

An investigation into the use of learning technology tools to offer opportunities for learners with Asperger's Syndrome in higher education to participate in group work



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Background ...



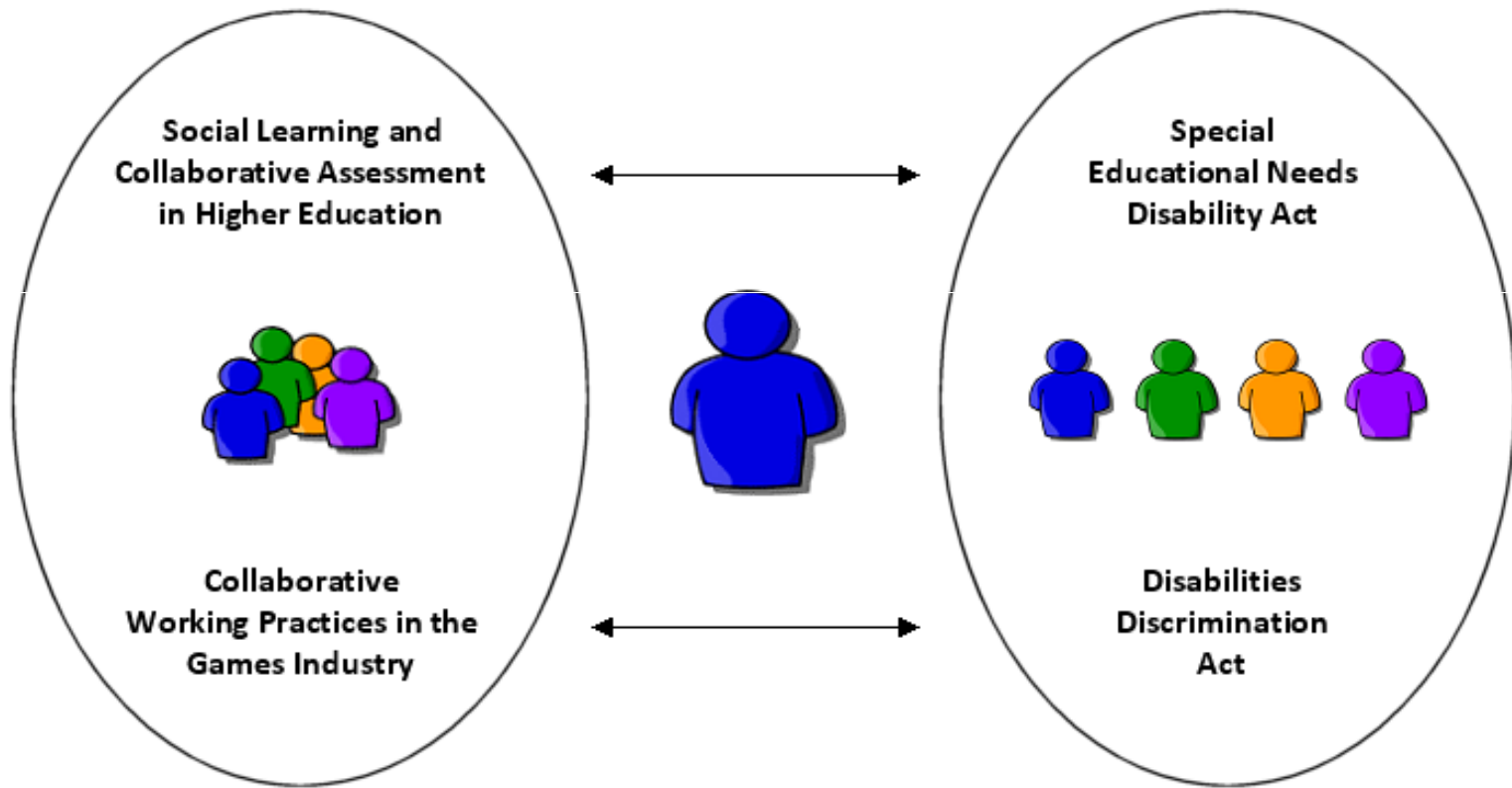
- Senior Lecturer in Computing and Engineering
- Teach on the Computer Games degree courses
- PhD Technology Enhanced Learning

Introducing 'Alex' ...



- A male undergraduate, c. 20 years old, diagnosed with Asperger's Syndrome
- Observable anxiety when in studio situations
- Always sat in the rear corner seat in the studio
- Difficulties in 1st year, nearly dropped out
- Supported by a Disability Support worker
- In 2nd year of the course developing a game in a team with 3 neurotypical students

An inherent tension ...



Note: c.5% of our computer games students are diagnosed with Asperger's Syndrome

A problem and a solution ...




FdSc Computer Games Technology

- Traditional documentation a weak area
- Needed a solution for the whole class
 - Blogging tool and online collaborative working facility
 - ➔ e-portfolio system
- Popularity of social networking in U25s
 - ➔ Mahara – a free e-portfolio system with SN

The e-portfolio system ...



 **Open Source ePortfolios**
[mah-hah-rah,verb]: to think, thinking, thought

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JMAX

About Me

I work at the University on a half-time basis while I'm studying for my PhD at Lancaster University, so will be in on the days when I'm teaching the course, i.e. Tuesdays and Fridays. To contact me outside these two days just email me, 'cos I'll be collecting and responding to email seven days a week ... 😊



If you use Skype you could also look for my Skype ID: james.mcdowell-huddersfield, but don't expect to find me on FaceBook, 'cos I don't go there! 😊

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My Groups

Media Production Studio 1 - Admin
This is the whole module group for the Queensgate

My Views

JMAX Blog Area ...
So this where you'll get to see my most recent blog posts ... I'll have to work on this area a bi...
Artefacts: [JMAX Journal](#)

Gameplay Vids: Counter-Strike

Week 2 Development Work
This is the development work completed in Week 2 ...
Artefacts: [Week2_Editor.jpg](#)

Week 3 Development Work
This is the Week 3 Development Work ...
Artefacts: [Week3_Editor1.jpg](#), [Week3_Editor2.jpg](#), [Week3_Editor3.jpg](#), [Week3_Editor4.jpg](#), [Week3_GamePlay.jpg](#), [Week3_InGame.jpg](#)

Week 4 Development Work
This is the Week 4 Development Work ...
Artefacts: [Week4_Editor1.jpg](#), [Week4_Editor2.jpg](#), [Week4_Editor3.jpg](#), [Week4_Editor4.jpg](#), [Week4_InGameDoorClosing.jpg](#), [Week4_InGameTeleporter.jpg](#)

Week 4 Supplemental

Winners Wear Red?!

In the eighteenth and nineteenth centuries soldiers apparently wore red to scare their enemies, but then as warfare and weaponry developed people realised that this kinda made them easy targets, and the style and colour of military uniforms changed as it was believed that wearing camouflage increased your chances of survival - sounds fair enough, right?!

Well apparently wearing red in UT2004 makes you more likely to be on the winning team, at least according to some research done at a Uni in Denmark:
<http://uk.gamespot.com/news/6234741.html>

I wondered whether we could do some research of our own to test out their theory, but I dunno about playing over 1300 games on CTF-Face - at even just the standard 15 minutes a game before extra time kicks in if it's a draw, that's almost 350 hours of gameplay per person ... which is about as much time as you're supposed to spend on this module in the entire year!

Posted by JMAX on 25 October 2009, 11:44 PM

My Friends (16 of 55)

More info and free software download available at <http://www.mahara.org>

What happened next ...



- Alex created the group's discussion forum in Mahara and initiated the opening thread ...

“I guess we should probably pitch ideas and things here?”

- ... and then uploaded concept artwork, both asking his peers for feedback and offering it ...
- Disabilities support staff suggested this was unusual and worthy of further research ...

Conducting a case study ...



- This led me to conduct a small scale qualitative case study as part of my PhD work ...
 - Literature review
 - Regular referrals to ‘expert witnesses’
 - Observation of in-studio behaviour
 - Observation of online activity in Mahara
 - Email interviews

Initial analysis of the data ...



- A comparative analysis of the email interview data identified a pattern of high frequency usage of collective-inclusive phraseology by Alex:

*“It's helped **us** to share files more frequently and easily than **we** could have otherwise done; without it, **we'd** probably have to send large emails or pass around pen drives all the time to keep **everyone** up to date, whereas with Mahara **we** can get the files to **each other** and update them a lot easier.” (my emphasis)*

... a pattern not evident in the neurotypical group:

“It has had a fairly significant effect. Having to blog every week both refreshes the memory of what has been previously written and makes me think “What have I done this week and what will I do next week?” (Neurotypical Participant 1)

The findings of the case study ...



Six key predictions were identified and tested:

<i>Predictions</i>	<i>Source of Evidence</i>	<i>Pattern-Match or Correlation of Sources</i>
P1. Alex will be unable to participate meaningfully in group work	Literature Review, Expert Witnesses, F2F Observation, Observation of Online Activity, Email Interviews	Negative – according to literature and expert witnesses, Alex should have been unable to cope with group work, however observations and email interviews contradict this.
P2. Alex will experience difficulties dealing with social cues in F2F group situations	Literature Review, Expert Witnesses, F2F Observation	Positive – according to literature and expert witnesses, Alex should experience difficulty in dealing with social cues, and observations of Alex in F2F situations confirmed this.
P3. Alex’s written word will be more eloquently expressed than spoken word	Literature Review, Expert Witnesses, F2F Observation, Observation of Online Activity, Email Interviews	Positive – all sources confirm that Alex demonstrates greater eloquence in written communications than in spoken and F2F situations.

... continues overleaf ...

The findings of the case study ...

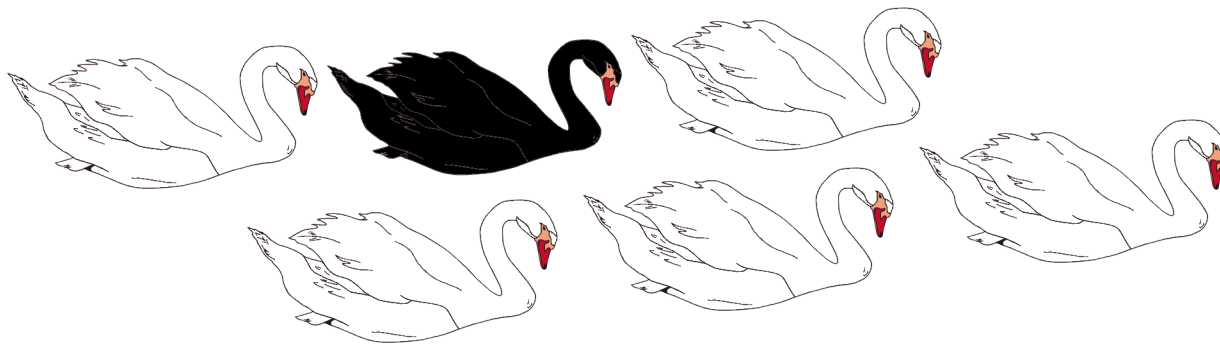


Predictions	Source of Evidence	Pattern-Match or Correlation of Sources
P4. Alex will display anxiety and nervousness in F2F group situations	Literature Review, Expert Witnesses, F2F Observation	Neutral – Alex initially displayed high levels of nervous behaviour in F2F situations, as predicted by the literature and the expert witnesses, however later F2F observations suggested improvement in this area, with signs of diminishing anxiety and increasing confidence in participation.
P5. Alex will not take the initiative in group work	Literature Review, Expert Witnesses, F2F Observation, Observation of Online Activity, Email Interviews	Negative – according to the literature and expert witnesses, Alex should not take a lead in F2F group work, however online and email sources indicate that the student has done so in non-F2F contexts, initiating new discussion threads and posting ideas for consideration by other group members.
P6. Alex will not engage in the process of offering and requesting feedback from other group members	Expert Witnesses, F2F Observation, Observation of Online Activity	Negative – expert witness evidence suggests feedback is particularly difficult for learners with AS, however F2F observations indicate some success in overcoming this, and online observations highlight pro-activity in both offering feedback and requesting it.

Limitations of this case study ...



- A single-case case study ...
 - Some factors are unique, e.g. the group dynamic
- Purely qualitative, self-reporting
- Issues of generalisability
- But, could the case constitute a 'Black Swan'?



Further research ...



- UoHTube Project
 - Step-by-step game development video tutorials
 - Development of an inclusive online ‘learning community’, where students work together, sharing best practice and creating learning materials
- PhD at Lancaster University
 - Expanding the case-study to investigate the potential of collaborative games and simulations
- Looking to work with external organisations



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