Representations of Self

Virtual Worlds: a case-study of pupils on the autism spectrum

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Overview

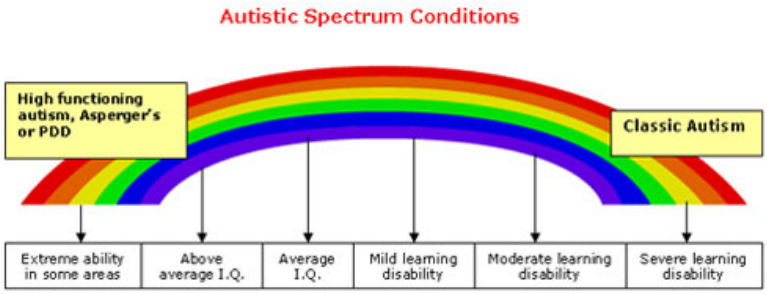
- Summary of project
- Research aims / questions
- Focus on one theme: representation of self
- Some data
- Game-based elements
- Discussion of findings / Implications
- Summary & Questions

Summary of Project

- A virtual world was modified (Second Life)
- Embedded into a classroom
- Designed (with users in mind)
- Sessions/tasks created for structured learning
- Specifically for social skills and communication (to aid such skills); testing
- Evaluated through a mixed-methods approach (wrapped around by a case-study)
- All within a context for users with autism…

Autism

- A spectrum that spans high-intelligence and fairly typical social skill development to low IQ and intellectual disability



Autism

- "Autism is a lifelong developmental disability that affects how a person communicates with, and relates to, other people. It also affects how they make sense of the world around them" (NAS 2012)
  - difficulty with social communication
  - difficulty with social interaction
  - difficulty with social imagination

Why Technology…?

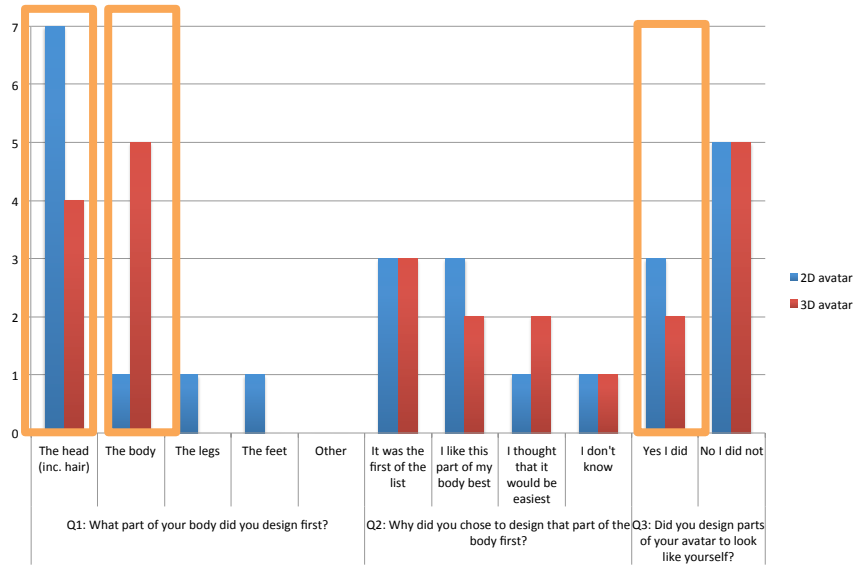
- It has been shown that VEs and such digital media technology can support social skills and emotional recognition
- For example: Parsons et al (2006); Baron-Cohen et al (2009) identify benefits to social skills acquisition and emotional identification
  - Acceptable form of interface for users with ASC
  - Potential benefits (within VWs)
  - Classroom application

This project sought to…

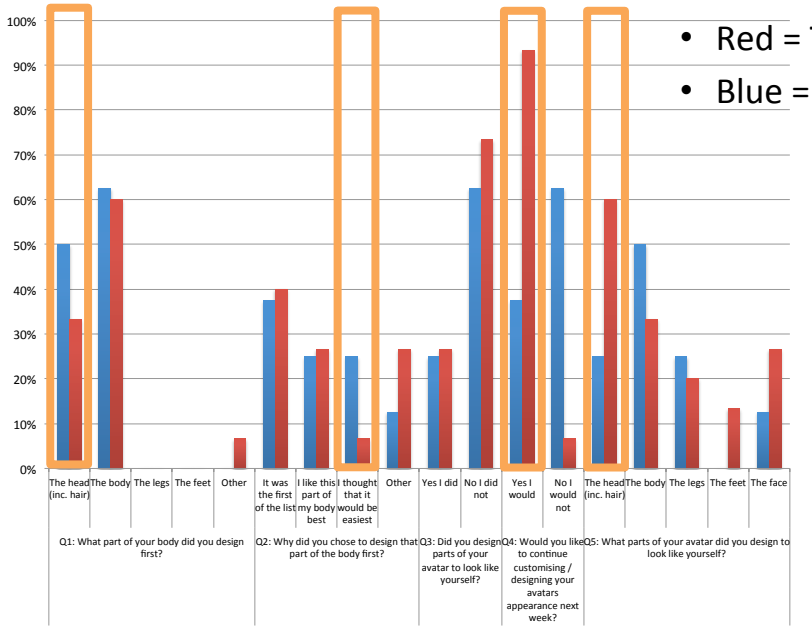
- Examine the ways users with ASC represent themselves in a virtual world (through an avatar)
- Understand the way that users with autism communicate in a virtual world
- Examine the social appropriateness of social communication in a virtual world

…ought to…

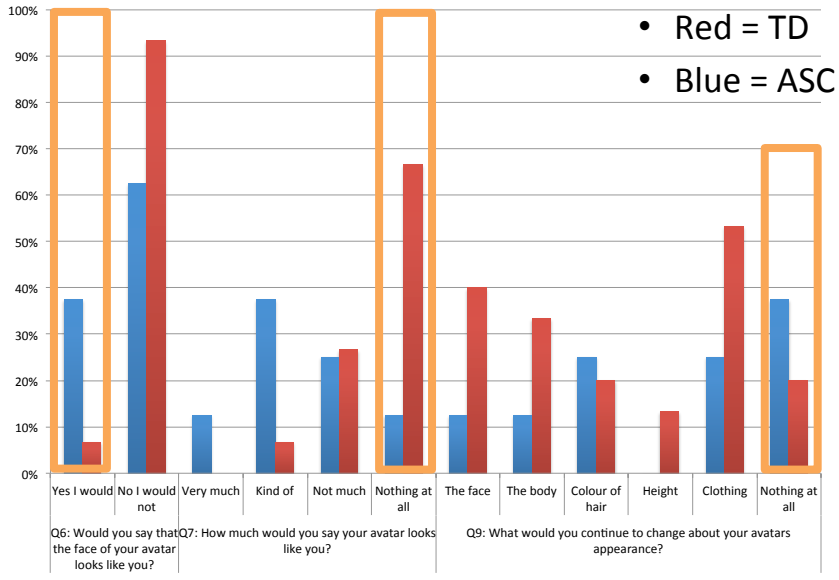
- 2D vs 3D avatar design (ASC group only)



- 3D avatar customisation preferences



- Red = TD
- Blue = ASC



- Red = TD
- Blue = ASC

Some findings…(1)

- Users on the autism spectrum are able to understand and use avatar customisation features available within a virtual world (Second Life, in this instance)
- Users with ASC, in this study demonstrated a willingness to become stakeholders in virtual worlds and thus become in some way immersed
- Users with ASC, in this case study, reported the face of their avatar not looking much like themselves, but that half of the participants reported the overall avatar as resembling themselves
- The body (followed by the legs and the head) were the most popular parts of the avatar designed to look like themselves – this compares to the head (followed by the body and the face) for the TDG

Some findings…(2)

- Users with ASC, in this study were on the whole happy with their avatars appearance
- Compared to a typically developing group, users with ASC (in this context) were more aligned to typically expected avatar customisation behaviours than the TDG
- Users (both the TDG and ASC group) in this study felt their avatar partially resembled themselves
- Users with ASC were more happy with their avatar design after the initial session (than the TDG)

Discussion

- Generally cognitive mechanisms can often leave individuals with autism to focus on details, rather than the general (or holistic) picture (Burke et al 2010), thus leading to a focused, and in some cases obsessive visual perception
- This argument would hold true to the manner in which participants in this current study were not so able to become aware of their avatar, and data suggests that users were more inclined to focus on aspects in the virtual world (e.g. buildings, objects) than themselves

Basic GBL Elements

- *Achievements* (providing a sense accomplishment and something to talk about after playing, specifically collecting items)
- *Community collaboration* (working together to solve a problem through practical assignments & developing social networks)
- *Personal customisation* (choosing avatar designs and items in the environment, thus investing themselves in the world)

Achievements

- Items were built-in to ensure that accomplishment was a factor – in this case worksheets and hand-outs of tasks
- Collection of items (inventory) and sharing of the use of items
- This created much discussion after each session and amusement

Community Collaboration

- Several tasks involved the use of working in pairs; in fact the group were assigned a 'partner'
- Problem solving happened naturally, but several opportunities were 'built-in'
- This enabled social networks to build, as much as this group were able (re: ASC)

Personal Customisation

- This relates to the avatar design and customisation
- Customisation provided a sense of 'ownership'
- Several of the participants liked that they could customise their avatar

Next steps…

- Working to create a 'centre' in Mullingar; exposing the use of technology for users with autism
- Working with schools across Ireland (Donegal, Munster region) to help provide training for the use of tools
- Developing the use of Kinect and VW technology
- Evaluating the use of Social Stories in classroom contexts

Conclusions

- Visual representation of self through avatar design for the ASC community; implies limited customisation
- This could be linked to visual-awareness limitations
- Desire to customise avatar is not an important factor
- GBL is a key factor for this group (ASC) in maintaining interaction(s) and communication in virtual worlds

References

- Baron-Cohen, S., Golan, O. & Ashwin, E. (2009). *Can emotion recognition be taught to children with autism spectrum conditions?* Philosophical Transactions of the Royal Society B: Biological Sciences, 364: 3567-3574
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Questions Please…and thank you

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