Serious Games
Ronan Smith, H00189534, Computer Science, 20/11/2014

What are serious games?

It is difficult to imagine a world without video games. They are very popular for entertainment and can be very addictive and gripping. Many people enjoy the stimulation they receive from playing video games and developers are looking to take advantage of this using 'serious games'. Serious games are 'games' which have been designed for a specific purpose other than just pure entertainment. Some different types of serious games include games for health, games in industry designed for training, news-games and educational games [1].

Why use serious games?

Writer Tom Chatfield said that games can "turn just about any complex and potentially overwhelming system of variables into a manageable simulation that can be played, refined and analysed as many times as you want" in his book 'Fun Inc.: Why Gaming Will Dominate the Twenty-First Century' [2]. This is interesting and allows us to see that serious games can be helpful in areas where mistakes cannot be made when learning in the real world. They offer an alternative, safe environment where learners can learn from their mistakes without putting themselves or others at risk.

One example of this is training aeroplane pilots as they will need to carry out many hours of training before they are capable of flying a real aeroplane, especially when conditions are tough. Serious games let the learner pilots become experienced to some extent in all sorts of conditions so that if something goes wrong during a real flight, they are prepared for it and don't panic. Figure 1 shows an example of a flight simulator being used. This type of training is also used in many areas of the military, for example learning to use new weapons. Soldiers can practice with simulations using many different weapons and become experts before they have even shot a real physical bullet. Instructors can also watch over them and analyse replays after they have completed exercises to find out what they did well and what they need to improve on [3].

Figure 1 – A trainee pilot using a flight simulator.

Perhaps another example of an area where this would be useful is bomb disposal as any mistakes made when on the job can be very costly. Trainees will have to go through many years of training before they are capable of dealing with a real-life bomb and serious games would certainly help to simulate these scenarios and prepare them for the real life situations. Although I could not find any evidence during my research that serious games are used in bomb disposal training currently it may be a possibility in the future.

Education is also an application of serious games and can be very effective as people tend to learn things more thoroughly when they enjoy learning them. Also there is the phrase "tell me and I'll forget, show me and I'll remember, involve me and I'll understand" which a company called Serious Games International (who will be spoke about in more detail later) makes a point of saying in a video on their website [4]. Their point is that people learn best when they are involved rather than sitting listening to someone talking or simply reading it from a book and this is part of the idea behind serious games. Making learning fun is important as it makes it more enjoyable for both adults and children.

Organisations and Products

Serious Games International is a British company formed in Coventry that uses gaming technology to create serious games mainly for businesses and they see themselves as the leaders in the market. Their products so far range from mobile applications to full-on simulations and include training for the fire brigade too. Some more examples of products they have produced include:

- 'Dials Tech' – A mobile application which allows the user to analyse different aspects of their car's performance.
- 'Matrix' – A games-based learning program. This is an example of a serious game designed to be 'fun' as well as educational.
- 'Chatterbox' – Software which uses 3D avatars and voice communication to mimic an experienced employee. It can have knowledge from many different experienced employees saved in one database and can be accessed by any of the current employees. The advantage of this is that the chatterbox avatars do not retire or leave. Figure 2 shows what these avatars look like.
- 'Me, Myself and I' – This has many uses in social work and can help to highlight what the person using it really needs to help them with their problem or problems.

These are all documented on the Serious Games International website [4].

Figure 2 – Chatterbox Avatars.

The company also managed to make a deal with British Airways to create a game for training not their pilots, but their cabin crew [5]. The software they have designed allows the cabin crew to prepare ahead of a training course and then they can use it to refer back to when they are actually on the job. It gives them 3D visualisation of many different scenarios they may need to train for and allows them to learn in a way that is both engaging and interesting.

   IBM is another company involved in creating serious games and the games they are creating are more about working out how to do things efficiently in different situations for example running a business (INNOV8) or a whole city (CityOne). Their game 'INNOV8' turns Business Process Management (BPM) from being a "dry and complex subject" into a "more interesting and vivid" game according to Tom Grant and their 'CityOne' serious game helps city planners to organise important resources such as finance, water and power [6].

Summary

   To summarise, a serious game is a 'game' which is not just created for entertainment, but for another primary purpose such as health, training, education, or news-games. They take advantage of the addictive nature of video games to allow people to enjoy doing things they may not have enjoyed before such as learning maths or the skills needed for a new job. Pilots and soldiers both use serious games to learn in a safe, secure environment and avoid putting their lives at risk before they are fully trained. Two organisations involved in developing serious games are IBM and Serious Games International and they have released products such as INNOV8 and Chatterbox respectively. The market for these types of games is growing quickly and they are being used more and more all the time.

References

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