Edutainment
Does it educate? Is it entertaining?

While the act of playing video games in general can have some positive developmental effects (such as building strategic thinking skills and hand-eye coordination), certain games have been created and marketed as a primarily educational experience. These games tend to be released on the PC or on Nintendo platforms such as the DS or the Wii. Because the Wii does not have the same high-definition graphics capabilities as the Xbox 360 or the PS3, developers may feel that users won't mind playing a game with less action and impressive graphics.

Educational games can be made on a number of subjects, from skills everyone needs (math, vocabulary, typing) to more individualized challenges such as learning a foreign language, local history, or about a certain disease or condition such as diabetes.

The big question is: do these games work? Some experts, such as Dr. Michael Marsiske state that practice – playing the mental math games in Nintendo's *Brain Age*, for example – will only help the player to improve at that particular task, and will not translate to improvements in other areas, such as calculus or memory (Butcher, 2008, p. 104). So while your score in *Brain Age* may increase (or, more accurately, your "Brain Age" will become younger), your aptitude in the real world may not have changed.

However, studies of games designed for a more specific purpose tend to be more favourably reviewed. One group of researchers created a game called *Skills Arena* for the Game Boy Advance (the handheld Nintendo console that preceded the **DS**). Instead of completing math problems on paper, which have to be marked and returned by the teacher, students were able to answer addition and subtraction questions in the game, and could choose the difficulty level themselves. While they only got an average of 60% of the questions right, each student completed an average of over 1,200 questions during the 19 days of the study. On a paper worksheet, each student would be able to see about 450 questions. Quizzing your students in a video game can provide instant feedback and won't cut into your photocopy budget (Lee, Luchini, Michael, Norris & Soloway, 2004, p. 1378).

Of course, the simpler the material, the easier it is to incorporate into a game. By the time gamers are in high school, they may not be able to supplement their classroom studies with practice in video games (For example, I haven't yet seen a game based on the valence bond theory – though there are plenty of virtual dissection programs available). Most research studies seemed to focus on the effectiveness of repetitive drills for students in elementary school.

Like any other tool, video games for use in the classroom should be evaluated critically against the curriculum and the teacher's goals. They can be used as a reward for completing work, or to address specific shortcomings in students' skills, but can never replace a well-rounded lesson plan incorporating a multitude of teaching techniques. Nevertheless, with the pervasiveness of SmartBoards, computer labs, and handheld devices, technology is being used in the classroom more than ever.

In a library setting, most educational video games or computer games would best fit in a circulating collection rather than for tournaments or open play. They could also be part of self-serve, independent programming where the software is already loaded on library computers, or educational DS cartridges could be available for designated times when patrons bring their DS consoles in to play together.

Finally, one sentiment shared by many reviewers is that "edu-tainment" games often come up short in both categories, being neither particularly fun nor educational. For example, there is a version of the wildly popular board game *Cranium* available for the Wii, but its aggregate score based on a number of reviews on Metacritic.com was an underwhelming 64. More telling are the comments, such as the following from IGN.com: "…not only is the board game a better value, but it's just more fun" (Buchanan, 2007, ¶ 9).

The bottom line is that educational video games have great potential: they may fill a gap in the curriculum, or they may be the best way to reach certain students. Their digital nature has a number of advantages, such as instant feedback (less marking!) and a large database of possible questions or vocabulary words. However, they are an expensive investment that is not always better than the analogue equivalent, and may be most useful for reinforcement and practice rather than actual teaching. Before purchasing these games, talk with your teens, rent before you buy, or read a number of reviews to get a feel for which games actually do provide educational value and an enjoyable player experience.

Nintendo DS

Brain Age and *Brain Age 2*: These popular games contain a number of puzzle activities designed to be played daily for brief periods of time. Examples of **minigames** are reading aloud, mental math (addition, subtraction, multiplication and division), making correct change, and Sudoku.

My Word Coach: training exercises designed to increase your English vocabulary.

My French Coach, *My Spanish Coach*, *My Chinese Coach*, *My Japanese Coach*: Play minigames that build your mastery of new vocabulary introduced by the games. Games contain sound files that teach the correct pronunciation of words. In the case of the *Chinese* and *Japanese Coach* games, a new set of characters must be learned, and the touch screen is used for tracing characters on the screen with the stylus.

Nintendo Wii

The "My Coach" series of games is also available on the Wii. Big Brain Academy is also available on the DS.

Big Brain Academy - Wii Degree: Players compete minigames in five different categories (logic questions, reasoning, math, visual, and memory) to determine the 'mass' of their brain. This is a single-player game.

Smarty Pants: a multiplayer trivia game with great potential for a tournament program, or a fun game for after school.