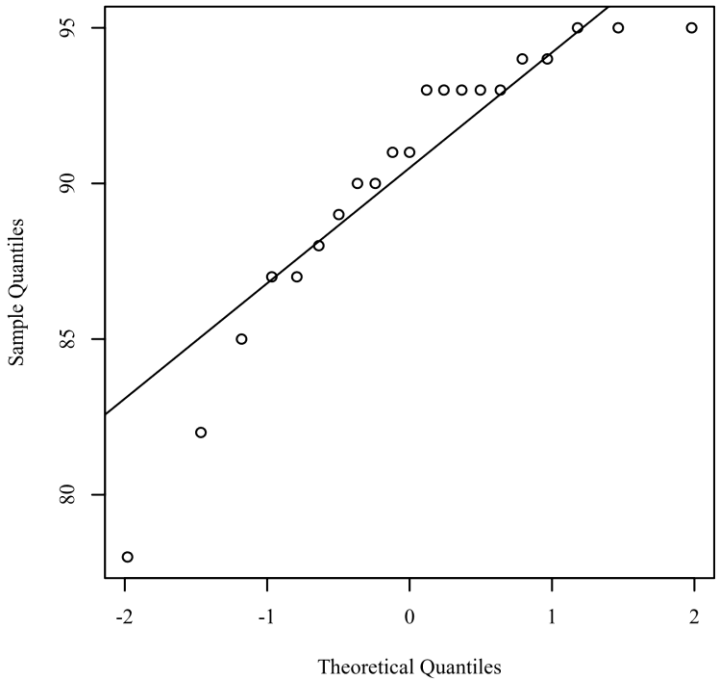

Figure 2. *Q-Q scatterplot for normality for Essay_Grade in the Experimental category of Group.*

Homogeneity of Variance.

Levene's test was conducted to assess whether the variance of Essay_Grade was equal between the categories of Group. The result of Levene's test for Essay_Grade was not significant based on an alpha value of 0.05, $F(1, 40) = 0.42$, $p = .519$. This result suggests it is possible that the variance of Essay_Grade is equal for each category of Group, indicating the assumption of homogeneity of variance was met.

Table 4. *Two-Tailed Independent Samples t-Test for Essay_Grade by Group*

	Control		Experimental				
Variable	*M*	*SD*	*M*	*SD*	*t*	*p*	*d*
Essay_Grade	90.90	4.77	90.29	4.52	0.43	.668	0.13

Note. N = 42. Degrees of Freedom for the *t*-statistic = 40. *d* represents Cohen's *d.*

Results

The result of the two-tailed independent samples *t*-test was not significant based on an alpha value of 0.05, $t(40) = 0.43$, $p = .668$, indicating the null hypothesis cannot be rejected. This finding suggests the mean of Essay_Grade was not significantly different between the Control and Experimental categories of Group. The results are presented in Table 4. A bar plot of the means is presented in Figure 3.

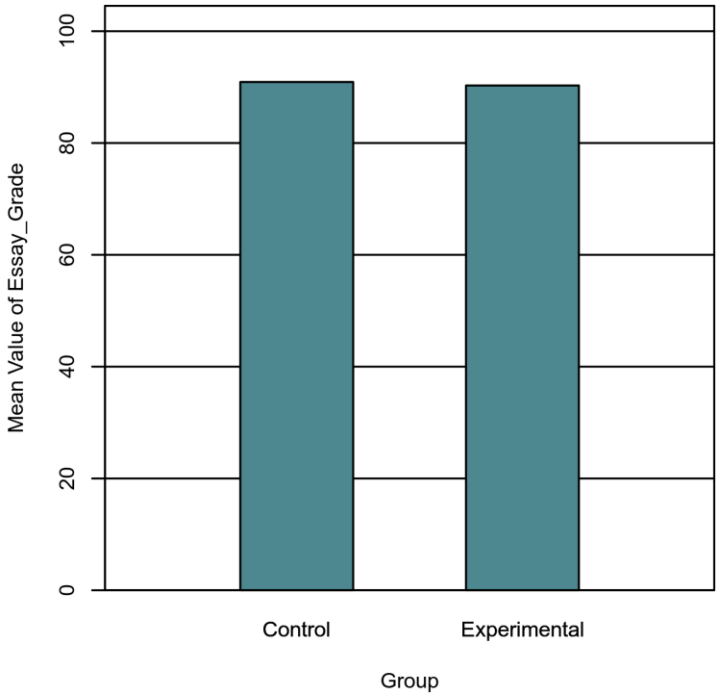

Figure 3. *The mean of Essay_Grade by levels of Group*

Two-Tailed Mann-Whitney *U* Test

Introduction

A two-tailed Mann-Whitney two-sample rank-sum test was conducted to examine whether there were significant differences in Essay_Grade between the levels of Group.

According to Conover and Iman (1981), the two-tailed Mann-Whitney two-sample rank-sum test, an alternative to the independent samples t-test, does not share the same premises. There were 21 observations in the control group and 21 observations in the experimental group.

Table 5. *Two-Tailed Mann-Whitney Test for Essay_Grade by Group*

	Mean Rank				
Variable	Control	Experimental	*U*	*z*	*p*
Essay_Grade	22.05	20.95	232.00	-0.29	.771

Results

The result of the two-tailed Mann-Whitney *U* test was not significant based on an alpha value of 0.05, $U = 232$, $z = -0.29$, $p = .771$. The mean rank for group Control was 22.05 and the mean rank for group Experimental was 20.95. This suggests that the distribution of Essay_Grade for group Control ($Mdn = 90.00$) was not significantly different from the distribution of Essay_Grade for the Experimental ($Mdn = 91.00$) category. Table 4 presents the result of the two-tailed Mann-Whitney *U* test. Figure 4 presents a boxplot of the ranks of Essay_Grade by Group.

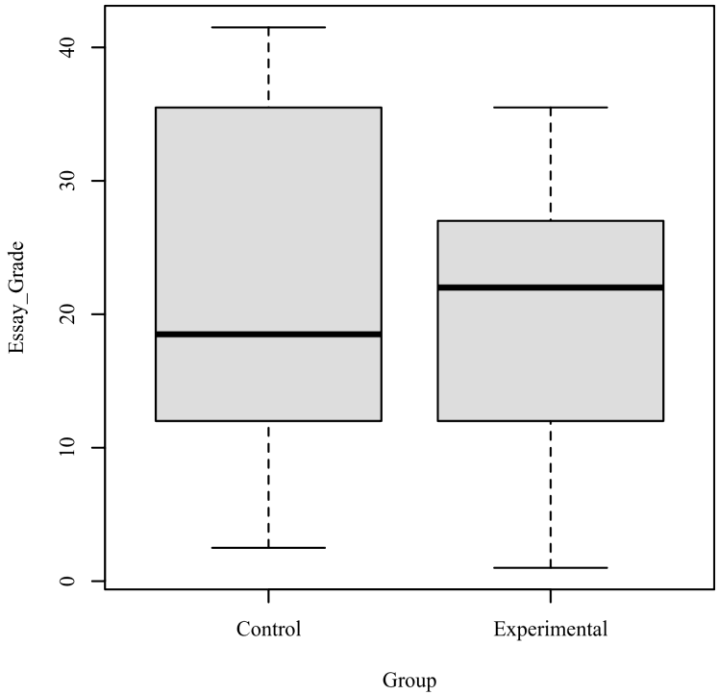

Figure 4. *Ranks of Essay_Grade by Group*

ANOVA

Introduction

An analysis of variance (ANOVA) was conducted to determine whether there were significant differences in Essay_Grade by Group and Gender. This statistical analysis was conducted to answer the second research question (how is playing an online video game, *Quandary*, different between male and female adult EFL students (in a writing course at university in Kuwait) when learning how to write argumentative essays?). Before conducting this analysis, the researcher of this study expected that males would outperform females in their test performance given that the treatment used was video game playing which, according to previous research, is more of an asset to males rather than females. However, the result indicated that the

difference between males and females was insignificant, thus violating the expectation of the researcher.

Assumptions

Normality. According to DeCarlo (1997), the normality assumption was tested by comparing the model's residual quantiles against the quantiles of a Chi-square distribution, sometimes known as a Q-Q scatterplot. The residual quantiles must not deviate significantly from the theoretical quantiles to meet the normalcy assumption. Normality is always tested for the purpose of choosing the right statistical procedures to run the data by. The presence of significant variances may indicate that the parameter estimates are inaccurate. Figure 5 presents a Q-Q scatterplot of model residuals.

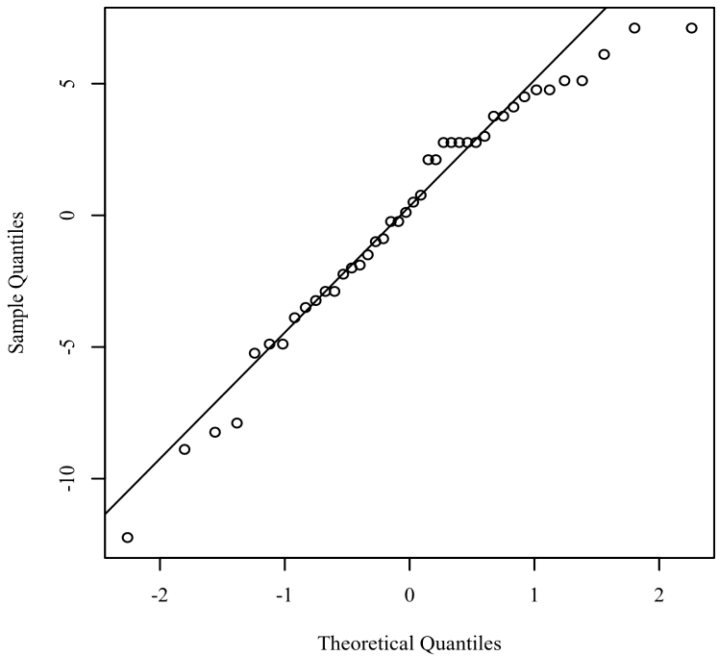

Figure 5. *Q-Q scatterplot for normality of the residuals for the regression model.*

Homoscedasticity. The residuals were plotted against the anticipated values to determine homoscedasticity (Bates et al., 2014; Field, 2017; Osborne & Walters, 2002). If the points appear

to be randomly distributed with a mean of zero and no visible curvature, the homoscedasticity requirement is met. Figure 6 presents a scatterplot of predicted values and model residuals.

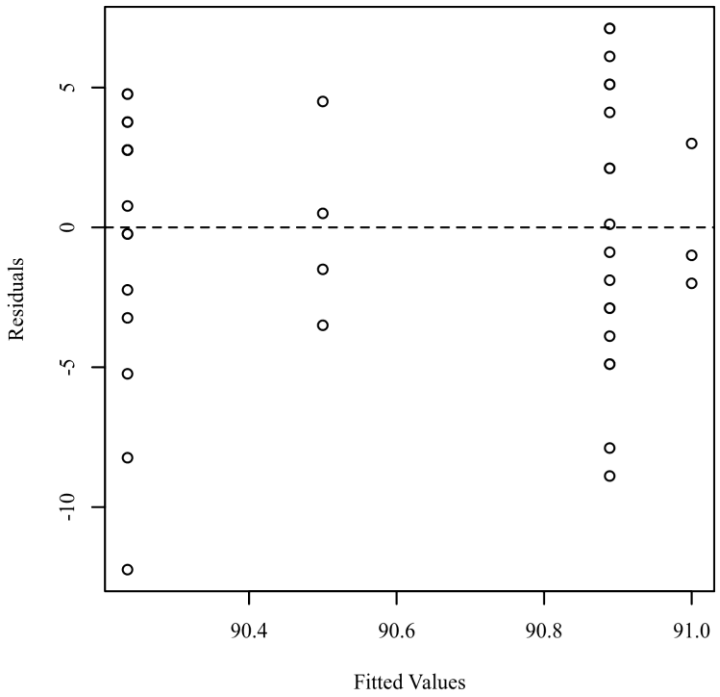

Figure 6. *Residuals' scatterplot testing homoscedasticity*

Outliers. Studentized residuals were computed, and the absolute values were plotted against the observation numbers to find essential points (Field, 2017; Pituch & Stevens, 2015). To calculate studentized residual, we start by dividing the model residuals by the estimated residual standard deviation. A Studentized residual more significant than 3.30 in absolute value or the 0.999 quantiles of a t distribution with 41 degrees of freedom, was regarded to have a massive effect on the model's outcomes. The Studentized residuals plot of the observations is shown in Figure 7. Each point with a Studentized residual higher than 3.30 has an observation number next to it.

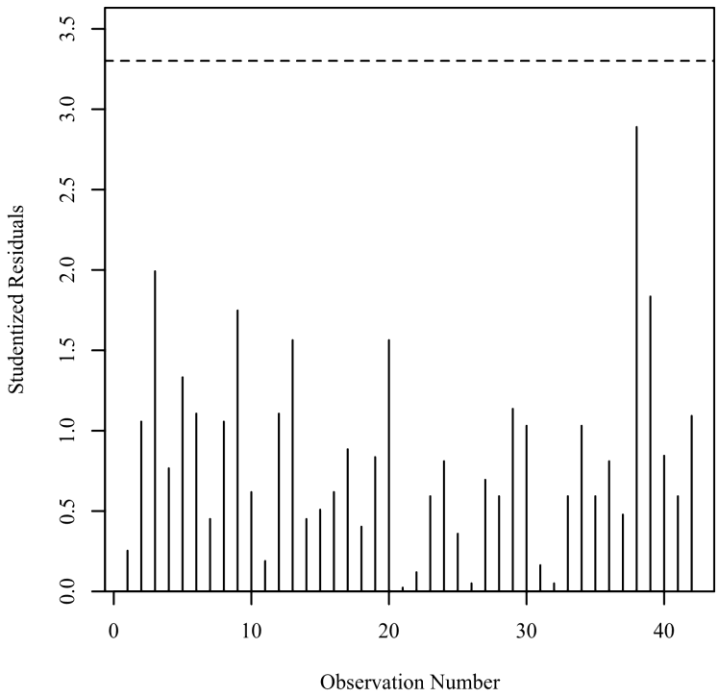

Figure 7. *Studentized residuals plot for outlier detection*

Results

The ANOVA was examined based on an alpha value of 0.05. The results of the ANOVA were not significant, $F(3, 38) = 0.06$, $p = .979$, indicating the differences in Essay_Grade among the levels of Group and Gender were all similar (Table 5). The interaction effect between Group and Gender was not significant, $F(1, 38) = 0.00$, $p = .969$, $\eta^2_p = 0.00$, indicating there were no significant differences for Essay_Grade for each factor level combination of Group and Gender. The main effect, Group was not significant, $F(1, 38) = 0.08$, $p = .774$, indicating there were no significant differences of Essay_Grade by Group levels. The main effect, Gender was not significant, $F(1, 38) = 0.01$, $p = .925$, indicating there were no significant differences of Essay_Grade by Gender levels. Such insignificance shows that neither gender outperformed the other whether being in the same group (control or experimental) or by comparing both genders

against each other in different groups. This finding is meaningful for the second research question indicating that, for the present study, gender differences were not significant. The means and standard deviations are presented in Table 6.

Table 6. *Analysis of Variance Table for Essay_Grade by Group and Gender*

Term	*SS*	*df*	*F*	*p*	η_p^2
Group	1.91	1	0.08	.774	0.00
Gender	0.20	1	0.01	.925	0.00
Group:Gender	0.03	1	0.00	.969	0.00
Residuals	863.84	38			

Table 7. *Mean, Standard Deviation, and Sample Size for Essay_Grade by Group & Gender*

Combination	*M*	*SD*	*n*
Control : M	91.00	2.65	3
Experimental : M	90.50	3.42	4
Control : F	90.89	5.10	18
Experimental : F	90.24	4.83	17

Note. A '-' indicates the sample size was too small for the statistic to be calculated.

Post-hoc

There were no significant effects in the model indicating that there is no difference between the grades examined. As a result, posthoc comparisons were not conducted.

Linear Regression Analysis

Introduction

The relationship between the dependent variable and the independent variables in the present study is estimated using the regression analysis. The one dependent variable is the final essay grades. The independent variables include: the group, the gender, number of times a student retook the course, the age when the student started playing video games, why the student enjoys or does not enjoy learning about writing arguments, the learning experience of the student, the feeling of the student on the day of the test, the type of high school the student attended, number of years the student spent studying English, the learning style proffered by the student, and the total time outside class spent by students in the experimental group playing *Quandary*. Therefore, if the analysis shows that the p-value is higher than the degree of significance, it shows that there is a strong correlation between these variables. If, on the other hand, the p-value is lower than the degree of significance, the relationship between the variables is weak. A linear regression analysis was conducted to assess whether Group, Gender, the amount of times a student repeated the course (Q9), the age of when the student started playing video games (Q11), the reason behind enjoying and not enjoying learning how to write arguments (Q18), whether the student had a good or bad experience in learning (Q19), whether the student is feeling positive or negative on the day that he/she took the test (Q20), whether the student had attended a public or private high school (Q5), the years spent studying English (Q7), the students' preferred learning style (Q8), and the amount of time that the students in the experimental group spent playing *Quandary* outside of class (Q10) significantly predicted Essay_Grade.

Assumptions

Normality. According to DeCarlo (1997), the normality assumption was tested by comparing the model's residual quantiles against the quantiles of a Chi-square distribution, sometimes known as a Q-Q scatterplot. The residual quantiles must not deviate significantly from the theoretical quantiles to meet the normalcy assumption. The presence of significant variances may indicate that the parameter estimates are inaccurate. Figure 8 presents a Q-Q scatterplot of the model residuals.

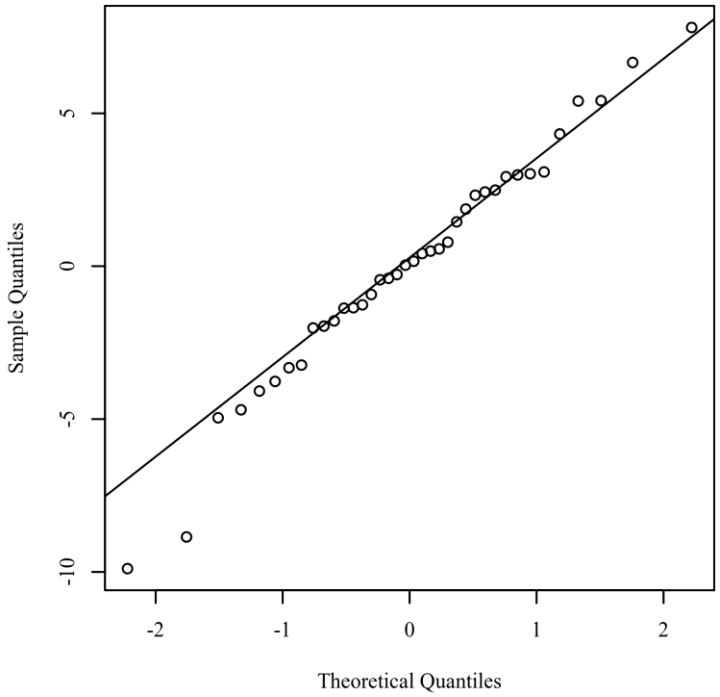

Figure 8. *Q-Q scatterplot for normality of the residuals for the regression model.*

Normality. According to Razali and Wah (2011), a Shapiro-Wilk test was used to see if a normal distribution might have generated the model residuals. The results of the Shapiro-Wilk test were not significant based on an alpha value of 0.05, $W = 0.98$, $p = .652$. This result suggests

the possibility that the residuals of the model were produced by a normal distribution and cannot be ruled out, indicating the normality assumption is met.

Homoscedasticity. The residuals were plotted against the anticipated values to determine homoscedasticity (Bates et al., 2014; Field, 2017; Osborne & Walters, 2002). The assumption of homoscedasticity is met if the points appear randomly distributed with a mean of zero and no apparent curvature. Figure 9 presents a scatterplot of predicted values and model residuals.

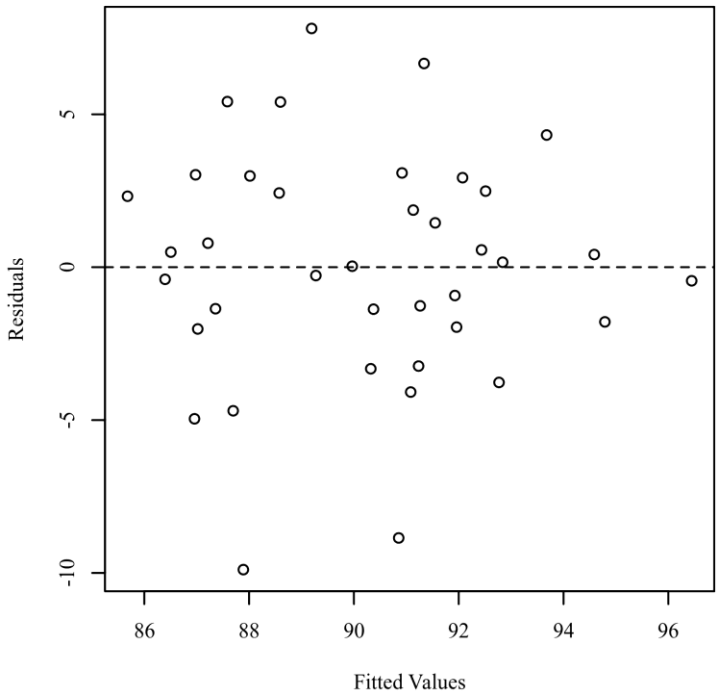

Figure 9. *Residuals' scatterplot testing homoscedasticity*

Multicollinearity. The presence of multicollinearity amongst predictors was detected using Variance Inflation Factors (VIFs). High VIFs suggest that the model's multicollinearity effects are more pronounced, thus making the correlated independent variable a highly collinear with the rest of the other variables used in the study. In other words, a higher VIF means that the variable has more variation than the rest of the variables, but since it is still below five then it

will not affect the multicollinearity issue. According to Menard (2009), VIFs of more than five should be deemed concerning, whereas VIFs over ten should be considered to be the upper limit. All predictors in the regression model have VIFs less than ten. Table 7 presents the VIF for each predictor in the model.

Table 8. *Variance Inflation Factors for Group, Gender, Q18, Q11, Q9, Q19, Q20, Q5, Q7, Q8, Q13*

Variable	VIF
Group	1.44
Gender	1.17
Q18	2.34
Q11	1.46
Q9	1.29
Q19	1.99
Q20	1.37
Q5	1.16
Q7	1.28
Q8	1.32
Q13	1.70

Results

The results of the linear regression model were not significant, $F(11,26) = 1.15$, $p = .369$, $R^2 = 0.33$, indicating Group, Gender, Q18, Q11, Q9, Q19, Q20, Q5, Q7, Q8, and Q13 did not explain a significant proportion of variation in Essay_Grade. Since the overall model was not

significant, the individual predictors were not examined further. Table 8 summarizes the results of the regression model.

Table 9. *Results for Linear Regression with Group, Gender, Q18, Q11, Q9, Q19, Q20, Q5, Q7, Q8, and Q13 predicting Essay_Grade*

Variable	*B*	*SE*	90% CI	β	*t*	*p*
(Intercept)	99.52	4.34	[92.11, 106.93]	0.00	22.91	< .001
GroupExperimental	1.11	1.77	[-1.90, 4.13]	0.12	0.63	.534
GenderM	-0.30	2.05	[-3.81, 3.20]	-0.03	-0.15	.883
Q18N	-2.75	3.09	[-8.02, 2.52]	-0.22	-0.89	.382
Q11N	-3.24	2.09	[-6.81, 0.33]	-0.30	-1.55	.134
Q9Y	4.03	2.05	[0.53, 7.52]	0.36	1.96	.060
Q19N	5.45	3.86	[-1.13, 12.02]	0.32	1.41	.169
Q20G	-1.79	1.82	[-4.89, 1.31]	-0.19	-0.99	.334
Q5	-3.50	1.62	[-6.26, -0.73]	-0.37	-2.15	.041
Q7	-0.04	0.15	[-0.30, 0.22]	-0.05	-0.28	.783
Q8	-0.96	0.71	[-2.18, 0.25]	-0.25	-1.35	.188
Q13	-1.79	1.65	[-4.60, 1.02]	-0.23	-1.09	.287

Note. Results: $F(11,26) = 1.15$, $p = .369$, $R^2 = 0.33$
Unstandardized Regression Equation: Essay_Grade = 99.52 + 1.11*GroupExperimental - 0.30*GenderM - 2.75*Q18N - 3.24*Q11N + 4.03*Q9Y + 5.45*Q19N - 1.79*Q20G - 3.50*Q5 - 0.04*Q7 - 0.96*Q8 - 1.79*Q13

Binary Logistic Regression

Introduction A binary logistic regression was conducted to examine whether Gender, Q9, Q11, Q18, Q19, Q20, Q5, and Q7 had a significant effect on the odds of observing the Experimental category of Group. The reference category for Group was Control.

***Assumptions*.** The assumption of absence of multicollinearity was examined.

Variance inflation factors. The presence of multicollinearity amongst predictors was detected using Variance Inflation Factors (VIFs). High VIFs suggest that the model's multicollinearity effects are more pronounced. VIFs of more than five should be deemed concerning, whereas VIFs over ten should be considered to be the upper limit (Menard, 2009). In other words, a higher VIF mean that the variable has more variation than the rest of the variables but since it is still below five then it will not affect the multicollinearity issue. All predictors in the regression model have VIFs less than ten. The test conducted makes sure that multicollinearity issues are highlighted among the predictors, which according to the early reference, anything above five is considered a multicollinearity issue. Table 9 presents the VIF for each predictor in the model.

Table 10. *Variance Inflation Factors for Gender, Q9, Q11, Q18, Q19, Q20, Q5, and Q7*

Variable	VIF
Gender	1.19
Q9	1.17
Q11	1.18
Q18	2.18
Q19	1.92
Q20	1.20
Q5	1.13
Q7	1.23

Results

The overall model was not significant based on an alpha of 0.05, $\chi^2(8) = 6.43$, $p = .599$, suggesting that Gender, Q9, Q11, Q18, Q19, Q20, Q5, and Q7 did not have a significant effect on the odds of observing the Experimental category of Group. According to Louviere et al., (2000), McFadden's R-squared was computed to assess model fit with values greater than two, indicating models with an ideal fit. The McFadden R-squared value calculated for this model was 0.12. Since the overall model was not significant, the individual predictors were not examined further. Table 10 summarizes the results of the regression model.

Table 11. *Logistic Regression Results with Gender, Q9, Q11, Q18, Q19, Q20, Q5, and Q7 Predicting Group*

Variable	*B*	*SE*	χ^2	*p*	*OR*	95% CI
(Intercept)	-0.39	1.39	0.08	.777	-	-
GenderM	0.64	0.95	0.46	.499	1.90	[0.30, 12.14]
Q9Y	-1.13	0.97	1.34	.247	0.32	[0.05, 2.18]
Q11N	-0.62	0.90	0.47	.493	0.54	[0.09, 3.16]
Q18N	1.34	1.42	0.89	.346	3.82	[0.24, 62.17]
Q19N	-1.31	1.83	0.52	.472	0.27	[0.01, 9.67]
Q20G	1.39	0.83	2.79	.095	4.01	[0.79, 20.49]
Q5	0.27	0.77	0.12	.730	1.31	[0.29, 5.94]
Q7	-0.02	0.07	0.11	.745	0.98	[0.85, 1.12]

Note. $\chi^2(8) = 6.43$, $p = .599$, McFadden $R^2 = 0.12$.

Two-Tailed Independent Samples *t*-Test

Introduction

A two-tailed independent samples *t*-test was conducted to examine whether the mean of Essay_Grade was significantly different between the students who attended private high schools as opposed to students who attended public schools. Examining such a question could help in explaining the results obtained since public high schools in Kuwait teach all their subjects, except English, in Arabic while the private high schools in Kuwait use English as their first language in teaching their curriculum.

Assumptions

Normality. Shapiro-Wilk tests were conducted to determine whether Essay_Grade could have been produced by a normal distribution for each category of Q5_Nominal (Razali & Wah, 2011). The result of the Shapiro-Wilk test for Essay_Grade in the Public category was significant based on an alpha value of 0.05, $W = 0.91$, $p = .035$. This result suggests that Essay_Grade in the Public category is unlikely to have been produced by a normal distribution. The result of the Shapiro-Wilk test Essay_Grade in the Private category was not significant based on an alpha value of 0.05, $W = 0.96$, $p = .768$. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for Essay_Grade in the Private category. The Shapiro-Wilk test was significant for the Public category of Q5_Nominal, indicating the normality assumption is violated.

Normality. The normality assumption was tested by comparing the dependent variable's quantiles against the quantiles of a Chi-square distribution, sometimes known as a Q-Q scatterplot (DeCarlo, 1997). The dependent variable's quantiles must not depart significantly

from the theoretical quantiles to meet the assumption of normalcy. Points that are on or near the line in normally distributed data will appear on or very close to the line. Deviations from normality are indicated by points that are distant from the line. Figure 10 and Figure 11 present Q-Q scatterplots of Essay_Grade in each category of Q5_Nominal.

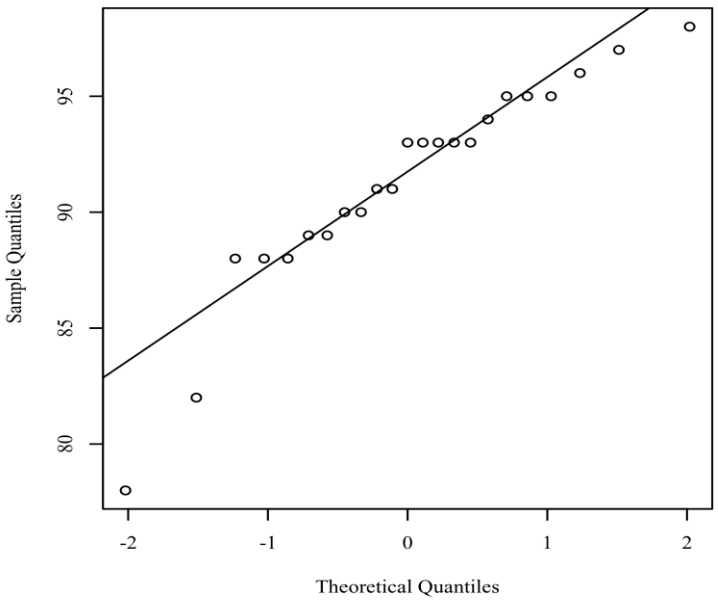

Figure 10. *Q-Q scatterplot for normality for Essay_Grade in the Public category of Q5_Nominal.*

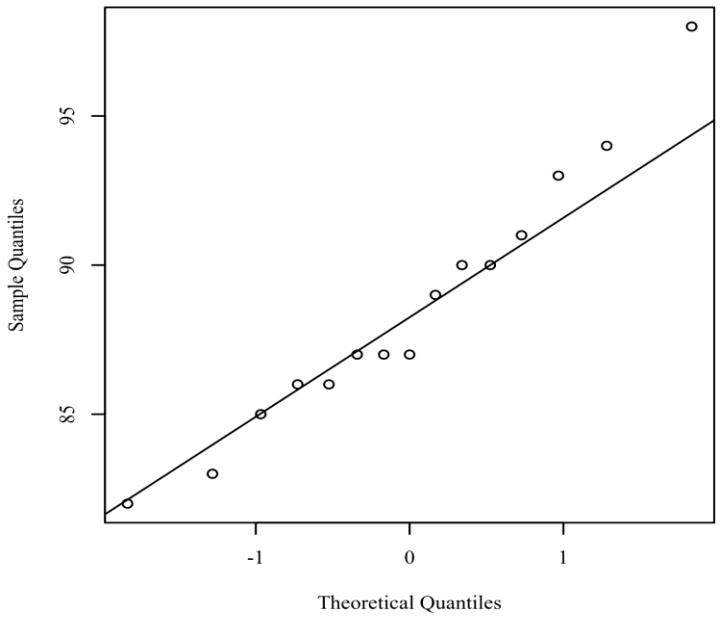

Figure 11. *Q-Q scatterplot for normality for Essay_Grade in the Private category of Q5_Nominal.*

Homogeneity of Variance. Levene's test was conducted to assess whether the variance of Essay_Grade was equal between the categories of Q5_Nominal. The result of Levene's test for Essay_Grade was not significant based on an alpha value of 0.05, $F(1, 36) = 0.01$, $p = .912$. This result suggests it is possible that the variance of Essay_Grade is equal for each category of Q5_Nominal, indicating the assumption of homogeneity of variance was met.

Results

The result of the two-tailed independent samples *t*-test was not significant based on an alpha value of 0.05, $t(36) = 1.83$, $p = .076$, thus indicating the null hypothesis cannot be rejected. This finding suggests that the mean of Essay_Grade was not significantly different between the students who went to private high schools as opposed to students who attended public high

schools. Therefore, the type of school is not a predictor of grades. The results are presented in Table 11. A bar plot of the means is presented in Figure 12.

Table 12. *Two-Tailed Independent Samples t-Test for Essay_Grade by Q5_Nominal*

	Public		Private				
Variable	*M*	*SD*	*M*	*SD*	*t*	*p*	*d*
Essay_Grade	91.26	4.63	88.53	4.27	1.83	.076	0.61

Note. N = 38. Degrees of Freedom for the *t*-statistic = 36. *d* represents Cohen's *d.*

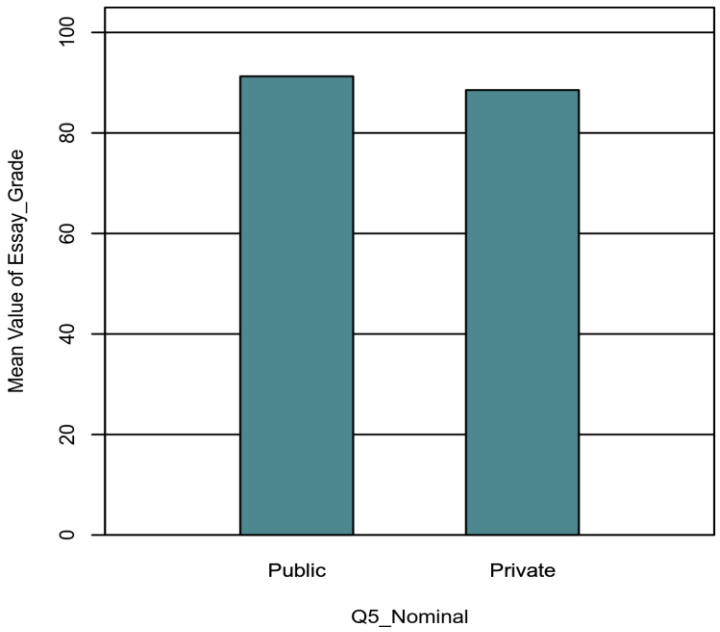

Figure 12. The mean of Essay_Grade by levels of Q5_Nominal

Two-Tailed Mann-Whitney *U* Test

Introduction

A two-tailed Mann-Whitney two-sample rank-sum test was conducted to examine whether there were significant differences in Essay_Grade between the levels of Q5_Nominal. According to Conover and Iman (1981), the two-tailed Mann-Whitney two-sample rank-sum test is a substitute to the independent samples t-test but does not have the same assumptions in common. There were 23 observations in group Public and 15 observations in group Private.

Results

The result of the two-tailed Mann-Whitney *U* test was significant based on an alpha value of 0.05, $U = 245$, $z = -2.17$, $p = .030$. The mean rank for group Public was 22.65 and the mean rank for group Private was 14.67. This suggests that the distribution of Essay_Grade for group Public was significantly different from the distribution of Essay_Grade for the Private category. The median for Public (*Mdn* = 93.00) was significantly larger than the median for Private (*Mdn* = 87.00). Table 12 presents the result of the two-tailed Mann-Whitney *U* test. Figure 13 presents a boxplot of the ranks of Essay_Grade by Q5_Nominal.

Table 13. *Two-Tailed Mann-Whitney Test for Essay_Grade by Q5_Nominal*

	Mean Rank				
Variable	Public	Private	*U*	*z*	*p*
Essay_Grade	22.65	14.67	245.00	-2.17	.030

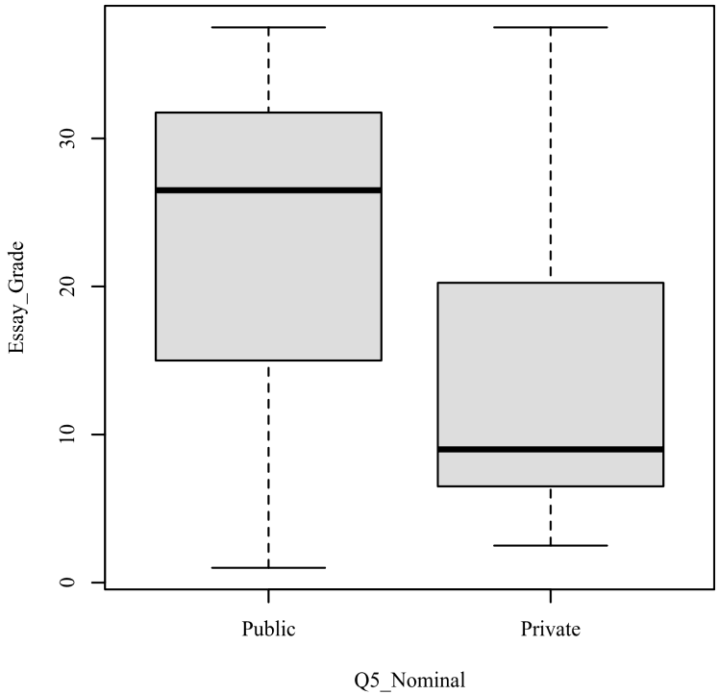

Figure 13. *Ranks of Essay_Grade by Q5_Nominal*

Chapter Summary

Chapter Four begun by providing an overview of the study's purposes by enlisting the research questions, mentioned the participants, gave a description of the assessment, then listed the statistical procedures employed by running the data through SPSS27. After the computing of the analysis required to answer the research questions, the data suggested that there was no significance in students' final grades between the control and experimental group, thus indicating that playing the video game, *Quandary*, had no effect in enhancing the quality of argumentative essay writing. This result violated the assumption that the research had in regard to having better performance when being involved in learning through playing video games. Further procedural analysis was performed to determine whether there is gender difference in student performance either between one group (control vs. control and experimental vs. experimental) or among both groups (control vs. experimental), yet the data obtained showed that the results are insignificant

in performance; thus, also violating the researcher's assumption in males outperforming the females. Other variables including but not limited to high school background and years spent learning English were also examined to see if they were predictors of better performance, yet no variable was proved to help in making one group outperform the other.

There are several factors of this study that may have contributed to the findings opposite those previously obtained in similar studies and contrary to the assumptions of the researcher. First, the sample size in the study was small which may have masked the effect of the differences between the groups. Second, the lack of gender effect may be due to the extremely low number of male students in the control and experimental groups. Both groups had only two male students while the remaining students were female. The gender imbalance of the classes themselves may have caused a lack of gender effect. In addition, the study took place during synchronous online instruction due to the COVID-19 pandemic. While students were encouraged to follow the experimental protocol and required to keep gaming logs and answer questions, students were not on camera during class time due to cultural limitations related to female students. This means that there is no way to be sure that the students in the experimental group engaged with the game as required in the research protocol.

The insights gained from this research will add to the lack of quantitative data in regard to how successful video games may be in teaching argumentative writing, especially to Arab EFL adults in Kuwait, along with keeping gender differences in mind. This will aid stakeholders, along with educators, to make decisions that better enhance the instruction.

There are several limitations regarding the generalizability of the results of this study. The sample size of the study is small and limited to a private university in the Middle East. In addition, the study was conducted during the COVID-19 pandemic which disrupted higher

education worldwide. Both of these factors make exact replication of the study difficult and reduce the generalizability of the results to other populations. Chapter five will provide a thorough discussion of the study along with providing implications and suggestions for future research.

Chapter Five: Discussion

In this study, the researcher conducted a quasi-experimental quantitative analysis on 42 adult EFL Kuwaiti students that were segmented into a control and experimental group in which data was gathered on their performances in argumentative essay writing along with collecting responses from a questionnaire that was assigned to all students as a qualitative source of data collection. The analysis was conducted using statistical analysis software SPSS 27 and the first research question that the researcher explored was: how playing an online digital video game, *Quandary*, during a university writing course affected the quality of argumentative essay writing (as measured by an assigned rubric) produced by adult EFL students in Kuwait. After conducting several statistical analyses on the data collected, i.e., the Shapiro-Wilk test, two-tailed independent samples t-test, and two-tailed Mann-Whitney U test, the results indicated that there is no significance between the control group and the experimental group in terms of writing superior quality argumentative essays. In comparison with prior research that was conducted on video gaming and learning, like the study done by Vahdat & Behbahani (2013), the current study didn't show better student performance in the experimental group and didn't prove that video games could positively impact students' academic abilities. However, the findings of this study do recommend that there could be better student performances in the experimental group if the study was conducted with different conditions like having a bigger sample size and taking place within a longer period of time (unlike this study that took course over a 3-week-timespan). This implies that having a small sample size could negatively affect the findings in which no significance would be shown when analyzing the data collected and that conducting a

longitudinal study over a longer period of time could show a difference in students' performances.

The second research question explored in this study investigated how playing the online video game, *Quandary*, is different between male and female adult EFL students (in a writing course at university in Kuwait) when learning how to write argumentative essays. The statistical analysis performed for this question was ANOVA and linear regression analysis. The researcher also examined several variables that could have indicated in having such results like examining high schools background, years spent learning English, and other conditions that could have contributed to getting insignificant data results, like how the student was feeling on the day that he/she took the assessment. However, all of the statistical procedures conducted showed insignificant data results answering the second research question by suggesting that there is no difference between male and female adult EFL students when learning how to write argumentative essays through playing the online video game, *Quandary*. This finding also contradicts prior research findings that state that there exist some constraints may dampen females' access to technology which, as a result, could affect their language learning (Hılao & Wıchadee, 2017). It further contradicts the notion that males have the advantage of having access to technologies, and such access is associated with gender differences (Borgonovi, 2016). The finding of this research claims that since there is a vast development of technology worldwide students are becoming more equipped in using such technologies and, as a result, are starting to break through the stereotypical beliefs that are imposed on them within societal constraints. Further analysis was conducted to investigate whether the performance of the students in both groups, experimental and control, was associated with predictors like: high school background (Q5), years spent studying English as a foreign language (Q7), preferred learning style (Q8), if

the students were repeating the course (Q9), whether they were video gamers or not (11), the amount of time that they spent playing video games outside of class (Q13), whether or not they have enjoyed learning through their designated learning protocol (Q18), whether the experience was positive or negative for them (Q19), and how they were feeling on the day that they took the test (Q20), along with their group type and gender. The statistical analysis was conducted through performing linear regression; however, the results of the linear regression model were not significant, thus indicating that such predictors are not associated with having significant proportion of variation in students' performance in the test that was administered. Such insignificance in the results could be due to a small sample size which could increase the possibility of having a Type II error that would lead to skewing the results of the analysis.

Although all students, according to the questionnaire that they were given, had demonstrated positive feedback towards game-based learning and even encouraged the use of video games in several other academic areas, the statistical analysis in this study did not show a correlation between having better student performance with video games employment in learning. Other than student engagement, attentiveness, and high motivation that all students in the experimental group had exhibited towards game-based learning (Annetta et al., 2009; Rosas et al., 2003), such analysis contradicts several prior research studies that emphasize the importance of game-based learning in academic settings when it comes to raising student performances. The reasons that could have contributed to such insignificant and contradicting findings is having a small sample size, not having enough male participants in the study, both groups experiencing the same exterior factors affecting the results of the study (COVID-19), conducting the study online, and the lack of having a pretest. The first contribution to attaining insignificant data analysis for both research questions is having a small sample size. Prior

research has suggested that students who learn through video games establish better performance than students who were put in the control group (Vahdat & Behbahani, 2013). However, this present study challenges the previous research in claiming otherwise by proving that there is insignificant performance between the two groups. I am not suggesting that the previous research conducted on video games and language learning is invalid and not true; however, it depends on the sample size and other contributing factors involved in the study. The second reason behind not having significant data analysis between male and female students for the second research question is not having enough male participants in both groups. Each group involved in the study, control and experimental, had a number of four male students as opposed to 17 female students. Prior research has indicated that male students tend to play video games more than female students as they tend to have more access to technology (Borgonovi, 2016); however, other research states that females typically tend to outperform males in formulating better argumentative points (Asterhan et al., 2012). The present study challenges those previous claims by having insignificant data analysis between male and female performance through using a video game to learn how to write an argument essay. I am not suggesting that the previous studies are invalid; however, the previous reason justifies having contradicting data analysis on the impact on the performance of students of different genders with regard to the learning of academic English argumentative writing in a university course. Other reasons that contributed to having insignificant data analysis is the fact that the researcher didn't use a pretest to compare and determine whether there has been an improvement in students' grades by examining previous samples of essays that the students wrote in their previous course of English Composition 1 as attaining such essays was not possible due to the university's system being updated which resulted in losing all of the samples stored in it.

Implications for future research include having a bigger sample size to include more samples of the population and conducting a longitudinal study to track the changes of student performance over time. Therefore, the previous reasons could have had an effect in attaining insignificant data analysis.

Study Implications

Above, I have shown that there were no significant differences in the argumentative essay grades between the experimental and control group and between male and female adult EFL Kuwaiti students in a university writing course who played the online digital video game, *Quandary*. Based on these findings, I have claimed that neither video games nor gender may be a limiting factor to enhance students' performance in using digital online video games to teach argumentative writing, while some prior research like Chen and Yang (2013) and Vahdat and Behbahani (2013) have called for caution in this area, finding that students' performance are enhanced when learning through playing video games. Although the findings of this study complicate prior research about game-based learning, future research in this area might focus on choosing a different sample size while conducting the study over a longer period of time to determine the effects of video games on EFL students. Finally, there are several practical implications that this study entails. One of the implications includes using more games in teaching and learning as they provide several opportunities for students to master the course's objectives. It is through game-based learning that students are exposed to performance learning in which they are required to perform a task as a result of instruction. By following this approach, students are involved in a learning process that is both interesting and fun and they could learn to master the skills in a more amusing way. The current study raises new questions

for future research that include but are not limited to: How is game-based learning affective in other fields of writing like descriptive or cause/effect essay? How is game-based learning different in teaching how to debate in other forms of communication (listening and speaking)?

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Appendix A: Essay Rubric

ENG 100 / 110 ARGUMENTATIVE ESSAY

Content 50% Mechanics 50%	**A + 100**	**A 90**	**B 80**	**C 70**	**D 60**	**F 10**
Introduction (10%)	A very well-developed introductory paragraph contains detailed & rich background information, a clear explanation or definition of the problem, devices to create interest, and a well-formed, properly placed thesis statement clearly stating a position. Counter argument is added to the thesis. (5+ sentences)	A developed introductory paragraph contains detailed background information, an explanation of the problem, device to create interest, and a properly placed thesis statement clearly stating a position.(counter argument may not be added, min 4-5 sentences)	Introductory paragraph contains some background information, a technique for creating interest, and states the problem, but may lack details. States the thesis of the paper.	Introduction does not adequately explain the background of the problem nor attempts to create interest. The author's position on the topic (thesis) is weak.	Thesis is vague or unclear. Writer does not attempt to create interest. Background details are random collection of information, unclear, or not related to the topic.	Introduction paragraph doesn't exist, or incomplete. There is no recognizable thesis statement.
Arguments (20%)	Includes 2 or more strong arguments with satisfying and relevant evidence supporting the author's position. (5 sentences for each argument)	Includes 2 strong arguments with relevant evidence supporting the author's position.	Includes 2 arguments and both have evidence supporting the author's position, though one may need details. (1 less than 5 sentences)	Includes 2 arguments, but one or both may lack development. There are one or two examples that are not relevant enough to support the thesis.	There are 1 or 2 arguments, but they are weak and irrelevant or repetitious. Obvious lack of logical argument throughout.	Arguments do not exist or do not relate to the topic.
Counter Argument & Refutation (10%)	Opposing argument is well-identified. The author refutes the opponents logically. Both opposing idea and refutation have example or evidence. (5+sentences)	Opposing argument is clear. The author refutes the opponents logically, with evidence.	Opposing argument is identified. Refutation is moderately clear, but may not present a solid counterpoint or back it up with evidence.	Opposing argument is mentioned but not very clear and/or Refutation is vague or just repeating the previous arguments.	Opposing argument is not identified well, refutation is missing or vague. (No refutation)	Counter argument paragraph doesn't exist.
Conclusion (10%)	Conclusion summarizes the main topics without repeating previous sentences; writer's commentary and suggestions for change are creative, logical and well thought	Conclusion summarizes the main topics without repeating previous sentences; writer's commentary and suggestions for change are logical.(1-2	Conclusion summarizes main topics but may not be restated adequately. Some suggestions for change are evident although not creative.	Conclusion summarizes main topics, but is not restated well. Not enough suggestions for change and/or commentary are included. It may bring up a new topic.	Conclusion does not adequately summarize the main points. No commentary or suggestions for change are included. It contains irrelevant, new topics.	No recognisable conclusion, or incomplete.

	out. Min 2-3 sentences for personal input.	sentences for personal input)				
Grammar (20%) Sentence Structure Punctuation, Capitalization	Sentence structure is correct and sentences are varied. Complex sentences dominate and are error-free. Punctuation and capitalization are correct.	Sentence structure is correct. Some complex sentences exist and mostly error-free. Punctuation and capitalization are correct.	Sentence structure is generally correct. Sentences show variety, with an attempt to form compound and complex sentences. Max 3 awkward sentences.	Essay contains max 5 grammatical errors & awkward sentences. There are 4-5 errors in punctuation, capitalization. The majority of sentences are simple, compound and complex sentences are rare	Essay contains 6-10 incorrect sentence structures. Predominantly simple sentences and complex sentences are always awkward.	Essay contains more than 10 errors in grammar and spelling that interfere with meaning.
Organization & Paragraphing (15%)	Logical progression of ideas in essay; clear structure which develops the central idea and moves the reader through the text. Organization flows smoothly. Effective, mature, graceful transitions exist throughout the essay, in every paragraph.	Logical progression of ideas in essay; clear structure which moves the reader through the text. Organization flows smoothly. Satisfying number of transitions / efficient paragraphing exist throughout the essay.	Overall, the paper is logically developed. Progression of ideas moves the reader somewhat through the text. Transitions or efficient paragraphing exist in most parts.	Progression of ideas is awkward, and may cause confusion in some parts. Paragraphing is not efficient. Transitions appear periodically.	Arrangement of essay is not clear. The writing lacks a clear sense of direction. Ideas seem to be put together randomly. A few, forced transitions may exist in the essay.	Arrangement of essay is illogical. There is no identifiable internal structure. Readers have trouble following the writer's line of thought. No transitions are present.
Vocabulary / Spelling (15%)	Vocabulary is at college level. Idıomatic expressions exist. Word choice is always appropriate and topic-specific. No spelling errors.	Vocabulary is at college level. Word choice is appropriate. No spelling errors, or just 1-2 typos.	Vocabulary is mostly at college level, with max 3 examples of poor/incorrect word choices. Max 3 spelling errors may exist.	Vocabulary variety is somewhat limited, 4-5 errors in word choice and max 5 spelling errors.	Vocabulary is elementary and writing is awkward due to poor/incorrect word choice (max 10). Spelling errors are common.	Vocabulary is elementary and writing is awkward due to poor/incorrect word choice and spelling errors (more than 10).

Appendix B: IRB Approval

EXEMPT DETERMINATION

March 17, 2021

Dalal Boland
10420 North McKinley Drive Tampa, FL 33612

Dear Dalal Boland:

On 3/16/2021, the IRB reviewed and approved the following protocol:

Application Type:	Initial Study
IRB ID:	STUDY002340
Review Type:	Exempt 1
Title:	The Use of Video Games in Teaching EFL Students to Write Arguments
Protocol:	• Updated Protocol;

The IRB determined that this protocol meets the criteria for exemption from IRB review.

In conducting this protocol, you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Please note, as per USF policy, once the exempt determination is made, the application is closed in BullsIRB. This does not limit your ability to conduct the research. Any proposed or anticipated change to the study design that was previously declared exempt from IRB oversight must be submitted to the IRB as a new study prior to initiation of the change. However, administrative changes, including changes in research personnel, do not warrant a modification or new application.

Ongoing IRB review and approval by this organization is not required. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these activities impact the exempt determination, please submit a new request to the IRB for a determination.

Sincerely,

Jennifer Walker
IRB Research Compliance Administrator

Institutional Review Boards / Research Integrity & Compliance
FWA No. 00001669
University of South Florida / 3702 Spectrum Blvd., Suite 165 / Tampa, FL 33612 / 813974-5638

Appendix C: GUST Letter of Approval

GUST | ENGLISH DEPARTMENT

March 12, 2021

RE: Dalal Boland's Research

To Whom It May Concern:

I am a member of Ms. Dalal Boland's Ph.D. committee and Chair of the English Department at Gulf University for Science and Technology. Ms. Boland will be conducting her study and gathering her data in the department during the Spring 2021 semester. A writing composition faculty member has agreed to allow her to use two sections of his ENGL 112 class for her study.

As previously discussed with Ms. Boland, the university supports research; especially research involving former GUST graduates of which Ms. Boland is one. According to GUST policies regarding research, an approved IRB from her current institution is required. I hope her IRB application can be expedited as it should be submitted prior to the start of her research.

Please let me know if any additional information is required.

Regards,

Dr. Cathy Daniel

Chair, English Department

Gulf University for Science & Technology

Kuwait

daniel.c@gust.edu.kw

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Dr. Cathy Daniel

Head of English Department