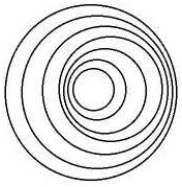

The IALLT Journal

A publication of the International Association for Language Learning Technology

SELECTION CRITERIA FOR COMMERCIAL OFF-THE-SHELF (COTS) VIDEO GAMES FOR LANGUAGE LEARNING

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Abstract

This article addresses criteria for choosing commercial off-the-shelf (COTS) games and their implementation in the classroom and other L2 learning environments. The proposal and discussion of a set of such criteria, which include the categories of motivation and flow, clearly defined and spaced goals, game skills and game mechanics, content, story and narrative, multimodality, agency, course integration and scaffolding, and financial, technical, and administrative considerations are the focus of this article. This discussion is followed by the analyses of three examples of COTS games (Buzz, Heavy Rain, and SingStar) which may be suitable in a L2 learning context.

INTRODUCTION

In L2 learning and instruction, non-digital games have long been a staple, from role-playing to matching games, from crossword puzzles to board games. In recent years, acceptance of digital game-based learning (DGBL) has risen (van Eck, 2006), and an increasing number of pilot projects and case studies show a growing interest in the topic. For example, deHaan, Reed and Kuwada (2010) analyze the commercial music game *Parappa the Rapper 2*, Meyer and Sørensen

(2009) examine *Mingoville*, and Rankin and Shute (2010) find increased social interactions between learners, vocabulary acquisition and reading comprehension skills in their analysis of *EverQuest II*. Peterson (2010) provides reviews of 7 studies on specific gaming environments: *MOO* environments, *Simcopter*, *Sim City*, *Active Worlds*, *World of Warcraft*, and *Tactical Iraqi*. He concludes that "[t]aken together, these findings suggest that the use of stand-alone games combined with carefully designed support materials may be an effective means to develop vocabulary as a supplement to regular coursework." (p. 87) Even though advantages of DGBL, such as motivational aspects, immersion, narratives, interaction, authenticity, and agency have been analyzed in theory, broader implementation of digital games has not materialized despite positive individual case studies. Research about DGBL in other disciplines can give a closer insight into the dynamics of gameplay and learning (e.g. Prensky, 2001; Gee, 2003), but games used for L2 acquisition have to fulfill a different set of parameters to be successful. Young et al. (2012) argue that games are better suited for language learning than for other subjects because it is "inherently social and relies on socially contextualized pedagogy teeming with scenarios and interactive dialogs that differ from other content areas (e.g., science or math) with emphasis on direct instruction" (p. 75). In a summary of the literature, Van Eck (2006) concludes that "educators have adopted three approaches for integrating games into the learning process: have students build games from scratch; have educators and/or developers build educational games from scratch to teach students; and integrate commercial off-the-shelf (COTS) games into the classroom." (p. 20) This article is concerned with the latter - commercial off-the-shelf (COTS) games, which were not created with the purpose of teaching a particular skill or content (see Neville, Shelton & McInnis (2009) for an example of interactive fiction (*Ausflug nach München*) created specifically for language learning purposes). With their immersive, authentic content and motivational character as well as their relatively low implementation cost, such games lend themselves well to use in L2 learning scenarios. While the growing video game industry (for an overview of video game history, see e.g.: Malliet & de Meyer, 2005) offers numerous new titles throughout the year, the vast majority of these are not suitable for most language learning and teaching situations. Finding, choosing, and evaluating the curricular fit of a game or simulation is a task with which language educators are usually unfamiliar, compared to the selection of textbooks. Hubbard (2006) argues that "textbooks are relatively straightforward to evaluate because they tend to have a transparent structure allowing teachers to skim through them to get an overview of the organization and content." (p. 313) Such a set of defined criteria for curricular integration is currently missing for

digital, commercial off-the-shelf games. Filling this gap and providing a framework for locating and evaluating such games is the main goal of this article. The analysis in this article is not informed by second language acquisition (SLA) theories, but rather by the field of foreign language (FL) teaching. The proposal and discussion of a set of such criteria is then followed by the analyses of three examples of COTS games (*Buzz*, *Heavy Rain*, and *SingStar*) which may be suitable in a L2 learning context.

COMMERCIAL OFF-THE-SHELF (COTS) GAMES

The object of inquiry in this article are "games for entertainment" (Meyer & Sørensen, 2009). Even though there are numerous terms, such as digital games, video games, computer games, or electronic games, I use the terms interchangeably, referring to commercially available games and simulations that can be played on an electronic device, such as a computer or game console (for a discussion of the terms *game* and *simulation*, see: Sauvé, Renaud & Kaufman, 2010).

Three-dimensional environments and virtual worlds, such as *Second Life* or *Active Worlds* are not an object of analysis here because they have a different mode of presentation in comparison to more traditional single and multiplayer games (for a discussion of *Second Life* and other virtual environments, see e.g.: Kuriscak & Luke, 2009; Steinkuehler & Williams, 2006).

Another category that does not fall into the realm of COTS games is that of dedicated learning games or serious games. Van Eck (2006) suggests that serious games (whose primary purpose is to teach rather than to entertain) currently have to compete with COTS games and are resource-intensive because "the games must be comparable in quality and functionality to commercial off-the-shelf (COTS) games, which after all are very effective in teaching the content, skills, and problem-solving needed to win the game." He warns that even though there are some positive examples and developments are promising, "the road to the development of serious games is also littered with Shavian reversals (poor examples of edutainment in which neither the learning nor the game is effective or engaging)." (p. 20) Thus, while not always optimal, COTS games currently offer a valuable tool in various language learning and teaching contexts.

Selection Criteria

Much of the research has focused on selection and design criteria for instructional games (Purushotma, Thorne & Wheatley, 2009) or multimedia CALL (Chapelle, 1998). While some of these are relevant for our purposes, COTS games are not multimedia CALL software applications or instructional games. It is not the software that is the main provider of language practice, but rather the framework and the activities built around it. Doughty and Long (2003) discuss in the context of distance learning for the less commonly taught languages how TBLT's (task-based language teaching) methodological principles can influence technology choices. Some of these, for example individualization, focus on tasks rather than texts, the promotion of learning by doing, learner co-operation and collaboration, rich input, or inductive learning, are also useful for the selection of COTS games.

The following set of criteria is meant as a guide for language educators and researchers when selecting COTS games. This author proposes the following nine criteria that ought to be considered when choosing a suitable COTS game for language learning and teaching purposes:

1. motivation and flow,
2. clearly defined and spaced goals,
3. game skills and game mechanics,
4. content
5. story and narrative
6. multimodality
7. agency
8. course integration and scaffolding
9. financial, technical, and administrative considerations

1. Motivation and Flow

The importance of motivation and learner attitudes in various second language acquisition contexts is well established (e.g.: Dörnyei, 2005; Dörnyei & Ushioda, 2010; MacIntyre, 2002). Providing a high motivational factor is a crucial criterion for selecting a COTS game for an L2 learning context. In contrast to games and simulations that were specifically designed for a defined learning outcome, COTS games can offer high motivational rewards to the player and will ideally lead to a state of flow (Csikszentmihalyi, 1990), a state in which

the player is fully immersed in the domain and is highly focused on the current tasks and narrative within the game. This heightened form of intrinsic motivation allows the player to experience the game with fully focused cognitive and emotional attention to the task at hand. Habgood, Ainsworth and Benford (2005) argue that these experiences "are missing in the majority of edutainment products and could be a major factor in the distinction between extrinsic and intrinsic learning in digital games. Some edutainment products certainly interrupt the flow of the gameplay with their learning content, and others keep the learning quite separate from any flow experience, but few manage to make the learning content part of the flow experience." (p. 492)

It is important to choose a game that is rewarding and satisfying in itself without the constructed learning environment and intended learning goals. The question to ask is: Would the learner/player enjoy playing the gaming and actually play it if there were no extrinsic motivational factors involved, such as grades, assignments, or learning outcomes? This is often not the case with games specifically designed for specific learning goals. We find a similar design in the early, quite sophisticated game *Spion* was developed to teach intermediate and advanced college German (Molla, 1988). The game, however, punishes players for using a wrong article and does not let the player proceed without the grammatically correct input. The example Molla provides has the player type "Lesen Sie das Zettel!" The computer answers: "Ich verstehe das nicht. Etwas scheint nicht richtig in Ihrem Deutsch. Sagen Sie es anders, bitte!" (Molla, 1988, p. 15) Only the correct answer ("Lesen Sie den Zettel!") lets the player advance.

Thus the grammar-centric focus provides an unrealistic environment (a native speaker would understand the command and not insist on the correct article before continuing with the story), presents language as an obstacle rather than a guide or a solution, and puts form before content. It is the content, however, that provides the motivational factor. Wilson et al. (2009) propose that learner motivation is tied to the mystery - a "gap in knowledge" - found in a game. (p. 257) Users are engaged because they want to reach a certain part of the game or a goal they haven't yet experienced. If the game is to be truly motivating, they will play it, not in order to learn but in order to unravel that mystery.

This poses a dilemma for many learning games because they are often not played because of such intrinsic rewards. Thus, when choosing COTS games, a high level of interest is a crucial criterion. Ideally language and instructional aides help the learner achieve the goals set by the game and not set by the

teacher. Lacasa, Méndez and Martínez (2009) describe the high motivational aspect of authentic and realistic games as follows: "One of the clearest differences is that commercial videogames are present in children's everyday life. Previous studies have shown that they can be a valuable tool to establish bridges between what happens inside and outside the classroom." (p. 108) It is this bridge of intact authenticity and genuine interest that can provide a meaningful context for language use and learning.

2. Clearly Defined and Spaced Goals

When selecting and evaluating COTS games, one should consider the tasks that the learner/player needs to accomplish to advance in the game. They ought to be manageable, clearly stated, and broken down into smaller sub-tasks. For example, an adventure game might list the current goals (e.g. find a key, talk to a certain person, go to a specific place) and provide information relevant to the task at hand (e.g. a description of an item or a person, a map). The learner/player should be able to accomplish these tasks and thus receive positive feedback, but they should be challenging enough to keep up interest and motivation. According to deHaan, Reed and Kuwada (2011), the level of interactivity and mental load must be appropriate.

Virtual environments, such as *Second Life*, often lack these integrated goals, which must be provided either from the learner her- or himself, or from an outside agent, such as the instructor. It depends on the curricular set-up to determine which of the two, the structured or the unstructured form, is more suitable for the given situation.

There is an increasing number of hybrid forms in COTS games that provide specific tasks but also let the player explore the environment on his or her own. In *World of Warcraft*, for example, the player may choose to simply follow the integrated quests, but may at any time take time to explore the world, interact with other players, or choose alternative goals not provided by the game itself. In any case, feasible but challenging, well spaced and defined goals are a crucial component that either the game or the instructor needs to provide.

The feeling of progression in the game is a compelling aspect of COTS games, giving the learner a tangible set of goals that are achieved on a regular basis. It is more apparent and immediate than the increased linguistic ability, which is difficult to measure in such small increments. The rewards created by repeatedly attained goals motivate the learner/player to continue on in order to

receive another small reward. Gee (2003) calls this the "Achievement Principle," stating that for "learners of all levels of skill there are intrinsic rewards from the beginning, customized to each learner's level, effort, and growing mastery and signaling the learner's ongoing achievements." (p. 67) Role-playing games, for examples, allow the player to constantly improve, whether by leveling up their character, finding better items, by learning new spells or acquiring new characteristics. Other games provide high scores, rankings, new items, levels, or sequencing of the narrative structure, including "micronarratives," coherent, short, and contained (narrative) moments, which are a part of a longer narrative. (Jenkins, 2004, p. 125) This mechanism explains why players can keep doing the same game tasks for hours and hours (Johnson, 2005). Wilson et al. (2009) assert that "[i]n order for players to improve performance and even enhance learning, it is critical that they see the connection between their actions and outcomes." (p. 233) Progress in language learning, on the other hand, is often not immediately perceivable by the learner, and may take years for the learner to realize. The reward and feedback loop of the game may substitute for this by providing a constant stream of positive feedback.

3. Game Skills and Game Mechanics

It is crucial that certain aspects of the game are met in order to allow learners/players to advance and be able to succeed without unreasonable frustration. Games should not require motor skills but rather rely on linguistic comprehension and reasoning to allow the user to succeed in the game. The skill level has to be appropriate for the learner, as is the case for all teaching and learning media. As described below, the teacher needs to provide necessary scaffolding and aid.

It is crucial that players can repeat parts of the game and try again. Being able to save progress and pause during game play are also important game mechanics aspects. Without these abilities, the learner would become frustrated quickly and develop a negative attitude toward the game and the language, thus leading to the opposite of the desired effect. As a rule of thumb, if the educator cannot play the game, neither can the student be expected to.

4. Content

The "problem of content" (Gee, 2003, p. 20) is a considerable obstacle in game selection for educational environments. Many can be immediately sorted out due to their content, such as unsuitable displays of violence and eroticism. But not all such content may be unacceptable in the same vein as not all violent or erotic content in literature or films is unacceptable. As with all instructional materials, games need to be carefully reviewed by the educator prior to their implementation, a lengthy process without external professional and academic reviews.

While we can discuss the value of each specific game's content, I argue here that a focus solely on content may be less relevant for our purposes here than in other academic fields. The content is inherently authentic because native speakers of the target language use these games in everyday situations. They are relevant artifacts, and the learner can have the same experience as the native speaker. COTS games provide meaningful and purposeful interaction and content, and compared to simplified and artificial textbook materials may lead to more immersion and genuine interest. An immersive environment provides a context for learning and meaningful interaction, providing the learners with a shared experience and purposeful, high level of active engagement with the materials.

Learning culture through COTS games, however, is an issue that needs further examination. These games are mostly a global phenomenon, reflecting international tastes and interests that often do not involve a focus on national cultures. O'Brien and Levy (2007) argue that cultural aspects are not a big part of many games: "While using foreign language versions of existing commercial games like "The Sims" may be helpful for vocabulary learning [...], we argue that they do little for the cultural aspect of learning languages since students are not interacting with a culturally appropriate version of the game." Because of this, the discussion of cultural aspects then happens not within the game but outside of it, based on the game's content. Interesting scenarios suitable for further inquiry from the example of the Sims include what food is purchased and prepared, how relationships evolved and how they may be different in other cultures, or issues of personal space. The COTS game constitutes the basis for further learning, not learning itself, as is discussed as criterion 8 below.

While games within a cultural context exist, they are the minority due to very high production costs and cycles of modern computer games. Serious games, which are specifically designed for learning tasks, are much more adept at providing meaningful target language culture content. In international COTS

games, culturally relevant information needs to be presented in other learning contexts - in the classroom, through other related media or tasks. Finding a game specifically designed for a target language culture, however, is difficult but a worthwhile endeavor. In this situation, the game may be used as a creation of art (e.g. Jenkins, 2005) or popular culture from the target culture.

5. Story and Narrative

When analyzing a games story, one ought to keep in mind that there are actually "two stories" involved: the game writer's story and the player's story (McDaniel et al. 2010: 19-20). DeMarle (2007) similarly distinguishes between the "high-level story," which is the story that the writer intends to convey, and the "immediate-level story," which is the story that the player experiences in a video game. (p. 77-78) This story, as DeMarle (2005) points out, is less often recognized, but it is exactly this story that is student-centered. Crawford asserts that what the user experiences is a "dramatic *storyworld*, not a *storyline.*" (p. 56) Juul (2005a) speaks of a "multiform plot." (p. 241) A game's plot is not linear, making it more difficult to anticipate for game evaluators, as there are countless variations, especially when compared to a static text. It would help to think of computer games not so much as storytelling devices but rather as "story-enabling.'" (Krawczyk, 2006, p. 89, quoting David Perry)

This leads to a discussion of terminology: if we no longer have a carefully crafted, linear storyline or plot, can a game be considered a narrative? "Where gameplay is all about interactivity," Mateas and Stern (2006) argue, "narrative is all about predestination." (p. 643). Some argue that games, which are interactive simulations, are not narratives (e.g. Juul, 2005a) and that games need to be evaluated through a different set of criteria. Bizzocchi (2010) explains that in "an interactive experience a share of control is ceded to the interactor, and a critical degree of fine authorial control is lost." (p. 70) While this article's goal is not a discussion of ludological and narrativist critiques (see e.g. Mateas & Stern, 2006, for an overview of the debate), it is important to keep in mind that analyzing and evaluating a COTS game for L2 acquisition purposes involves different parameters than more traditional types of texts.

6. Multimodality

Games excel in complementing verbal information with non-verbal information and utilizing a range of communicative modes, such as visual (images, videos, animations, etc.), auditory (speech, music, sounds), textual aids (hypertext, glossing, subtitles, etc.), or tactile modes. As deHaan, Reed and Kuwada (2010) suggest, "[s]econd language research, teaching, and design should focus on what distinguishes games from other multimedia." (p. 75)

The learner/player may interact with the game interface through speech input, mouse movements, controller input or physical motions. Improved speech detection technologies and human interface devices, such as *Microsoft Kinect*, *PlayStation Move*, or the *Wii*, create a more immersive user experience and facilitate the shedding of disbelief in artificial environments. Interaction with the machine is increasingly more natural, reducing learner anxieties and reservations of game technology use in an educational context. Other promising and emerging technologies, such as 3d capabilities and augmented reality overlays may provide an even more immersive and supportive learner experience. "Game-informed practices influence the design of interactive digital interfaces embedded in video games, leveraging context in the virtual world via animations, textual information, and sound to assist students with proficiency in the target language." (Rankin & Shute, 2010, p. 182) For the COTS game selection process this means being able to repeat sequences and in-game information and to utilize subtitles.

7. Agency

The ability - or at least the belief - to be in charge of one's own actions is a powerful criterion in video game. Mateas and Stern (2006) argue that the experience of agency occurs

> "[...] *when there is a balance between the material and formal constraints*. When the actions motivated by the formal constraints (affordances) via dramatic probability in the plot are commensurate with the material constraints (affordances) made available from the levels of spectacle, pattern, language, and thought, then the player will experience agency. An imbalance results in a decrease in agency." (p. 654)

Agency is also experienced because the player is not only a recipient but also a co-author of stories. (McDaniel et al., 2010, p. 19) DeMarle (2007) even goes so far as to argue that the personal "immediate-level stories" can be more powerful than the "high-level story a writer creates." (p. 78) Selection of COTS

games, thus, relies on the game's probability of providing compelling personal stories. Murray (1997) argues that gaming and simulation environments allow for powerful literary creation because of four properties of digital environments that she identifies: they are "procedural, participatory, spatial, and encyclopedic." (p. 71) The emergence and growth of user-generated creations are immense, including new forms such a machinima or digital storytelling.

According to Habgood, Ainsworth and Benford (2005), "the perceived level of control is more important to motivation than the actual level of control." (p. 485) Good games create the illusion of choice, even when the game world is by its very nature limiting. This does not only apply to extensive game worlds found in popular games such as *World of Warcraft* or *Red Dead Redemption*. Even quiz games, such as the game *Buzz* (discussed below), provide enough choices through avatar creation and meaningful interaction with the content that the players forget that essentially they are limited to very few actual choices. The choices are, however, there to be experienced by every player, and in contrast to classroom situations, are clearly defined and the consequences are understood by all players through the game rules.

8. Course Integration and Scaffolding

One of the most challenging aspects of implementing a COTS game is its curricular fit and alignment with set learning outcomes. In many instances, it may not be feasible or prudent to choose a video game to achieve certain learning outcomes. The settings and conditions which lead to a possible integration of COTS games must align with the intended learning goals. For example, if written production is a goal, students may use the game narrative as they would a literary text. If the tense 'simple past' is the learning goal, students may report on their game progress in this tense. If conversation and role-playing are the intended aim, students can replay characters or their alter ego. For speech production, a reading or singing game may be appropriate.

The game as central object may only be one, even minor, aspect of the learning process, leading to meaningful interaction, activities, and communication. Van Eck (2006) argues that "we can easily augment the game with instructional activities that preserve the context (situated cognition) of the game (e.g., by extending the goals and character roles of the game into the classroom)." (p. 24) Such activities may include the creation of machinima, cooperative play, work in affinity spaces (Gee, 2004) writing of walkthrough

descriptions or game manuals, or the production of narrative accounts of either immediate-level or high-level stories. deHaan (2011) describes a role-playing game creation and the writing of a game magazine as effective, context-appropriate activities. Begg, Dewhurst and Macleod (2005) suggest the term *game-informed learning:* "By allowing the learning process to become informed rather than supplemented by processes identified with successful gameplay, instructors can maintain consistency and coherence without relying on extrinsic motivational interventions." (p. 1) Such activities are not passive but allow for a "process of knowledge construction." (Lacasa et al., 2009, p. 108)

If we understand scaffolding as "providing contextual supports for meaning through the use of simplified language, teacher modeling, visuals and graphics, cooperative learning and hands-on learning" (Ovando, Collier & Combs, 2003, p. 345), then the game itself is both itself a scaffolding measure as well as one that needs such contextual support itself. As learners/players are immersed in a highly motivational and group identity creating experience, educators ought to provide a support framework utilizing peers and other aids. One possibility is the re-purposing or customizing of COTS games through modules, modifications, or add-ons. Rankin and Shute (2010), for example, describe positive experiences with adding a dictionary module and a conversational prompts module to the commercial game *EverQuest II*. Such an approach, however, is time- and resource-intensive, it often has a steep learning curve, faces implementation hurdles, and may not be sustainable due to the rapid production and development cycles that force games to become obsolete fairly quickly.

Crookall (2010) stresses the importance of debriefing, which he defines as "the occasion and activity for the reflection on and the sharing of the game experience to turn it into learning." (p. 907) Neville, Shelton, & McInnis (2009) argue for a careful introduction into the curriculum "either by scaffolding them into existing, more familiar, instructional approaches or by designing instruction exclusively around the game experience so that game activity can be seamlessly blended with classroom activity and homework assignments." (p. 420-421) This writer agrees with the call (deHaan et al., 2010, p. 86) for further research on the pedagogical aspects of game integration, especially the creation of meaningful pre-teaching and reflection activities and proper educator training to provide scaffolding support.

9. Financial, Technical, and Administrative Considerations

Several factors should be considered when choosing a particular game. Is there technical support for the chosen platform? Is the hardware infrastructure already in place, and if not, how feasible is its implementation? Does the amount of time and work justify the learning potential, or is it better spent on other curricular innovations? The rapid outdatedness and short shelf life of current titles may lead to the inability to use the game in the future as platforms change and user experiences evolve. There also may be legal constrictions and ethical considerations (see, e.g. Schrier & Gibson, 2010) because of violent or sexual content.

Being able to change the language settings may not be possible in local versions, so purchasing the games from abroad may be necessary. Such transactions may not be possible or even legal, as video games are often not shipped internationally. While some consoles play international discs (e.g. the *PlayStation 3*), others may not. The lack of information and experience as well as constantly changing parameters and platforms may be the biggest obstacle to a successful implementation of certain COTS games.

THREE ANALYSES OF EXAMPLES OF COTS GAMES

The following three analyses represent different genres but share a number of characteristics. The games *Buzz*, *Heavy Rain*, and *Singstar* run on a *PlayStation 3* system, which plays domestic and foreign versions of games. They are available in several languages. The setup is relatively uncomplicated, and gameplay is fairly easy to learn. Required motor skills or previous computer game experiences are minimal. The contexts are realistic, set in "coherent worlds" (Juul, 2005b, p. 131-132), allowing for quick identification with the domain.

It is important to note that these are not recommendations, but rather exemplary analyses that may serve as a guide for evaluating other COTS games. In fact, *Heavy Rain's* notably violent content may make it unusable in most educational contexts, but nonetheless provides a worthwhile insight into the possibilities that newly emerging forms of technologies afford.

Buzz

Non-digital games based on quiz shows, such as *Jeopardy*-style games, are a common occurrence in many language classrooms. Van Eck (2006) suggest that these types of games "are likely to be best for promoting the learning of verbal information (facts, labels, and propositions) and concrete concepts." (p. 22) One digital version of such a game is *Buzz,* an interactive quiz game for up to 8 simultaneous users, in which the players use proprietary wireless buzzers with color coded keys, not much different from clickers, to provide game input. Available in a variety of changeable languages, *Buzz* is customizable and provides a number of question genres from which players may choose.

Criterion #1: Motivation and Flow

The central goal is to earn points by answering questions correctly, which are read aloud by an engaging and humorous talk show host and are generally displayed in on-screen text. Even though the player with the most points wins, the game dynamics are set up in a way to allow weaker players to catch up, for example by choosing topics or by allowing players to steal points from the leading contenders.

Being able to select an avatar allows players to inhabit a different persona and may lead to reduced anxiety and inhibition. *Buzz* allows students to develop emotional attachment to the characters they choose, to assume their identities and perform accordingly, without fear of serious consequences. (Begg et al., 2005)

Criterion #2: Clearly Defined and Spaced Goals

The instant responses and reward and feedback loop allow the learners to judge their progress and compare it to their peers, providing a highly motivating, individualized interaction situation in and out of the classroom. There are possible pauses between rounds, allowing the learners to reflect on the previous round or conduct follow-up activities.

Criterion #3: Game Skills and Game Mechanics

Gameplay is learned by playing, therefore an instruction manual or previous practice is not necessary. There are no physical or mechanical skills involved with the exception of being able to press the correct buttons quickly. A positive feature is that language comprehension is necessary to successfully master the game, forcing the learner to pay close attention to the questions, both aurally and visually.

Criterion #4: Content and Criterion #5: Story and Narrative

The provided content is authentic and challenging, and there are additional games (e.g. "*Buzz! Deutschlands Superquiz*" or "*Scene It? - Ganz großes Kino*") that can be used with the same controllers. The game is highly customizable in that there is a large online library of additional sets of questions, and users can even create their own content, which can then be played on the *PlayStation 3* console. Question sets are, however, strictly limited to four possible answers per question, thus reflecting multiple choice quizzes in game format. The game world setup follows Gee's (2003) ninth game-based principle because it is "constructed in such a way that learners learn not only about the domain but about themselves and their current and potential capacities." (p. 67) There is no story in the traditional sense: the game is merely the adaptable medium, which enables learners and teacher to project their content onto a digital canvass.

Criterion #6: Multimodality

The multimodal output includes written and spoken text, videos, images, sounds, songs, and animations.

Criterion #7: Agency and Criterion #8: Course Integration and Scaffolding

Players actively engage with the digital content because they have to take action in order to earn points. Within the game their options are limited because only four answers are possible per question. But because students and teachers can design their own quiz sets, one of the main uses of the game is the creation of content. Teachers may have students write up the questions, possibly drawn from course content or other areas of interest and ask them to provide one correct and three false answers to their submitted questions. This could be used to reinforce or review content from the curriculum. *Buzz* therefore provides a constructivist framework that allows manipulation of the game world as well as the experience of being immersed in the relevant and meaningful space created by their peers.

The main draw of the game is its social nature. Video games are often regarded as solitary, uncommunicative activities, but such games can be highly social activities that encourage meaningful L2 communication. Eight players, or more when played in groups, can simultaneously experience the game in the target language. If they create their own question sets and do a post-game reflection activity, total time spent using the target language is likely to be longer than the time spent with the game, and the content is adapted to the curricular needs of the learning.

Criterion #9: Financial, Technical, and Administrative Considerations

Set-up is simple and, depending on the version, includes multiple language packs changed through the system language setting. International *Buzz* discs can be played on a locally purchased *PlayStation 3* system. In addition to the game, the proprietary wireless buzzers need to be purchased, but use of the online library and content creation tool is free of charge.

Concluding Remarks: Buzz

A flexible, social game like *Buzz* can be a meaningful addition to a constructivist L2 curriculum and is in itself a motivating medium with adaptable content. The competitive yet non-threatening nature of the game allows for playful, imaginative, and authentic use of the target language.

Heavy Rain

The game *Heavy Rain is* an immersive, interactive film narrative played by a single player.

Criterion #1: Motivation and Flow and Criterion #2: Clearly Defined and Spaced Goals

Players consume *Heavy Rain* like a movie in which they can influence the plot. The game is an agentive and highly motivating performance space in which the plot and the atmosphere engage and immerse the player. One important criterion is that you cannot lose the game in a traditional sense. If a character dies, the story continues to unfold in a different way, and the player takes on the role of other characters. While the various endings are very different depending on the player's actions, most of the main story's differences are nuanced.

Criterion #3: Game Skills and Game Mechanics

The player must be alert because at any time a reaction may be required, but the game can be paused. The game-play method, called *quick time events*, prompts players to press certain buttons or perform certain finger, hand, or arm motions. The *PlayStation Move* controller, which is motion sensing and involves body movements, may be used as a more natural and immersive response mechanism, which may appeal to those inexperienced with video games. Chapters can be replayed, and since the story unfolds in many different ways, there isn't the common threat of "game over" found in more traditional video

games. Thus it allows less experienced gamers play the game without getting too frustrated by the game mechanics.

Criterion #4: Content and Criterion #5: Story and Narrative

Because of its ESRB rating of "Mature," it will not find widespread use in many educational contexts.

Heavy Rain foreshadows the future possibilities of interactive digital storytelling. The player follows an immersive narrative through the eyes of different characters. Belonging to the adventure game genre, it is a single-player psychological thriller with strong film noir elements and feels more like a movie than a video game in the traditional sense. The story involves four playable protagonists and the mystery of a serial killer, the Origami Killer.

Van Eck (2006) argues that adventure games, "which are narrative-driven open-ended learning environments, are likely to be best for promoting hypothesis testing and problem solving." (p. 22) *Heavy Rain* is an interesting case because the plot moves along, even as each player's own individual story plays out differently. Players develop emotional involvement in the story and personal attachment to the characters. "Media-rich narrative-based simulations and games" Bizzocchi (2010) argues, "can offer learners the richest of mediated experience – immersion." (p. 69)

Criterion #6: Multimodality

During the approximately 8 to 10 hours of game-play, the player spends the majority of time listening, reading, and watching the plot unfold, so there is a large amount of authentic language input. The voices of the game characters are professionally read in various languages (which depends on the version), and optional subtitles are available as aides if needed. The monologues and dialogues are realistic and compelling, yet not too long as to not lose the viewer's attention.

Criterion #7: Agency

What makes this type of narrative compelling is that the learner/player is influencing the story. Nonetheless, the story is the central focus and more important than the action taken by the player. The division into individual chapters is reminiscent of a novel or DVD menu structure, including the fact that you may replay individual completed chapters to practice or to see the story develop in a different way. Since it is possible to save overall game process, the main storyline is not lost when replaying a chapter. Since every player

experiences a different story, *Heavy Rain* feels personalized and the player feels that he or she is in charge.

Criterion #8: Course Integration and Scaffolding

Because of the ESRB rating of "Mature," the game does lend itself to use within most formal educational contexts. Within higher education its use could be possible, but perhaps not as part of a formal class. Such games could be made available in a language learning center or for check-out. In theory, an interactive and compelling narrative like this without the mature content could be used in many ways in formal instructional setting, especially since the chapter structure mimics the narrative setup of other media, such as films or novels.

Criterion #9: Financial, Technical, and Administrative Considerations

From a technical standpoint, the game is fairly easy to manage and inexpensive. When purchased in other countries, discs will play on a locally purchased *PlayStation 3*.

Concluding Remarks: Heavy Rain

Heavy Rain would be well suited for many intermediate and advanced language courses, were it not for the content and its ESRB rating "Mature." The listed content descriptors include "Blood, Intense Violence, Nudity, Sexual Content, Strong Language, Use of Drugs." While students may be used to these in films and other media, it is the otherwise so positive level of immersion and agency that support serious concerns about the feasibility of using the game in an educational context. This underscores the necessity to carefully and critically examine all aspects of each game before its implementation.

Nonetheless, *Heavy Rain* shows the future potential of immersive and interactive game narratives. It expands traditional traits of computer games and hints at a convergence of genres and media that may yield compelling, rich interactive digital storytelling possibilities in the future that do not raise concerns due to their rating.

SingStar

The music and karaoke game *SingStar* allows players to sing as individuals, partners, or competitors in a variety of languages. The *SingStar* franchise comprises of a number of individual games, which all share the same game mechanics but offer different music genres and artists.

Criterion #1: Motivation and Flow

Besides offering a convenient karaoke solution, the game mechanics provide an element of competition and focus in that it evaluates and awards points to the singers. These points reflect pacing and voice pitch, and graphical feedback is provided throughout the song along with the lyrics and the music video. Pronunciation, however, is not evaluated by the system. The system does make a recording of the last song, which may be used for subsequent evaluation and improvement. Performer inhibition is lowered by providing the original song, video, and meta-information, as well as the possibility to sing individually or with others. Gee (2003) points out through what he calls his "'Psychological Moratorium' Principle" that "[l]earners can take risks in a space where real-world consequences are lowered." (p. 67)

Criterion #2: Clearly Defined and Spaced Goals

Each song lasts only a few minutes, and for some songs players can choose between the regular and a shortened version of the song. The system provides instant feedback by awarding points in real time. The evaluation should not be taken too seriously because pronunciation is not evaluated, which may help to lower the singer's anxiety.

Criterion #3: Game Skills and Game Mechanics

Game-play mechanics, rules, and goals are immediately apparent and need no further explanation or training. The lyrics displayed on the screen, and the current word or part of the word that should be sung is highlighted. Bars of different height indicate the song's melody so that even those not too familiar with the song may participate.

Criterion #4: Content and Criterion #5: Story and Narrative

Because the content involves authentic songs, it is very suitable within L2 learning contexts. The selection of songs may be limited in some languages and the song catalog not as expansive as those for "traditional" karaoke system. Since the discs were produced for local markets, language learners get an authentic language experience and can consume media just as their peers in the target language's country would.

Criterion #6: Multimodality

Players will hear music, watch the song's video, and follow the on-screen lyrics while singing.

Criterion #7: Agency and Criterion #8: Course Integration and Scaffolding

Learners produce language rather than merely consuming it. This is empowering and enables him or her to become an agent. In order to get to this stage, however, it is critical to introduce the learner to the song. This opens up possibilities of discussing the song's lyrics, cultural background, the artist, and context prior to singing the song. In that sense the game will be the final stage of the learning process.

It is advantageous that most instructors will already have experience preparing appropriate activities, since *SingStar* is very similar to other forms of music used in the L2 curriculum. The structure of the game lends itself both to whole or partial class session integration, as well as practice outside of the classroom.

Criterion #9: Financial, Technical, and Administrative Considerations

In addition to the songs on the discs, individual songs can be purchased through an online store, thus providing a way to add more recent content to the collection. The store selection reflects a focus on English language music, but various other languages are available on discs and individual downloads. The technical set-up involves a proprietary set of microphones, and for individual song purchases a PlayStation Network account.

Concluding Remarks: SingStar

SingStar is essentially a social game that is very adaptable. It can be used within more formal or semi-formal L2 learning environments. It does not work well without any preparation, but is a highly motivating language learning tool when carefully introduced and scaffolded.

CONCLUSION

Even though they are a real and an important part of many learners' lives, computer games are still only rarely found in L2 educational situations and curricula. Squire (2008) sees games as valued less than other media, or not at all. The *potential* of video games is certainly great, offering high intrinsic motivation, a rewards and feedback loop, immersion and agency, engagement with "symbolic reconstructions of the world" (Lacasa et al., 2009, p. 108), as well as multimodal input and output possibilities. "Video games provide an

active, personal experience that is difficult to duplicate for each student in the traditional classroom environment." (Rankin & Shute, 2010, p. 179)

It has been the aim of this article to suggest that certain criteria have to be met in order to successfully implement COTS games into formal language learning contexts. The game itself has to be fully motivating and provide clearly defined and spaced goals. Learners with varying game skills must be able to play the game without too much knowledge of specific game mechanics. Educators must find appropriate content, which ideally provides rich and meaningful, media-rich narratives, providing their users a feeling of agency and choice. The benefits of COTS games are only fully realized when embedded in an instructional and pedagogical context, requiring scaffolding, appropriate and context-sensitive activities, as well as "mindfully-selected games." (deHaan et al., 2010, p. 87) It is outside of the game that the majority of the learning takes place. Finally, there are a number of financial, technical, and administrative considerations that need to be taken into account.

The process of COTS game selection for language learning is still not fully researched and this article tried to remedy this at least partially. This writer agrees with Van Eck (2006), who asserts that "[t]his is the biggest obstacle to implementing COTS DGBL: it requires careful analysis and a matching of the content, strengths, and weaknesses of the game to the content to be studied." (p. 22) Adding technical and administrative aspects, as well as cost and short shelf-life of games to this obstacle, it is obvious that much work and research is still ahead of us to if we wish to convey the potential of COTS games to educators, administrators, game designers, and publishers. But the benefits of such multimedia rich, immersive, authentic and highly motivating games warrant further work for educators and researchers in this field.

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REFERENCES

Begg, M., Dewhurst, D., & Macleod, H. (2005). Game-informed learning: Applying computer game processes to higher education. *Innovate: Journal of Online Education*, *1*(6).

Bizzocchi, J. (2010). The role of narrative in educational games and simulations. In D. Kaufman & L. Sauvé (Eds.), *Educational gameplay and simulation environments: Case studies and lessons learned* (pp. 68–83). Hershey, PA: Information Science Reference.

Chapelle, C. (1998). Multimedia CALL: Lessons to be learned from research on instructed SLA. *Language Learning & Technology*, *2*(1), 22–34.

Crawford, C. (2005). *Chris Crawford on interactive storytelling*. Berkeley Calif.: New Riders Games.

Crookall, D. (2010). Serious games, debriefing, and simulation/gaming as a discipline. *Simulation & Gaming*, *41*(6), 898 –920.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience* (1st ed.). New York: Harper & Row.

Davies, G., Higgins, J., Davies, G., & Centre for Information on Language Teaching and Research. (1985). *Using computers in language learning: a teacher's guide*. London: Centre for Information on Language Teaching and Research.

deHaan, J., Reed, M. W., & Kuwada, K. (2010). The effect of interactivity with a music video game on second language vocabulary recall. *Language Learning & Technology*, *14*(2), 74–94.

DeMarle, M. (2007). Nonlinear game narrative. In C. M. Bateman (Ed.), *Game writing : narrative skills for videogames* (1st ed., pp. 71–84). Boston, Mass.: Charles River Media.

Dörnyei, Z. (2005). *The psychology of the language learner: Individual differences in second language acquisition*. Mahwah, N.J.: Lawrence Erlbaum Associates.

Dörnyei, Z., & Ushioda, E. (2010). *Teaching and researching: Motivation* (2nd ed.). Pearson ESL.

Doughty, C. J., & Long, M. H. (2003). Optimal psycholinguistic environments for distance foreign language learning. *Language Learning & Technology*, *7*(3), 50–80.

Gee, J. P. (2003). *What video games have to teach us about learning and literacy* (1st ed.). New York: Palgrave Macmillan.

Gee, J. P. (2004). *Situated language and learning: A critique of traditional schooling.* New York: Routledge.

Habgood, M. P. J., Ainsworth, S. E., & Benford, S. (2005). Endogenous fantasy and learning in digital games. *Simulation & Gaming, 36*(4), 483–498.

Hubbard, P. (2006). Evaluating CALL Software. In L. Ducate & N. Arnold (Eds.), *Calling on call: from theory and research to new directions in foreign language teaching* (pp. 313–338). San Marcos TX: Computer Assisted Language Instruction Consortium.

Jenkins, H. (2004). Game design as narrative architecture. In N. Wardrip-Fruin & P. Harrigan (Eds.), *First Person: New Media as Story, Performance, and Game* (pp. 118–130). Cambridge, Mass.: MIT Press.

Jenkins, H. (2005). Games, the new lively art. In J. Raessens & J. Goldstein (Eds.), *Handbook of computer game studies* (pp. 176–189). Cambridge, Mass.: MIT Press.

Johnson, S. (2005). *Everything bad is good for you: how today's popular culture is actually making us smarter*. New York: Riverhead Books.

Juul, J. (2005a). Games telling stories? In J. Raessens & J. Goldstein (Eds.), *Handbook of computer game studies* (pp. 220–245). Cambridge Mass.: MIT Press.

Juul, J. (2005b). *Half-real: Video games between real rules and fictional worlds*. Cambridge Mass.: MIT Press.

Krawczyk, M. (2006). *Game development essentials: Game story & character development*. Clifton Park, NY: Thompson Delmar Learning.

Kuriscak, L. M., & Luke, C. L. (2009). Language learner attitudes toward virtual worlds: An investigation of Second Life. In L. Lomicka & G. Lord (Eds.), *The next generation: Social networking and online collaboration*

in foreign language learning (pp. 173–198). San Marcos, TX: Computer Assisted Language Instruction Consortium.

Lacasa, P., Méndez, L., & Martínez, R. (2009). Using videogames as educational tools: Building bridges between commercial and serious games. In M. Kankaanranta & P. Neittaanmäki (Eds.), *Design and Use of Serious Games* (Vol. 37, pp. 107–123). Dordrecht: Springer Netherlands. Retrieved from http://www.springerlink.com/content/uu82461132503735/

Levy, R. M., & O'Brien, M. G. (2007). A virtual world for teaching German. *Loading...*, *1*(1). Retrieved from http://journals.sfu.ca/loading/index.php/loading/article/view/14/12

MacIntyre, P. D. (2002). Motivation, anxiety, and emotion in second language acquisition. In P. Robinson (Ed.), *Individual differences and instructed language learning* (pp. 45–68). Amsterdam;Philadelphia PA: J. Benjamins Pub.

Malliet, S., & de Meyer, G. (2005). The History of the video game. In J. Raessens & J. Goldstein (Eds.), *Handbook of computer game studies* (pp. 23–45). Cambridge Mass.: MIT Press.

Mateas, M., & Stern, A. (2006). Interaction and narrative. In K. Salen & E. Zimmerman (Eds.), *The game design reader: A Rules of play anthology* (pp. 642–669). Cambridge Mass.: MIT Press.

McDaniel, R., Fiore, S. M., & Nicholson, D. (2010). Serious storytelling: Narrative considerations for serious games researchers and developers. In D. Kaufman & L. Sauvé (Eds.), *Educational gameplay and simulation environments: case studies and lessons learned* (pp. 13–30). Hershey, PA: Information Science Reference.

Meyer, B., & Sørensen, B. H. (2009). Designing serious games for computer assisted language learning – a framework for development and analysis. In M. Kankaanranta & P. Neittaanmäki (Eds.), *Design and use of serious games* (Vol. 37, pp. 69–82). Dordrecht: Springer Netherlands. Retrieved from http://www.springerlink.com/content/r80324672m162445/

Molla, S. (1988). Artificial intelligence in a German adventure game: Spion in PROLOG. *CALICO Journal*, *6*(1), 9–23.

Murray, J. (1997). *Hamlet on the holodeck: The future of narrative in cyberspace*. New York: Free Press.

Neville, D. O., Shelton, B. E., & McInnis, B. (2009). Cybertext redux: Using digital game-based learning to teach L2 vocabulary, reading, and culture. *Computer Assisted Language Learning*, *22*(5), 409–424.

Ovando, C. J., Collier, V. P., & Combs, M. C. (2003). *Bilingual and ESL classrooms: Teaching in multicultural contexts* (3rd ed.). Boston, Mass.: McGraw-Hill.

Peterson, M. (2010). Computerized games and simulations in computer-assisted Language learning: A meta-analysis of research. *Simulation Gaming*, *41*, 72–93.

Prensky, M. (2001). *Digital game-based learning*. New York: McGraw-Hill.

Purushotma, R., Thorne, S. L., & Wheatley, J. (2009). 10 Key principles for designing video games for foreign language learning. Retrieved from http://lingualgames.wordpress.com/article/10-key-principles-for-designing-video-27mkxqba7b13d-2/

Rankin, Y. A., & Shute, M. W. (2010). Re-purposing a recreational video vame as a serious game for second language acquisition. In D. Kaufman & L. Sauvé (Eds.), *Educational gameplay and simulation environments: Case studies and lessons learned* (pp. 178–194). Hershey PA: Information Science Reference.

Sauvé, S., Renaud, L., & Kaufman, D. (2010). Games, simulations, and simulation games for learning. In D. Kaufman & L. Sauvé (Eds.), *Educational gameplay and simulation environments: Case studies and lessons learned* (pp. 1–26). Hershey PA: Information Science Reference.

Schrier, K., & Gibson, D. (2010). *Ethics and game design teaching values through play*. Hershey, Pa.: IGI Global (701 E. Chocolate Avenue, Hershey, Pennsylvania, 17033, USA),.

Squire, K. D. (2008). Video-game literacy: A literacy of expertise. In J. Coiro (Ed.), *Handbook of research on new literacies* (pp. 635–669). New York: Lawrence Erlbaum Associates/Taylor & Francis Group.

Steinkuehler, C., & Williams, D. (2006). Where everybody knows your (screen) name: Online games as "third places." *Journal of Computer-Mediated Communication*, *11*(4). Retrieved from http://jcmc.indiana.edu/vol11/issue4/steinkuehler.html

Young, M. F., Slota, S., Cutter, A. B., Jalette, G., Mullin, G., Lai, B., Simeoni, Z., et al. (2012). Our princess is in another castle: A review of trends in serious gaming for education. *Review of Educational Research, 82*(1), 61–89.

Van Eck, R. (2006). Digital game-based learning: It's not just the digital natives who are restless. *EDUCAUSE Review*, *41*(2), 16–30.

Wilson, K. A., Bedwell, W. L., Lazzara, E. H., Salas, E., Burke, C. S., Estock, J. L., Orvis, K. L., et al. (2009). Relationships between game attributes and learning outcomes: Review and research proposals. *Simulation & Gaming, 40*(2), 217–266.