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## Learner Background and Its Effect on Perceptions of Using Video Games as a Language Learning Tool

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### Abstract

This paper investigated learner background and its relationship with perceptions of using video games as a language learning tool. Using a case study design, 10 participants took part in a six week long digital game-based language learning (DGBLL) experience. Data were collected via a pre-game questionnaire, post-game interviews, and reflection journals. Analysis of the questionnaire revealed that participants were of upper intermediate English proficiency and fell into three levels of little to high gaming experience. Interview data revealed that most participants perceived the language in the game to be similar to everyday language and that they had a history with DGBLL, showing a generally positive perception towards its use. However, higher game experience learners expressed frustration with a major game mechanic in the video game used in the study due to the lack of learning curve, which is present in other video games. Lastly, analysis revealed the emergence of four major themes based on what learners chose to reflect on during the study. These themes were mechanics, narrative, perceptions, and learning.

## Introduction

Advancements in digital technologies, particularly in video games, led to the continued proliferation and relevance of the medium in modern society. Highlights in a gaming industry report by Newzoo (2020) highlight that the video game market is growing rapidly, generating revenue of up to 159.3 billion USD in 2020, a significant increase of almost 10% from the previous year. Additionally, an increasing number of people are playing video games. The aforementioned report asserts that in 2023 the number of players will reach 3 billion worldwide. Educational researchers have noticed the potential of video games, coining relevant terms such as digital game-based learning (DGBL), educational games, serious games, and edutainment (Tsai et al., 2011). Anastasiadis et al. (2018) state that researchers have dedicated a significant amount of time into investigations of video game educational applications. In general, results from their applications in studies have been positive in terms of attitudes towards use of digital games in the classroom, learner motivation, and learning outcomes (Chang & Hung, 2019; Chiu et al., 2012; Rosman et al., 2013).

However, for a time, the traditional perspective on second language acquisition (SLA) tended to lean towards the psycholinguistic (Zuengler & Miller, 2006). This is also the case for computer-assisted language learning (CALL) and SLA (Stickler and Hampel, 2015). Gee (2010) explains the major schools of thought regarding how learning occurs, which are the psycholinguistic and the sociocultural schools of thought. The first asserts that learning is an individual, mental process while the second asserts it as a societal and cultural product (Herro, 2015).

Specifically in regards to DGBLL and SLA, deHaan (2005) provides future research suggestions that would contribute to improved understanding and subsequently effective video game application. The researcher describes the significance of investigating factors connected to the individual such as language proficiency and video game experience. Drawing on the sociocultural perspective, Activity Theory emphasizes this importance on learner background. According to the theory, an individual's historical, cultural, and social background can influence the way they approach or behave while engaged in a task (Engeström, 1987). In an educational setting, this can manifest in the different learning motives and objectives students have, which can be different than the objectives set out by the teacher or researcher. These differing motives may then influence student behavior in accomplishing objectives and subsequently the outcomes of learning. In a recent relevant study, Shokeen et al. (2023) highlighted that learner background, particularly in terms of gaming experience and history, affected how learners behave in situations involving challenging and unknown situations. Participants in the study who had more gaming experience were observed to show more patience in these situations and did not ask for help from the researcher during challenging obstacles. However, in contrast, less experienced participants perceived the challenges in a more negative way and saw it as evidence of inadequate skills as a player. In addition, the less experienced players gave up more often and asked for assistance more frequently from the researchers. Another study by Bolliger et al. (2015) investigated the perceptions of Japanese undergraduate students. A survey was used to measure perceptions. In analysis, four factors were considered: preference, ease of use, gaming experience, and learning opportunities. Results of the analysis revealed that students perceived digital game classroom use positively and that it was easy to

utilize. Furthermore, it supported the creation of opportunities to collaborate and experiment with others. The study also reported that digital games provided advantages such as that they were motivating, entertaining, and eased the language learning process by providing opportunities to use it. However, some disadvantages were reported, such as concerns of developing video game addiction and the possibility of it becoming a distraction.

Although some research on learner background and DGBLL exist in available literature, it appears limited. The current study aims to fill gaps and contribute to current literature through the following research question.

**Research question:** How does gaming experience and English language proficiency affect participant motivation and attitudes on using video games as a language learning tool?

## Method

The study used a case study design using a qualitative approach to data collection. This design was used due to its suitability with the proposed research question. Swanborn (2018) describes that a case study design is suitable for investigating social phenomena in a natural environment where the details of the phenomena are not well known. In addition, observations of the qualitative variety can facilitate recognition of significant patterns and themes (Chapelle & Duff, 2003). This more micro focus will also facilitate the discussion of the background, relevant experience, and personal history of individual learners.

## Participants

Non-probability, convenience sampling was used in this study. Participants were recruited via an advertisement sent to a community group chat and social media. Potential participants needed to fulfill certain criteria to be selected. The requirements were geographical closeness to the researcher, that they are students at a Japanese university, and are non-native speakers of English aged between 20-39. The last requirement was that potential participants have not played or watched the completion of the video game used in the study. A total of ten participants were recruited for this study. Table 1 illustrates participant demographic information along with their assigned pseudonym.

**Table 1**  
*Participant Demographic Information and Pseudonym*

Learner	Pseudonym	Gender	Age
1	A	F	25
2	B	M	20
3	M	F	28
4	Z	M	29

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5	S	M	28
6	L	F	26
7	N	M	27
8	Q	M	31
9	T	M	32
10	J	M	24

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## Materials

Using Google Forms, participants filled in a questionnaire online. The questionnaire consisted of 12 short answer, scale, and multiple choice questions. The questionnaire was used to collect demographic information, English language proficiency, and video game experience. A copy of the questionnaire questions can be found in Appendix A.

Secondly, this study utilized a semi-structured interview. Using Tomlinson's (1989) hierarchical focusing as reference, an interview agenda was created. The questions were related to the participant's feelings, the language of the video game and using video games as a language learning tool. Several prompts were additionally prepared to elicit more information when needed. Participants were also encouraged to elaborate when possible. Generally, the interview time averaged around 18–20 minutes. The interview agenda used in the study can be found in Appendix B.

Lastly, participants were tasked with writing a journal entry at least once after each session. The objective of this journal was to give participants opportunities to reflect on the DGBLL experience. Participants were given the freedom to write as long as it was relevant to the topic.

## Study Procedure

The study procedure involved an orientation session. The main purpose of this session was to familiarize participants with the general aspects of the DGBLL experience, the schedule, and the flow of the study. After the orientation session, participants were placed into pairs randomly and then assigned the starting role of either watching or playing the game. This was decided by a coin toss. The roles rotated every week to allow a more equal opportunity to play. The game sessions ran over the span of 5 weeks with a session averaging one hour. During the sessions, the participants were given full autonomy to communicate and discuss what actions should be taken. Then, once per week, participants wrote an entry in their reflection journal based on the gaming session. After the five-week gaming sessions elapsed, a post-study, one-to-one interview was conducted. A summary of the study procedure is illustrated in Table 2.

**Table 2**  
*Summary of the Study Procedure*

Week 0	Week 1	Week 2	Week 3	Week 4	Week 5	Post
Questionnaire	Session 1	Session 2	Session 3	Session 4	Session 5	Interview
Orientation	Journal 1	Journal 2	Journal 3	Journal 4	Journal 5	

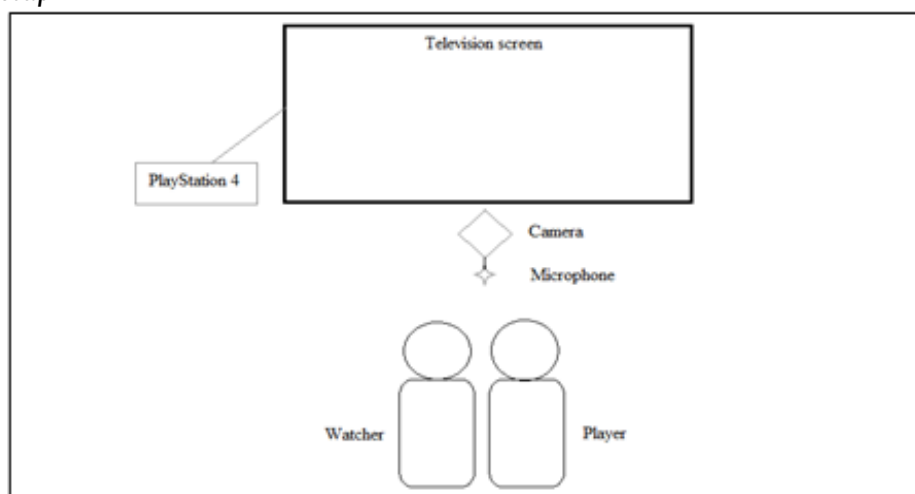
## Video Game

The video game selected for this study was Quantic Dream’s *Detroit: Become Human* (DBH) (<https://www.quanticroam.com/en>). The video game platform “Steam” (<https://store.steampowered.com/>) classifies *Detroit: Become Human* as an adventure game with an emphasis on player choices. These player choices can lead to different endings and outcomes. The game takes place in a near-future, science-fiction setting where human-like androids have become the norm, assuming the role of caretakers or other service jobs. In DBH, players take control of three different playable characters named Connor, Kara, and Markus. DBH was released on PlayStation 4 consoles in 2018 and in 2020 on PCs (personal computers).

## Session Setup

Recording game sessions involved video capture using a computer’s built in webcam. Additionally, audio was recorded using an external microphone. The webcam and microphone were placed towards the two participants. One of the participants held the controller and took on the role of the player, while the other participant watched. To play DBH, a PlayStation 4 console was attached to a television. The participants were seated next to each other in front of the console setup. Figure 1 below illustrates the game session setup. In addition, the researcher was present during every session for situations relating to technical or gameplay difficulties, as well as to record any relevant observations.

**Figure 1**  
*Session Setup*



## Results and Discussion

### *Pre-Game Questionnaire*

Results of the pre-game questionnaire revealed learner language proficiency and gaming experience. Establishment of learner language proficiency and gaming experience was subsequently used to inform the discussion of the interview and reflection journal data.

### *Language Proficiency*

Participants self-reported their English language proficiency based on the four skills of reading, writing, listening, and speaking. A scale of 1 to 5 was given, where 1 is poor, 3 is assigned to average proficiency and 5 is near-native. Participants also reported any English language certification scores such as IELTS or TOEFL. Table 3 describes reported learner language proficiency.

**Table 3**  
*Learner Language Proficiency*

<b>Learner</b>	<b>Average score</b>	<b>IELTS/TOEFL</b>
A	3	No record
B	4	TOEFL 110
M	4	No record
Z	3.75	TOEFL 105
S	3.75	IELTS 8.0
L	4	No record
N	3.75	No record
Q	5	IELTS 7.0
T	5	No record
J	4	TOEFL 106

Based on the results in Table 3, participants self-reported an above average proficiency in the English language. However, there are some discrepancies in the self-reported scores and reported certified scores. Participant S self-reported an average score of 3.75, but attained an IELTS score of 8, which is considered a very good user according to the British Council (2023). In addition, Q self-reported a maximum proficiency score of 5 but obtained an IELTS score of 7. This would indicate that some participants overestimated or underestimated their English language proficiency levels. However, it

can be argued that participants are upper intermediate or above in terms of English language proficiency.

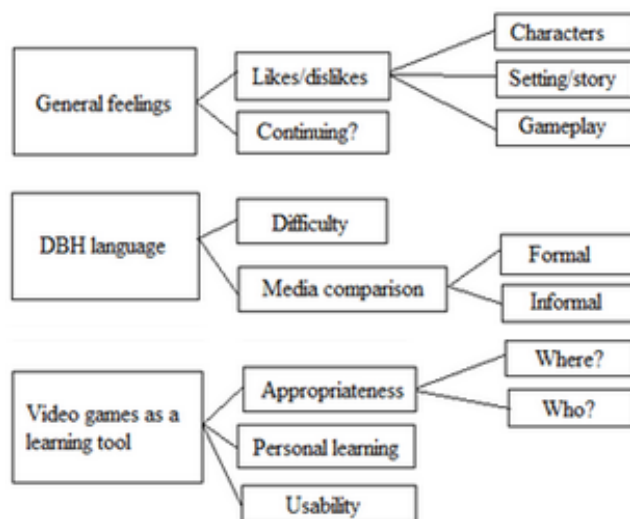
## Gaming Experience

In determining gaming experience, participants reported which genre of video games they were familiar and comfortable with, with a total of 18 genres to select from. Also, the participants reported how many hours per week they engaged with the medium and how long one session lasts. From the answers, the overall gaming experience was quantified. A total score of 0 – 9 describes someone with little to no gaming experience, a score of 10 – 19 describes a person with average experience, and 20 – 30 is someone who is highly experienced. These scores placed participant A, M, and L into the first category, participant B, Z, N, Q, and J into the second category, and participant S and T into the third category.

## Post-Study Interviews

Using deductive coding, the codes were selected based on the semi-structured interview questions and applied in the analysis of the raw interview data. The major themes of the interview were general feelings, the video game language, and using video games as a language learning tool. Figure 2 illustrates learner interview responses.

**Figure 2**  
Learner Interview Responses



## General Feelings

Under general feelings, participants reported on what they liked and disliked about the game. Learners reported on narrative elements such as characters and story as well as the gameplay. Based on the interview results, all of the learners found at least one of the three playable characters appealing. This shows that the game has characters that are different enough to generate interest in learners with varying preferences. Playable characters are essentially an embodiment of the player in a virtual environment. The

avatar likely gives the player a sense of control in the virtual space. If players have positive emotions towards an avatar, it can have a positive effect on thinking and learning (Gee, 2008). This is also supported by Segaran et. al (2018) who asserts that dislike towards a character can negatively impact participant attitude and interest in interacting with or using a virtual character.

Similarly, for story and gameplay elements, what participants liked and disliked seemed to differ with individual preferences. Some learners mention how the theme of science-fiction appealed to them (M, S, and N) and that the gameplay was a positive new experience (L, J, and Z). Furthermore, category 2 participants B, J, and Q liked the choice and consequence mechanics but category 3 participants S, T, and category 2 learner Q disliked the use of a major mechanic called quick-time events (QTEs). The three participants state the reasons as follows [sic]: S: "...they throw us High QTEs, it's not clear what the controls want you to do, and I, since, like, you don't really have a clear picture of what you need to do that difficulty—the fact that you fail in this difficulty setting will really set you back." T: "It's difficult to play because there is no learning curve. They suddenly throw you in a button mashing competition with no prior warning or anything, not like regular games where you learn simple movements which get tougher." Q: "Yeah, the quick time events, they don't kind of prime you because usually games have like, not step by step, but progression of how difficult it gets. It gets easy and then gets more and more difficult. But in terms of this game, it suddenly just shoves you into a lot of QTE at one point, and then at the other arcs it's just nothing. You just press a few buttons, make some choices, so it feels a bit sudden where you suddenly have to press a lot of buttons at the same time and if you fail then you kind of have a different consequences or maybe even kill the characters."

From the responses, there is a possible connection between higher gaming experience and the dislike of the QTE game mechanic. S, T, and Q mention the harsh punishments of failing QTEs, while Q and T describe a lack of a learning curve that they assert is often the norm in other video games. Notably, all category 1 and most category 2 participants do not mention a dislike for this game mechanic.

Participants also reported on their willingness to continue playing the video game on their own time. Eight out of ten participants reported a generally positive response towards continuing, one participant was neutral (L) and the last said they would not continue (T). For participant T, the DGBLL experience was generally negative. Despite T being placed as category 3 in gaming experience, T expressed frustration with the mechanics of the game and experienced difficulties with the controls throughout the course of the study. In addition, T attributed this difficulty to a flaw in the game design rather than inadequate skill. In contrast, L described their neutral stance towards continuing due to not identifying with the gamer identity. Several studies have shown that women were less likely to identify with the label due to the sentiment that the activity of gaming is stereotypically tied to men (Kivijärvi & Katila, 2022). L also explains that her difficulties with usage were due to lack of skill [sic]: "Mmm, I'm not sure, like, I'm not that gaming person. (laughing) I'm not good with controller."

Wilkinson (2013) asserts that affective factors can affect attention, memory, and motivation to engage with the material when learning. Therefore, examining what participants liked and disliked about the DGBLL experience provided insight into whether their feelings were generally positive or negative and subsequently their level of motivation and engagement.



## Video Game Language

From analysis of the data, four participants reported that the language in DBH is similar to everyday language. However, half of the participants emphasized that the video game used significantly more expletives compared to formal and informal mediums of language input and may therefore not be suitable for younger audiences. Due to the perceived similarities with day-to-day language, eight out of ten participants reported very little or no difficulty with the language they were exposed to while playing the game. However, six participants (N, Q, Z, M, B, and A) reported that learners would require a minimum intermediate level of English language proficiency in order to understand the language in the game.

Two participants (L and J) recalled that there were some uncommon words they did not understand and that it subsequently affected their gameplay. J recalls the verb “probing” and how he misunderstood the meaning of the word until the game provided feedback in the form of an unintended action by the playable character [sic]: “...I feel like probing is the-what I thought of probing was mean-meant was different from what it actually is. Yeah, that was my biggest downfall (laughs).” L recalled the word “carcass”. When asked for more details, she explains that continuing to explore the game helped her understand the meaning from context [sic]: “I mean, just follow what’s happening, like there was the option to take the item, so I’m like, okay, so this is the carcass.” In both cases, J and L came to understand the meaning of unknown words from the context given in DBH. This finding suggests that these learners may have experienced situated learning, where players learn through actions in the embodied context of the virtual game environment (Gee, 2008).

## Video Games as a Language Learning Tool

Six participants (Z, J, L, Q, T, and N) stated that using video games to learn a language suits both informal and formal settings, while three reported that it suits a casual setting (M, S, and B) acting as a supplement to formal learning. For participants who stated that a casual setting is suitable, they reported that using video games in language learning should not replace formal instruction and that there is a place for both to exist separately. In addition, three participants (A, T, and L) stated that teacher presence would increase the effective use of video games in language learning.

This generally positive view towards using video games such as DBH as a language learning tool may have been influenced by learner history with DGBLL. From the interview analysis, seven out of ten participants mentioned a positive learning history. The responses are recorded in Table 4.

**Table 4**  
*Learner History With DGBLL*

Participant	Interview excerpt [sic]
B	...So what I know is that some people learned English through playing video games. I’ve seen it a lot through online games like, “Ohh how can you speak English?” “Oh, I just learned through video games.”
M	I know that I learned, um, yeah, I learned some amount of English growing up by playing video games myself. I played a lot of adventure games. Um, games that were rich in storytelling.

Z	I played video games since I was a child. All video games in English. There's no Malay video games so you have to (laughs) you have to learn English if you want to play games. And my kind of games is RPG (roleplaying game) uh, storyline heavy. Story-based games, so you have to understand English to understand the game.
S	Me personally, I learned more from games or other kinds of media in terms of English language rather than in classes itself but that's just me personally.
L	When I started learning English, I started with playing "RuneScape," an online game and you learned a lot of words like "burning iron" and those kinda medieval words.
Q	I grew up learning English from games as well, but I played RPG, especially Japanese RPG so it's, uhm, you can learn it at your own pace kinda because there is no kinda time limit. They didn't have a lot of QTEs. Mostly turn-based, so you can go to the NPC (non-playable character) and talk to the NPC and then if you don't understand you can just open dictionary or something. It's very helpful for me in terms of learning.
T	Well for Japanese, it's Japanese RPG that has furigana on them, so that helps you to learn kanji. Especially the "Dragon Quest 11" is a really good tool. And other than that, alot of RPGs 'cause they're all texts and you have to reading comprehension and all that so. Not only that, then if you're stuck somewhere, you have to go to online guides, so it also teaches you to read how other people are talking...

## Reflection Journals

Analysis of the reflection journals involved a three-stage coding approach of open, axial, and selective coding drawn from the "Ground Theory Method" (GTM) (Williams & Moser, 2019). Analysis revealed that four major themes emerged. These four themes are mechanics, narrative, perceptions, and learning. Mechanics involves entries related to gameplay characteristics such as controls or gameplay functions pertaining to choice and the consequences of success or failure. Narrative includes entries about DBH's characters, story, or other narrative elements such as moral and android related issues. Perception includes thoughts about DBH, the assigned partner, or general feelings. Lastly, learning concerned entries referencing learning instances. Table 5 illustrates excerpts from the learner reflection journals and the associated entry categories.

**Table 5**  
*Excerpts From Learner Reflection Journals*

Entry category	Examples [sic]
Mechanic (Gameplay)	A: The controls were a little confusing because in order to move right, the joystick has to be pushed to the right unlike in airplane simulations where pushing left = going right.  N: (Partner) and I strived to explore all possible interactions before moving to objective.

Mechanic (Responsibility)	<p>M: I'm glad I'm not the one controlling because I don't think I can keep my cool well enough to not mess up.</p> <p>S: I think I was goofing around most of the time and just trying to get (Partner) to make all the decisions</p>
Mechanic (Choice)	<p>Q: It's very interesting how you are forced to choose and you can't go back on the choices, just like life.</p> <p>J: Did not think too much into the fact that each action had long term consequences in the game such as the fact that in Kara's scene we stole money in front of the cameras and we actually looked in that same camera</p>
Mechanic (Success)	<p>Z: We managed to uncover most (I think?) of the clues</p> <p>S: Really good so far, saved the kid hostage in the opening mission</p>
Mechanic (Failure)	<p>M: We fucked up pretty badly, we both kind of panicked about the time.</p> <p>Q: We failed to rescue the girl as the android that was holding her hostage jump off the building after we failed to convince him. We only got 60% probability of success as we might have spent too much time roaming the area</p>
Narrative (Characters)	<p>Z: Relationship between Markus and Karl is so sweet (father-son-like)</p> <p>L: Of course I'm on Alice and Kara's side but I also want Connor and Lt Anderson to get along</p>
Narrative (Story/setting)	<p>Q: It was interesting to see that the birds inside the house is also an android with the circular android feature can be seen on the birds' head.</p> <p>M: The plot got a lot more interesting and we had to a lot of questions.</p>
Narrative (Moral)	<p>N: Didn't steal clothes cause want to keep android positivity. Didn't steal from supermarket either.</p> <p>Q: Of course there are some moral and immoral choices that we can make: to steal/not, lie/not this, impact relationship with Alice.</p>
Narrative (Android issues)	<p>Q: A distinction between humans and androids was already made in the first few minutes of the game. ...Perhaps due to graphical limitations or intended, androids and humans look almost similar besides the mentioned characteristics</p> <p>J: We were pro-android as the game portrayed the hate against androids quite strongly especially from a first person view in all three characters especially Markus.</p>

Perception (Game)	Q: Overall I quite enjoyed the session and will probably finish the game to see the ending. J: Had fun in the first session today.
Perception (Partner)	S: (Partner) is doing really well. Cool time playing the game together. L: I felt (Partner) was being silent except telling his jokes here and there.
Perception (General feelings)	Q: I was a bit confused with the delivery mission that started right after. T: This made us a little uncomfortable.
Learning	L: I learned a new word carcass J: Didn't know the meaning of probe and I forgot that we are not supposed to probe the victim in Connor's scene J: Need to take into more consideration that and put more into thought. B: I have to be more accommodating (to partner)

According to the data, learners generated a total of 300 entries over the course of the study, although some participants used the journal less than others. The learners which created the most entries were Q (51 entries), N (43 entries), J (36 entries), and Z (35 entries). The top five categories which generated the most writing in the reflective journals were Mechanic (Choice), Narrative (Characters), Mechanic (Gameplay), Perception (Partner), and Mechanic (Failure) with total entries of 38, 37, 36, 34 and 30 respectively.

### *Mechanics – Choice, Gameplay and Failure*

As previously mentioned, most of the entries were related to game mechanics. This is likely due to this category being directly tied to what was experienced during the gameplay sessions. For choice, the participants with the highest entries were N, Q, and J. In N's reflective journal, entries under choice described moments of disagreement between N and his partner [sic]: "(Z) wants to check the piano but I want to check the chess. But I persuade to do the nearest then go to piano. After interacted chess, we unable to interact the piano...(Z) was a bit hesitant when I express and wanted to take the gun. We took the gun...(Z) says I should chase as Connor is a policeman but I didn't because I wanted Kara and Alice to have longer story." In relation to the episode 3 entry, N's partner Z also reflected on the moment of disagreement [sic]: "The plot turned dark suddenly. Chose to take the gun and killed Todd. Did not want this choice. Should not have taken the gun!"

In the case of the pair J and Q, there were no mentions of disagreements but rather reflections on what choices were made and the consequences of what happened. For gameplay, the participants with the highest entries included N and T. Participant N's entries reported thoroughly examining and searching for all possible details and outcomes, a playstyle which is consistent with the behavior observed in N and his

partner Z based on gameplay footage. For T, his entries consisted of expressions of boredom and frustration, echoing the negative feelings observed in interview responses. The act of reflecting on these frustrations may have further solidified his negative stance towards DBH [sic]: “We get to play maid simulation on this one, pick up the trash, clean the table, pick up dried clothes, wash clothes...Very big part of the session: push an old man around and robot paint as well? Okay...This game never trained you for fast-paced button mashing and out of nowhere you get prompted (illegible)...It was honestly frustrating to watch...The controller did not recognize my input? Also silly time-based button smashing, what a load of crap.”

Another category that is reflected on a lot by participants is failure. In this category, Z, Q, and J have the most entries. In all three of these participant reflections, mistakes were identified, reflected on, and suggestions were written. Examples of these entries are shown as follows [sic]: Z: “Disappointed with performance during Kara fight scene. Should have been faster.” Q: “We failed to rescue the girl as the android that was holding her hostage jump off the building after we failed to convince him. We only got 60% probability of success as we might have spent too much time roaming the area.” J: “We could have prevented her from having her memory wiped as we could have her wire broken but we didn’t think it through. ...We didn’t think about it and would expect more straightforward choices instead of thinking more about it.”

Notably, T, who had the most difficulty playing DBH, only has one entry on failure and rather than reflecting on the mistake, the entry appeared to be a brief recollection of something that happened during his playthrough [sic]: “We saved the child but Connor died.” Similarly, M and L, who are category 1 learners and also reported some usability issues while playing DBH, wrote entries that were brief recollections of moments of failure, establishing a possible link between frequency and quality of reflection from participants on failure and improvement on engaging with DBH [sic]: M: “We fucked up pretty badly, we both kind of panicked about the time...I didn’t expect us to die hahaha...I messed up a lot lol...The old guy died. That made me sad...At least I didn’t mess up completely and have either Alice or Kara die haha.” L: “I missed some important clue when I failed collecting the data of the hamburger...I felt frustrated about the missing clues and wasted time.”

## *Perception – Partner*

Additionally, participants were able to express opinions on their partner. The most entries on partners were from Z, N, J, and M. Z and N both wrote about each other, highlighting moments where the other failed in the role of the player [sic]: Z: “He played for the first time, so the progress this session was a bit slower...Why are you jaywalking???...Still getting used to the controller. Probably got panicked during the running away scene. Understandable hahaha.” N: “Z hesitant on using gun but we miss QTE...Z accidentally annoyed the policeman and detective by standing in front of one-way window.”

However, N and Z also highlighted several positives about their partner, showing an effort was made to cooperate and function as a pair [sic]: Z: “Very cooperative...(N) made helpful choices. Thanks~” N: “(Z) is actually great, I was happy that we are wanted to learn about the game environment before proceeding through chapter. I’m glad that I’m able to share opinions with (Z) when making decisions...I like exchanging views with (Z) about humanoid android taking human jobs because Markus chapter shows the

unemployment rate.”

For J, his entries were all positive in regards to his partner. The entries focused on communication with Q, which was observed to become progressively better as the study continued. This may be an indicator of good cooperation and chemistry between them [sic]: “Feel like we have better communication now and we can make more decisions together faster instead of one picking the answer when the timer’s going out...Communication between us is definitely better and after the game, we discussed how we should approach it after 3 game sessions...Communication was definitely more evident as we talked more about each decision before agreeing on one...Would definitely say that I had fun experiencing something new with someone else, especially with the fact that we never talked before.”

For M, her entries on T tended to focus on his reactions and emotional state. This further supports the intensity of T’s negative emotions reported by his interview and journal responses. Some examples included [sic]: “I found it hilarious that (T) had to do a lot of chores. I doubt he’d do my house chores based on his reaction to the chores in the game hehe...I think (T) got pretty annoyed at the camera angles...(T) seemed to be in a mood. Scary...He struggled a bit with the controls and for a while I felt a little better about how I played last sesh.”

In summary, the activity of reflection allows participants to recall DBH, including language input and events of the gameplay sessions. Reflection leads to deeper retention of what was experienced and more effective learning via attention to details (Chang, 2019). Furthermore, the reflective journals provided a medium of communication for participants who might have difficulties expressing themselves verbally (Mynard, 2008) and therefore act as effective additional supporting data to the interviews. Furthermore, the frequency and quality of reflection in the journal entries provided insight into the personal motivations of the learners and the process of learning.

## Conclusion

The background of participants was determined in aspects of language proficiency and gaming experience. The learner background information was then used in the analysis of interview and reflection journals to determine its effects on how learners perceived DBH in the context of language learning and learning in general. Data analysis revealed several key findings. Firstly, learner preference affected how participants felt about characters and thematic setting, influencing learner motivation to engage with the video game. In terms of learner language proficiency, the upper intermediate learners overall did not have difficulty comprehending the language of DBH, with many participants perceiving the language to be similar to everyday language. Notably, two participants highlighted instances where context and feedback in DBH helped them understand the meaning of unknown words. The higher-level English proficiency participants also mentioned how DBH is unsuitable for beginners of English, stressing the necessity of a strong language foundation. For gaming experience, many participants in the study have a positive history with learning language with video games, which likely influenced the overall positive perceptions on DGBLL use in both formal and informal settings (six participants), casual settings (three participants), and support of its use with teacher presence (three participants). Additionally, the major mechanic of QTEs was generally disliked by learners with higher gaming experience. This was reported to be due to its

deviation from the norm in video games in which there is a learning curve and the negative consequences that can occur due to failing the QTEs.

In regards to the reflection journals, learners reflected on elements of mechanics (choice, gameplay and failure), narrative (characters), and perceptions about their assigned partner. This shows what the learners chose to pay attention to with the type, frequency, and quality varying with each individual learner. Generally, learners who experienced continued difficulties using the video game produced superficial reflections while those who reported a positive experience produced more reflective entries.

Limitations of the study include the small sample size. This means that the results may not be generalizable to a larger population and that results may vary within a different study context. The small sample size was due to factors out of the researcher's control, such as institutional limitations and the availability of participants, which proved an especially significant obstacle due to the COVID-19 pandemic. Furthermore, the study focused on a specific commercial game (DBH) therefore findings cannot be generalized to commercial video games in general as many video games differ in both language and gameplay mechanics.

Based on the study, pedagogical implications include the careful consideration of learner background and video game characteristics such as characters, setting, and gameplay mechanics when selecting a suitable game for DGBLL. As was observed in the study, when aspects of the video game are perceived positively, it is capable of generating interest in continual engagement with the medium. For example, in DBH, the provision of three main characters made it easier for this to be accomplished. However, in contrast, the major game mechanic of QTEs resulted in feelings of frustration in some learners, particularly due to the absence of opportunities for improvement and the negative consequences of failure. With this knowledge in perspective, practitioners of DGBLL can effectively inform pre-game orientation sessions to ensure smooth operation and a positive experience for learners. Similarly, practitioners intending to develop video games for educational use should also carefully consider the background of the intended audience as well as either avoiding gameplay mechanics such as QTEs or implementing the provision of different difficulty settings for learners of varying gaming experience backgrounds and levels.

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## Appendix A

### Pre-Game Questionnaire

### Pre-Game Questionnaire

The purpose of this questionnaire is to gather demographic information, English proficiency level and information on your previous gaming experience. It will only take about ten minutes to complete. There are 12 questions in total. Thank you for your time!

Email \*

Valid email

This form is collecting emails. [Change settings](#)

Q1. How old are you? \*

Short answer text

Q2. What is your sex? \*

Female

Male

Prefer not to say

Q3. How would you rate your English reading skills? (3 being average) \*

	1	2	3	4	5	
Poor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Excellent

Q4. How would you rate your English writing skills? \*

	1	2	3	4	5	
Poor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Excellent

Q5. How would you rate your English listening skills? \*

	1	2	3	4	5	
Poor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Excellent

Q8. Which genre of video game are you familiar and comfortable with? (You can select multiple answers. Examples \* are given in brackets)

- Puzzle (Portal, Trine, Untitled Goose Game)
- Sports/Racing (FIFA, Need for Speed)
- Strategy (Civilization, Age of Empires, Starcraft)
- Platformer (Hollow Knight, Rayman, Super Mario)
- Sandbox Games (Minecraft, Terraria, Don't Starve)
- Action (God of War, Devil May Cry, Grand Theft Auto)
- Simulation (The Sims, Cities Skylines, Stardew Valley)
- Fighting games (Tekken, Street Fighter, Mortal Kombat)
- Role-playing game (RPG) (Final Fantasy, Skyrim, Baldur's Gate)
- Hero Shooters/Battle Royale (Apex Legends, PUBG, Valorant)
- Rogue-like/Souls-like (Dark Souls, Darkest Dungeon, Bloodborne)
- First person shooter (FPS) (Left for Dead, Bioshock, Borderlands)
- Adventure (Horizon Zero Dawn, Red Dead Redemption, Tomb Raider)
- Visual Novel (Danganronpa, Phoenix Wright, Doki Doki Literature Club)
- MMORPGs (The Elder Scrolls Online, Warcraft, Black Desert Online)
- Survival-Horror (Resident Evil, The Last of Us, Amnesia: The Dark Descent)
- Rhythm games (Dance Dance Revolution, Crypt of the Necrodancer, Guitar Hero)
- Multiplayer online battle arena (MOBA) (League of Legends, Dota, Mobile Legends)
- Other...

Q9. What is your favorite genre of video game? (If any)

Short answer text  
.....

Q10. What is the name of your favorite video game? (If any)

Short answer text  
.....

Q11. As an estimate, how many hours per week do you typically play video games? \*

- I don't typically play video games
- Around 5 hours per week
- Around 10 hours per week
- Around 20 hours per week
- Around 30 hours or more per week

Q12. How long does one game session typically last? \*

- 0 - 1 hour
- 1 - 2 hours
- 2 - 3 hours
- 3 - 4 hours
- More than 4 hours

## Appendix B

### *Interview Agenda*

Start with: Purpose of the interview, ensure confidentiality, build rapport

Q1. How did you feel when playing the game?

Was there anything you liked or disliked about the game?

(Characters, the world, story themes etc.)

Are you interested in playing the game more in the future (on your own)?

Q2. What do you think about the language in the video game?

Were there any words or phrases you didn't understand?

(if yes...what did you do to help you understand these words/phrases?)

How would you compare the language in the game with language in other media/situations? (Real life, books, classroom etc)

Q3. What do you think about using video games as a language learning tool?

What have you learned from this video gaming experience?

Was it easy or difficult for you to use/play the video game (control wise)?

Video game learning appropriateness: where, who? Why?

End of interview: Allow participants to make final comments, thank you.

Duration: Around 15 minutes