

Review on Robert Arnold-Stein's dissertation

on

Videogames as a catalyst for intercultural and foreign language advantage in secondary school ESL students

by

Dr. Szilvia Bátyi
Institute for Hungarian and Applied Linguistics
University of Pannonia

The topic of the dissertation is timely and approached from a multidisciplinary perspective. It is structured into six chapters and presents three empirical studies based on a substantial sample of ESL students in Hungary. The revised version of the dissertation shows considerable improvement in both structure and content. The author addressed several concerns which were previously raised for the mock exam. The overall structure is now more logical, and the writing and language is more focused. The title has been modified and the abstract, though still a bit long, provides a coherent and informative overview of the study's aims and the main results. The presentation and the statistical analyses of the results have gone through considerable improvement making the chapter the strongest and most enjoyable part of the PhD dissertation. The following section presents primarily critical remarks, intended to support the author in refining the dissertation—or selected parts of it—for potential publication.

Chapter 1. Introduction

The chapter introduces the role of games in language learning, and it also mentions other positive influences. The main research question, as well as the sub-questions for Studies 1, 2, and 3, are clear and align well with the studies. However, the large number of sub-questions is unusual and redundant. Furthermore, typically, research questions explore relationships between constructs/concepts, while hypotheses should involve testable statements about variables (as a result, there should be more hypotheses than questions, because concepts are broken down into variables). In the introduction, the distinction is reversed, however, later in Chapter 3 it is addressed.

The rationale for the study and the significance are well justified, particularly in the Hungarian educational context. The inclusion of factors such as socioeconomic status,

language exposure, and device usage is a good choice and contributes to a more holistic investigation.

Chapter 2. Literature Review

The literature review is rich, drawing on various sources from fields such as SLA, cognitive science, sociolinguistics, and educational technology.

Rich literature is discussed in section 2.1. (*Concurrent language use and video gaming experience in the brain*). While the sources are summarized, no critical engagement with the literature can be traced, contradictions are not revealed. Such detailed discussion of these studies is unnecessary as no brain imaging is included in the studies of the dissertation.

Section 2.1.1. is titled: *Video gaming activity and its impact on the brain*, but nothing is mentioned about the brain, the section is about the popularity of video games.

Section 2.2. discusses language learning systems mainly focusing on the explicit/implicit memories and processing. The concept of flow is loosely connected and to my knowledge the concept of flow has not been incorporated in any memory models regarding language learning.

A strong part of the dissertation is the overview of studies that looked into video gaming's role in L2 learning. I still think that loosely connected concepts such as motivation and a detailed description of L1 acquisition is unnecessary and take away from the focus.

Methodological issues, such as choosing, scoring and piloting the tests is included at the end of the literature review. It should be in Chapter 3.

What I miss is the discussion of how gaming improves inhibition (one of the main questions of the dissertation).

In general, the literature review is very rich, discussing some of the closely and some of the loosely connected concepts and studies. The shortcomings are that (1) there is little discussion of contradictions or gaps in the field, especially regarding video gaming's role in L2 learning (2) the discussion of inhibition and gaming is missing and (3) the text often lacks coherence with many studies and ideas cited without any argument.

Chapter 3. Methodology

Thank you for incorporating information regarding participants, instruments and procedures from all three studies to one coherent and well-structured chapter. It can be clearly seen that the concepts in the RQs are operationalized by choosing the right instruments: students' background by a questionnaire, receptive vocabulary by a highly reliable VLT task, inhibition by the Stroop task and lexical retrieval by the semantic and the phonemic fluency tasks.

The RQs and Hypotheses are placed in this chapter instead of placing them at the end of the literature review or in a separate chapter. Considerable effort has been devoted to the development of the hypotheses, with appropriate justification and grounding in relevant literature.. Each hypothesis is preceded by the discussion of the relevant literature which makes the hypothesis forming process transparent. The only critical remark concerns the wording of the hypothesis. The phrasing is not standard for hypotheses as most of them use tentative language and lacks measurable variables. A good hypothesis should be direct, testable, and clearly state an expected relationship. For example, this is the original H1. *“It is assumed if the members of the video gamer group extend their L2 learning with incidental L2 learning events they can acquire a great deal of high-frequency words in favour of their receptive vocabulary size.”*

It could be rephrased as a proper hypothesis: *Members of the video gamer group will demonstrate significantly greater receptive vocabulary size compared to non-gamers, as a result of incidental L2 learning through frequent exposure to high-frequency words in gameplay contexts.*

Chapter 4. Results

I would like to congratulate on the results section which serves as an exemplary model of how to present findings in a clear and organized way of such a complex study. For the mock exam the review consisted of more than 17 000 characters and now 1000 which is a quantitative confirmation of how much it improved. The author is systematic throughout the whole chapter, first presenting the descriptive analyses, followed by strict testing of whether the data is parametric or not. This kind of strict analyses is very exceptional in linguistics, because often assumption checking is left unreported even in high-ranking journals. The author not only selects the appropriate statistical tests but also reports the outcomes in line with academic standards. Furthermore, the interpretations of the results are accurate and show a strong understanding of statistical inference. The main findings are summarized in tables, boxplots and barcharts, all are used in away that it makes the whole chapter very reader-friendly. In places where appriaching the data is challenging, such as with so many game types, Robert found a way to group the games and perform the statistical analyses.

Chapter 5. Discussion

In this chapter the findings are discussed following the order of the research questions and hypothesis which is a logical way of presenting the interpretations. However, there are some misinterpretations and unanswered questions.

The author frequently attributes receptive vocabulary growth directly to video gaming. For instance, the claim that *“All the results can be considered as a promising progress in clarifying the impact of video gaming activity on high-frequency vocabulary advantage caused by video gaming activity as part of language learning”* (p. 113) implies a causal relationship. However, such conclusions should be drawn with greater caution. Given that the study does not employ an experimental design—no controlled treatment was administered to an experimental group—it is not methodologically sound to infer causation. Moreover, video gaming represents only one of several potential sources of language exposure among participants (also noted in the Limitations of the study). Thus, the findings can indicate associations but do not warrant definitive claims about the causal effects of gaming on vocabulary development. The same applies to correlations, they show association between two variables but causation can only be confirmed experimentally: *“According to the findings, the participants’ English grades correlate significantly and strongly with their VLT test results, ($r = .88$), which means a strong influence.”* (p. 118).

As written on page 78, gamers better executive function is expected to result in less interference (both intra- and interlingual). The results in Chapter 3 show more interference in both conditions in the gamer group, however, the discussion of these results is not entirely clear. I would like to ask the candidate to interpret these results and connect them to previous studies or frameworks, i.e. what do these results mean? (This also impacts statements such as the one found on p.121 about the ST and the VFT results being similar and confirming better cognitive skills *(In conclusion, the video gamer students’ performance was similar on the inhibitory control measures and the lexical retrieval tasks, more specifically, the proficiency level played a key role in both VFTs and ST, which induces different cognitive skills and processes that are the elements of the inhibitory control (Schmidt et al., 2019).)*

Table 79 and 81 show significant differences in the semantic and the phonemic fluency tasks, however, the interpretation of the results does not coincide with this finding on page 121 *(The hypothesis was confirmed only in the case of the difference in the VFT ‘s’ letters, since if the participant is a video gamer, his performance on the VFT differs from that of their non-gaming peers.)*. Can you explain this?

Statements about incidental language learning are not confirmed by empirical findings from this study and as such they can be treated as subjective speculations. The research design does

not allow us to make such interpretations, however, I understand that as a teacher the author may have experience about it. I fully agree with the author's opinion that psycholinguistics tasks, such as the ST and the VFT can be useful in the classroom.

In general, this dissertation empirically validated the importance of video games as an extracurricular activity in language learning. The strongest part of the dissertation is Chapter 3 where the findings are systematically presented. Unfortunately, there is no overarching theoretical background to this study which could have given a solid framework to the three studies. As a result, the literature review lacks coherence, however, it relies on a rich resource of works from different disciplines.

Question: Looking back at your complete dissertation with the findings and discussion in place, can you name a theoretical framework (or a combination of 2 frameworks) that could help make the literature review more coherent and the interpretation of the results more straightforward?

This dissertation can be released for public defence and the candidate be awarded the PhD degree.

Szilvia Bátyi

