

# Serious Gaming, Serious Modding and Serious Diverting... Are You Serious?!

*Catherine Bouko and Julian Alvarez*

## **Abstract**

In French-speaking research, the expression ‘serious gaming’ is used in English in order to refer to the *practice* of diverting videogames aimed at three new, functional purposes: the diffusion of message(s), training and data collection. ‘Serious games’ are thus distinguished from ‘serious gaming’: while the end result may appear similar (combining games with educational purposes), serious gaming applies new functions a posteriori. To highlight the phenomenon of diversion, we propose the expression ‘serious diverting’, which therefore constitutes a type of serious gaming, as it is understood in English. Beside ‘serious diverting’, we also identify a second category of serious gaming in the broad sense of the word, for which we coin the concept of ‘serious modding.’ In this chapter, we present several examples of ‘serious diverting’ taken from the education and health sectors, emanating from teachers, professors, researchers, medical teams or companies.

**Key Words:** Serious games, serious gaming, serious modding, serious diverting, health, education.

\*\*\*\*\*

‘Don’t tell my mother I’m a *game designer*, I’m training the doctors, firemen, IT technicians... of tomorrow.’<sup>1</sup> This statement from Guardiola *et al.* humourously reminds us that videogames are not viewed as a particularly politically correct cultural object. In the French domain, Dauncey has highlighted the way in which the progressive recognition of videogames as a cultural object, rather than mere software, has tweaked the effective framework of the typically French ‘cultural exception’:

... the videogaming industry in the late 1990s and 2000s fought to obtain the support of the state as culture rather than leisure, as art rather than technology, and thus to benefit from the measures afforded to activities deemed to contribute to France’s cultural specificity and cultural diversity. Despite the gradual drift of policy towards recognising the validity of popular culture [...] videogames have often struggled to overcome the enduring elitism of the French cultural establishment.<sup>2</sup>

The use of videogames in the context of education is contributing to the political legitimising of videogames in general, a fact reinforced by the example of the French authorities who in 2009 allocated 30 million Euros to encourage French video gaming production.<sup>3</sup> This financial aid for such a precise sector of videogames led producers to fear a new, counterproductive distinction between two levels of legitimacy: ‘videogames “deserving” of support, and by default, other games, to be pejoratively classified as “leisure”.’<sup>4</sup> Nevertheless, different approaches to videogames enable us to move beyond this elitist distinction. One such approach consists of what is referred to as ‘serious gaming’ in French-speaking research.

### **1. ‘Serious Gaming’ in French-Speaking Research, or ‘Serious Diverting’**

An alternative to the use of serious games consists of what certain French-speaking researchers, trainers and teachers label ‘serious gaming’ in their research or academic work.<sup>5</sup> They use the expression in English in order to refer to the *practice* of diverting videogames aimed at three new, functional purposes: the diffusion of message(s), training and data collection.

However it goes without saying that commercial videogames do not need to be diverted in order to serve as learning materials. Indeed, this point of view is in line with general classifications of playful objects, such as the ESAR© system. Based on psycho-educational criteria and inspired by the work of Jean Piaget, this system aims to classify and organise games and toys according to five standards: cognitive skills, functional skills, types of social activity, language skills and emotional behaviour. The ESAR acronym refers to four types of game: exercises, symbolic games, construction games and games with rules. For the most part, videogames can be categorised as symbolic games (in particular simulation games) and games with rules. More specifically, James Paul Gee<sup>6</sup> has presented us with the now famous thirty-six learning principles enabled by gaming.

This approach to serious gaming can be referred to as diversion in the sense that its purposes are not those put forward by the game’s designers. This diversion can involve commercial games as well as serious games, to which we attribute a new learning function in addition to, or independent of, their initial pedagogical purpose. Thus we distinguish between ‘serious games’ and ‘serious gaming’: while the end result may appear similar (combining games with educational purposes), only serious gaming applies new functions *a posteriori*.

The use of the English expression in French research aims to distinguish between the gaming experience and the artefact. In French, the expression ‘jeu sérieux’ does not allow us to distinguish between the *activity* in progress and the *object* which enables the activity. It must also be noted that the same ambiguity exists in English: the notion of serious gaming as opposed to serious games acts as a generalisation; it refers to all practices in education through games, without distinguishing between the practice and the game itself. Therefore the notion of

---

serious gaming has a much more restricted scope in French than in English. In order to move past this contrasting terminology and highlight the phenomenon of diversion, we propose the expression ‘serious diverting.’ ‘Serious diverting’ would therefore constitute a type of serious gaming, as it is understood in English.

‘Serious diverting’ is a form of ‘catachresis’. That notion was first used in linguistics to refer to misuses of words (‘alibi’ instead of ‘excuse’) or to figures of speech which use existing expressions and give them a new meaning. The concept of catachresis has been transferred to the use of tools, to describe the use of a tool instead of the proper one, or the use of tools for functions they were not made for. For example, using an adjustable spanner to hit something, instead of a hammer is a catachresis. This notion has also been transferred to the ergonomics of technologies to describe the difference of use between that originally imagined and the real function.<sup>7</sup>

Beside ‘serious diverting’, we can also identify a second category of serious gaming in the broad sense of the word, for which we coin the concept of ‘serious modding.’ The diversion of *use* which characterises ‘serious diverting’ can be distinguished from serious modding by the *software* modifications which the latter involves. The act of modifying an existing game in order to circulate different versions is widespread in gaming culture; this can even be seen as one of the cornerstones of the success of certain titles, such as *Doom* or *Half-Life*. The difference between a variation on a given game and a ‘mod’ lies in the fact that the latter is not autonomous, and needs the original game in order to function. In most cases, modding is limited to the adaptation of games for entertainment purposes. Nevertheless, certain mods transform games for entertainment into serious games. For example, *Escape from Woomera* modifies the game *Half-Life* by using the latter’s playful structure to draw the public’s attention to living conditions in Australian refugee camps. This example illustrates the explicit presence of both playful and serious dimensions.

It is also important to note that level design, i.e. the creation of levels within a game via the editorial software in order to create a utilitarian element, is also present in serious games. Thus in our opinion, for example, the creation of a map game in *Warcraft III* by using items and resources to teach mathematics, can be categorised as serious modding.

Let us consider several examples of ‘serious diverting’ taken from the education and health sectors. Indeed, these are the sectors in which we can identify the most examples of this practice of purpose appropriation.

## A. Education

This is without doubt currently the sector in which ‘serious diverting’ is the most evident. Gee<sup>8</sup> and Schaffer<sup>9</sup> have drawn several noteworthy examples, to name but a few. *Second Life* certainly stands out as one of the most diverted

games: it is used to teach information technology, media studies and even classical music. It is also worth mentioning initiatives based on less well-known games.

Lucas Gillispie of Pender County Schools, Northern Carolina, United States, has headed the WoWinSchool project since 2009. Based on a diverted version of the MMORPG *World of Warcraft*, the project's aims include helping 7th and 8th grade pupils in difficulty to better get to grips with reading, writing and mathematics. Due to the programme's success, Mrs Edie Skipper, the head teacher, has suggested extending the initiative to the whole student body. Today, tens of schools in the United States and Canada are taking the same approach. Other games have been the object of similar diverting, such as *Guild Wars 2* and *MineCraft*.

For his part, John Burk, a ninth-grade physics teacher at a private school in Westminster, Atlanta, uses *Angry Birds* in his Physics classes to teach mechanics in particular.<sup>10</sup>

Donna Beth Ellard, a professor and researcher in higher education, uses the role play game *The Elder Scrolls V: Skyrim* to teach Scandinavian mythology at the Rice University in Texas.<sup>11</sup> The technique consists of first asking students to read extracts of texts drawn from mythology, before then taking part in quests which refer to the texts. The aim is thus to understand how these myths have influenced other cultures, in particular that of the United States. We can also identify lessons given by Samantha Allen who uses the third-person shooting game *Halo*<sup>12</sup> and the fighting game *Wrath of the Gods*<sup>13</sup> to evoke issues linked to transexuality.

In France, the Ludus network, created by Yvan Hochet and Denis Sestier from the Caen academy, brings together teachers using games (both videogames and games) for pedagogical purposes. This network highlights the use of *Sim City* in Geography classes and *Lords of the Realm II* for History.<sup>14</sup> Moreover, the French Pedagame collective has edited a report bringing together a range of experiences using videogames taken from the entertainment industry for teaching purposes, such as *Sing Star* to improve English proficiency.

## B. Health

'Serious diverting' is also used in the health sector. In the United States, for example, since 2006, Wii games consoles have been introduced into *Riderwood* (Maryland) retirement homes belonging to the American *Erickson* group, with the aim of stimulating elderly people whilst offering something which is both occupational and socially-based. This phenomenon has since been observed in similar establishments around the world.

In Japan, the business Namco-Bandai, which notably produced the *Pacman* game, now offers senior citizens in their eighties the chance to visit their offices.<sup>15</sup> A dedicated area, for which you have to pay, now acts as a sort of day centre. The idea is to offer them the chance to play with different arcade games in order to maintain their health capital. The aim of the game is to hit crocodiles or frogs with

a rubber mallet in order to stimulate blood flow to certain parts of the brain and body (arms, legs...). It is interesting to note that some of these games have been adapted to correspond with the physical needs of the target audience.<sup>16</sup>

In the French health sector, we have particularly focused on the work of Michael Stora. In the volume *Guérir par le virtuel*,<sup>17</sup> this clinical psychologist explains the manner in which he uses the game *ICO* by modifying its initial aim of 'mere entertainment.' In therapy sessions with children, he uses a specific section of the game. The player is asked to hold a princess' hand, by holding down a button, in order to lead her to the exit. However, once the destination is reached, the player must release the button and allow the princess to leave. Some children refuse to accept this strategy and become distressed. The therapist therefore tries to establish a dialogue by linking the child's family experience with the situation presented in the game. As for Yann Quintilla, he uses *The Sims 3* for behavioural rehabilitation with people suffering from mental disorder. The technique consists of asking them, via the game, to go home from the cinema. In order to do so, they must carry out a series of tasks such as getting dressed, preparing money, taking the bus... This technique particularly requires the patient to question in which order he should carry out the different tasks. In France, these examples are referred to as serious gaming, which has, as said earlier, a more precise meaning than in English. Let us now examine more specifically the English approach to the notion of serious gaming.

## 2. 'Serious Gaming; in English, or Learning 'Outside the Box'<sup>18</sup>

While lots of researchers use the notion of serious gaming in their English work to refer to serious video gaming practices in general, we will our examination on the work of Jenkins *et al.* in order to somewhat refine the concept.

As with lots of terms which experience a certain amount of success, the notion of serious gaming is losing its specificity as it becomes more widely used. In the opinion of certain researchers, it can be summarised as the general practice of using videogames for serious means, regardless of the activity or the artifact. Thus, different serious gaming practices are sometimes grouped together, which does not allow for their specific nature to be taken into account.

In the article 'From Serious Games to Serious Gaming', Jenkins *et al.* put forward a more specific approach to serious gaming; they focus primarily on the learning process instead of the software as a technology to convey information and tasks:

A hallmark of our serious games projects is that we factor the context and process of play into our game design, insisting that much of the learning takes place outside the box as the experience of gaming gets reflected upon by teachers and learners in the context of their everyday lives.<sup>19</sup>

This vision of serious gaming corresponds with the third generation approach to education via videogames highlighted by Egenfeldt-Nielsen. Thus, following a first behavioural, and then a second cognitive and constructive period, it is now time for a constructionist approach which pays particular attention to situated learning and the socio-cultural dimension:

Instead of conceiving content, skills and attitudes as residing with the user, knowledge is transferred to culture, tools and communities. [...] You learn new things by participating in these communities and appreciating and negotiating what counts as knowledge, skills and attitudes. It is worth stressing, that in this perspective the educational use of computer games ties much closer to the surrounding culture.<sup>20</sup>

For Jenkins' team, focusing attention on serious gaming rather than serious games allows us to underline the challenges of learning activities through gaming, which go much further than the interaction between the player and the software. The technical and individualistic approach of the game gives way to a more collective approach, through which the player is counted as a member of a cultural community. Meta-gaming, or reflecting on learning by the game, are central to serious gaming. The game therefore becomes a support for exchanges and collective problem solving, which themselves are an integral part of the learning process.

In conclusion, we use the notion of serious gaming following Jenkins *et al.*'s focus on the meta-pedagogical, cultural and collective aspects of learning. Serious gaming in English refers to the use of serious games, to serious modding and to serious diverting. In French research, only the latter is considered as serious gaming.

'Serious diverting' can be a particularly interesting means of achieving pedagogical aims while focusing on their cultural and collective aspects. Its various advantages enable us to dismiss the criticism sometimes directed at serious games. While learning through serious games has its supporters thanks to stimulating projects, there are still some obstacles to overcome. Indeed, certain researchers are sceptical as to this form of edutainment. Egenfeldt-Nielsen has drawn particular attention to the following disadvantages: little intrinsic motivation, no integrated learning experience, drill-and-practice learning principles, simple game play, small budgets. The fact that 'serious diverting' involves diverting existing games, which are often known to and appreciated by players, means that it does not have the disadvantage of provoking little intrinsic motivation, in particular due to simple game play. Jenkins' team have demonstrated that serious gaming on the basis of third generation serious games could and should lead to the development of integrated learning experiences rather than drill-and-practice learning principles.

The same applies to ‘serious diverting’, which could provoke experiences of meta-learning, whereby the learning conditions are situated at the heart of the videogame experience. Moreover, rather than having to spend time getting to know the gameplay of an unfamiliar game, ‘serious diverting’ enables the player to immediately concentrate on the educational aspect for which the game is merely a support, and we know that teachers are leery of committing precious class time to time-consuming activities. The game is an integral part of the popular cultural practices which ‘serious diverting’ takes pleasure in deciphering. This certainly explains in part why some e-virtuoses awards<sup>21</sup> were attributed to serious diverting experiences in 2013.

### Notes

<sup>1</sup> Emmanuel Guardiola et al., ‘Du jeu utile au jeu sérieux (SG) Le Projet Jeu Serai’, *Jeux Vidéo, Quand Jouer C’est Communiquer*, ed. Jean-Paul Lafrance, Nicolas Oliveri (Paris: CNRS, 2012), 85.

<sup>2</sup> Hugh Dauncey, ‘French Videogaming: What Kind of Culture and What Support?’ *Convergence: The International Journal of Research into New Media Technologies* 18.4 (2012): 389.

<sup>3</sup> Dauncey, ‘French Videogaming,’ 400.

<sup>4</sup> Nicolas Gaume, ‘Interview Bilan 2009 avec N Gaume (SNJV),’ *GameKult.com*, 7 January 2010, viewed on 25 November 2010, <http://www.gamekult.com/actu/interview-bilan-2009-n-gaume-snjv-A0000081941.html>, quoted in *Ibid.*

<sup>5</sup> Julian Alvarez et al., *Introduction Au Serious Game* (Paris: Editions Questions Théoriques, 2012); Thomas Constant, ‘De Angry Birds à Mécanika: Serious Game et Serious Gaming,’ *JeuxSérieux.ac-Creteil.fr*, 28 September 2011, viewed on 11 December 2011, <http://jeuxseriesux.ac-creteil.fr/?p=862>; Florian Denys, Ouali Chabi, ‘Panorama et Problématique du Serious Game,’ *Ide-Edu.net*, 21 November 2011, viewed on 15 April 2014, <http://ide-edu.net/wp-content/uploads/2012/02/PANORAMA-ET-PROBLEMATIQUE-DU-SERIOUS-GAME-une-conf%C3%A9rence-d-Olivier-Mauco.pdf>. Blog.

<sup>6</sup> James Paul Gee, *What Video Games Have to Teach Us about Learning and Literacy* (Basingstoke: Palgrave Macmillan, 2007).

<sup>7</sup> Pierre Rabardel, *Les Hommes et les Technologies, une Approche Cognitive des Instruments Contemporains* (Paris: Armand Colin, 1995), 100.

<sup>8</sup> James Paul Gee, *What Video Games*.

<sup>9</sup> David W. Shaffer, *How Computer Games Help Children Learn* (Basingstoke: Palgrave Macmillan, 2006).

<sup>10</sup> John Burk, ‘Angry Birds in the Physics Classroom,’ *Fnoschese.wordpress.com*, June 16, 2011, viewed on 20 February 2014,

<http://fnoschese.wordpress.com/2011/06/16/angry-birds-in-the-physics-classroom/>. Blog.

<sup>11</sup> Pia, 'Skyrim enseigné à la Fac,' *Journaldugamer.com*, October 22, 2012, viewed on 13 December 2013,

<http://www.journaldugamer.com/2012/10/22/skyrim-enseigne-a-la-fac/>. Blog.

<sup>12</sup> Samantha Allen, 'All Skulls On: Teaching Intersectionality through Halo,' *Borderhouseblog.com*, April 23, 2013, viewed on 15 March 2014,

<http://borderhouseblog.com/?p=10617>. Blog.

<sup>13</sup> Samantha Allen, 'Wrath of the Gods: Teaching Intersectionality through Bastion,' *Borderhouseblog.com*, October 2, 2013, viewed on 15 March 2014,

<http://borderhouseblog.com/?p=11456>. Blog.

<sup>14</sup> 'Nos productions : les fiches de jeu', <http://histgeo.discip.ac-caen.fr/ludus/sommfiche.htm>, viewed on 8 April 2012. Website

<sup>15</sup> Anon., 'Japon : les jeux vidéo comme thérapie pour le troisième âge,' *LeMonde.fr*, 6 March 2014, viewed on 9 March 2014,

[http://www.lemonde.fr/technologies/video/2014/03/06/japon-les-jeux-video-comme-therapie-pour-le-troisieme-age\\_4378900\\_651865.html](http://www.lemonde.fr/technologies/video/2014/03/06/japon-les-jeux-video-comme-therapie-pour-le-troisieme-age_4378900_651865.html).

<sup>16</sup> Belga, 'Et ça rigole, et ça fait des "oups!", des "ouaiiis!'," *LeSoir.be*, 6 March 2014, viewed on 9 March 2014,

<http://www.lesoir.be/487175/article/actualite/fil-info/fil-info-styles/2014-03-06/japon-jeux-video-au-secours-du-troisieme-age-un-marche-prometteur>.

<sup>17</sup> Michael Stora, *Guérir par le virtuel* (Paris: Presses de la Renaissance, 2005).

<sup>18</sup> Henry Jenkins, 'From Serious Games to Serious Gaming,' *Serious Games: Mechanisms and Effects*, ed. Ute Ritterfeld et al. (New York: Routledge, 2009), 449.

<sup>19</sup> Ibid.

<sup>20</sup> Simon Egenfeldt-Nielsen, 'Third Generation Educational Use of Computer Games,' *Journal of Educational Multimedia and Hypermedia* 16.3 (2007): 275.

<sup>21</sup> The e-virtuoses awards are attributed by the Chamber of Commerce and Industry of Grand Hainaut (France). The fifth ceremony took place in 2013. For this edition, in addition to the existing categories of 'training', 'communication and awareness' and 'health', two other categories awarded games related to education, namely 'serious gaming' and 'gamification'. In 2013, the game *Arcadémie*, which uses *Little Big Planet 2* to teach the basics of physics, won the 'serious gaming' award.

## Bibliography

Allen, Samantha. 'All Skulls On: Teaching Intersectionality through Halo.' *Borderhouseblog.com*, April 23, 2013. Viewed on 15 March 2014.

<http://borderhouseblog.com/?p=10617>. Blog.

---

———. ‘Wrath of the Gods: Teaching Intersectionality through Bastion.’ *Borderhouseblog.com*, October 2, 2013. Viewed on 15 March 2014.

<http://borderhouseblog.com/?p=11456>. Blog.

Alvarez, Julian, Damien Djaouti. *Introduction Au Serious Game*. Paris: Editions Questions Théoriques, 2012.

Anon. ‘Japon: les jeux vidéo comme thérapie pour le troisième âge.’ *LeMonde.fr*, 6 March 2014. Viewed on 9 March 2014.

[http://www.lemonde.fr/technologies/video/2014/03/06/japon-les-jeux-video-comme-therapie-pour-le-troisieme-age\\_4378900\\_651865.html](http://www.lemonde.fr/technologies/video/2014/03/06/japon-les-jeux-video-comme-therapie-pour-le-troisieme-age_4378900_651865.html).

Belga. ‘Et ça rigole, et ça fait des "oups!", des "ouaiiis!".’ *LeSoir.be*, 6 March 2014. Viewed on 9 March 2014.

<http://www.lesoir.be/487175/article/actualite/fil-info/fil-info-styles/2014-03-06/japon-jeux-video-au-secours-du-troisieme-age-un-marche-prometteur>.

Burk, John. ‘Angry Birds in the Physics Classroom.’ *Fnoschese.wordpress.com*, June 16, 2011. Viewed on 20 February 2014.

<http://fnoschese.wordpress.com/2011/06/16/angry-birds-in-the-physics-classroom/>. Blog.

Constant, Thomas. ‘De Angry Birds à Mécanika: Serious Game et Serious Gaming.’ *JeuxSerieux.ac-Creteil.fr*, 28 September 2011. Viewed on 11 December 2011. <http://jeuxserieux.ac-creteil.fr/?p=862>.

Dauncey, Hugh. ‘French Videogaming: What Kind of Culture and What Support?’ *Convergence: The International Journal of Research into New Media Technologies* 18.4 (2012): 389.

Denys, Florian, Ouali Chabi. ‘Panorama et Problématique du Serious Game.’ *Ide-Edu.net*, 21 November 2011. Viewed on 15 April 2014.

<http://ide-edu.net/wp-content/uploads/2012/02/PANORAMA-ET-PROBLEMATIQUE-DU-SERIOUS-GAME-une-conf%C3%A9rence-d-Olivier-Mauco.pdf>. Blog

Ducrocq-Henry, Samuelle. ‘Apprendre ensemble en classe via des jeux vidéo populaires: le modèle du LAN pédagogique.’ *CJTL/RCAT* 37.2 (2011): np.

Egenfeldt-Nielsen, Simon. 'Third Generation Educational Use of Computer Games.' *Journal of Educational Multimedia and Hypermedia* 16.3 (2007): 263-281.

Ferreira, Alcino. 'Jeux Sérieux et Langue de Spécialité: Trois Exemples de Ludification pour l'Apprentissage de l'Anglais Naval.' *Cahiers de l'APLIUT* 33.1 (2014): np.

Gee, James P. *What Video Games Have to Teach Us about Learning and Literacy*. Basingstoke: Palgrave Macmillan, 2007.

Guardiola, Emmanuel, Stéphane Natkin, Delphine Soriano, Even Loarer, Pierre Vrignaud. 'Du jeu utile au jeu sérieux (SG) Le Projet Jeu Serai.' *Jeux Vidéo, Quand Jouer C'est Communiquer*, edited by Jean-Paul Lafrance and Nicolas Oliveri, 85-91. Paris: CNRS, 2012.

Jenkins, Henry. 'From Serious Games to Serious Gaming.' *Serious Games: Mechanisms and Effects*, edited by Ute Ritterfeld, Michael Cody and Peter Vorderer, 248-268. New York: Routledge, 2009.

'Nos productions: les fiches de jeu.' Viewed on 8 April 2012.  
<http://histgeo.discip.ac-caen.fr/ludus/sommfiche.htm>.

Pia. 'Skyrim enseigné à la Fac.' *Journaldugamer.com*, October 22, 2012. Viewed on 13 December 2013.  
<http://www.journaldugamer.com/2012/10/22/skyrim-enseigne-a-la-fac/>. Blog.

Rabardel, Pierre. *Les Hommes et les Technologies, une Approche Cognitive des Instruments Contemporains*. Paris: Armand Colin, 1995.

Shaffer, David W. *How Computer Games Help Children Learn*. Basingstoke: Palgrave Macmillan, 2006.

Stora, Michael. *Guérir par le virtuel*. Paris: Presses de la Renaissance, 2005.

**Catherine Bouko** is Associate professor at the Université Libre de Bruxelles (Belgium). She works on communication and culture, on cultural semiotics and on media literacy. She published *Théâtre et réception. Le spectateur postdramatique* (Brussels, Peter Lang) in 2010 and *Corps et immersion* (Paris, L'Harmattan) in 2012.

**Julian Alvarez** is part-time Professor at the CIREL-lab at Université Lille 1 (France). He is also the manager of the Play Research Laboratory (Valenciennes, France). Julian Alvarez has contributed so far to the design and development of over 150 Advergames, Edugames and Casual games