

# Second Language Acquisition Opportunities during Digital Game Interactions

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**Abstract:** Digital Game Based Learning has been studied for its impact on learning in a fun way in the language classroom. Second language learners are said to benefit from the systemic environment of the game that even low proficient speakers are prompted to engage in the target language in a less stressful way. However much past research has adopted a survey stance rather than analysing the interactive patterns emerging from the utterances in real time in understanding second language acquisitions among L2 learners. Therefore, this research focused on two groups ( $n=8$ ) of secondary school L2 students as they played two rounds of the *Werewolf* game each to identify the aspects of language that emerged. Findings revealed that their interactions featured negation, lexical borrowing, guessing, repetitions, persuasion and peer-tutoring, of which negation and negotiation were most prevalent. Interestingly, there were also elements of L2 culture. Implications of this study relate directly to the use of digital games for promoting the use of English in a non threatening environment for L2 learners and in furthering current understanding of aspects of second language acquisition among L2 learners.

**Keywords:** Digital, Games, Learning, Language, L2, Supplementary materials, CEFR

## 1. Introduction

In the last thirty years, Digital Game-Based Learning (DGBL) has grown to be a force to be reckoned with. Why? Electronic Software Association in 2021 revealed that approximately 227 million people play video games in the United States across diverse ethnicities, in nearly equal percentage (female, 45%; male, 55%). There is an ever-increasing number of players who continue to engage in various forms of technologies in the forms of video games or computer games that it is safe to use digital game as a general term. Despite some initial doubts, DGBL has continued to stir the interest of educators to bring technological entertainment, i.e. digital games and gamification, into the fore of education as evidenced by the growing numbers.

In fact, it has caught academic interest in DGBL with more than 7,000 academic publications indexed by Google Scholar (Aguilera & de Roock, 2021). For practitioners looking for ways to promote language among reluctant second language learners, it is a boon indeed as

DGBL is an option to keep learners engaged in the target language out of the class in instances of disruption amidst calamities. Furthermore, the systemic environment of digital games is perceived to contribute to a positive outcome on students' intrinsic motivation (Schunk et al., 2014) and cognitive skills (Shamsuar, 2014) at the tertiary (Noraddin & Kian, 2014) and school (Faculty et al., 2016) levels. However, few studies have focused on the patterns of interactions while engaging in digital games to see how they contribute to L2 acquisition among second language learners mainly due to the tedious work involved.

It could be seen that for classroom and formal contexts, DGBL has been integrated in education in four ways at the global level. According to Aguilera and de Roock (2021), they are: (a) commercial games integrated in classroom learning; (b) games developed for teaching educational content; (c) digital games developed for involving students in the learning process; and (d) gamification that includes elements like scoreboards, feedback loops, and reward systems derived from digital games for non-game contexts. The researchers revealed that comparatively literature on DGBL in informal settings has emphasized 'the socially situated, interpretive practices of gamers; the role of affinity spaces and participatory cultures; and the intersection of gaming practices with the lived worlds of the players. Within the crossroads of formal and informal contexts, students' interaction while playing could shed light on their language acquisition especially in the context of second language learning.

More needs to be investigated on the commercially available games that could be found in everyday life of learners as they do not deliberate on learning, teachers, or curriculum but just indulge in the entertainment. As English is one of the widely used languages in digital games, there is a need to examine L2 players' interactions to see if it is a viable source of language learning outside of formal class contact. To this end, relevant literature could be understood in two strands, one that focuses on teachers, and the other, learners. The first strand mainly focused on pre-service teachers, teachers and ICT. For instance, pre-service teachers were questioned if they would adopt a digital learning-based game like *Adventure German- A Mysterious Mission* in their future class (Faculty et al., 2016). Teachers surveyed in schools affirmed that they would adopt digital games in their classroom but a lack of ICT infrastructure was a hindrance. Faculty et al. (2016) and Mohamad Judi (2016) confirmed that the ICT problem affected learners' accessibility and learning via DGBL. Teachers also refused to adopt DGBL due to concerns over learner addiction and misuse (Chik, 2014). Practitioners ( $n=273$ ) were also surveyed for their attitude towards digital games across five Malaysian universities (Noraddin & Neo, 2014). Hence more findings are needed through actual lived experience in the DGBL environment to make informed decisions on teaching and learning practices for L2 learners.

Comparatively, research in the second strand involving students such as the one involving 32 classes of diverse learner population ( $n=795$ ) using DGBL (Hebert, Jenson & Fong, 2018) showed positive learning outcome after engaging in *Sprite's Quest: The Lost Feathers and Sprite's Quest Seedling Saga*. Using multiple choice and short answer change scores in pre to post evaluation, the researchers showed that different length of play and how it was used in the classroom still produced good learning outcomes. In fact, the research showed that a game could still be played in its own right without any educational assessment built into it but learners could still be assessed *after* the game and relate them to their learning objectives. In addition to studies such as this, research has also probed learners' motivation, enjoyment, interest, skills, academic performance, competitiveness, efficacy, teamwork, attitude, psychology and health (Mahali, Jamaluddin, Din, Ahmad, Jabar, & Fadzillah, 2016). However, there is still a glaring gap on second language acquisition during learner interactions during the digital game. A lack of qualitative research at site is needed especially on players' interactions in groups as trends show both number of male and female players are steadily increasing with preference for multiplayer games compared to individual ones (Uz & Cagiltay, 2015). More attention has to be paid to learners in second language context as there could be opportunities out of the classroom as much as in the controlled class environment for interacting in English as the target language via DGBL.

DGBL could provide a non-threatening environment as compared to face-to-face or online interactions with the teacher setting the climate in the class driven by the curriculum. In a class, there is a question of learners holding back from participating. Some second language or foreign language learners with high levels of linguistic competence deliberately remain quiet (Öz, Demirezen, & Pourfeiz, 2015) while others with limited competence may speak unremittingly (Baghaei, Dourakhshan & Salavati, 2012). This means that not all students of high level of communicative competence communicate frequently in the target language which in a way deprives their less proficient peers from benefitting in terms of language input in Vygotskian sociocultural views. Hence it is important to study how the digital game environment could prove to provide an important communicative opportunity especially for those who are reluctant to communicate, and a rich environment, for those with limited competence to expand their communicative repertoire. Therefore the objective of this study is to examine the interactions that occur when learners engage a digital game out of class, with the research question of “What are the features of second language learners’ interaction during a digital game?”

### **Theoretical underpinnings: The Digital Game as Social Semiotics**

First, it is important to perceive the playing of the digital game as a social event in which language is used as a tool to communicate, driven by the agenda to win. As there is a clear boundary of timeframe and rules, theorising the game event or entire episode is done through Lemke’s (2000) discussion of activity in time where he prods us to breakdown the timescales of the process and events that make a “classroom”, in this case, the digital game. What is key is the meaning that is made in the talks and actions, that transcends routine human actions, timing and sequence. In such an event, there are repeated patterns that could be generalised to other educational contexts, such as questioning, answering, greetings, assessing, which naturally forms some patterns that we could identify as culture or semiotics. Some acts are short, some long but are episodic, and constitute lessons in a stipulated time frame. This means that during each level of the game, the participants’ responses could be ‘short, some long’ but they indeed constitute lessons for the students who utter and listen to their peers’ responses; herein lies the lessons for language learning within the game timeframe.

Referring further to the Lemke’s concept of timescale further, human action could fall in the approximation of recognisable, characteristic processes and social practices. There is a higher-level process that is already in place, on its own longer timescale, and this determines the context that constrains what is likely and what is socially appropriate at the adjacent scale. An interpretation of this conceptualisation in the context of the digital game is that each participant’s response to the other should not be taken as an utterance in its own right but meaningful as part of an exchange. In short it should be taken in the context of the ongoing exchange, in this instance, the entire game, and possibly to the ‘higher-level contexts’ (Lemke, 2000) of language learning and acquisition.

The format of the game with its initial grouping, and downsizing due to elimination and regrouping to the different levels within the same game and subsequent one is cognisant to the new levels of organization emerge as intermediates between pre-existing levels, and profoundly change the relations among the formerly adjacent levels as well as making possible still newer emergent forms (see further discussion in Lemke, 2000).

In the context of the game, the player’s use of the English as L2 could be explained as binding the pre-existing L1 to the target L2; and participating in the game offers the players opportunities to trigger L2 use in the adjacent space, extending the existing frames to newer emergent forms. This could be retrospectively recognised as emergent processes and patterns that Lemke (2000) assures is what is experienced in the classroom during the teaching and learning process. Moreover, these new routines that emerge are also evident in new social groupings and manifest in typical interactions that sustain them, e.g. class in-jokes, informal rituals, typical sayings and phrases, favourite word usages with special meanings, which are bountiful during game

playing. It is important then to examine in a qualitative approach how these aspects could be manipulated for L2 language learning and teaching.

## 2. Aspects of Second Language Acquisition in Digital Game Environment

An advantage of the systemic environment provided by a digital game environment is that it allows for peer-to-peer interaction with minimal teacher intervention or interaction within the game. When a game is played outside of classroom hours, there is even less anxiety as there is no expectation to produce grammatically correct utterances from the watchful eyes of the teachers. There is freedom not to comply with learning objectives and other formalities that come with formal instructions. As Sundari, Rafli and Ridwan (2017) described in their findings, some speaking activities are quite difficult to perform in classroom settings as students may dislike their peers or sitting positions in class. The teacher designed peer interaction activity even backfired when the class participated in the whispering horse games. The class became very noisy as they competed to be “the fastest and the rightest”. In such a chaos, it would be near impossible for teachers to observe their students’ interactive patterns to determine if language learning or practice had occurred.

Noticing is an important phenomenon in second language acquisition (Chin, Pillai & Zainuddin, 2019; Schmidt, 1995, 2001). In fact, noticing could be construed as a cognitive agency which benefits L2 learners during interactions. They may notice forms and/ or meanings, mismatches their existing and target forms (Gass, 2003) which possibly could led to restructuring of linguistic aspects. Surprisingly, there is a lack of concrete findings about the relationship between noticing and L2 development (Chin, Pillai & Zainuddin, 2019). To date, few studies have highlighted the phenomenon in the context of digital games. Piirainen-Marsh and Tainio (2009) applied Conversation Analysis to show that noticing linguistic elements in an environment where the main focus is not on language is possible in a gaming environment. In their study, two young male adults repeated language elements in the game to show their involvement and to make sense of the game. There was immediate imitation, anticipatory use, recontextualization of previously heard utterances and expansions. The researchers noted that ‘...repetition offers a flexible resource through which the participants display continued attention to relevant features of the game and co-construct the collaborative play activity’ (p. 166). While these elements were noted as noticing aspects of the target language, the researchers did not pursue the effects of this repetition on the players’ linguistic acquisition.

However, more has been reported in the traditional classroom environment as the teacher could directly observe the students’ performance, for instance, Chin, Pillai and Zainuddin’s (2019) focused on communicative tasks and oral corrective feedback on the use of past tense form in English. Nevertheless, more studies on the digital environment are needed where the teacher is not present. It is *au naturel* for digital natives to engage in self-directed instructions in completing tasks, and therefore elements of second language acquisition may manifest while playing games such as the present one.

## 3. Methodology

In order to answer the research question of what the interactions are like among L2 learners/ players when playing the digital game, it was necessary to adopt a qualitative approach. The participants ( $m=4$ ,  $f=4$ ) were sixteen-year-old Form Four students from a Malaysian secondary school in an urban city where English was L2. Permission was obtained prior to the beginning of the research from the school and district education office and pseudonyms were used to protect their identities. The school site offered a safe and familiar context for the participants who volunteered to play the game. They were purposively selected from two classes by their class teachers as they had observed them to be of average proficiency level of English and were familiar with using mobiles. This was necessary to avoid problems in understanding the instructions and

rules of the game which could possibly affect the group climate and the game. Based on the teachers, the eight participants' characteristic could be summed as follows:

**Table 1.** The Participants of the Digital Game

<b>The Participants</b>	<b>Brief Descriptions</b>
Males	
Himmy	Very shy around people but likes to play video games
Zawir	Very talkative and laughs a lot
Daren	Very polite and is good with words
Syahmi	Very talkative and likes to tell jokes
Females	
Sabrina	Very talkative and friendly around her friends
Aeryn	Excellent at expressing her thoughts and opinions. Very vocal
Amani	Very talkative and approachable
Amalin	Good at expressing her thoughts and opinions and is very chatty

The participants had been learning English as part of their formal education for more than 13 years. They were questioned beforehand to understand if they would be comfortable playing the game with the other students as their thoughts and emotions were deemed important. Emmerich and Masuch (2013) asserted that playing digital games comprises a diverse holistic experience, but it is still unclear how and to what extent individual player experience is affected by certain design elements of a game. As the players had different personalities as stated in the Table 1.0 above, the digital game provided a leveraging field for them to play and speak in the target language.

The rationale for choosing the Werewolf game is that the game is an interactive digital game which could be navigated via a smartphone. In this era, the millennial generation are familiar with gadgets like smartphones, and are competent in using them independently to play digital games like the Werewolf game. As disclosed by the Malaysian Communications and Multimedia Commission in 2018, every nine out of ten Malaysians or 93.8% of the population knew how to use a smartphone, which reflected the participants accurately. The game also requires players to interact in a group to find the Werewolf. The commission noted that 97.3% of the population were active on social media and networking, which means that interacting in a group using smartphones is not a problem for the digital natives. Instructions were clearly stated in the phone and therefore did not require the presence of an instructor, e.g. their teacher.

The eight participants played the game in two separate sessions led by a Game Master who administered the game as players had to take turns playing with the mobile. An initial analysis was conducted to examine the suitability of the game to see the level of proficiency required of the players. Although it was in English, the target language of instruction in the classroom, it required players to use language within the competitive context of the game. Emmerich and Masuch (2013) who empirically investigated the potential differences in player experience induced by collaborative and competitive game design elements revealed player experience, aggression, social presence and performance as constructs. They revealed positive affect and aggression in the competitive mode, while empathy was higher in the collaborative mode. Social presence was not a sufficient predictor of positive affect and no gender differences were found. However, the researchers remained focused on player experience and neglected the linguistic elements produced. In the Werewolf game, the hunter-victim roles prompt rich player experience and prompt players to interact with one another, producing authentic communicative patterns.

In order to focus on the interactive patterns of language learning, the Werewolf text (e.g. instruction, rules and description) was processed with Compleat Lexical Tutor v.8.3. which

revealed it had 2254 words. The list of words was further compared against the curriculum specifications for Form Four to identify any matches so that the participants' language output could be viewed as novel production due to participation in the game. To confirm, they were also queried after the transcription was completed to understand how they knew selected words produced during the interactions. The video recordings were transcribed and codified to identify topics, issues, similarities, and differences that are revealed through the participants' own narratives.

### *The Procedure*

Prior to playing the game, written consent was obtained from the participants and the school which allowed the researcher to use its Language Room. They were informed that they would be video recorded while playing and later, the recordings would be transcribed verbatim to answer the research questions. The game commenced after school when the players were free from other activities. They sat around a Japanese table and were comfortable to begin. The researcher then gave a smartphone to a player to begin the game. The following section provides a thorough description of the game.

### *The Game*

The Werewolf game is played with a smartphone. Participants click on the 'New Game' button to start the game while the master 'who rules the game' initiates the discussion by reading a welcoming text:

Welcome to "Werewolf". Choose a game master who will rule the game. The game master reads the rules of the game shown on the display for other players. (The game master can join the game as well). All the players sit and make a circle so that you can see each other's face.

Once chosen, the game master reads out loud the rules of the game shown on the smartphone for others to hear. They proceed to identify the players in the 'Player Setting' which has two keys- a blue button labeled 'Add Player' and a red one labeled 'Fix Player'. Once the players are identified, the game master taps 'Fix Players'. As the game is played in turns, the first player begins with the Night Stage called 'The 1<sup>st</sup> Night'.

Each player is assigned a secret role (citizen, werewolf, shaman, fortune teller or knight) and must role-play it during the night stage and later hand over the device to the next player. The description of the roles is as stated in Table 2.0:

**Table 2.** The Different Roles in the Game

<b>Role</b>	<b>Description</b>
Citizen	Citizens execute werewolves. They win once all werewolves are executed.
Werewolf	Werewolves pretend to be citizens and kill them. The werewolves know who the other werewolves are. Werewolves win the game when there are equal number of werewolves and citizens.
Shaman	Shaman is a citizen who has supernatural power and could confirm if the killed Werewolf was a Citizen.
Fortune teller	Fortune Teller is a citizen who has supernatural power and knows the identity of the werewolves.
Knight	Knight is a citizen who has supernatural power and could protect a player from the werewolves every night.

The game commences when the ‘werewolf’ attacks a victim during the ‘night’ and the player who was attacked by the werewolf is reported the following morning. The Werewolf game has one basic cycle consisting of three stages that are repeated until the ‘citizens’ successfully capture the Werewolf within the stipulated time. In this study, each stage is treated as an event as the participant deliberate on the predator werewolf. ‘judgment’ is passed when each player announces a name of the player suspected to be the werewolf. The one with the highest number of votes is ‘executed’, that is, eliminated from the game while the players who survive the night obtain a point each. The players repeat the night-morning-judgment cycle until all the players are eliminated.

The transcription of the players’ utterances was analysed for the various strategies during their interaction when playing the game. An initial analysis showed the following categories: peer-tutoring, repetition, negation and lexical borrowing.

#### 4. Findings and Discussion

This section discusses the interactive patterns that emerged while the participants interacted during the Werewolf game. As they assumed specific roles to compete, their spoken language reflected their linguistic repertoire related to their roles as listed below:

**Table 3.** Players and their roles

Player	Round A	Round B
Himmy	Game Master / Knight	Citizen / Game Master
Zawir	Fortune Teller	Knight
Aeryn	Shaman	Fortune Teller
Amani	Werewolf	Shaman
Amalin	Citizen	Shaman
Daren	Shaman	Werewolf
Sabrina	Citizen	Werewolf
Syahmi	Citizen	Citizen

Thematic analysis of the transcription revealed that **negation**, peer-tutoring, repetition, and lexical borrowing were common linguistic features in the participants’ interactions in their roles. Hence the ensuing discussion focuses on the four aspects identified above; each sub-structured as theoretical/analytical approach, evidence and discussion.

##### 4.1 Negation in the Digital Game Interaction

Data from both rounds of the game showed that negation was one of the repeated responses observed among the players. Research in second language acquisition has generally pointed to the same direction of sequence in stages for all learners regardless of their first language (Ellis, 2015; Lightbown, 2013). In the analytical process, parallel comparisons were drawn with Ellis’ (2015) composite picture obtained across various studies. They are: pre-basic lexical: (1) particles “no” and expression of denial, refusal, rejection or correction; (2) “no”, in utterance initial or final position, combined with other non-verbal elements; basic variety: (1) negative particle precedes the verb, (2) reduction in the use of single negative particle and more of other varieties; and post-verbal negation: (1) “not” is positioned between the auxiliary and main verb; (2) may have modal verbs. A total of 93 (6.72%) “no” were detected from the 1384 utterances.

The most basic negative utterance consisting of the sole lexical particle “no” was detected throughout the game:

Zawir: No  
Zawir: No, no.  
Amani: No  
Amalin: No  
Amalin: No, no  
Amalin: No, no, no  
Aeryn: No.

The second pre-basic negation is combined with other non-verb element, with the negating particle located at either the initial or end position of the utterance, as was found in the later part of the sentence:

Gamemaster: No finding the werewolves, no life.

Besides that, the two basic varieties of negation were also found. In the first variety, the negative particle preceded the verb, as noted in the following:

Aeryn: 'Coz no killing on the first night.

The pre-basic variety was also found to be combined with the basic type indicated earlier. In the first part of the sentence uttered by the gamemaster, the negation precedes the verb "finding".

Gamemaster: No finding the werewolves, no life.

The gamemaster's utterance is categorically a basic one although it has a pre-basic element. This is because the basic structure precedes the pre-basic, therefore, this could be considered as a transitory phase.

However, other varieties of negation emerged for the first time as the interactions intensified during the game.

Aeryn: Okay so, in this row. But it's not me though.  
Syahmi: It's not me too.  
Aeryn: It's not me though.  
Daren: Are you sure?  
(Everyone laughed at this point)  
Sabrina: No, I'm not.  
Syahmi: Why, why?  
Amalin: Are you sure?  
Himmy: I am no Werewolf.  
Aeryn: Of course you are not the werewolf.

Some of the variations noted is the use of "not" (Aeryn, Syahmi and Sabrina) which appeared 14 times (1%) throughout the game, and "no" with a noun (Himmy). These variations, although evident also in target speech, remains a basic variety as there is less reliance on the use of the single particle "no".

Another variation is the use of "don't" (1.9%) as in the following excerpts. However, the use of the negation fulfills several functions although they appear with a verb. In the following two instances, it is a form of instruction:

Himmy: Himmy is killed and becomes a ghost. Don't speak anything until end of the game. Wait! I am the Game Master  
Himmy: Judgment shall fall. Daren has died and became a ghost, don't speak. The third night.

In the following two excerpts, it is to refute.

Aeryn: Each and every one vote for one person. So that.. because we don't know who is who. But then again, it's unknown. We don't know.  
Syahmi: I don't have any proof. So, I don't want...

Interestingly, the negation forms have L1 cultural influence as evident in the following excerpts, and should not be taken literally although the patterns are correct in the target language. When Amani claimed that she was a "citizen", Aeryn responded with "Don't be like this.." which in her L1 Malay could translate as "Jangan macam ini". It is a subtle polite cajole to show one's dissatisfaction over another's action. In the translation, the "don't" is bundled with "be-like-this" and dropping any one word would not reflect the cajoling.

Amani: Citizen  
Aeryn: Don't be like this Amani.

Another similar cultural influence is evident when Syahmi responded to Daren:

Daren: I think it's Syahmi.  
Syahmi: Wow!Wow! You want to blame on me eh? I don't know la.  
Daren: No.

Syahmi's reaction in the later form of "I don't know la" is a way to tell Daren that he is lost for words or disappointed that his friend had "blamed" him. In L1 Malay, this could be interpreted as "Saya tak tahulah" which directly translates as "I don't know la", with the "lah" intact in the translation. Therefore, the basic variety of negation does not only remain a simplistic form of interaction but may retain the speaker's L1 cultural element. This contrasts the same sentence in a different situation:

Aeryn: Haaa okay. Seriously? Really?  
Amalin: I don't know.

In response to Aeryn's query, Amalin says "I don't know" which indeed has literal meaning. In the final stage of post-verbal negation where more sophistication in the creative use of language is possible, the interactions that unfold as the game advances show the players using more varieties. For instance, "not" is positioned between the auxiliary and main verb in the following utterances

Himmy: Okay, the morning has come. The victim of last night was... no one! The werewolf did not kill any player.  
Himmy: Sabrina becomes a ghost and is not allowed to talk until the game is over.  
Daren: Yeah, I'm not gonna trust you.

The negation forms "did not kill", "is not allowed", "am not gonna" (going)" are accurately positioned between the auxiliary and main verb, which are target-like Ellis (2015).

As mentioned earlier, the final stage shows more sophistication in the use of “not”. The nuanced difference between the use of ‘no’ and ‘not’ may be elusive to beginners of the language but those who have entered the post-stage may use it seamlessly or in combination correctly.

Aeryn: So, he is not the Werewolf. You can see who is who, but you cannot tell.  
Do you want to see or do you want to skip?  
Daren: Are you sure it’s not you?  
Syahmi: It’s me? No, not me. I am a honesty citizen.

Moreover, the “no” and noun often makes the negative stronger as speakers often stress “no” (Cambridge Dictionary) or “not”. Another interesting feature in the Aeryn, Daren and Shahmi’s responses above are the use of negation in question form, which is considered an advanced stage but difficult skill to acquire for all learners. This development of learner repertoire is not based on learning new meaning, but rather learning a different linguistic pattern to express meanings that are already understood (Lightbown, 2013). In this instance, meaning is contextualized in the game. In discovering the culprit, the players must ask questions; something that teachers in L2 class often find to be daunting.

#### 4.2 Noticing in the Digital Game Interaction

Schmidt’s noticing hypothesis suggests that specific language features are learned because the learner had noticed them. When he or she becomes aware of it in the input, noticing becomes the starting point of the learner’s language knowledge. This section focuses on how noticing could occur among the peers during the interactions.

In the following excerpt, it was observed that Himmy, the more proficient speaker of the target language, corrected Aeryn:

Himmy: There aren’t any player who are suspect... suspect..  
Aeryn: **Suspected.**  
Himmy: Suspected, okay. Suspected in this morning.

In another instance, the group corrected a member:

Syahmi: It’s me? No, not me. I am a honesty citizen.  
Aeryn: No.  
Zawir: Honestly?  
(Aeryn and Syahmi simultaneously laugh and stress **Honest**).  
Syahmi: Honest. I can’t speaking*lah*. Yeah, I’m innocent. I’m innocent and so honest.

It was clear that the peers corrected one another. i.e. “suspected” and “honest”, as could be seen in the two excerpts. The peer interactions that occur while playing the game “pushes” them to actively process their language learning, compelling them to notice and almost spontaneously correcting the tense form and pronunciation errors. In another instance, Zawir draws on his cultural knowledge and translates it to hilarious consequences:

Zawir: Bukan think cookly.  
Boys: \*Laughing\*  
Syahmi: Fikir masak-masak. Think cook cook kan?

“Fikir masak-masak” (Malay language) is used to caution a person to deliberate before making a decision. In the game, the player is urged to deliberate before casting a vote against another player. Hence, Zawir’s humorous caution (literally “not”) to think wisely. Syahmi “notices” Zawir’s play with words and substitutes “cook” with “masak-masak” (literally “cook” in Malay). The going-back-and-forth from L1 to L2 and L1 reaches deep within both speakers’ cultural and linguistic repertoire. Without the instructor and pressure of learning about language, the peers indulge in the game and correct their peers. Although this could be construed as lacking in target language vocabulary which cause the speaker to substitute words from L1, the phenomenon could also be analysed from the noticing hypothesis perspective. For Pyle et al., 2016, the spontaneous interjections allow peers to notice errors and make corrections. For the corrected, they seemed to take notice of what their peers said at the spur of the moment.

Besides noticing errors and literal translations, another form of noticing seemed to have emerged during the game, patterns of repetition. While repetitions in interactions have been reported before, e.g. Shahriarpour and Kafi, 2014, the phenomenon has not been discussed in the context of digital games and second language acquisition, specifically noticing hypothesis. In the following excerpts, Syahmi, Aeryn and Amalin were seen to be repeating what their peers had said (Game 1):

Syahmi: I can see from your eyes.  
Aeryn: I can see from your eyes.

Syahmi: Woo..so dramatic.  
Aeryn: So dramatic!

Syahmi: It’s you!  
Amalin: It’s you!

Likewise, Amalin, Amani, Daren and Himmy were observed to do the same in Game 2:

Syahmi: It’s a she! I want to vote myself but I can’t. So...  
Daren: It’s a she!”

Amani: Oh well, let’s finish this.  
Himmy: Let’s finish this.

Syahmi: Think it properly.  
Daren: Think it wisely.

The repetitions or imitations which occurred quite naturally during the game showed that it is a useful linguistic tool for the L2 players. At times entire sentences were repeated as evident in the excerpts above. Those instances could be interpreted as moments of acquisition where the speaker adds on to their existing repertoire of vocabulary, and puts to practice the linguistic skill, i.e. repetition, and if such a skill was not commonly applied before, it was necessary for the player at that point of interaction. However, the repetitions did not indicate variations in sentence structures nor paraphrases, but only complete reproduction of the sentences in their entirety.

In the interaction hypothesis, the more proficient speaker is said to repeat his or her sentence either partially or in its entirety, or completely paraphrases it. For instance, “Mary was missing from class” could be repeated as it is or paraphrased as “Mary was not in class”. The lack of variations could be attributed to the players’ poor proficiency of the target language. Nevertheless in this context, repetition is learner driven, and dispels the negative perception that it is “boring” (Shahriarpour & Kafi, 2014) and skewed towards meaningless rote learning or drillings.

## **5. Limitations and future research**

This qualitative case study has several limitations. Firstly, it is based on a small sample size and is descriptive in nature. Secondly, the data used in the study was reported by the researchers who audio-recorded and observed the players, which may have posed a number of well-known challenges (Tsang, 2020). Finally, the findings are based on one digital game; it is not known if a different game would have produced a different set of second language elements. Research in sociolinguistics (Holmes, 2013) informs us that authoritative figures like teachers in the class domain influence speaking styles. If they had participated in a more traditional face-to-face class with the presence of the teacher, the students too would have acted differently. The aim of the present study was not to compare different learning environments, but simply to investigate the interactions that are produced when second language learners are asked to play a digital game.

There were variations between players in terms of their participation levels and their willingness to communicate, as shown by the more domineering players. This variation should be further investigated as the impact of individual differences have consequences on speakers in any interaction. Are there certain types of learners for whom a different type of game would have been better suited? Perhaps most importantly, this study focused predominantly on their language production and delved into the socio-cultural view which could have provided a different 'flavour' to the interpretations. While these were not ignored and have been reported in a limiting way, the cultural aspects are strongly represented in the players although the digital environment itself is not. This will be useful for teachers who would like to consider using games in a multicultural context.

## **6. Implications for pedagogy**

This study presents several implications. The most obvious is perhaps the opportunities that commercial games provide for adopting games accessible on smartphones for use in second language learning and teaching, thus allowing teachers to focus on supplementary materials and resources to be used with the games. An encouraging finding is that the students actively interacted when playing games, which of course, may not be the case in a large traditional class due to the challenges posed by classroom seating (Sundari, Rafli & Ridwan, 2017) and anxiety (Chik, 2014). The digital game played out of the classroom allows participants to feel 'safe' in the company of their peers, but there is the 'confined space of the game, access to which had been restricted from the general public' (Reinders & Wattana, 2011). This means that teachers could plan and design lessons to continue out of the classroom, in a way gradually opening up communication avenues based on the games. Indeed, these could be supplemented with worksheets to match the formal content of the syllabus. For instance, teachers could point out the instances of interactions during the game and relate them to demonstrate elements that are normally difficult to teach in ESL classes such as negation. Learning difficulties could also be mitigated to an extent by considering the cultural elements that were evident in the interactions such as "masak-masak" that were both amusing and engaging.

Teachers could take into consideration these digital game linguistic aspects and create supplementary teaching materials, assessment tools and enrichment materials that are related to the game as the students have some experience with the language aspects while playing the game. Future researchers could attempt to assess learner interactions while playing a digital game on the Common European Framework of Reference for Languages (CEFR) as CEFR is a widely accepted valid tool for assessing language ability. In fact, assessment of the types of game-based interactions using the six reference levels of CEFR is an interesting unexplored option for grading speakers' language proficiency. In other words, the digital game provides a rich and fertile ground for practitioners to improve students' second language acquisition experience.

## 7. Co-author contribution

Author 1 conceptualized the research with Author 2, interpreted the data and wrote the paper. Author 2 organized the sessions with the participants and transcribed the data.

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