

HIGH SCHOOL STUDENTS' VIDEO GAME INVOLVEMENT AND THEIR ENGLISH LANGUAGE LEARNING MOTIVATION: A CORRELATION STUDY

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ABSTRACT

Video games, as the most frequent tools of computer technologies, have been integrated into classroom teaching through experimental studies. However, there is still much to investigate if and to what extent video game involvement (VGI) in informal settings can influence students' language learning motivation (LLM) in formal settings. Adopting a survey methodology with the participation of heavy and frequent video game players, this study examined 100 high school students' LLM, both instrumental and integrative, and their VGI. The relationship between LLM and VGI was also examined from various angles. Descriptive, inferential statistics and correlation tests were employed for data analysis. The results revealed that the students had moderate LLM, with stronger and statistically significant integrative motivation ($z = -3.407$, $p = .001$). Despite being negative and weak, VGI in English correlated with LLM ($r_s = -.355$, $p < .01$), integrative motivation ($r_s = -.347$, $p < .01$), and instrumental motivation ($r_s = -.339$, $p < .01$). However, a very strong and statistically significant correlation was found between VGI in English and the time spent doing so ($r_s = .948$, $p < .01$). A Mann-Whitney U test showed statistically significant difference in both LLM and integrative and instrumental motivation between VGI in Turkish and VGI in English ($p < .05$). The findings could highlight the significant role of integrative motivation on LLM. The close relationship between VGI in English and the time spent doing so, and also the statistically significant difference between VGI in Turkish and VGI in English, could suggest VGI as an opportunity for learners to interact more easily with English speakers and get to know them more and better.

Keywords: *integrative and instrumental motivation, formal and informal learning environments, language learning motivation, video games*

INTRODUCTION

Motivation has been a frequently researched topic in second- and foreign-language teaching and learning for a long time since Robert Gardner laid the foundations of motivation research (Dörnyei & Ushioda, 2011). As one of the key factors acknowledged and examined among individual

differences, motivation is regarded as the combination of one's interest to enjoy and to put effort into language learning (Nakamura, 2016) "to develop proficiency sufficient to facilitate social functioning and engagement in meaningful and enriching interactions" (Henry & Davydenko, 2020, pp. 364–365). In this vein, motivation is seen

to have a significant influence on language learning achievement (Dörnyei, 2005a). The role played by motivation as an important, noticeable factor affecting learning and the success of learners has always been emphasized (Dashtizadeh & Farvardin, 2016; Hudson, 2017; Piniel & Csizér, 2013; Schunk et al., 2014). However, its difficulty and complexity to be theorized and examined is also highlighted (see Nakamura, 2016). It is for this reason that “the landscape of language learning motivation has changed almost beyond recognition” (Dörnyei & Ushioda, 2011, p. xi). Despite the rich body of knowledge and research on motivation, “researching motivation in language learning [is still regarded] as complex and multifaceted” (Bower, 2019, p. 558). It is probably for this reason that there have been various definitions and classifications of it. For instance, Dörnyei and Otto (1998) defined motivation as “the dynamically changing cumulative arousal in a person that initiates, directs, coordinates, amplifies, terminates, and evaluates the cognitive and motor processes whereby initial wishes and desires are selected, prioritized, operationalized and (successfully or unsuccessfully) acted out” (p. 64). On the other hand, motivation is also defined as “the result of an interaction with the target culture and the target language” (Guerrero, 2015, pp. 96–97). The latter definition is a result of the approach that Wallace Lambert and Robert Gardner adopted to define motivation, as “they saw second languages as mediating factors between ethnolinguistic communities and considered motivation to learn the language of the other community as a primary force enhancing or hindering intercultural communication and affiliation” (Dörnyei & Ushioda, 2011, p. 40). These definitions show the role of two mechanisms: internality and externality, which have further resulted in different classifications of motivation.

Motivation is classified into integrative and instrumental. Integrative motivation “requires openness to the L2 [second language] group and willingness to adopt features from it” (Al-Hoorie, 2017, p. 1). It also necessitates “the desire to interact with and even become similar to valued members of that community” (Dörnyei & Ushioda, 2011, p. 41). Therefore, this type of motivation indicates that language learners want to learn not only the language but also its people and culture. Research shows that learners with this type of orientation put much effort into learning the language

and have a higher academic self-concept (Cokley et al., 2001). They also want to improve their communication with English speakers, become friends with them, learn their culture and life, and, most importantly, be respected and accepted as members of English-speaking society (Hudson, 2017). Hence, integrative motivation, alternatively known as intrinsic motivation (Ryan & Deci, 2000), has been examined a lot as it is thought to influence positively language learning (Al-Hoorie, 2017). On the other hand, instrumental motivation, commonly regarded as extrinsic motivation, refers to any pragmatic reason to learn the language to pass an exam, advance a career, or receive incentives (Liuolienė & Metiūnienė, 2006), or to have “a better job and higher salary” (Dörnyei & Ushioda, 2011, p. 41).

The superiority of integrative motivation over instrumental motivation is agreed upon, but research into instrumental motivation (Brown, 2000; Dörnyei, 1990; Dörnyei & Otto, 1998) disclaimed this superiority. Dörnyei & Otto (1998) stated that instrumental motivation is an important part of motivation, especially for learners who do not have the opportunity to become a part of the target culture, or when not all activities are adequately new, attractive, or difficult to be intrinsically motivating (Ryan & Deci, 2000). In such situations, learners tend to have instrumental motives simply with the expectation of receiving rewards or any kind of incentives.

There have been discussions of these two concepts of motivation regarding their impact on language learning motivation (hereafter LLM). Many researchers worldwide agree that integrative motivation has a more important role on learning than instrumental motivation (Gardner & Lambert, 1959; Noels et al., 2000) because integrative motivation represents a will to participate in the social groups that use the target language. Gardner and MacIntyre (1991) reported that both types of motivation affect language learning, but those who were instrumentally motivated lose their motivation when the incentive was removed. Studies also revealed that instrumental motivation determines LLM more than integrative motivation (see Al-Ta’ani, 2018; Rozmatovna, 2020). Research in young Turkish learners’ motivation to learn English showed that they wanted to learn English to talk to tourists, understand them, and meet

foreign kids visiting their schools (Asmalı, 2017). However, these two concepts are not in opposition (Dörnyei, 2001). Better results are yielded when integrative and instrumental motivation are integrated (Wan-er, 2008).

Studies reveal the importance of motivation in education both in and beyond the local body of literature. In this regard, there has been interest in understanding motivation from different perspectives, such as if it has any relationship to such variables as gender, perceived proficiency, and achievement (Dashtizadeh & Farvardin, 2016; Sakiroglu & Dikilitas, 2012); young learners' level of motivation and their attitudes towards English lessons (Asmalı, 2017; Kızıltan & Atlı, 2013); high school learners' self-efficacy beliefs and their LLM (Şener & Erol, 2017); or reasons to learn English and motivation (Hudson, 2017). Research also showed a positive correlation between university students' attitudes towards learning English and their LLM (Öztürk, 2014). Multilingual learners were reported to have higher levels of LLM than bilingual learners (Thompson & Erdil-Moody, 2016). Significant positive correlation between learners' LLM and their willingness to communicate was also reported (Ma et al., 2019). Japanese international students with stronger integrative motivation were found to be more willing to communicate in English as they get more acculturated in the United States (Aoyama & Takahashi, 2020). Family influence and self-efficacy were also seen to play a significant role on high school students' LLM (Shih & Chang, 2018).

The effect of LLM on education has been studied by many researchers (Deci et al., 2001; Engin, 2009; Kyndt et al., 2011). With the entrance of technology and computers into educational settings for the last couple of decades, research has integrated technology and mobile tools, such as WhatsApp, avatar identities, or mobile-assisted English tenses tool, into language teaching to examine their likely contributions to language learners' knowledge of English and LLM (Alamer & Al Khateeb, 2021; Chen & Kent, 2020; Refat et al., 2020). Studies showed that these tools had statistically significant contributions on English learning outcomes (An et al., 2021) and significant improvement on students' autonomous motivation covering their psychological needs of sense of autonomy, competence, and relatedness (see Alamer & Al Khateeb,

2021). In their study of struggling English learners' task performance and motivation through their avatar identities in virtual world, Chen and Kent (2020) reported improved motivation and verbal communication skills and easier language use. They also reported that "the game factor also transformed a conventional English class into a fun virtual learning playground" (p. 1). However, with the engagement of young and high school learners with computers to play video games, there is now a stronger need to research the effect of video game involvement (hereafter VGI) on learners' LLM. Research worldwide focuses on use of educational or commercial video games' effects on acquiring language in formal (Alrajhi, 2020; Enayat & Haghghatpasand, 2019; Iacovides et al., 2012; Poštić, 2015; Väisänen, 2018) and informal learning environments (Horowitz, 2019; Sundqvist, 2019). Research reported that online video games contribute to the development of French university students' English language skills and their confidence in use of English due active use of the corpus specific to gaming (see Peake & Reynolds, 2020). Studies in Turkish context revealed the positive effect of computer aided education on learning success and motivation (Bayturan, 2011; Güven & Sülün, 2012). Despite the interest in how computers contribute to learners' motivation in classroom environment, to our best knowledge there has been no study focusing on high school learners' VGI in informal settings and its likely influence on their LLM in formal settings. Therefore, this study is one of the first attempts to do so.

REVIEW OF THE LITERATURE

Video Game Involvement and Language Learning Motivation

Despite the intensity of research on motivation and despite "sixty years of language motivation research" as Al-Hoorie (2017, p. 1) defined it, there are still many aspects that are worth paying attention to, some of which have been revealed with technological developments. As Stockwell (2013, p. 156) stated, "as technologies have become more sophisticated, the growing range of use of technology in and out of the classroom increases the potential for enhanced motivation." One of the uses is video games, one of the most popular entertainment tools nowadays, as educational tools, and some such as Lingio, Lango, StudyCat,

and Quicklernr are solely designed for educational purposes. Egenfeldt-Nielsen et al. (2013) called such games edutainment. Reinhardt and Sykes (2012) defined this kind of learning as game-based learning, which is defined as “any initiative that mixes video games and education” (Moreno-Ger et al., 2008, p. 2531). However, besides using video games as learning tools in formal learning, there are opportunities for language learners to use video games in informal learning situations, i.e., out of classroom environment. Reinhardt and Sykes (2012) defined this kind of learning as game-enhanced learning.

Kozlova (2021) stated that video games trigger motivation. Hakkarainen and Sintonen (2002) stated that an effective way of motivating learners is to teach English through games. According to Kinzie and Joseph (2008), there are six activity modes, ranging from active explorative involvement to social and creative, that play a role in high school students’ game involvement preference and could appeal to them more than educational games. Studies report that learners have positive attitudes towards the integration of video games into English learning as they find them facilitative and contributory (see Alrajhi, 2020) and curriculum informed by game-based instruction is observed to help learners engage more in classroom instruction, feel more motivated to set learning goals, and become more successful (see Barab et al., 2012). Enayat and Haghighatpasand (2019) reported that undergraduate students who were put into an experiment group and played video games showed statistically significant differences in terms of receptive and productive vocabulary recall compared to those in the control group. In their review study, Zou et al. (2021) reported that game-based learning has positive influence on motivation and contributes to various language skills such as vocabulary, listening, and reading comprehension. Another meta-analysis reported that video-game based learning has the potential to create significant difference on English vocabulary acquisition, and their integration into classroom teaching can result in large and important student achievement (see Thompson & von Gillern, 2020). These indicate that video games are not only favorable because they are rich in activities drawing learners’ attention, but they also can serve as an incitement for them. Hence, video games help a teacher find what

content is interesting for learners outside of classroom hours.

In this regard, a recent area of interest in motivation studies is VGI. Gamlo (2019) examined mobile game-based language learning applications’ effect on Saudi female university students’ English learning motivation during their preparatory year and reported that their motivation was instrumental and high as they wanted to gain high scores to start studying their majors. A recent study examining the English vocabulary learning and motivation of Iraqi students through story-based video games revealed statistically significant differences between experimental and control groups (Hintaw Abdulhussein & Alimardani, 2021). In her longitudinal study of young Danish students’ English LLM, Fenyvesi (2020) reported that high achievers displayed higher motivation as they played games in English and watched YouTube videos, compared to low achievers who were motivated by interacting with their parents in English. However, all were motivated by English as an international language. A study by Iacovides et al. (2012) examined key research that relates to motivation, engagement, and informal learning through video games and highlighted that gaming experience does not start with the command that says, “Press Start.” Before playing, a gamer asks oneself, “Why this game? Why now? Why keep playing and what does all this have to do with learning?” The study states that it is important to explore the links between what motivates a player to play a game, what keeps them playing the game, and what they learn from the game that relates to motivation, engagement, and informal learning. Another study by Ebrahimzadeh and Alavi (2017) examined the effect of a video game on Iranian high school students’ LLM. The participants were 241 male Iranian high school students between 12 and 18 years old. They put the students into three groups: readers, players, and watchers who watched the other two group members reading and playing the game. Data collected through pretests and posttests showed that the treatment increased the students’ LLM. Väisänen (2018) examined what kind of experiences Finnish English language learners have through playing video games, if they learn different language skills, and if video games affect their LLM. The data collected through a series of semistructured interviews showed notable

Table 1. Participants' Characteristics

| When they started playing video games | | How much time they spend playing video games in Turkish | | If they play video games in English | | How much time they spend playing video games in English | |
|---------------------------------------|----|---|----|-------------------------------------|----|---|----|
| Age | f | Hour(s) | f | Response | f | Hour(s) | f |
| Under 8 | 12 | 5 | 6 | Yes | 45 | 5 | 5 |
| 8-10 | 35 | 6-10 | 13 | | | 6-10 | 16 |
| 11-13 | 42 | 11-15 | 18 | | | 11-15 | 13 |
| 14-16 | 10 | 16-20 | 36 | No | 55 | 16-20 | 9 |
| 17-18 | 1 | More than 21 | 27 | | | More than 21 | 2 |

difference regarding LLM and language learning experiences. Väisänen (2018) stated that games that necessitated more attention to progress were connected to more detailed experiences of vocabulary learning, while simpler games were connected to experiences of nonlearning. The study found that younger participants' LLM was more positively affected by VGI since video games provided them with a concrete need for English language skills. Older participants were negative towards this idea and felt that their English skills were sufficient and they did not need to study the language anymore. Additionally, in their quantitative descriptive study, Rudis and Poštić (2018) investigated the connection between playing video games and English proficiency. The results indicated a definite positive relationship between video games and English language learning success. Most of the participants stated that video games helped them learn English.

METHOD

The primary purpose of this study was to find out if high school students' VGI has any effect on their LLM. The study examines the students' LLM and if integrative or instrumental motivation determines their English LLM. Together with the effect of VGI as an organic experimental factor in informal settings on their LLM, we examined the correlation between LLM and different variables such as the age that they started playing video games, how much time they spend playing video games a week, if they play video games in English or in Turkish, and if so, how much time they spend playing to look for a likely relationship between LLM and VGI. In this regard, quantitative methodology best suited these purposes as it is best for descriptive and correlational research (Charles, 1988 cited in Taylor, 2005b).

Participants

The study was conducted with high school students ($N = 100$) studying in 43 cities in Turkey. The sample size was 142 students, but 42 of them were disregarded during initial data cleaning due to incomplete and inconsistent data. As the method of sampling was purposeful, which means that the participants had "key characteristics that are related to the purpose of the investigation" (Dörnyei, 2005b, p. 99), all were playing video games. Almost a quarter ($f = 24$) were from Istanbul. Their age ranged between 15 and 19, with the majority of them ($f = 28$) age 16 and the average age was 16.5. Seventy-five of the participants were males and 25 were females. There were 24 9th and 12th graders, 27 10th graders, and 25 11th graders.

To draw a complete picture of their profiles, they were asked when they started playing video games, how much time they spend doing so a week, if they play video games in English, in addition to Turkish, and how much time they spend playing. Table 1 presents the results.

As seen above, 42 of the students started playing video games between the ages of 11 and 13, others ($f = 35$) started between eight and ten, some ($f = 12$) started before the age of eight, and a few ($f = 10$) started between the age of 14 or 16. Only one started between 17 and 18. A majority of the students had plenty of experience as video gamers. Additionally, they were asked how much time they spent a week playing video games. Many ($f = 36$) spent between 16 and 20 hours, more than a quarter ($f = 27$) played more than 21 hours, some ($f = 18$) played between 11 and 15 hours, a few ($f = 13$) spent six to ten hours, and very few ($f = 6$) spent six hours. The results are really striking as

the students spent quite a lot on VGI. Moreover, they were asked if they played video games in English, and 45 reported that they did, while 55 reported otherwise, which means they only played video games in Turkish. Sixteen of those who played video games in English were playing between six and ten hours, 13 of them were spending between 11 and 15 hours, some ($f = 9$) were playing between 16 and 20 hours, and very few ($f = 2$) were spending more than 21 hours. The participants can be regarded as heavy video gamers since great majority of them, 63 percent, spend almost four hours a day playing, which Colder Carras et al. (2017) determined was a high use of games or heavy gaming. Yılmaz et al. (2018) also regard four hours of video gaming per day as an indicator of heavy gaming.

Instrumentation and Data Collection

For data collection, we used the revised version of Vaezi's (2008) Motivation scale, which was adopted into Turkish by Şener and Erol (2017). The original version of the scale was based on Gardner's (1985) Attitude and Motivation Test Battery and was used in many studies worldwide. The scale has 25 items representing two subdomains as integrative (items 1–12) and instrumental (items 13–25) motivation. Items were on a Likert type scale ranging from strongly agree to strongly disagree. In the current study, to fulfill the criteria for the validation and reliability, the Turkish version adopted by Şener and Erol (2017) was used. They translated and back translated the scale to assure its contextual validation, and for the reliability of the scale Şener and Erol reported the Cronbach Alpha reliability score as ($\alpha = .94$). The Cronbach Alpha reliability score for integrative motivation subscale was ($\alpha = .91$), and ($\alpha = .92$) for the instrumental motivation subscale. In the current study, the Cronbach alpha reliability score for the scale was ($\alpha = .90$), the score for integrative motivation subscale was ($\alpha = .83$), while it was ($\alpha = .82$) for the instrumental motivation subscale. In this regard, both Şener and Erol's and the current study revealed that the Motivation scale has excellent reliability (see George & Mallery, 2003). The reliability scores of the subscales in the current study showed good reliability. Besides the motivation scale and its subscales, we designed a participant profile section including two parts: one for their demographic information and the other for their VGI.

The scale was implemented online through Google Forms. The first researcher, who is also a video gamer, contacted the participants through groups in the video game digital distribution service Steam. The first contact was with the directors of video game groups on Steam to inform them about the study. With their approval, a room on the software channel called Discord was opened to further inform the video gamers through a written consent. The researcher then contacted the participants who showed interest in the study via VoIP (Voice over Internet Protocol), also known as Internet Protocol telephony, to maintain voice communications. This software seemed suitable due to its convenience and frequent use among players. All participants were informed about the study before starting the data collection process and the study was conducted on a voluntary basis. A Google Forms link of the questionnaire was sent to the players who stated that they wanted to participate in the study during these voice calls.

Data Analysis

For data analysis, SPSS software was used to run both descriptive and inferential statistics. The data regarding participant characteristics were analyzed through frequencies, and data regarding LLM were analyzed through means and standard deviations and nonparametric Wilcoxon Signed Rank test. As for the relationship between the students' LLM and VGI, correlation tests were performed. Before correlation tests, which are to determine if two or more variables relate or tend to relate (Taylor, 2005a), a normality test was run to determine which type of correlation test to perform. As the sample size was 100, Kolmogorov-Smirnov test was used ($p = .004$), and this showed that the data were nonnormally distributed ($p < .05$) (see Mishra et al., 2019). Therefore, Spearman's Rho (r_s) test was run. Lastly, to see if VGI in English creates any difference in the students' LLM and integrative and instrumental motivation, a Mann-Whitney U test was run. The details are presented below.

FINDINGS

This study set out to examine if VGI, as an organic experimental factor in informal settings, has any effect on high school students' LLM, and if there is any link between the two. Before looking at the relationship from different angles, we analyzed data regarding the participants' LLM

Table 2. Item Analysis Regarding Integrative Motivation

| Integrative Motivation Scale Items | <i>M</i> | <i>SD</i> |
|--|----------|-----------|
| I study English . . . | | |
| 1. to be more at ease with other people who speak English. | 3.14 | 1.05 |
| 2. to meet and converse with more and varied people. | 3.13 | 1.37 |
| 3. to better understand and appreciate English art and literature. | 3.05 | 1.20 |
| 4. to participate more freely in the activities of other cultural groups. | 3.36 | 1.24 |
| 5. to know the life of the English-speaking nations. | 3.33 | 1.14 |
| 6. to understand English pop music. | 3.30 | 1.25 |
| 7. because the more I get to know native English speakers, the more I like them. | 3.36 | 1.27 |
| 8. to know various cultures and peoples. | 3.33 | 1.23 |
| 9. to keep in touch with foreign friends and acquaintances. | 3.41 | 1.12 |
| 10. to know more about native English speakers. | 3.29 | 1.26 |
| 11. because the British are kind and friendly. | 3.39 | 1.20 |
| 12. because Americans are kind and cheerful. | 3.28 | 1.21 |
| Total | 3.28 | .72 |

and found they were moderately motivated to learn English ($M = 3.20$, $SD = .65$). The overall means and standard deviations for integrative and instrumental motivation subscales were also calculated. Tables 2 and 3 present the results.

As can be seen, the students' integrative LLM was found to be moderate ($M = 3.28$, $SD = .72$). To make more sense of this, we took a closer look at the items in this subscale. The strongest integrative motivation factor was to keep in touch with foreign friends and acquaintances ($M = 3.41$, $SD = 1.12$). The second strongest integrative motivational factor was their perceptions regarding British people that they found to be kind and friendly ($M = 3.39$, $SD = 1.20$). Participating more freely in the activities of other cultural groups and fancying native English speakers as they get to know them more were other items having equal influence on their integrative motivation ($M = 3.36$). They also found being informed about the life of English-speaking nations and various cultures and people adequately motivating ($M = 3.33$). Studying English also motivated the participants to understand English pop music ($M = 3.30$, $SD = 1.25$). Considering the place of English songs in the popular culture and among the youth, we see that this item makes quite a lot of sense. The participants felt motivated to know more about native English speakers ($M = 3.29$, $SD = 1.26$), and they found American people to be kind and cheerful, which motivated them to study

English ($M = 3.28$, $SD = 1.21$). On the other hand, studying English to be more at ease with other people speaking English ($M = 3.14$) and meeting and conversing with more and varied people ($M = 3.13$) were relatively less motivating. Lastly, the participants found studying English to better understand and appreciate English art and literature to be the least motivating integrative factor ($M = 3.05$).

The participants' instrumental motivation was also seen to be moderate ($M = 3.13$, $SD = .63$). Items are examined carefully to better understand this type of motivation.

As the table shows, the strongest item influencing participants' instrumental motivation was their awareness regarding the need for English in their future career ($M = 3.34$, $SD = 1.13$). They also felt motivated as they thought an educated person is supposed to be able to speak English ($M = 3.27$) and it would make them a more knowledgeable person ($M = 3.26$, $SD = 1.18$). Being able to search for information and materials on the internet was another motivating factor ($M = 3.26$, $SD = 1.05$). Studying English so they can understand English-speaking films, videos, or radio, and because it made them feel happy were equally influential on their motivation ($M = 3.22$). The participants perceived that studying English was an asset making them prestigious as they thought they would be respected more ($M = 3.15$). Also, they perceived English to be a tool helping them get a good job

Table 3. Item Analysis Regarding Instrumental Motivation

| Instrumental Motivation Scale Items | M | SD |
|--|------|------|
| I study English because . . . | | |
| 13. I will need it for my future career. | 3.34 | 1.13 |
| 14. it will make me a more knowledgeable person. | 3.26 | 1.18 |
| 15. it will someday be useful in getting a good job. | 3.14 | 1.19 |
| 16. other people will respect me more if I know English. | 3.15 | 1.14 |
| 17. I will be able to search for information and materials in English on the Internet. | 3.26 | 1.05 |
| 18. I will learn more about what is happening in the world. | 3.13 | 1.20 |
| 19. language learning often gives me a feeling of success. | 3.07 | 1.07 |
| 20. language learning often makes me happy. | 3.22 | 1.18 |
| 21. an educated person is supposed to be able to speak English. | 3.27 | 1.18 |
| 22. I can understand English-speaking films, videos, TV, or radio. | 3.22 | 1.12 |
| 23. I can read English books. | 3.08 | 1.11 |
| 24. I want to know new people from different parts of the world. | 3.03 | 1.21 |
| 25. without it one cannot be successful in any field. | 2.55 | 1.02 |
| Total | 3.13 | .63 |

Table 4. Wilcoxon Signed Ranks Test for Integrative and Instrumental Motivation Scales

| | | Ranks | | | | |
|---|----------------|-------|-----------|--------------|----------|------|
| | | N | Mean rank | Sum of Ranks | z | p |
| InstrumentalMotivationMean- IntegrativeMotivationMean | Negative ranks | 64a | 53.92 | 3451.00 | -3.407b* | .001 |
| | Positive ranks | 35b | 42.83 | 1499.00 | | |
| | Ties | 1c | | | | |
| | Total | 100 | | | | |
| a. InstrumentalMotivationMean < IntegrativeMotivationMean | | | | | | |
| b. InstrumentalMotivationMean > IntegrativeMotivationMean | | | | | | |
| c. InstrumentalMotivationMean = IntegrativeMotivationMean | | | | | | |

*b. Based on positive ranks

($M = 3.14$) and learn more about what is happening in the world ($M = 3.13$). However, they were less motivated towards some factors such as being able to read English books ($M = 3.08$), experiencing feeling of success ($M = 3.07$), and getting to know new people from different parts of the world ($M = 3.03$). Lastly, the participants were found almost not to agree with the item that said one cannot be successful in any field without English ($M = 2.55$). Therefore, this idea is seen to have almost no influence on their instrumental motivation.

Details regarding the items on both scales helped us clarify the participants' LLM and see if

it was integrative or instrumental. As the analysis revealed, their integrative motivation was stronger ($M = 3.28$) than their instrumental motivation ($M = 3.13$). To further examine if the difference between two types of motivation is statistically significant, we carried out a Wilcoxon Signed Ranks test, which compares two sets of data coming from the same participants in nonnormally distributed data. The result is presented in Table 4.

As the table shows, the difference between the participants' integrative and instrumental motivation was statistically significant ($z = -3.407$, $p = .001$). This indicated that their integrative

Table 5. Correlation Coefficients (Spearman rho) between LLM and Various Factors of VGI (N = 100)

| | | LLM related factors | | | | VGI related factors | | | |
|--------------------------------|----|---------------------|---------|---------|-------|---------------------|--------|---|--|
| Values | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| 1-LLM | rs | 1 | | | | | | | |
| | p | | | | | | | | |
| 2-Integrative motivation | rs | .959** | 1 | | | | | | |
| | p | .000 | | | | | | | |
| 3-Instrumental motivation | rs | .937** | .824** | 1 | | | | | |
| | p | .000 | .000 | | | | | | |
| 4-Age | rs | -.045 | -.028 | -.084 | 1 | | | | |
| | p | .654 | .779 | .408 | | | | | |
| 5-Time spent on VGI in Turkish | rs | -.122 | -.157 | -.073 | -.132 | 1 | | | |
| | p | .227 | .119 | .467 | .182 | | | | |
| 6-VGI in English | rs | -.355** | -.347** | -.339** | .167 | -.043 | 1 | | |
| | p | .000 | .000 | .001 | .096 | .673 | | | |
| 7-Time spent on VGI in English | rs | -.297** | -.285** | -.288** | .187 | .087 | .948** | 1 | |
| | p | .003 | .004 | .004 | .62 | .391 | .000 | | |

** Correlation is significant at the 0.01 level (2-tailed)

motivation was statistically and significantly stronger and had a bigger role on their LLM.

As for the likely relationship between the participants' LLM and their VGI, a careful look at various factors was needed. Therefore, we examined any correlation between the age that they started playing video games, amount of time they spend playing videogames in Turkish each week, playing video games in English, and time spent doing so and their LLM, integrative and instrumental motivation. The results are presented in Table 5.

The table shows the correlation between LLM and VGI from different angles. First and foremost, LLM and its subscales correlate with each other. For instance, LLM had a very strong and positive correlation with both integrative ($rs = .959, p < .01$) and instrumental ($rs = .937, p < .01$) motivation. Integrative and instrumental motivation were also seen to correlate with each other ($rs = .824, p < .01$). Therefore, the results showed that as the high school students' integrative and instrumental motivation increase, their LLM does too. This means that any source that can encourage the learners to learn English either for integrative or instrumental reasons strengthens their overall LLM.

When it comes to the correlation between VGI

and LLM, it was ($rs = -.122$). Both integrative ($rs = -.157$) and instrumental ($rs = -.073$) motivation were found to have a very weak and negative correlation with VGI. This means the participants' VGI in Turkish had no influence on their LLM as the correlation coefficients were not statistically significant ($p > .01$). On the other hand, despite being negative and weak, playing video games in English correlated with LLM ($rs = -.355, p < .01$), integrative motivation ($rs = -.347, p < .01$), and instrumental motivation ($rs = -.339, p < .01$). To further understand if the difference observed between VGI in Turkish and VGI in English was statistically significant, we performed a Mann-Whitney U test. The results were found to be significant for LLM ($z = -3.535, p = .000$) and also for integrative motivation ($z = -3.455, p = .001$) and instrumental motivation ($z = -3.368, p = .001$). This shows that VGI in English was a significant factor on the students' overall LLM and integrative and instrumental motivation as well.

Moreover, spending time playing video games in English was also seen to correlate with LLM ($rs = -.297, p < .05$), integrative motivation ($rs = -.285, p < .05$), and instrumental motivation ($rs = -.288, p < .05$). Despite being negative and weak, the correlation coefficients were seen to be

statistically significant. The results also revealed an interesting but statistically significant link between VGI and LLM. As high school learners played video games in English and as they spent more time on that, their LLM was seen to decrease. However, another interesting result was that the more participants played video games in English, the more they wanted to keep being involved in that ($r_s = .948, p < .01$). This link was both very strong and statistically significant and could help explain the statistically significant difference that VGI in English makes on LLM and integrative and instrumental motivation.

DISCUSSION

Setting out to examine the relationship between high school students' VGI, as an organic experimental factor, in informal settings and its likely effects on LLM in formal settings, this study firstly examined their LLM to explore which type of motivation determines their language learning. The findings showed that the participants had stronger integrative motivation, which is statistically significant. In this regard, although studies report superior instrumental motivation among diverse groups of students (see Al-Ta'ani, 2018; Gamlo, 2019; Hong & Ganapathy, 2017; Mehrpour & Vojdani, 2012; Warden & Lin, 2008), this study supports some other studies disclaiming the superiority of instrumental motivation over integrative motivation (see Asmalı, 2017). For instance, despite revealing that high school students dominantly had instrumental motivation, Gholami et al. (2012) reported that high achievers had stronger integrative motivation. Similarly, Abdul Samad et al. (2012) stated that high achievers' language proficiency correlated well with integrative motivation. In her study with Scottish college learners, Hudson (2017) revealed that integrative motivation as a defining source on learners' wishes to learn English as getting to know the culture of English-speaking society, making friends, and communicating with them were among the major reasons for learning English.

When it comes to the relationship between LLM and VGI, our study revealed an interesting but statistically significant link showing that as high school students play video games in English in informal settings and spend more time doing that, their LLM decreases. Moreover, the study shows a strong, positive, and statistically significant, relationship between playing video games

in English and the desire to keep being involved in that. The difference that VGI in English, compared to VGI in Turkish, made on their LLM and integrative and instrumental motivation was also obvious. Although studies examining the likely link between VGI and LLM are limited, some recent studies conducted in formal settings, i.e., classrooms of various level, reported a positive link between the two constructs, unlike the current study. For instance, in their study of story-based video games for teaching vocabulary to Iraqi high school students, Hintaw Abdulhussein and Alimardani (2021) reported higher vocabulary retention and motivation in the experiment group. In their study of the use of adventure video games on vocabulary learning among Iranian university students, Enayat and Haghightpasand (2019) reported higher vocabulary learning and positive perceptions towards the game and its use among those in the experimental group compared to those in the control group. Additionally, Lombardi (2015) reported improved language learning motivation in a year-long experimental study that piloted a game-informed language teaching methodology through the fictional Fukudai Hero to help students' language skills development, to engage them more in English classes, and to raise their commitment. Another study carried out with Spanish university students to offer them the chance to get to know and interact with video games, Osmar-Ruiz et al. (2015) reported that the students regarded video games as facilitators for language learning. Nonexperimental survey research examining what young Danish students liked about English lessons and what motivated them revealed that gaming was a motivating factor for the high achievers (Fenyvesi, 2020). Also, nonexperimental surveys of university students supported the integration of video games into English curriculum as they expected games to provide them with more opportunities and a comfortable environment to learn and practice English (Alrajhi, 2020).

Additionally, Calvo-Ferrer (2017) conducted an empirical study to investigate the effect of the educational game The Conference Interpreter on second year translation and interpretation students' vocabulary acquisition and perceived learning achievements as compared to a nongaming tool. He found that the students who had access to the game performed better than the nongamers in

pretests and posttests, but it made no difference in terms of their learning achievements. Calvo-Ferrer also pointed out the role played by instrumental motivation in making the students play with the expectation of learning new words. In another experimental study, Chen and Yang (2013) investigated a video game's effect, called BONE, on foreign language acquisition and learners' perceptions. Pretest and posttest results indicated new vocabulary acquisition for both groups without any significant difference. Participants reported that the video game was helpful in language learning and in raising their motivation. Similarly, Galvis Guerrero (2011) conducted a small-scale action study to examine military academy students' perceptions of game-based instruction in English as a foreign language classroom. They collected data via field notes, a survey, and a semistructured interview, and reported that game-based instructions had a positive effect on students' engagement and attention. In their 24-week experimental study about the effects of video games on young learners' vocabulary learning, Vasileiadou and Makrina (2017) reported that the use of video games, especially for the students who were low achievers in the pretest, was remarkable for teaching vocabulary. They also reported that the students perceived vocabulary learning through video games as effective, enjoyable, and motivating. In her experimental study with young Danish learners, Jensen (2017) also showed that gaming significantly contributes to vocabulary learning. A recent nonexperimental study also shows the contributions of games on vocabulary learning, reading and listening comprehension, and speaking development (see Zou et al., 2021).

In areas other than language teaching and learning, video games are employed to examine their likely contributions on learning. For instance, Annetta et al. (2009) investigated a teacher-created video game called Multiplayer Educational Gaming Application and its effect on the learning of simple machines in a 5th grade forces and motion unit, reported statistically significant gains and concluded that games scaffolded learning. Tüzün et al. (2008) used a game called Global Village to teach 4th and 5th graders countries and continents for three weeks and to test its effects on students' achievements and motivation. Through the use of pretests and posttests, they concluded that

the students showed higher intrinsic motivation and lower extrinsic motivation, which were statistically significant. The students also demonstrated less focus on getting grades but more interest in learning. Using an original version of the game Deal or No Deal, Chow et al. (2011) aimed to improve student learning, retention, and critical thinking skills in an introductory statistics course. They put the participants into two groups as gamers and nongamers and concluded that the retention rate for those who did not play games was 59%, while it was 92% for the gamers. They also reported that playing games removed the fear traditionally seen in statistics course, which in turn allowed the tutors to motivate the learners. A very recent experimental study in high school biology and history courses reported the educational value of video games as tools for reflection and media criticism (see Rüth & Kaspar, 2021).

What makes all these studies and their findings different from the current study is their design and context, since the majority are experimental studies conducted in formal settings under the control of teachers and researchers with some direct educational goals to be taught and hypothesis to be tested. Therefore, they employed a strict design that regarded video games as educational tools and observed if and to what extent they produced improvements and contributions to learners' achievement. In studies relating to English language teaching and other areas, VGI is seen to make significant contributions to learning.

Despite having so many contributions and strengths, some studies reported that games do not just work for the sake of being games. Rather, to contribute to language learners learning outcomes (as some games were seen not to do so at all), they need to be interesting, challenging, mysterious, and thought-provoking (see Butler et al., 2014). Unlike the current study, which reports that as the learners spend time playing video games in English they want to keep doing that, in their study of almost four thousand young learners between 4 and 12 years old, Butler et al. (2014) reported that as the students age went up, time spent in gaming decreased. They could not explain the reason for this, but they assumed it might have resulted from the low linguistic level needed to perform in the games. At this point, we need to emphasize that VGI in English in our study was seen to make a significant difference on LLM compared to VGI in

Turkish, and this could result from the perception that the students held towards learning English as they kept being involved in playing video games. Another study carried out with parents of secondary school students aged 12 to 20 to elicit their thoughts about children's VGI, Bourgonjon et al. (2011) showed that parents had negative views of video games and did not believe that video games could be used as educational tools due to the inappropriate content of some videos and the negative image of them in popular culture.

Although studies looking at language learners' VGI in informal settings and its effects on LLM are very limited, to our knowledge, the study conducted by Horowitz (2019) with teenage Spanish speakers of English to examine their VGI and willingness to communicate in English, which Horowitz assumed as an indirect reflection of motivation, showed a moderately positive relationship between time spent playing video games and willingness to communicate. Another positive and statistically significant, but interesting, relationship was reported between time spent playing video games and students' communicative anxiety to speak English in classroom. However, the students in Horowitz study, who played video games in informal settings similar to our study, were reported not to have any communicative anxiety as they interacted with other video game players. In another meta-analysis, Zhang (2018) concluded that experimental studies showed motivation was low due to individual or game-related factors but communicative proficiency was strong. Both Horowitz's and Zhang's studies support our study and help us understand the reasons why the participants of our current study wanted to spend more time playing video games when they played video games in English. The study carried out by Peake and Reynolds (2020) also supports both our current study and the literature (Horowitz, 2019; Zhang, 2018), since French university students speaking English when they played multiplayer video games in informal contexts as leisure activity were found to develop their English language skills and their confidence of language use. Moreover, the students reported that they intentionally preferred to play multiplayer games "as using English allowed them to communicate with other players" (p. 8). The difference that VGI in English made on LLM cannot be disregarded. This could strongly suggest that

students perceive their interactions with other gamers as an opportunity to improve their English in informal settings. Looking at the video game digital distribution service Steam's statistics (<https://store.steampowered.com/stats/>), nine out of ten (as retrieved on June 21, 2021) and eight out of ten (as retrieved on January 26, 2022) of the most popular games are multiplayer games that require the gamers to interact with each other both through spoken and written language (only Grand Theft Auto V has both single and multiplayer modes). Sundqvist (2019) also reported that Swedish learners of English playing video games in informal settings prefer massively multiplayer and multiplayer games rather than single player games. Another study by Iacovides et al. (2014) reported a stronger relationship between perceptions of identity as a gamer and learning via playing and interacting with other gamers. Therefore, it could be thought that interacting with other gamers and constructing an identity as a gamer who is able to use English effectively with other gamers has a facilitating role in students' integrative motivation. When we look at integrative motivation, which was found to be superior and statistically significant, "keeping in touch with foreign friends and acquaintances" was the item with the highest mean. Therefore, this item also confirms the positive link between VGI in English and time spent playing video games in English since it could be said that the students perceive being engaged in video games in English as an outlet to interact with English speaking individuals and learn other cultures and identities. This could also clarify why multiplayer games are most popular among gamers.

Consequently, compared to experimental studies, studies conducted in informal settings without teachers and researchers teaching and managing the research process could have a less strong role on LLM. This might also boost the students' perception to see video games as leisure or free time activities rather than tools to help them achieve certain educational or language learning goals. On the other hand, VGI in English, even in informal settings, is seen to have a significant role on LLM and instrumental and integrative motivation.

CONCLUSION AND LIMITATIONS

With reference to the findings and discussion presented in the previous sections regarding if and

to what extent there exists a relationship between high school students' VGI in informal settings and its likely effects on their LLM in formal settings, this study revealed some key conclusions. First and foremost, VGI in English can be a potential means for improving students' LLM, particularly integrative motivation. In this regard, it is obvious that when designed as educational tools in formal settings, video games have undeniable contributions to language learners' language learning achievement and motivation. An obvious implication of this is the need to include video games in language teaching in formal settings and to integrate them into the language teaching curriculum, because we found that VGI in Turkish in informal learning environments seems to have no direct role on LLM, but VGI in English certainly does. Additionally, as the studies show when video games are included in teaching through educational design, they are seen to have a role in learners' language learning skills and motivation. Therefore, this further suggests that language researchers need to collaborate with classroom teachers to support them with the means and ideas for the integration of video games as educational tools.

Another conclusion to draw from our study is that VGI in English facilitates and increases learners' willingness to be involved in playing video games. Looking at the likely reasons for this, it seems that the type of video game plays a role as the great majority of games played by the participants of the current study are multiplayer games requiring the students both to speak and write in English. This supports the role of VGI in learners' language skills development. In this regard, further studies could examine communicative performance in English to see if students are competent in video gaming and understand what motivates them to stay engaged in video game playing. Further studies could also address if students are seen to move away from the idea that video games are to help them achieve certain educational goals and to see if VGI in English makes a difference in improving students' communicative skills. This supports the need for more experimental studies to be conducted in language classrooms.

Lastly, seeing the strengths of experimental designs in video game research, we can obviously conclude that a study having experimental design could yield stronger and more valid results than a

quantitative survey study that relies on self-reporting. Therefore, we suggest future research to be conducted in formal environments with multiple measures and preferably before and after measurements of the concepts under examination supported by qualitative data.

As in any other study, there are limitations pertaining to the current study. As the data is based only on survey methodology, we could not overcome the deficiency resulting from a lack of qualitative data to explain why the students had higher levels of integrative motivation, what boosted their VGI in English, and what encouraged them to put more and more time into it. Thus, we can only make tentative interpretations and conclusions, but if this study had integrated an educational goal into the students' VGI in informal settings, it could have revealed more about VGI and LLM.

DISCLOSURE STATEMENT

We have no conflict of interest to disclose.

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