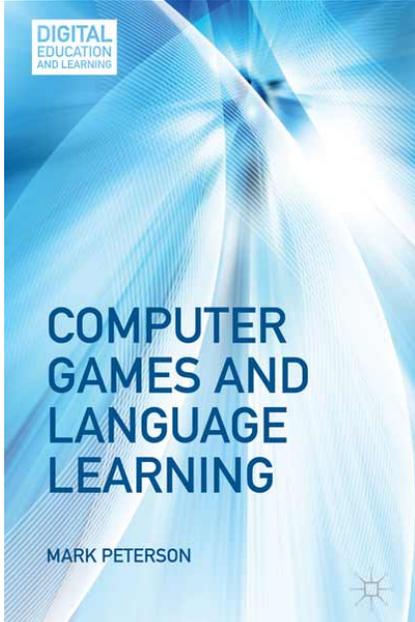# REVIEW OF *COMPUTER GAMES AND LANGUAGE LEARNING*

Computer Games and Language Learning

Mark Peterson

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Review by Jonathon Reinhardt, University of Arizona

As one of the first book-length treatments of the topic, Mark Peterson's *Computer Games and Language Learning* offers a broad, comprehensive overview of the study of computer games in CALL. As stated in the preface, the author aims to answer two major questions: "Is participation in computer gaming beneficial for language learners?" and "Does computer gaming represent, as has been claimed in relation to other spheres, a paradigm shift in language education?" (p. xi). To answer the first question, the author reviews practically all the research on the topic and concludes that while there is evidence that computer games may have a potential beneficial impact on language learning, there is not enough evidence for a clear affirmative. While answering the second question is a "challenging endeavor" (p. 131), the author argues convincingly that the rising popularity of computer games does not signal a paradigm shift but rather may simply indicate another *false dawn phenomenon,* a bandwagon-like tendency of the CALL community to claim a new technology has revolutionary potential, only to abandon it for a second new trend before thoroughly researching the first. Peterson argues this may be the case with computer games; even though they have been used in CALL since the 1980's, they have never been fully mainstreamed or "integrative" (Bax, 2003, p. 18) vis-à-vis language teaching, and have only landed on radars again recently because of societal popularity. In response, Peterson includes in his book a well-designed study of language learning in a massively multiplayer online role playing game (MMORPG), the latest game genre to be hailed by many for its compatibility with SLA principles. This application of the wide diversity of theory and research presented throughout the book allows it to serve not only as an introduction and reference for the field, but also as an example of how one might do research in it.

In the first chapter, "CALL and New Digital Technologies," Peterson lays out his argument that a *false dawn phenomenon* has plagued CALL research, and has perhaps kept it from being driven by SLA theories as it should be. He describes how CALL technologies like PLATO, multimedia CD-ROMs, and videoconferencing have been exalted over the past 50 years, only to be abandoned for a variety of reasons, sometimes simply because the novelty wore off. To avoid continuing down this path of wasted effort, the author maintains, as do many CALL leaders, that SLA theories, rather than technology, should

drive research and development. He uses Bax's (2003) closed–open–integrative framework to explain that games are nowhere near integrated into CALL practice, and that researchers should consider the dangers inherent in technocentric thinking.

The second chapter, "Computer Games: Definitions, Theories, Elements, and Genres," shifts gears and explores fundamental theories and definitions of digital games, including the narratology vs. ludology debates of game studies circles. Peterson then provides a brief outline of game genres utilized in CALL and describes some history of their use. These genres include text manipulation, text-based adventure, simulation, first person shooter, 3D adventure, MMORPG, MUVE (multi-user virtual environments), sports, and rhythm. While he outlines these genres, he does not describe them in detail, saving his "analysis of significant findings from learner-based studies" (p. 20) for later chapters.

Like the second, the third chapter, "Computer Games and Learning," does not delve into research on games and language learning, but discusses theory and research in education and the learning sciences, focusing on the work of Prensky, Gee, and Steinkuehler, and identifying the many purported developmental benefits of digital gaming, like problem solving, computational thinking, and identity exploration. The author then provides a thorough and well-researched overview of several meta-analyses of research on games through the lens of learning gains. Flowing naturally from the first section of Chapter 2, the chapter provides a useful and didactic introduction to, and in-depth discussion of, the key discussions in educational gaming into which practicing and potential researchers should be tuned.

In Chapter 4, "Computer Games and Language Learning: Theoretical Rationales," Peterson discusses the relationship between SLA theory and CALL, focusing on the two semi-oppositional cognitive and socio-cognitive approaches he sees most relevant to the use of games in CALL. He then moves into a discussion of rationales for the use of computer games in CALL, centering on theoretical pieces by García-Carbonell et al. (2001), Thorne, Black and Sykes (2009), and Zhao and Lai (2009). Each of these three pieces draws parallels between SLA theories and gaming features like rules, interaction, goal direction, and social participation. Although it makes sense that this chapter follows the previous on educational gaming, Peterson misses the opportunity to make connections between the cognitive and socio-literacy theories discussed in chapter 3 to the concepts presented in this one. Still, the chapter fills the author's stated purpose to argue for an SLA theoretical base for games-in-CALL research, and it is argued convincingly.

Chapters 5 and 6 are perhaps the most useful chapters, as they provide very comprehensive syntheses of early and more recent research on the use of computer games in CALL that has not been published elsewhere, and they focus on common findings. Chapter 5 describes several early studies (in the 1980's and 1990's) on text manipulation and text-based adventure games, and offers a synthesis of several significant positive and negative findings that are still commented on in game research, for example, that games motivate and engage, and that they may be useful for learning vocabulary, albeit low frequency or words of a limited register. Chapter 6 describes more recent empirical research on the use of simulation, role play, MUVE, action, and text-based games for language learning, and offers syntheses of significant positive and negative findings in these genres, for example, that lower proficiency level learners may have trouble learning with some games, that games may afford social interaction, and that there is risk of cognitive overload with some games. Presented with research in this way, the reader can see commonalities across studies and will likely be led to the author's conclusion that games have potential as learning resources. While the author acknowledges shortcomings like low participant numbers, lack of theoretical grounding, and the scarcity of longitudinal perspectives, his critiques are not overly strong, perhaps so as not to squelch new scholarship in a field still struggling to find legitimacy.

In Chapter 7, the author presents an empirical study of interaction in MMORPGs among Japanese learners of English to answer whether or not the types of interactions aligned with social accounts of SLA. While the author has previously published similar research (Peterson, 2012), the study here serves to illustrate how game research can be grounded in SLA theory—in this case, interaction broadly

understood as social-functional. Situated as a case study, the methods involve descriptive discourse analysis involving identification and description of functional types of game-mediated learner interactions, including off-task discussion, collaborative dialogue, failed communication, and reciprocity. The study illustrates the variety of interaction types that can occur in MMORPGs, but does not use quantitative techniques to identify their frequencies, and so serves as descriptive research. In answer to its research question, the study finds evidence that social interaction types claimed to afford language learning can and do occur in MMORPGs. An additional question regarding learner attitudes, answered with a post-study questionnaire and observations, found that generally the learners found the game motivating and beneficial, although there was some difficulty for lower proficiency learners, who sometimes found it frustrating. While it is not clear how it is grounded in sociocultural theory, the study is well written and convincing, and serves as a solid example of one approach towards research on language learning in computer games.

In the book's concluding chapter, the author returns to his original thesis, summarizes the findings reviewed in the book, and offers future directions for research. In sum, computer games may provide sources of contextualized, meaningful, and repeated input, and they may offer environments for collaboration and socialization. However, the use of commercial off-the-shelf (COTS) games sometimes requires extensive pedagogical mediation, since some genres may be inappropriate, and in-game linguistic registers may be limited. To avoid a *false dawn*, researchers should ground their inquiries in SLA theory. Peterson then describes four noteworthy development projects: Zhao and Lai's *ZON*, Sykes and Holden's *Mentira*, Middlebury College's *MiddWorld*, and Sorenson and Meyer's *Mingoville*. Finally, he offers several areas for future research: focus on what learner-players are actually doing in games, investigate the role of the teacher and pedagogical framework, explore the potential of modified COTS games, examine gaming in informal, non-educational contexts, and consider individual differences among learner-players.

Overall, the book is an excellent review of past and recent research on computer games in CALL, presented in relation to broader research in CALL, educational gaming, and SLA. One shortcoming of the book is that it does not discuss the role of pedagogy beyond discussions in the reviewed studies, and does not note distinctions between studies that use educational games and those that use COTS games. For the former, pedagogy is integrated into the game design, but for the latter, players use the game as a learning tool on their own, or are guided to do so via pedagogical mediation. The author presents how language learning in games has been researched and identifies the genres in which useful games might be found, but he does not discuss directly how games might be practically integrated into a language classroom. For this reason, the book would be more useful for researchers or graduate students than for teachers or practitioners.

Another shortcoming may be the focus on genre as an organizing principle to review the research. Game genres continually evolve, and new games of hybrid genres emerge from the creative minds of game designers attuned to global trends and technological advances. Thus, attributing learning potential to one particular genre is what could lead to a *false dawn*, as genres rise and fall in popularity. Instead of attributing potential outcomes to particular genres, we might instead recognize game genres as ecological systems of elements or principles that can be compared with each other and with non-game equivalents. There may be elements of action games, for example, that are applicable to language learning because time pressure in those games forces production of output. In Chapter 2, the author gives only very brief attention to game elements and focuses on basic physical elements like graphics and algorithms, rather than on mechanics, such as goal setting, feedback systems, interaction dynamics, or narrative structures, that are common across titles and genres. While discussion of these features comes out in descriptions of individual studies, the author presents studies according to genre rather than element, so it is difficult to conclude, for example, whether it is the goal setting feature of role play games that makes them effective, or the feedback mechanisms, and how technology plays a role. Such a presentation might lead to a clearer

answer about whether computer games do indeed afford learning, and since those affordances are tied to game mechanics rather than titles or genres, research on games in CALL may have broader impact on the field of language learning and teaching, ultimately informing SLA theory, and thus perhaps proving the field's legitimacy.

In spite of these minor issues, Mark Peterson's book offers anyone interested in learning the history of the use of games for CALL a comprehensive and detailed survey of the state of the field today. In such a new and interdisciplinary field, it is difficult to apprehend the breadth, depth, and synergetic diversity of the scholarship that situates it. The book presents a clear pathway through the fields of CALL, SLA, and educational gaming and thereby offers an applied example of how they can and should be drawn on to conduct solid and fruitful research.

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