

Case Study: The use of video game construction to bridge hearing and deaf students in Trinidad and Tobago

Introduction

There has been limited inclusion of differently-abled students into mainstream schools in Trinidad and Tobago at secondary level. Students who have been included have reported feelings of alienation (Peters, et al., 2007). This case study investigates the use of ICT via a problem-based project to foster inclusion of heard-of-hearing and/or deaf students into mainstream schools.

Background

Educator: Janadi Gonzalez-Lord

School: BAHSE is an all-girls' secondary school for students aged 10 to 16. BAHSE strives to be a leader in the use of technology in education in Trinidad and Tobago. There is school-wide wireless access, six computer labs, and a staff to computer ratio of 1:2

Content/Subject Areas: Integrated Science
Topic: The Solar System

Age/Grade leve: Form 1 (ages 10 to 13)

Number of students: 175

Problem at school: Lack of consideration for deaf student and deaf auxiliary member of staff

Objectives

The main objectives of this case study were to allow students to:

1. Learn about the Solar System
2. Understand and appreciate the differently-abled
3. Gain cross-curricular understanding

Methods

The project had three (3) phases, all implemented by the students. The project extended over a three (3) week period.

Students were given a project outline which allowed each of the five (5) classes to sub-divide into groups of five (5). Each sub-group was responsible for implementation of a different part of the Project as follows:

1. Creation of the planetarium and conducting the planetarium tour
2. Creating game using Kodu
3. Creation of web-based assessment using hotpotatoes
4. Video documentation of the process of game creation
5. Video Documentation of the process of web-based assessment using hotpotatoes

The group then underwent two (2) weeks of deaf culture sensitization with members of the deaf community. This included an introduction to how the deaf view the world, an overview of Trinidad Sign Language (TSL) and assistance with interpreting the games from the deaf point of view.

At the end of the period, each class had to showcase their games and web-based assessment using their laptops for assessment by both deaf and hearing peers. This included the planetarium tour which was created using Microsoft World Wide Telescope.

The following results were recorded:

1. Peer assessments of the games created
2. Peer assessments of the web-based assessments created
3. Peer assessments of the planetarium tour
4. Student performance in final assessment
5. Video journals for the group

Photos



Figure 1: Teacher and students building the roof of the planetarium



Figure 3: Sign language sessions with students

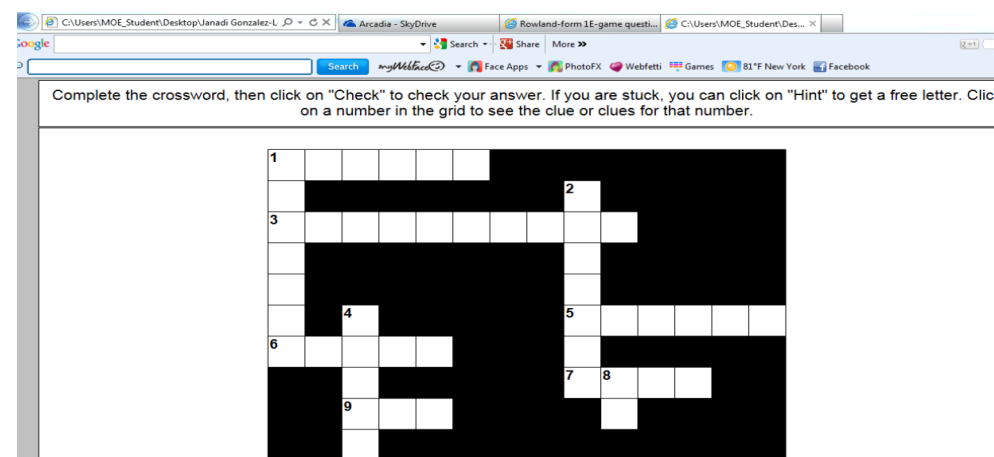


Figure 5: Sample web-based crossword created by students

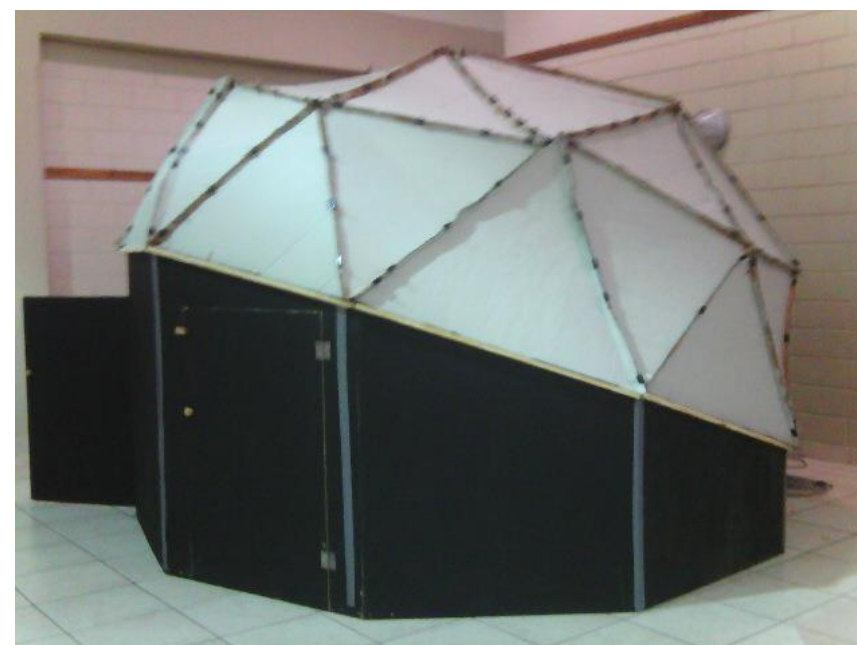


Figure 2: Completed planetarium

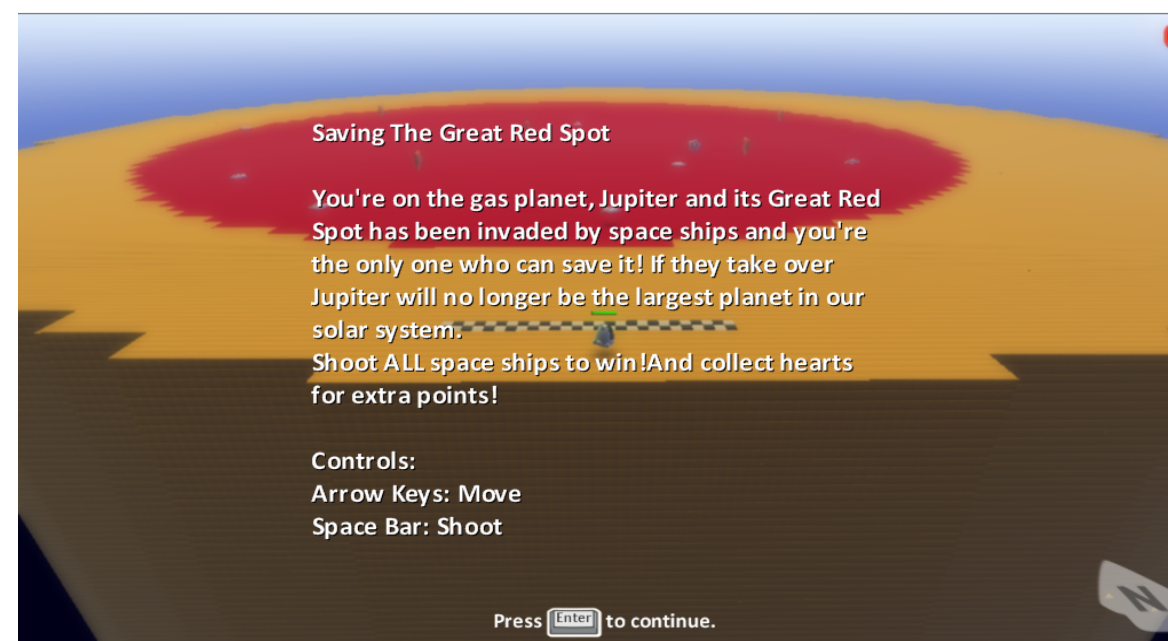


Figure 4: Sample game created by student using Microsoft Kodu

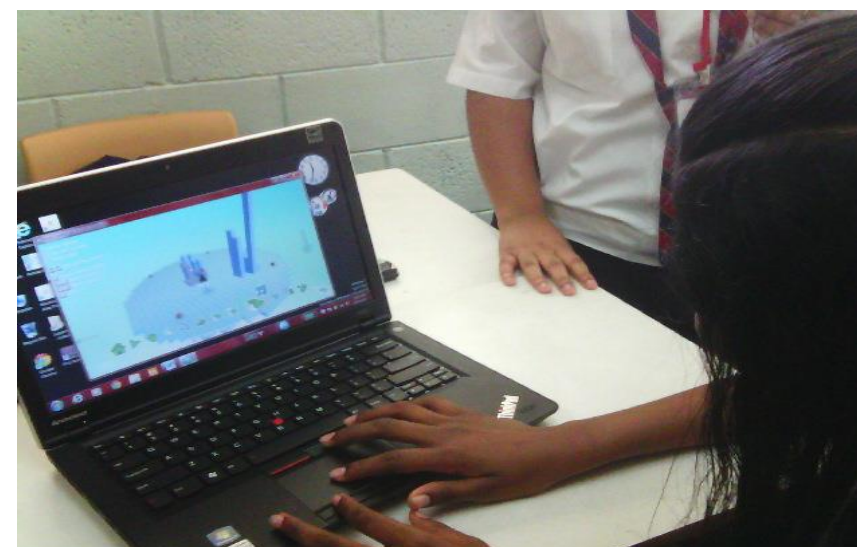
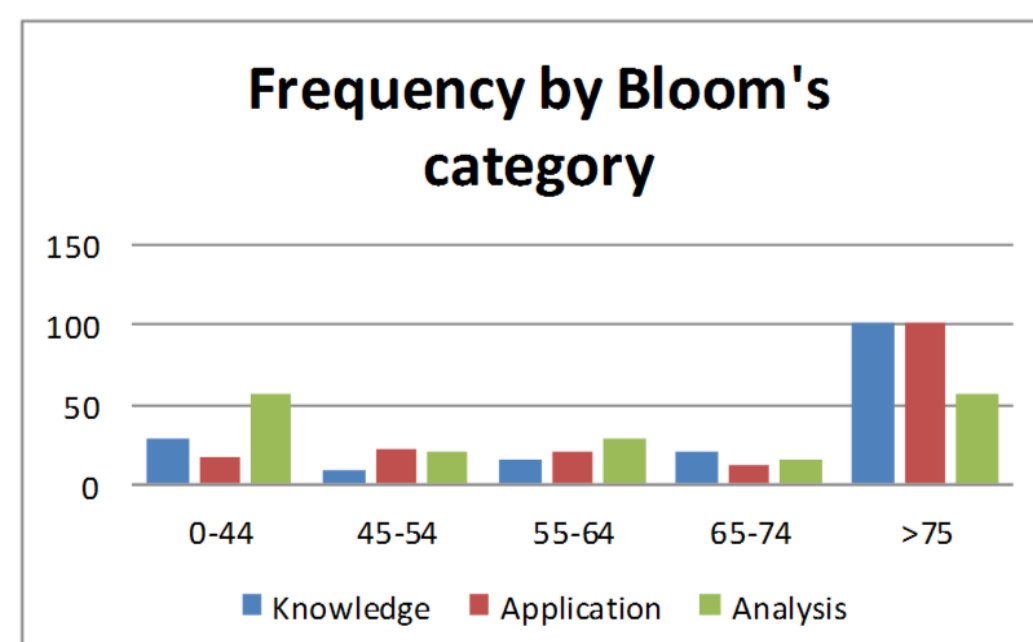


Figure 6: Students in the process of creating a game on a laptop

Results

Assessment of content knowledge:

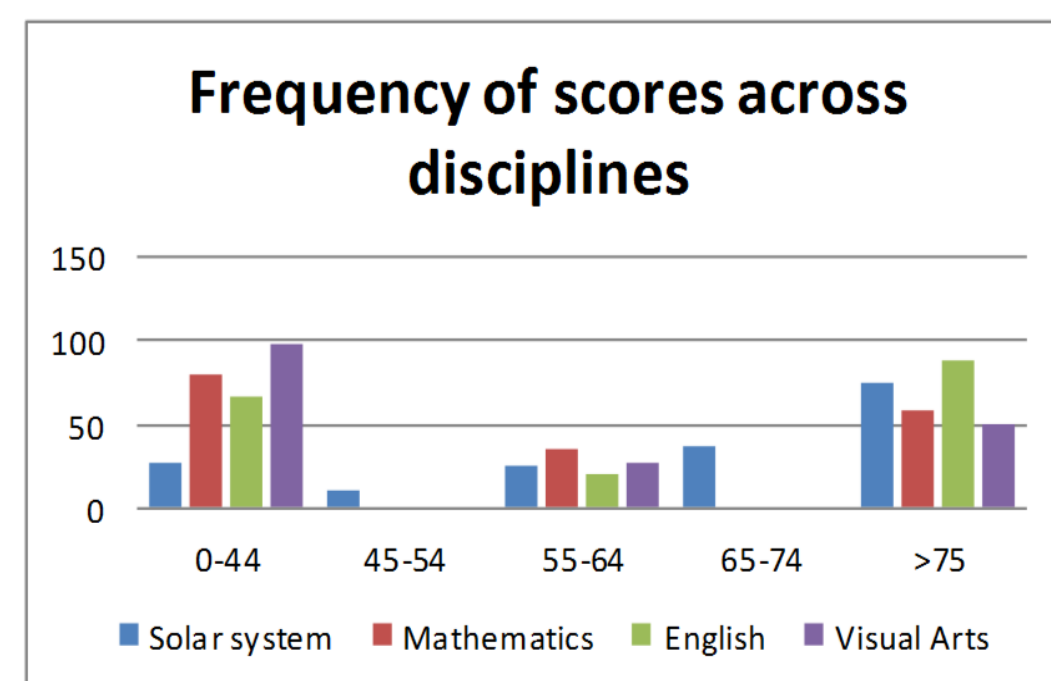
78% of students achieved >55% average in terms of overall content. A high percentage of students achieved >75% in the areas of analysis, knowledge and application.



Results (cont'd)

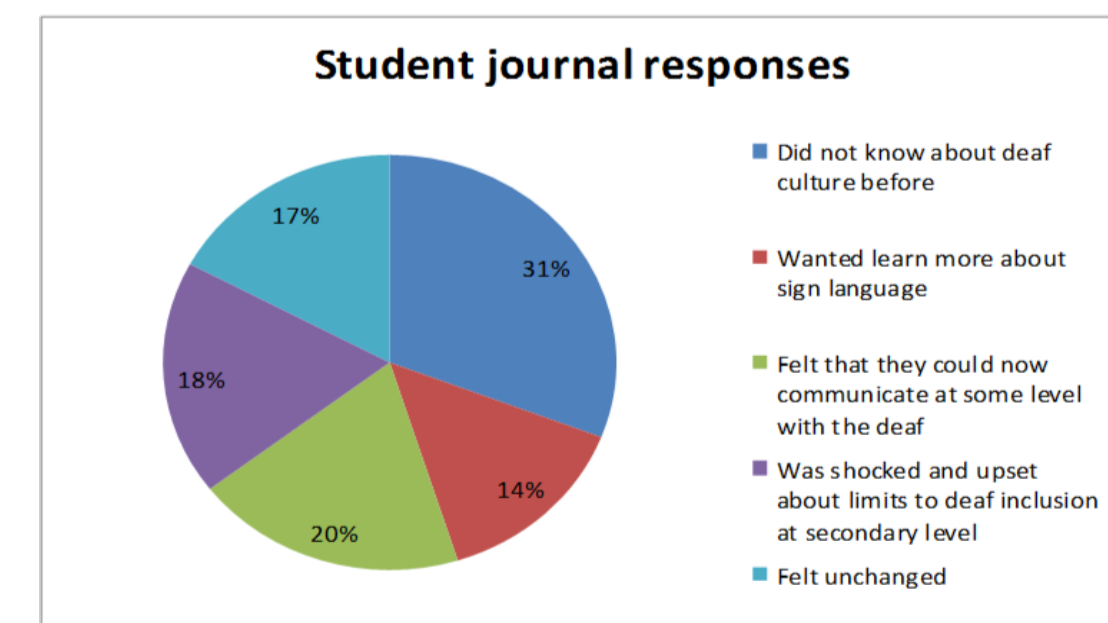
Assessment of cross curricular knowledge:

54% of students achieved >55% average in the Mathematics aspect embedded in the assessment
62% of students achieved >55% average in the English aspect embedded in the assessment
44% of students achieved >55% average in the Visual Arts aspect embedded in the assessment



Assessment of appreciation of deaf culture appreciation:

48% of students achieved moderate level of sign language proficiency. From journal entries, 52% of students suggested that the project gave them a better understanding and appreciation of the deaf in Trinidad and Tobago. Many personally identified with the students who did the final assessment of their games. 32% stated that they would want to learn more about the deaf in the future.



Conclusion

The study suggests that allowing students to create games may slightly increase analytical skills and build cross-curricular competence. Allowing students to create games for a deaf audience seems to bring a greater awareness of deaf culture to the hearing. Future investigations should be explored into the impacts on deaf and hearing-impaired students being more directly involved in these types of problem-based projects especially in terms of second-language (English) development, crafting knowledge across curriculum areas and social interactions with the hearing world.

References

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