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## Methods

- A total of eight participants used Second Life®
- 10 weeks in a classroom, as part of Information Communication Technology (ICT) class.
- A series of activities with the specific purpose of; designing an avatar, using the communications tools, navigating the virtual world, collaborating on tasks, interacting with objects, and collecting items.
- Case study group between 15 & 16 years old and were split 6:2 male to female.
- Statement of special needs and were diagnosed with an autism spectrum condition.
- ICT sessions lasted for between 45mins to 1hour and were in the same location each week.
- Laptops were used to display and control the virtual world.
- All of the participants (and their parents) consented to be involved in the study, as did the school and teachers.
- By means of data collection, questionnaires were used as part of an interpretivist paradigm as were observations and in world activity (recorded through photos, text-chat and screen capture).

## Findings

- 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.
- 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.
- The ASC group was less committed to ensuring the face or the head were an accurate representation of themselves; going some way to support the notion that a person with an ASC can lack visual self-recognition (Spiker & Ricks 1984) and perhaps therefore presence in a virtual world.

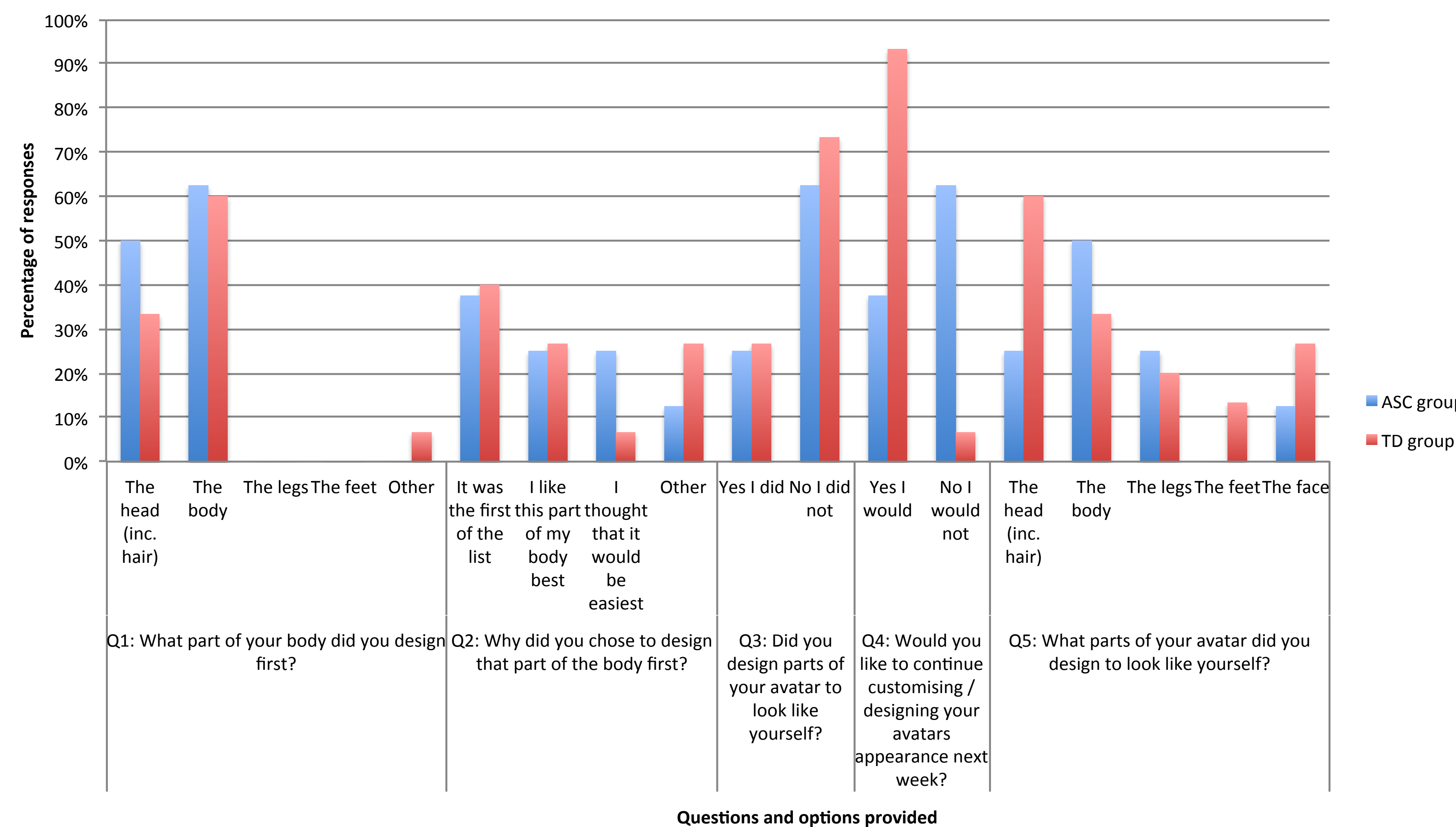


## Discussion

The ASC group reported a higher level of satisfaction in their avatar design, when compared to the TD group. This is a finding that is consistent with the conclusions of other studies including Vasalou & Joinson (2009) for example, who suggest that avatar design is perceived by their 'owners' as highly similar to themselves. Notwithstanding, and although the ASC group reported creating a more satisfying avatar, it could be argued that the TD group enhanced their avatar to a greater degree, and as Ducheneaut (2009) highlight; suggesting a greater attachment to their avatar.

Data also suggests that only some users on the autism spectrum, in this study, would consider customising their avatar further ("in more detail") as time progressed. This suggests that while the participants reported being happy with their avatar, there was a desire, by some, to make further changes to their appearance in world given a little more time. While it is not clear how long they might take to further customise their avatars or if others would follow suit, this finding provides some indication that users with ASC are able to in fact reflect on their perceived appearance through an avatar and identify that further customisation is preferred. This is a finding that is echoed in the work of Wallace et al (2010) who suggest that "...children with ASD are [within their study examining immersive virtual environments] attending to the content and requirements of the virtual environment" (p 209). Continuing, Wallace et al suggest that "...the children with ASD responded with similar levels of spatial presence as the typically developing children, suggesting they felt transported into the VE".

Avatar customisation: Comparison between the views of ASC and TD users



\*Aqua' is an avatar designed by one of the participants in the study

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