Blogging: A System to Encourage Asperger and Neuro-Typical Students to Successfully Complete Their Undergraduate Dissertation?

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Abstract

During their final undergraduate year students at Anglia Ruskin University are required to write a dissertation as part of a major research project. Many students, but particularly Asperger syndrome students can find it difficult to successfully complete this project work. Following a case study based on the problems encountered by a single Asperger student, an action research investigation was undertaken to develop a system using Web 2:0 technology (blogging) to support students through the dissertation proposal phase of the project. The study was extended to include neuro-typical students, as a result of a request by the Staff and Educational Development Association (SEDA) in 2010. A blogging system was set up that enabled the students to develop their dissertation proposal and obtain support and feedback from the academic team. Following the success of the dissertation proposal blog, the study was extended to include all aspects of the dissertation process. All students appeared to benefit from the blogging system. However, the Asperger students seemed to appreciate the online support provided and used the blogging system for longer than the neuro-typical students. It was hoped that the students would use the blog to form a community of practice with their peers, academic and support staff. Although the students enjoyed interaction with staff, there was no dialogue between peers; therefore the ultimate goal of a community of practice was unfulfilled.

1. Context of the research

With improvements in support, increasing numbers of young people with Asperger syndrome are successfully completing secondary education and are moving on to study at universities [1]. However, it has become apparent that AS students at university often have difficulty satisfactorily completing extended pieces of written work, particularly if the work requires a significant research element [2]. In 2009 a research project was started, funded for two years through Anglia Ruskin University Learning and Teaching Awards, to investigate the problems AS students have in undertaking the dissertation portion of the Undergraduate Major Project. Following a request made by the Staff and Educational Development Association (SEDA) in the first year of research in 2010 the study was extended to include neuro-typical students.

2. Body of Knowledge

2.1 Introduction to Asperger Syndrome

Asperger syndrome (AS) is a lifelong disability within the autism spectrum and affects how a person makes sense of the world, processes information and relates to other people. AS has been identified as consisting of a triad of impairments that can include problems with social interaction, social communication and social imagination [3]. For instance, people with AS may not understand the unwritten social rules that are generally taken for granted and, therefore, can struggle to make and maintain friendships and find people unpredictable and confusing. This may lead to withdrawal and depression.

They can have difficulty in: understanding gestures, facial expression or tone of voice; knowing when to start or end a conversation; use complex words and phrases when not understanding their meaning fully; and have problems understanding jokes, sarcasm and metaphor. They may also find it difficult to imagine or predict alternative outcomes to situations and misunderstand or misinterpret other peoples' thoughts feelings and actions through misreading facial expression and body language.

They may have a limited range of imaginative activities, which can be pursued rigidly and repetitively and can have an idiosyncratic interest or obsession [4]. The distractions caused by such obsessions can cause AS students time management problems, missed submission dates and they can produce work that is outside the bounds of the academic subject area [2].

However, people with AS are often of average or high intelligence but may also have specific learning difficulties such as dyslexia, dyspraxia and attention deficit hyperactive disorder (ADHD) [5].

Beardon [6] however argues against the term triad of impairments, and identified the positive traits of autism, such as honesty, straight talking, attention to detail, perfectionism, drive and focus more in line with the social model of disability. He recognised that those with, AS have differences that needed

acknowledgment. In contrast, neuro-typical (NT) is a term recommended by the National Autistic Society that is used to describe people without an autistic spectrum disorder whose neurological development is such that society in general would perceive as normal their ability to process linguistic information and social cues [7].

2.2 e-learning

E-Learning is seen in many countries around the world as being an important contribution to teaching methods at all levels of education [10]. The learning process can be moved out of the classroom through the use of networking technology. This has seen the development of virtual learning environments that allow for the incorporation of blogging, pod-casting and other asynchronous communication procedures into education [11].

Gonzalez [12] commenting on lecturers' experiences of using e-learning for teaching undergraduate students, indentified three conceptions about its purpose.

1. 'The web for providing academic and administrative information related to the course',
2. 'The web for communicating with other people involved in the course',
3. 'The web as a space to create, build and share knowledge'.

A Blog or Weblog is a relatively new phenomenon, similar to a website, but it acts as an asynchronous on-line diary, to which participants can leave comments to the postings. Blogging could be thought as a form of 'Micropublishing' [13]. The term weblog was first used in 1997 by Jorn Barger and the blog provider Blogger.com that offered a build-your-own-blog site which was initially launched in 1999 [14]. Since then blogs have propagated as the idea has caught on and become very popular. The pedagogical potential of these sites has started to be realised and blogs are tentatively being used more and more within educational reflective practice as an effective e-learning tool, which offers a deeper learning experience. Blogging can provide a conduit that allows both tutors and students to reflect on their own and each others' work. Feedback through the blogging system can be a very effective way of improving the students' written work [15].

However, there are contrasting claims over the speed of uptake of e-learning technologies. Rosenburg [16] has claimed that the development of e-learning techniques has only been increasing slowly and usage is variable whereas Gonzalez [12] maintains that the introduction of e-learning has been rapid in university based courses.

The value e-learning has also been questioned. Jung and Latchem [17] provided evidence from research undertaken in a number of countries that suggested the impact of information and communication technology in schools had been of only a limited success. Kerawalla et al. [11] in an investigation of blogging usage on a master's level course concluded that socialisation between students did not occur and so students either blogged for their own personal interest or gave up. However, Starcic and Niskala [18] noted that vocational students with severe learning difficulties using e-learning technology benefited through higher motivation, leaning skills and greater levels of achievement.

It has been claimed that much of the research that had been undertaken into the use of information communications technology in learning had been into the educational experiences of the well qualified in the areas of professional development and first degree learning [19]. In this context the aim of the technology would appear to have been intended to ensure that the participants were not disadvantaged by location, distance or time limitations. Webb [19] reported on the usage of e-learning by a socially excluded group of adults learning English for speakers of a foreign language and described the learning process as a social practice where the level of commitment of the tutors involved was crucial to the range of activities in which the learners engaged.

Consequently it can be concluded that there are many critical factors, including those of organisational and management structures that influence the rate that change can occur within educational establishments necessary for the development, implementation, acceptance and success of e-learning systems [10].

2.3 Communities of Practice

Wenger [8] believes that a community of practice can only exist if there is a commonality between the members due to life experience (their practice), and that this experience is driven by meaning and negotiation (reification), through the production of artifacts, such as systems, processes and documentation. The community allows for deep learning rather than surface learning that stems from the formulation of conditionalised knowledge, metacognition, and communities of enquiry (communities of practice) [9].

These communities produce boundary objects, pieces of work or documentation, which hold the community together. Boundary objects encourage the community to collaborate in mutual engagement, a joint enterprise and a shared repertoire to keep the community together [8]. It was hoped that the mix of AS and NT students would produce work which would be peer reviewed, and that critique would lead

to expression of ideas, and finally some documentation in the production of their proposals.

In order for the students to participate with a blog, they have to find a reason or meaning for participation. For the students with AS: they were undertaking their dissertation; were both using the dissertation proposal blog to the same end, the production of a proposal that would help them to engage with the dissertation process; and that they both have AS. The part that reification plays would be the building of the blog (the instrument) and also the production of the student's proposal documents.
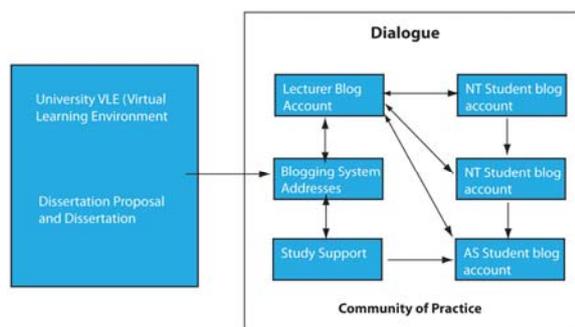

Figure 1. The dissertation community of practice
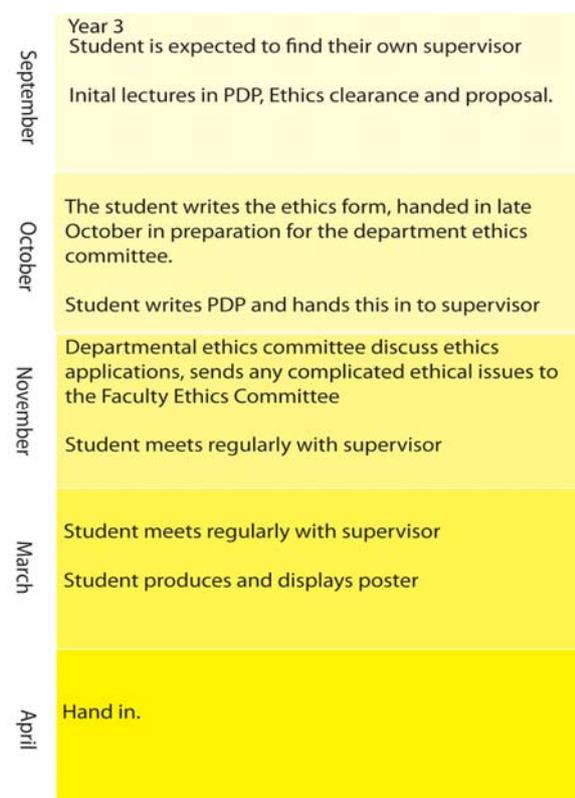
Figure 2. The dissertation process

3. Methodology

This research follows an initial case study followed by a learning and teaching project award, which reported on the production of the dissertation proposal blog and its utilisation by five students at the beginning of their dissertation. This research was assessed by two focus groups that provided valuable qualitative data [2] [5] [20].

This tranche of the action research cycle is based on piloting the use of the blogging system for the entire duration of the dissertation and to collect opinion via taped interview of the students involved about their experience of the dissertation itself and the value of the blog. This time we were interested in investigating the different stages and assessment processes that confronted the student when engaging with the entire dissertation process, against the stereotypical and our learned expectations of the students with the intention of formulating recommendations which could inform future practice. Funding for this tranche was obtained via an extension to our internal Learning and Teaching Award, which was intended to build upon our earlier research.

Edublogs was adopted as the blog provider, as it offers safe blogging within an educational environment. A blog was set up for the dissertation proposal, providing information about the proposal process itself, the expected structure and content. As a result of the request from SEDA use of the blog this was extended to include NT students. In February 2010 five students, two AS students and three NT students, were asked to participate in piloting the blog to write their proposal, and to hopefully carry on and use it as a tool for their dissertation The next stage of the research was to carry out individual semi-structured interviews to record the students' perceptions of the use of the blog in scaffolding their approach to the dissertation. The data collected was to be transcribed and analysed for themes and trends.

Two AS students were interviewed two weeks after the hand-in date for the dissertation using structured questions. It proved difficult to interview the three NT students and we did not receive any input from them, one has left the university, and the other two students were unavailable for interview. The interview was taped and transcribed.

4. Findings

4.1 Responses about the dissertation process

The students stated that if they were unsupported by the pilot scheme, they would have trouble finding

a suitable supervisor, particularly one who had an understanding of their specialism.

"I found it easy because obviously I was already with Jo on the blog thing so it was such a, it didn't feel so hard, it might have been harder had I not pre-arranged to have an adviser; that would be an issue"

The students found the ethics process confusing, illogical, vague, and ill timed. When sent an email from the ethics committee, it was not entirely evident whether they had received ethics approval. The feedback that they received was difficult to decipher because it was provided as a numbered process. Supervisors it seemed were just as confused by the communication.

"It was confusing, its just everywhere, its not a logical list of documents and I don't even know if I was given ethics approval or not, whether I needed it."

Students requested a fool proof and comprehensive ethics process, which could be communicated by a diagram a) to show the process and b) to show the level of ethical approval.

"I think a diagram saying do you have this? No? You do, you don't. You know a chart thing that leads out in different directions that shows you what level o f ethics approval you have."

Personal Development Planning (PDP) was not communicated well, and the documentation included in the PDP was laborious and difficult to understand.

"There were parts of the tutorial which were a help, i.e. PDP but I don't think they went through the PDP in enough detail".

The library workshop for the final project was provided at too short notice; the last workshop that the students received was in the first year of their course. The students were quite scathing about the standard of books etc. offered in the library.

"By the time they had told us the dates, I had already had plans for other things on the same day, it was like one or two days before they happened, that we were even told it was going on'

Students found the one to one tutorial sessions very useful, with the supervisor and having the learning support assistant present. This was because they were relaxed and informal (it probably helped because they know both members of staff very well).

"They were always relaxed and informal and nice, because it means I can share my work in a much more comfortable manner."

The students felt that the poster presentation was ill timed, because most students hadn't received their final data, and were unable to analyze it in time. They found the poster presentation a distraction.

"It got in the way of my personal schedule, the way I write things."

4.2 Responses about use of the dissertation proposal blog

The proposal blog enabled the students to think about their project in advance, and helped them to develop and share ideas for the dissertation with their peers, the supervisor and the learning support assistant. It helped the students to write their proposal by the end of the summer holiday, so they had a head start.

"It got me thinking about it earlier than I normally would've and I think that really helped because by the time September came around, I already know pretty much what I was doing. So yes, it was helpful."

The students felt that the blog was beneficial for sharing ideas and have comments from the supervisor to help build their dissertation idea, to store data, merge and write part of the dissertation up front.

"I think the fact that I could simply just share what I had so far and then have Jo comment on my work and help me build on my idea."

"I managed to get most of my literature review done before we came back last semester!"

The students found the dissertation easy to write as it was so structured and because they were happy with their dissertation subject in comparison with other modules. The way the dissertation process was spread out made it more manageable. The learning and skills development module undertaken by all students in their first year, introduced the students to the writing process, so it helped the students to develop structure and content like a mini dissertation.

"I found it easier, I think because it is more structured and you have so much more time to do it. I actually found it easier than some other modules, I mean Web Design was an easy one in comparison, that was easier than this, but I found IT Security harder because you had to put so much more into a smaller document."

The students recommended that their colleagues should start the dissertation process early, and that working on it during the summer should not be onerous but beneficial given the amount of time that students get for summer holidays.

"I have already told one of my friends who is year two to start thinking about it now and to start writing his literature review, whether he has or not is another matter, but I think it would be to start thinking of your idea at the beginning of year two, if you can start gathering sources even then, then you will find it a lot easier."

Both students were pleased that they had lived at home for their last year at university because it avoided distractions such as parties, shopping etc.

"Living at home this year, I am glad I have, there is less distractions, when I was in the house last year it

was very easy to get distracted from work, because you have someone who says "Do you want to go to Braintree Freeport" for no reason, you go because it is more fun than doing any work. Now I am at home it is pretty much either working or doing uni work."

The students didn't feel that their support was overbearing, and that they had autonomy in their writing.

"It has helped to guide us in the completely correct direction."

"Yeh, this way I now feel I have a dissertation that is acceptable rather then a compete mystery."

4.3 Negative elements of the use of the proposal blog

The students found the introductory sessions to the final project quite tedious, because they had got a head start,

"I don't think they were very useful at all, in the fact that obviously because I had already started it back in before the summer, a lot of the introductory stuff just kind of didn't mean too much to me as it felt a bit too late for me, obviously in that sense it was boring".

The students found interaction with other students undertaking the dissertation difficult, due to the fact that they were so far ahead with their work, whereas other students had often not even started their work. The students were quite empathetic about how the other students would feel if they know that they had written so much. They genuinely wanted to encourage their colleagues to get on with their work.

"I think I have spoken with other people enough because everyone else just depresses you, and gets you down because everyone is sitting around saying they haven't done anything and that, and it is no use even if you did have a reaction with them, because they haven't got anything done. Now I know some people who haven't even started it!"

"And I don't want to come across that I am sticking it to them, that I have got all this done, they haven't. I think it would look worse for them, if I was a student that only had 500 words done. I would feel terrible knowing that four or five people had got 6,000 words done!"

4.4 Looking to the future

The students felt that in order to improve communication they would like to use a drop box, so that documents can be shared between them, the tutor and learning support. Also it would help to back up work.

"I am a big fan of drop box, because obviously you can create a folder, which will be capable of being shared between say the one person and their adviser which means that the adviser could review what documentation had been written. Also it has the

advantage of backing up everyone's work at the same time so it gets rid of the whole "oh dear, my pen drive has blown up with my dissertation on it!"

There was overwhelming agreement that the blog should be used for the dissertation proposal and that a drop box should be used for the dissertation itself.

The ideal time for the dissertation process to start particularly for those students with AS, would be Easter of year two for students taking a three-year degree. At that point students should, using the blog, involve themselves with the proposal, PDP and ethics clearance.

"I think that would be the best way of doing it, it would give people such a head start on everything, they will feel a bit more inclined to think about it a little more".

The students felt that the blog should be an optional way of developing the dissertation as offered to the students as some may wish to follow the traditional route.

"I think an option would be a good way of doing it, you will find people who want to do it the traditional way but I think a lot of people would want to do it in this now format."

5. Discussion

It is evident that there are many aspects of the final project that cause difficulty for students with AS. The dissertation is a sustained piece of work, is process driven, and therefore there are pitfalls at different junctions in that process. The students with AS could have the problem of failing at the first hurdle, finding a dissertation supervisor, only to go on to have difficulty understanding the ethics process, PDP delivery, production of the poster and the writing of the dissertation itself.

The students had pre-arranged who would be their supervisor, but finding a supervisor would have been a problem without this, partly due to the fact that the students didn't know many lecturers that were conversant with their specialist subject areas.

The Ethics process was confused and illogical according to the respondents. There seems to have been a breakdown in communication between the module leader, the supervisor and the students as to whether they had received approval and what that approval consisted of. It was a vague process and there were too many changes made to that process during the delivery of the module. The process was too slow, and approval arrived during the Christmas holiday when students were not in university, as it leaves little time to improve the application. The feedback was not popular either, which was provided as number scheme which was difficult to fathom. The supervisor did not know that the ethics approval had been achieved.

The students felt that the Learning and Skills Development Module in the first year, helped to

introduce the respondents to what the dissertation process is like.

The respondents stated that they didn't attend a library session for the dissertation. There was one arranged, but the dates were inconvenient as they were only communicated a couple of days in advance.

The project proposal blog made the students think about their project earlier which they found very helpful. The timing for working with the proposal blog was good, as it was just before the summer holiday.

The blog enabled the students to write their proposal and literature review before they returned for the third year, which gave them a head start. The most beneficial aspect of the blog was that they could share their work and have the supervisor comment and help them build their ideas.

The weekly tutorial sessions provided by the module leader were rendered ineffectual, as the respondents had achieved most of the outcomes. The tutorial was timetabled for one hour between five and six on a Friday, which was inconvenient and expensive. The only benefit to turning up was the PDP work, which needed to be taught in more detail. PDP was a challenge for the respondents, as they didn't understand the wording and requirements of the skills analysis document.

The respondents found the one to one tutorial sessions with their supervisor to be helpful.

The poster was ill timed according to the respondents who said that there was not enough time to present findings or evaluate their data and was a distraction from the dissertation.

When the respondents were asked how they would advise their friends on their approach to the dissertation, both respondents felt that starting early definitely made a difference, and that they would recommend that their friends should start gathering sources or write their literature review over the summer holiday.

The respondents mentioned that the use of a drop box would be helpful where a folder could be created to share parts of the dissertation between the student, the supervisor and possibly learning support. This would have the benefit of backing work up. They suggested that the blog would be used for the proposal, and a drop box for the dissertation.

The respondents enjoyed coming to university to work, rather than rely on on-line resources and working at home.

Being so far ahead with their dissertations, made conversation with other students more difficult, it depressed them when they heard how little work the other students had done. If there were a way to encourage students to give each other advice on where to get started that would be very beneficial.

A general drop box was rejected, because the respondents were worried that their ideas would be plagiarized.

Both respondents were glad to have lived at home this year, free from the distractions of other loud students, parties, and accompanying friends on shopping trips.

There was a consensus that the dissertation module was found to be generally easier than other third year modules. This was due to its structure and the fact that there was more time allocated to it. This may reflect Ghaziuddin [4] who highlights the idiosyncratic interests people with AS become obsessed with. The scaffolding of information, and the production of small pieces of work, may have helped the students with AS to avoid writing out of the bounds of their chosen subject, and becoming locked in to their obsession.

The respondents felt that for those who are struggling with the dissertation or those who hadn't started require further encouragement outside of their regular supervisor meetings which reflects the views of Webb [19]. When asked if a similar system to the piloted blog would be advantageous to all students undertaking their dissertation, there was a resounding "yes!"

When asked if the students felt driven by this research project, both students were indignant at the suggestion that the researchers had helped to write the dissertation.

Both respondents agreed to the idea that year two students are approached at Easter in order to put the proposal together using the blog, and that this would also be a good time to look at ethics approval and PDP.

The respondents felt that students should be offered the choice of using the traditional method or the newer format.

It was interesting that the early completion of certain parts of the final project caused some anxiety to the AS students, when they could see that their peers had not produced sufficient work and that time was running short. In some ways the early completion was antagonistic to their relationship with their peers, which can be fragile at the best of times. They seemed embarrassed to mention that they had achieved so much work in comparison to their peers, they didn't want to appear to be overbearing about it, which suggests a surprising empathetic side to their nature which delightfully goes against the presentation of AS [3].

The students, who used the blog, felt that the Final Project was actually an easier module to complete than others, due to its structured approach. The format helped to chunk up the work, so that small goals could be achieved over the length of the module. The fact that they could use the dissertation blog to start their dissertation, gave them impetus, support, and autonomy in their writing.

The dissertation proposal blog, did manage to satisfy two out of the three points made by [12], but it failed to answer point three, as there was not a true sharing of knowledge between all five of the students who used the blog. Therefore it seemed that the researchers failed in our quest to form a community of practice. It was evident that the AS and NT students did not interact on the blog, and the two AS students remained aloof on-line. There was only interaction between the individual students, the lecturer and learning support. This was most likely the result of a lack of facilitation by the lecturer, who needs to encourage the students to leave messages, critique work and offer advise to one another.

6. Recommendations

1. That a dedicated supervisor / intermediary, is allocated to any student with AS in order to build rapport and trust, well before the start of the Dissertation.

2. To improve the whole ethics process – which would benefit all students, to make sure that approval is timely. The production of a chart, which shows the whole ethics process clearly – and perhaps an on-line tracking system for the students to show how their application is advancing, would be useful. Feedback should be provided in writing, with a clear indication to any adjustments that need to be made to the ethics application.

3. A revision and enhancement to the PDP process, to prepare the student leaving university for the workplace, this is particularly relevant for AS students, who have diverse preferences in communication.

4. More interaction with the library and library staff, with a member of the library allocated as a point of contact for AS students.

5. The proposal blog should continue to be used for the proposal process particularly in the area of finding and defining the project. Both AS and NT Students should be advised to start using it between Easter and the end of the semester of their second year. This will allow the students to make a start on difficult areas such as the literature review and research methodology.

6. Rather than a blog, a 'Drop Box' is more relevant for the actual writing of the dissertation. This will allow students, supervisors and learning support workers access to the project document for comment and advice. The Drop Box facility on the university VLE (Virtual Learning Environment) could be utilized for this. This

would particularly benefit students with AS, as they may prefer to communicate electronically rather than face to face.

7. The poster presentation should be timetabled at the end of the module, when students have completed their research and have findings/data to complete their poster. Then the poster will not act as a distraction to the writing-up process. The current system provides a conflict of interest to the students which can lead to confusion and the students not completing their work.

8. It will be advisable, if possible, for students with AS to live at home rather than in accommodation for their final year thus freed from possible distractions and irritations.

9. The blog system will be offered alongside the traditional system so that students have a choice in how they develop their work.

10. The lecturer needs to facilitate closely how the students use the blog, patiently encouraging them to interact with their peers on-line.
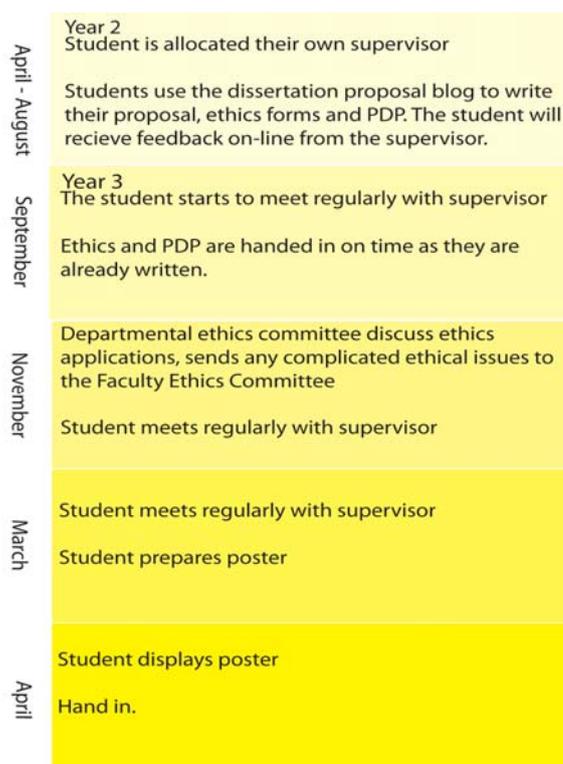

Figure 3. Proposed dissertation process

7. Conclusion

Both AS and NT students found the blog very useful in the first instance and they all felt that starting their dissertation proposal in the second academic year early was beneficial and that they

were better prepared for the start of their third and final academic year. The NT students used the blog to formulate their ideas and initialize their projects, but relied on it less and less as the academic year progressed. In contrast, the AS students were more reliant on the blog but their use reduced as they became more confident in their ability to construct and write coherently. The students believed that the blog helped them to formulate their ideas and kick start their dissertation, but for the bulk of the dissertation a drop box was a more satisfactory way of working and collaborating with academic and support staff. Although the students did interact with the lecturer and learning support, a community of practice did not emerge.

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