

A study to investigate Students and Teachers attitudes towards the use of computer games in St Johns School, to assist learning.

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Abstract

The aim of this study was to investigate students and teachers attitudes towards the use of computer games in St Johns School, to assist learning. This study was done to support research being carried out by Futurelab.

Teaching with Games is a year-long project part-funded by Electronic Arts, the world's leading interactive entertainment software company, and ISFE, investigating the place of mainstream commercial computer games in the classroom. The project aims to provide practical and informed evidence of the implications and potential of the use of these games in school, and an informed strategy for future educational development requirements, based upon collaborative discussions between industry and the education community.

The target population for the study was students in year 8 at St Johns Lower School, Marlborough, Wiltshire. The participants were selected using opportunity sampling by asking any teachers who were willing to complete the questionnaire, and give them to their mixed ability tutor groups to complete, the students who participated in a lesson using a computer game were also asked to complete the questionnaire to see if their views differed.

From this research it is possible to draw the conclusion that computer games would be beneficial in lessons as the majority of teachers think it would assist learning in lessons such as Maths, ICT, History and Geography and students think it would make lessons more interesting.

Introduction

Aim: The aim of this study is to find out students and teachers attitudes towards the use of computer games in school and whether it will assist learning.

Background: *Futurelab are passionate about transforming the way people learn. Tapping into the huge potential offered by digital and other technologies, we are developing innovative learning resources and practices that support new approaches to education for the 21st century.*

Teaching with Games is a year-long project part-funded by Electronic Arts, the world's leading interactive entertainment software company, and ISFE, investigating the place of mainstream commercial computer games in the classroom. The project aims to provide practical and informed evidence of the implications and potential of the use of these games in school, and an informed strategy for future educational development requirements, based upon collaborative discussions between industry and the education community. The Teaching with Games project aims to extend our understanding of the ways in which commercial games might be implemented in a formal educational setting.

Our Involvement: We are year 12, sixth form students at St Johns School Marlborough, who are assisting Futurelab with their study into teaching with games, to help identify learning opportunities of using games in lessons. As part of our research we will ask the children directly concerned with using games in lessons, students in years 7 to 9, their opinions on how they think computer games should be used in lessons. We will also ask teachers to see which subjects they think will be most effective to use games in. As a separate part of our research we will witness a lesson involving using a computer game in lessons to gain an insight into exactly how computers would be used in lessons. We have been asked to help Futurelab in this research because we can provide a stronger relationship between students and ourselves than the staff at Futurelab. This is because we are closer in age and the students may feel less intimidated and make it a more informal discussion so they may be more open with their views. The research questions we will use will be:

Which subjects do students and teachers believe to be the best for using computer games?

What are students and teachers attitudes on using PC games in lessons, both those involved and uninvolved with the study?

Methodology

Target Population: The target population for the study was students in St John's lower school in Years 7 to 9, Marlborough, Wiltshire and teachers who taught at lower school. The participants were selected using opportunity sampling. Opportunity sampling is when anyone from the target audience who is willing to participate is selected. The method was chosen because it is a quick and practical method of sampling although it can be biased. The students who had participated in a lesson using computer games such as 'the SIMS' were also given questionnaires although it was still voluntary whether to complete them or not.

Procedure: The opportunity sampling was carried out by asking teachers to hand out questionnaires to students in years 7 to 9 during lessons and to teachers in the staff room over a week. Prospective students and teachers were given a questionnaire which outlined what the questionnaire was about and why the research was being done:

'On behalf of Futurelab and eAgames, we are part of a year long project researching teachers and students attitudes towards the use of computer games in schools to assist learning. We would appreciate it if you could answer the following questions to help us research this topic.'

At the bottom of the questionnaire the participants were debriefed:

'Thank you very much for completing this questionnaire. Your answers will be very useful to our research. If you have any queries, please do not hesitate to contact Bethan Spanswick, Emma Wiltshire and Hettie Scholes on [e-mail address].'

The questionnaires were then collected in and the results analysed and presented in graphs.

We also carried out interviews with a small random sample of both students who took part in a lesson with games and a group who didn't to see if their views differed. This was done by systematic sampling from a class register. The students were approached and asked if they would be willing to take part in an interview, the following was said to them:

'Hi, would you mind talking to us about using computer games in lessons.'

If participants were willing they were taken to an empty classroom, where a 5minute semi-structured interview took place. The following was said to them before the interview started:

'On behalf of Futurelab and eAgames, we are part of a year long project researching teachers and students attitudes towards the use of computer games in schools to assist learning. We would appreciate it if you could answer the following questions to help us research this topic, you have the right to withdraw at any time and your results will be destroyed. Your answers will also be kept strictly confidential as no names will be recorded.'

Some of the questions we asked were:

'Would you like to use computer games in lessons?'

'Do you think that it would help you learn more?'

'Do you think the lessons would be more interesting?'

'Do you think the use of computer games would help you concentrate and pay more attention in lessons?'

We also expanded their answers by querying them to extract a more detailed response. (for interview transcripts see appendices) The students were then thanked for their help and

reassured that their answers would be kept confidential and given the option to withdraw:

'Thank you very much for taking part in this interview. Do you have any questions? If you have any queries later, please do not hesitate to contact us on [e-mail address]. Remember you may withdraw at any time.'

The qualitative data was then analysed.

Ethical Issues: The ethical issue of confidentiality is a potential problem because people may be worried that they are not answering the questionnaire how they are supposed to, this problem is addressed by treating the information collected with complete confidentiality and not recording any names on the questionnaires, just whether the participant is male or female and if they participated in a lesson using computer games.

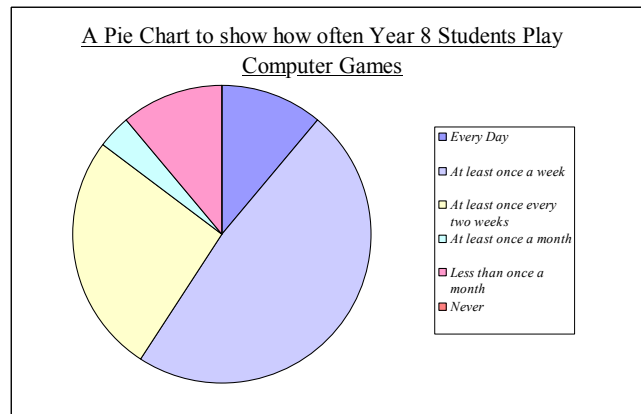
Limitations: The limitations of this study are there was an inadequate amount of students able to experience using computer games in lessons due to a lack of spare time in the curriculum. There were also technical difficulties as the games would not work on individual workstations and the class had to work as a whole which may have restricted the effectiveness of using games. e.g In Mr Dechoux's French lesson the Sims2 would only install on the network in English not French.

Results:

Results of the questionnaires given to year 8 students who did not take part in a lesson using 'The Sims2'.

1. How often do you play computer games in your free time? (tick **one**)

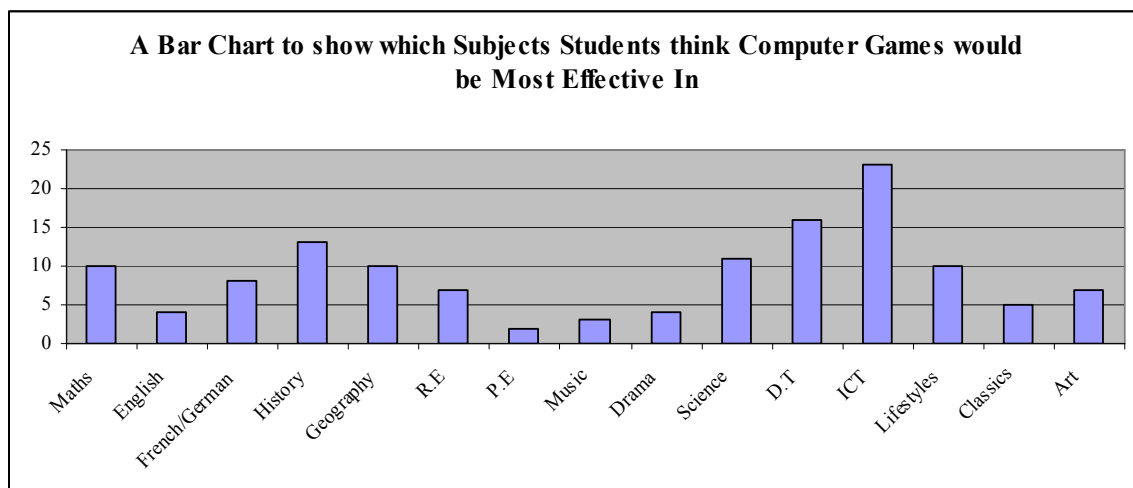
- Every day
- At least once a week
- At least once every two weeks
- At least once a month
- Less than once a month
- Never



This shows that most year 8 students who were not part of the Sims group play computer games at least once a week or at least once every two weeks. This also shows all students play computer games at some time.

5. In which of the following subjects do you think that using computer games would be **most** effective? (tick **four**)

- | | | |
|-------------------------------------|---|----------------------------------|
| <input type="radio"/> Maths | <input type="radio"/> P.E | <input type="radio"/> ICT |
| <input type="radio"/> English | <input type="radio"/> Music | <input type="radio"/> Lifestyles |
| <input type="radio"/> French/German | <input type="radio"/> Drama | <input type="radio"/> Classics |
| <input type="radio"/> History | <input type="radio"/> Science | <input type="radio"/> Art |
| <input type="radio"/> Geography | <input type="radio"/> Design and Technology | |
| <input type="radio"/> R.E | | |

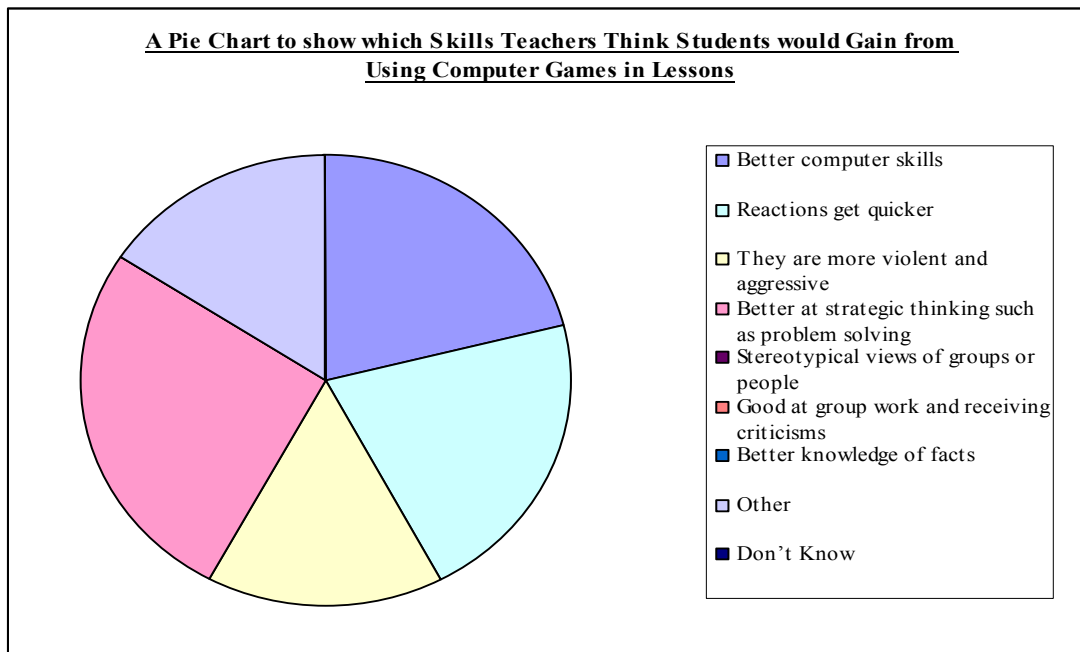


This bar chart shows that students who did not take part in a lesson using 'The Sims 2' think that using computer games in ICT, D.T, History, Science, Lifestyles, Geography and Maths would be most effective.

Results of the questionnaires given to teachers who teach students at Savernake.

4. Thinking about the kinds of computer games people play outside school, do you think young people who play these games learn any of the following through doing so? (tick **all** of the boxes that apply)

- Better computer skills
- Reactions get quicker
- They are more violent and aggressive
- Better at strategic thinking such as problem solving
- Stereotypical views of groups or people
- Good at group work and receiving criticisms
- Better knowledge of facts
- Other
- Don't Know

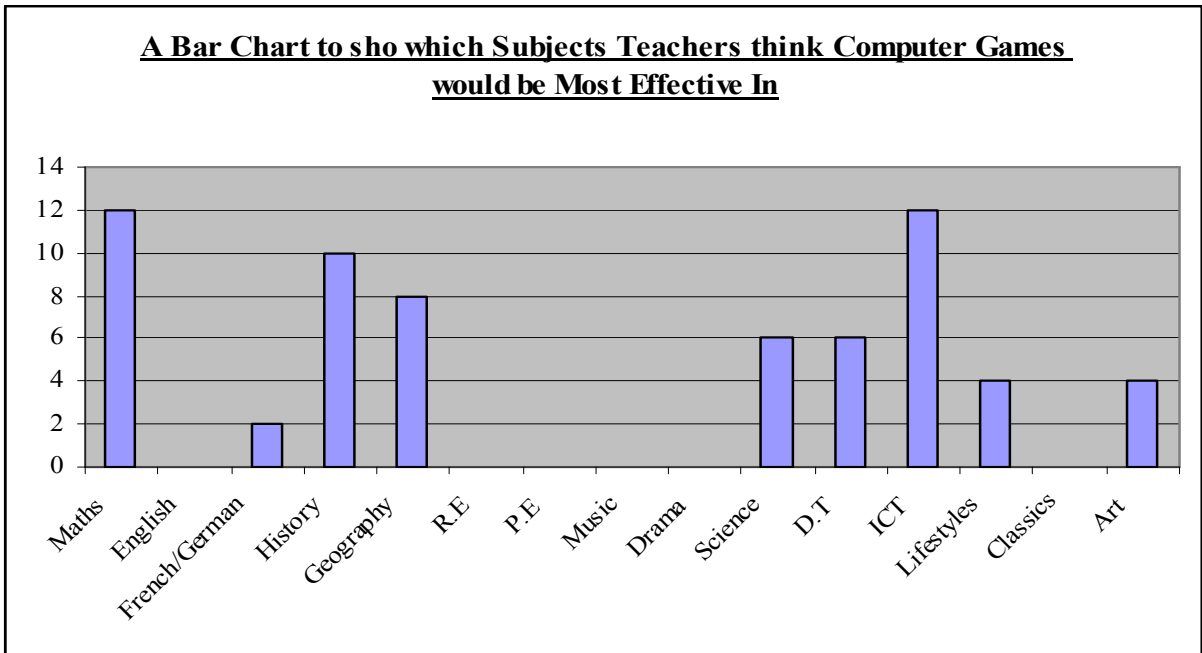


This pie chart shows that teachers think students would gain: better strategic thinking skills such as problem solving, improved reactions and better computer skills.

5. In which of the following subjects do you think that using computer games would be **most** effective? (tick **four**)

- Maths
- English
- French/German
- History
- Geography
- R.E
- P.E
- Music
- Drama
- Science
- Design and Technology
- ICT
- Lifestyles
- Classics
- Art

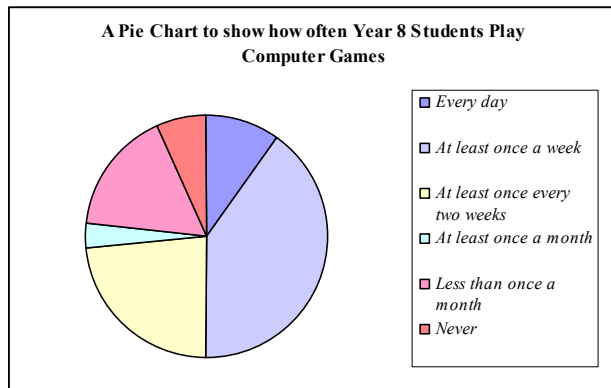
This bar chart shows that teachers think that using computer games in ICT, Maths, History and Geography would be most effective.



Results of the questionnaires given to year 8 students who took part in a lesson using 'The Sims2'.

1.. How often do you play computer games in your free time? (tick **one**)

- Every day
- At least once a week
- At least once every two weeks
- At least once a month
- Less than once a month
- Never



This shows that most year 8 students who were in the Sims group play computer games at least once a week or at least once every two weeks.

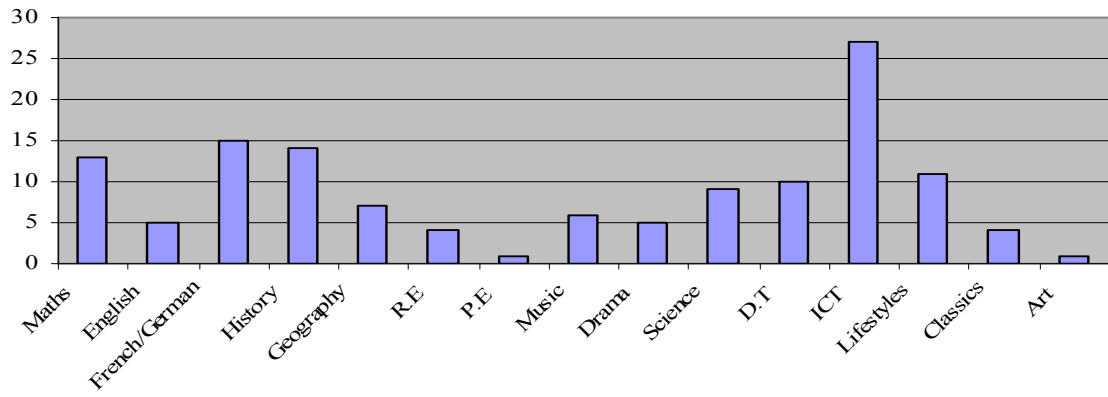
However there is also a large percentage of students who play computer games less than once a month or never.

5. In which of the following subjects do you think that using computer games would be **most** effective? (tick **four**)

- | | | |
|-------------------------------------|---|----------------------------------|
| <input type="radio"/> Maths | <input type="radio"/> P.E | <input type="radio"/> ICT |
| <input type="radio"/> English | <input type="radio"/> Music | <input type="radio"/> Lifestyles |
| <input type="radio"/> French/German | <input type="radio"/> Drama | <input type="radio"/> Classics |
| <input type="radio"/> History | <input type="radio"/> Science | <input type="radio"/> Art |
| <input type="radio"/> Geography | <input type="radio"/> Design and Technology | |
| <input type="radio"/> R.E | | |

This bar chart shows that students who were part of the Sims group think that using computer games in ICT, Maths, History and Geography would be most effective.

A Bar Chart to show which Subjects Teachers think Computer Games would be Most Effective In



Discussion:

The aim of the study was to find out student's and teacher's attitudes towards the use of computer games in school and find out whether it will assist learning.

'Which subjects do students and teachers believe to be the best for using computer games?'

From our research we have found that teachers, Sims students and non-Sims students all have similar views on which subjects the use of computer games would be most effective in. Teachers thought that the most effective four subjects would be ICT, Maths, History and Geography. Non-Sims students thought ICT, DT, History and Science and Sims students thought ICT, Maths, History and Geography. These results show that the teacher's views were the same as the Sims student's views which suggest that because they have experienced the use of computer games in lessons they know which subjects would be more appropriate. The results of the non-Sims group had the widest range which could be because they have the least experience in using computer games in lessons. Whereas teachers are likely to have more idea which subjects using computer games would be most effective in.

From these results it is possible to draw the conclusion that computer games would be effective in lessons. This is backed up by our interview results which found that the majority of Sims and Non-Sims students agreed that computer games in lessons would be beneficial. For example they thought using computer games in lessons, '...made it more interesting because it was a different way of learning, so it gave you a different view on everything,' 'It was better than a normal text book lesson because that's really boring, so it made it more interesting,' and 'Well it was quite good because you sort of remembered it better but it wasn't good because only a few people got to play on it, the rest of us just had to sit there and watch.' These findings were the most common replies we received and nearly every student commented on the fact that only one student getting to use the computer game was unfair and to improve this all students should be able to use the game on their workstation.

'What are student's and teacher's attitudes on using PC games in lessons, both those involved and uninvolved with the study?'

From our research we have found that teacher think students would gain skills from using computer games in lessons. Results show that better strategic thinking skills such as problem solving, improved reactions and better computer skills would all be benefits of using computer games in class. We have also found that the majority of students play computer games once every week or two weeks. This suggests that they will be used to playing computer games and could transfer these skills to lessons easily. From our interviews we have also found that the Sims students though they gained the following skills form using The Sims in lessons, for example, 'If it was a fast game, your reactions might improve and you'd become better at navigation and finding stuff,' 'It would help French and life skills' and 'Mainly computer skills.'

Conclusion:

From our research we are able to draw the conclusion that computer games would be beneficial in lessons. However a limitation of our study was that not all of the teachers returned the questionnaires which meant the teacher sample was very small. Therefore the results would have been more reliable if more teachers were asked. Another limitation was the complexity of the questionnaire given to the year 8 students, as some students did not fully understand the questions and answered inappropriately, for example, when asked to tick four boxes some ticked 10. To improve this study if it was repeated it would be better to pilot the questionnaire by giving it to member of the target population to make sure it was fully understood. Also it would be interesting to investigate the different responses made by other year group's e.g. years 7 to 10, to find out which age groups would benefit the most from using computer games in lessons to assist learning.

Appendices:

Questionnaires:

Brief: On behalf of Futurelab and eAgames, we are part of a year long project researching teachers and students attitudes towards the use of computer games in schools to assist learning. We would appreciate it if you could answer the following questions to help us research this topic.

Debrief: Thank you very much for completing this questionnaire. Your answers will be very useful to our research. If you have any queries, please do not hesitate to contact Bethan Spanswick, Emma Wiltshire and Hettie Scholes on [e-mail address].

Interviews:

Brief: Hi, would you mind talking to us about using computer games in lessons. On behalf of Futurelab and eAgames, we are part of a year long project researching teachers and students attitudes towards the use of computer games in schools to assist learning. We would appreciate it if you could answer the following questions to help us research this topic, you have the right to withdraw at any time and your results will be destroyed. Your answers will also be kept strictly confidential as no names will be recorded.

Debrief: Thank you very much for taking part in this interview. Do you have any questions? If you have any queries later, please do not hesitate to contact us on [e-mail address]. Remember you may withdraw at any time.

Transcripts:

Interview 1: Female, took part in a French lesson using the SIMS.

Interviewer:

Brief - Hi, would you mind talking to us about using computer games in lessons. On behalf of Futurelab and eAgames, we are part of a year long project researching teachers and students attitudes towards the use of computer games in schools to assist learning. We would appreciate it if you could answer the following questions to help us research this topic, you have the right to withdraw at any time and your results will be destroyed. Your answers will also be kept strictly confidential as no names will be recorded.

Student: Yes that's fine.

Interviewer: Did you enjoy using the Sims as part of your French lesson?

Student: Yes

Interviewer: Why?

Student: It made it more interesting because it was a different way of learning, so it gave you a different view on everything.

Interviewer: Do you think it helped you to learn French?

Student: Yes, yes it helped, because you were going through stuff as well as doing it on the computer.

Interviewer: Which lessons do you think it would be most effective to use computer games in?

Student: ICT, German all languages really

Interviewer: Which year groups do you think would benefit most from it?

Student: Umm everyone until year 9, probably not anyone older because using computer games would limit how far you could progress with the subject.

Interviewer: Do you think you would gain any other skills?

Student: Probably mainly computer skills.

Interviewer:

Debrief - Thank you very much for taking part in this interview. Do you have any questions? If you have any queries later, please do not hesitate to contact us on [e-mail address]. Remember you may withdraw at any time.

Interview 2: Male, took part in a French lesson using the SIMS.

Interviewer:

Brief - Hi, would you mind talking to us about using computer games in lessons. On behalf of Futurelab and eAgames, we are part of a year long project researching teachers and students attitudes towards the use of computer games in schools to assist learning. We would appreciate it if you could answer the following questions to help us research this topic, you have the right to withdraw at any time and your results will be destroyed. Your answers will also be kept strictly confidential as no names will be recorded.

Student: Yes, OK.

Interviewer: Did you enjoy using the Sims as part of your French lesson?

Student: Yes, it was quite good.

Interviewer: Why?

Student: Umm I don't know, it let you use games, so it made it more interesting and I preferred it to a normal lesson.

Interviewer: Do you think it helped you to learn French?

Student: Not really, it was just much more interesting.

Interviewer: Do you think you would gain any other skills from using computer games in lessons?

Student: Umm well because we didn't all get to use the game we would maybe learn more skills if we each had the SIMS on our computer, it was unfair that only one person got to play it at a time.

Interviewer: Which lessons do you think it would be most effective to use computer games in?

Student: ICT probably

Interviewer: Were you more interested in your lessons?

Student: Yes.

Interviewer:

Debrief - Thank you very much for taking part in this interview. Do you have any questions? If you have any queries later, please do not hesitate to contact us on [e-mail address]. Remember you may withdraw at any time.

Interview 3: Female, took part in a French lesson using the SIMS.

Interviewer:

Brief - Hi, would you mind talking to us about using computer games in lessons.

On behalf of Futurelab and eAgames, we are part of a year long project researching teachers and students attitudes towards the use of computer games in schools to assist learning. We would appreciate it if you could answer the following questions to help us research this topic, you have the right to withdraw at any time and your results will be destroyed. Your answers will also be kept strictly confidential as no names will be recorded.

Student: Yes.

Interviewer: Did you enjoy using the Sims as part of your French lesson?

Student: It was ok.

Interviewer: Why?

Student: Well it was quite good because you sort of remembered it better but it wasn't good because only a few people got to play on it, the rest of us just had to sit there and watch.

Interviewer: Would it be better if everyone had it?

Student: Yes, definitely.

Interviewer: Do you think it helped you to learn French?

Student: Not really, its just more interesting.

Interviewer: Do you think you would gain any other skills from using computer games in lessons?

Student: If it was a fast game, your reactions might improve and you'd become better at navigation and finding stuff.

Interviewer: Did you look forward to the lessons more?

Student: Not really.

Interviewer: Which lessons do you think it would be most effective to use computer games in?

Student: Business studies, Computing, ICT

Interviewer: Which year groups do you think would benefit most from it?

Student: 8-14 years old

Interviewer:

Debrief - Thank you very much for taking part in this interview. Do you have any questions? If you have any queries later, please do not hesitate to contact us on [e-mail address]. Remember you may withdraw at any time.

Interview 4: Male, took part in a French lesson using the SIMS.

Interviewer:

Brief - Hi, would you mind talking to us about using computer games in lessons. On behalf of Futurelab and eAgames, we are part of a year long project researching teachers and students attitudes towards the use of computer games in schools to assist learning. We would appreciate it if you could answer the following questions to help us research this topic, you have the right to withdraw at any time and your results will be destroyed. Your answers will also be kept strictly confidential as no names will be recorded.

Student: Yes.

Interviewer: Did you enjoy using the Sims as part of your French lesson?

Student: Yes

Interviewer: Why?

Student: It was better than a normal text book lesson because that's really boring, so it made it more interesting

Interviewer: Do you think it helped you to learn French?

Student: Sort of, I suppose.

Interviewer: Would it be better if everyone could play the sims?

Student: Yes a lot better, it was unfair that only one student got to play the game

Interviewer: Do you think it helped you to learn French?

Student: It would help French and life skills

Interviewer: Did you look forward to the lessons more?

Student: Yes it was something different

Interviewer: Which year groups do you think would benefit most from it?

Student: Our age and above. Maybe younger children but not using the sims because its too confusing.

Interviewer: Which lessons do you think it would be most effective to use computer games in?

Student: Science

Interviewer:

Debrief - Thank you very much for taking part in this interview. Do you have any questions? If you have any queries later, please do not hesitate to contact us on [e-mail address]. Remember you may withdraw at any time.