

Learning Within a Connectivist Educational Collective Blog Model: A Case Study of UK Higher Education

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Abstract: The use of Web 2.0 technologies and specifically blogs has become increasingly prevalent within the Higher Education (HE) sector within recent years as educators begin to maximise the opportunities such tools can provide for teaching and learning and to experiment with their usage in a wide range of context. The use of such technologies has been shown to promote learning (Garcia, Brown & Elbeltagi, 2012) however currently the manner in which these tools can be best used to promote teaching and learning is not entirely clear.

It is within this context that Connectivism, a learning theory for the digital age (Siemens, 2004) has been developed as a theory which aims to provide a model through which teaching and learning using digital technologies can be better understood and managed. Connectivism is however as yet still a relatively new learning theory and not without criticism. Therefore this theory must be considered more fully before it can be accepted fully as a learning theory for the digital age.

Within this research a case study of collective blog usage by students studying at an HE institution within the United Kingdom is utilised in order to explore the extent to which Connectivism can be considered to provide a sound theoretical model in which to base future teaching and learning activities of this sort. The views of academic staff and students are utilised in order to explore the extent to which the model of Connectivist learning can be applied to this case and demonstrate the complexities of considering teaching and learning in this way.

The results of this study would suggest that Connectivism as a learning theory for the digital age is worthy of consideration and a number of elements of the theory can be seen within the activities undertaken however these are not seen universally across all groups involved within this project.

Keywords: blogs, connectivism, higher education, teaching, learning, Web 2.0, case study

1. Introduction

The use of Web 2.0 within Higher Education (HE) has become increasingly popular in recent years and consequently there is an increasing range of research concerning the manner in which Web 2.0 tools can be used to support teaching and enhance learning within HE. What has been less clearly articulated however is the manner in which such tools can fundamentally change the manner in which learning occurs and the effect this may have on academic staff, students and the learning experience itself. The changes seen can be considered to have occurred, not only as a result of the use of the use of technology itself but also due to the effect that the use of such technological tools may have on how both staff and students approach learning. This has led, particularly through the use of blogs, to the development of new forms of teaching, learning, pedagogy and learning theories.

One of the most relevant theories, to come to prominence due to the rise of Web 2.0 is Connectivism. Connectivism is not an area in which a great deal of research, particularly empirical research, has been conducted to date. However the manner in which connectivism may be able to enhance our understanding of teaching and learning in the digital age, especially in relation to the use of collective blogs within teaching and learning, could be of fundamental importance. The roles of both academic staff and students are particularly important within a connectivist-learning model and therefore the views of both academic staff and students of the use of collective blogs within a connectivist-learning model is an area that requires further investigation.

Before considering the extent to which blogs reflect a connectivist-learning model and the manner in which this affects both teaching and learning, it will be first necessary to consider the nature of connectivism as a teaching and learning theory before considering the manner in which this will be reflected in the use of blogs for teaching and learning.

2. Connectivism

The learning theory of connectivism was developed as a result of a belief that there was a need for a learning theory, which took into account the manner in which society has changed as a result of the new technologies of the digital age. (Siemens, 2004) Connectivism therefore seeks to provide a point of differentiation between itself and other learning theories with which educators may be familiar. Connectivism also seeks to assist in the development of current practice in order that learning design in the future will be developed in such a way that learning through digital means will be an inherent consideration in any learning design. (Al-Shehri, 2011)

The foundations of Connectivism are driven by the influence of social constructivism, network theory and chaos theory (Couros, 2009) and highlights the importance of learners making connections, which allow the flow of information to occur between the learner and their learning community. (Kop & Hill, 2008)

Within a connectivist-learning environment, knowledge is considered to flow through a network which contains “nodes” which can be an individual, group, system, resource or community (Bell,2009). Within a Connectivist model learners therefore use technology to create networks, comprised of a variety of nodes for themselves, which are open and filled with knowledge sources that the individual chooses. The manner in which networks are formed therefore make the network highly personalised and primarily the responsibility of the individual. (Guder, 2010) As a result individuals are required when building their network to consider which nodes are of importance and which are not. The ability of learners to additionally be able to judge when a network may no longer be useful are also vital elements of connectivism. (Siemens, 2004)

Within a connectivist-learning environment it is also important to note that the concept of distributed cognition is of high importance. Distributed cognition is the belief therefore that no single individual is in receipt of all required knowledge to solve a problem or complete an activity (Boitshwarelo, 2011) and this therefore highlights the importance of maintaining nodes, connections and a strong network. However whilst the knowledge held by each node is important it is important to note that within a connectivist-learning network the connections made between nodes should be primarily concerned with the ability to solve problems rather than the specific information held and therefore the network should be filled with contacts and resources rather than solely information. (Al-Shehri, 2011)

Siemens (2004) defines the key principles of connectivism as follows:

- Learning and knowledge can rest in diversity of opinion
- Learning is a process of connecting specialised nodes or information sources
- Learning can reside in non-human appliances
- Capacity to know is more critical than what is currently known
- Nurturing and maintaining connections is needed to facilitate continual learning
- Ability to see connections between thoughts, ideas and concepts is a core skills
- Currency is the intent of all learning activities
- Decision making is itself a learning process

It is clear within connectivist learning that the individual and their network is of key importance. In addition the nature of the network appears to support a fundamental change in the role of academic staff as when they are present within a learner network (although this cannot be assumed) their role will be of a peer. (Friesen & Lowe, 2011)

Within this approach learning is seen to occur when peers collaboratively share opinions, viewpoints and critiques through conversation and dialogue on a more mutual basis than the traditional teacher / student relationship. (Friesen & Lowe, 2011)

In addition it is important to note that within a connectivist-learning model learning does not only take place within the classroom but also outside of it, often made possible due to mobile digital technologies (Guder, 2010) and the connections formed with others who may wish to continue to learn outside of the classroom.

The nature of the networks formed also places the emphasis for making and choosing connections on the student rather than the teacher. (Guder, 2010) This therefore places a greater emphasis on the student's role within the learning process and where it exists the teachers role will be determined by the learner rather than the teacher. (Guder, 2010)

This theory is however not without its critics. Verhagen (2006) has been critical of connectivism, as he does not consider it to be a learning theory as it is based at a curriculum level rather than an institutional level. Verhagen (2006) therefore believes connectivism should be considered a pedagogy rather than a learning theory. This criticism is further support by Kerr (2007) who considers that something interesting is happening but that this is not necessarily at the level of a learning theory. Furthermore Kerr (2007) also considers that issues arise from connectivism when consideration is taken of "non-universals" which are not things that can be learnt spontaneously such as reading and writing. Further criticisms are made of connectivism as, unlike other theories, it appears to be incompatible with other theories and can even be considered to reject other learning theories altogether. (Al-Shehri, 2011)

Despite these criticisms the concept of connectivism continues to be considered of relevance when considering learning within the digital age, which supporters of connectivism argue has not been considered by previous learning theories. (Bell, 2011)

3. Connectivism and blogs

The use of blogs would appear to support connectivist learning due to the manner in which blogs are considered to provide opportunities for individuals to collaborate and communicate online with others. (Richardson, 2010) Furthermore blogs enable the creation of social structures (Efimova & Hendrick, 2005) particularly where collective blogs are used as a learning tool.

Collective blogs provide many of the features considered to be of importance in a connectivist-learning model such as allowing interaction, (Ferdig & Trammell, 2004) peer and social communities to be promoted to support learning, (Glogoff, 2005) and a continuity of conversation. (Macduff, 2009) Collective blogs would appear to support the development of a connectivist-learning environment particularly as at the centre of connectivism is the concept that individuals will learn best when they are able to connect to a learning community, be able to both learn from others and help others to learn through dialogue and discussion within a group of individuals with similar interests and aims. (Boitshwarelo, 2011) Whilst the use of blogs can be therefore seen to meet the needs of a connectivist-learning model it is important to consider the degree to which academic staff and students will accept the use of blogs. If the use of collective blogs is incompatible with the needs of both academic staff and students it is unlikely that their adoption will be successful.

Initially it must be noted that in order for blogs and a connectivist approach to be adopted staff must firstly be willing and able to use such tools. (Kvavik, 2005) As it is usually the decision of staff to use the specific technologies within a session there will be a need for staff to have knowledge of such technologies. However whilst academic staff may need knowledge of the technology the manner in which control of both the digital and learning environment moves from staff to students is an important distinction to make within both student blogs and connectivist learning. This therefore changes the role of both staff and student, particularly within group student blogs where students become accountable to each other rather than the teacher. This therefore places the role of the teacher as one concerned with ensuring that students are actively engaged and responding in a timely and relevant way to each other's posts rather than replying themselves. (Livingston, 2011) This could however be difficult to achieve if blogs are busy or large numbers of students are involved.

The connectivist model and nature of blogs also supports any time, any place learning which may suit students but may not be appropriate for staff who possibly might be unable to be available on a flexible basis. (Lujan-Mora & Juana-Espinosa, 2007)

One further aspect of blogging that would well support the connectivist-learning model is the manner in which external "experts" could become involved within the blog more easily than in an offline environment. It is important to also consider that as connectivism is concerned with individuals making connections for learning and therefore reducing isolation within learning (Boitshwarelo, 2011) the manner in which blogs will allow students to reach audiences across the Internet will both enable students to build as large a community as required whilst also focusing on specific communities and

niches that may be most relevant to the activity being undertaken. The manner in which students, staff and experts may interact within the connectivist-learning blogging model is shown in figure 1.

Figure 1 demonstrates the relationships that exist between students within the blogging environment and the manner in which staff and experts may input into the community but are not automatically involved within the learning environment. Within this model learners exist within the collective blogging environment and by the nature of the environment are all linked to each other through their ability to see each other's posts and comments and respond to these freely. Outside of the blogging environment staff and external experts will exist. Both of these groups are shown outside of the blogging environment but are able to contribute to the blog if invited into the community by the learners. The level of this commitment will be determined the learners as existing members of the community but could range from simply viewing the activity being undertaken to full participation within the community as an equal participant.

It is important to note that all of the roles within this model may change over time and are not static or fixed. It is likely that roles will change across time and additionally that the number of participants, in terms of learners, external experts and staff, will differ for each community and depend upon the reason for the formation of the community and the expertise that each member of the community brings to the group.

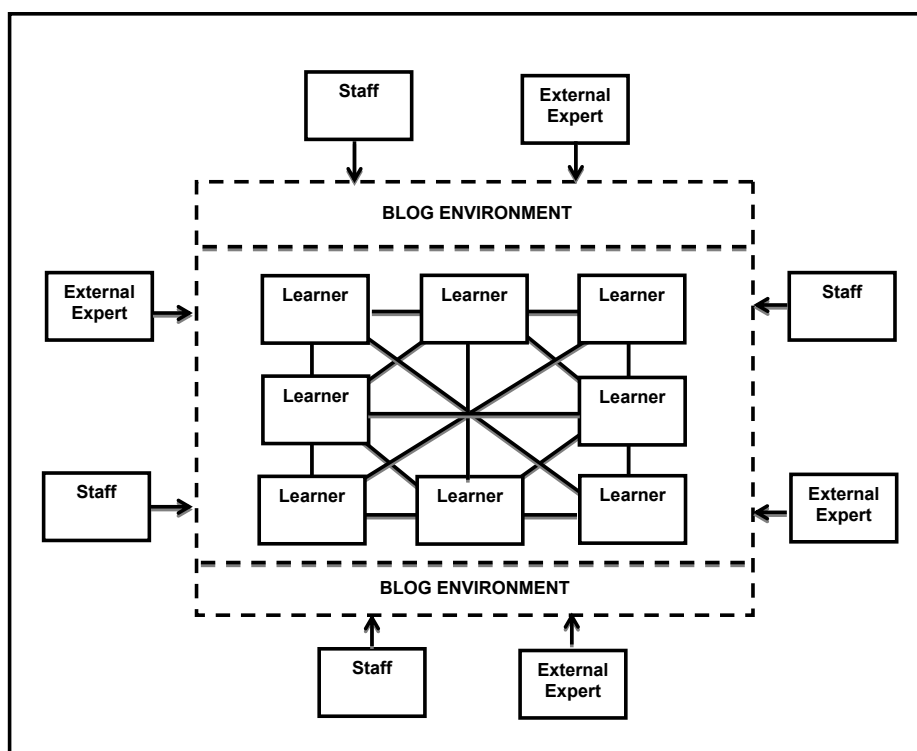


Figure 1: Connectivist educational blog model

In order to determine the extent to which this model represents a realistic interpretation of the use of blogging within teaching and learning, the case study of Plymouth College of Art (PCA) shall now be considered.

4. Methodology

The research is undertaken using a qualitative approach. This approach is considered to be most useful in this case as it allows the collection of research data within a natural setting and seeks to gain an understanding of participants and the relationships that exist between participants. (Saunders, Lewis & Thornhill, 2012)

According to Creswell and Clark (2011) the advantages of such an approach include:

- It aims to describe and interpret participant's personal experiences of a phenomena
- It allows participants to share their view

- It provides a way of understanding complex phenomena
- It tries to understand the interactions between people

This therefore helps to ensure that the validity of the results is relatively high. (Creswell, 2009)

4.1 Case study method

A case study is a qualitative research method, which allows the researcher to explore phenomena within context. (Saunders, Lewis & Thornhill, 2012) Case studies are a useful method where a researcher wishes to gain a detailed understanding of the context in which the phenomena is occurring. (Saunders, Lewis & Thornhill, 2012) One of the key advantages of a case study is the manner in which it can deal with a variety of evidence (Saunders, Lewis & Thornhill, 2012). By using a variety of evidence a more detailed view of the phenomena can be considered. (Yin, 2009)

4.2 Data analysis

A total of 33 students and the academic staff team (2 staff) were asked to complete a survey, which utilised open-ended questions. In addition the staff team wrote both personal and team reflection throughout the project and were interviewed following the project. Student surveys were returned from members of five of the six teams (IJ, TF, FFF, TI and WWSY). In addition results from both staff interviews (ST1) and staff surveys (ST2) were received.

The results of both the interviews and qualitative written responses were analysed using narrative analysis. This method was chosen as it allows an account of the experience individuals have to be told in a sequential manner, which allows the opportunity to explore the events, which may be related to each other and which may provide an indication of areas of importance for researchers. (Saunders, Lewis & Thornhill, 2012)

5. Case study

The BA (Hons) Illustration course is a three-year undergraduate degree programme, which runs at PCA. The use of collective student blogs occurs within a module called "Illustrative Practices" within the second year of the course. Within this module, a simulated work based learning project called "The Great Editorial Race" runs for three weeks in which students are required to form an editorial team in order to answer a number of editorial briefs with varying requirements and deadlines. This project therefore requires students to work in groups to create a number of illustrations in a relatively short timespan. In order to complete the task, student teams are required to work together assigning editorials, choosing a team captain and each team is responsible for setting up a group blog. Within this instance of delivery of the project a total of six teams were created and members within each team were assigned by staff in order to be as evenly distributed as possible in terms of both student individual characteristics and individual performance.

The use of collective blogs were determined by staff to be useful following the voluntary use of a collective blog by one student team in a previously presented instance of this project. Academic staff also considered that all students would be familiar with the use of blogs due to their usage throughout the programme for Personal Development Plans (PDPs) and other course related activities. It should be noted however that collective blogs had not previously been utilised with this group of students and this therefore represented a new use of the technology for the majority of students.

Staff felt that the manner in which students had previously successfully used individual blogs and the example of usage of a collective blog in a previous instance of this project resulted in an indication that this would be a good manner in which students could manage this project. The advantages of the use of blogs were considered to be the manner in which they provide a flexible, asynchronous online space in which students could post ideas, research and sketches, which could be commented on by others in the team before submission. Although academic staff request to have access to each of the blogs at the start of the project this space would not generally be an area in which academic staff would actively participate as it was hoped that the blog would enable students to create an online community that would provide peer support and build on offline activities undertaken in the studio.

Staff requested all blogs should be created using “Blogger” as this was the blogging software that was most familiar to staff and students and had been the software which had been most widely used throughout the course.

6. Findings

6.1 Student views of learning within a connectivist blogging environment

From the qualitative surveys conducted it would appear that through the use of collective blogs students did appear to begin to form a network and the types of connections with others that would be expected within a connectivist-learning model:

“They were very valuable... They were all positive and friendly and made you feel part of a team and not working all alone” (IJ1)

Furthermore it appears that students found the network formed and the connections made within the blog provided a supportive environment in which critique, comment and provide constructive feedback which allowed learning to occur and assisted students to develop their work:

“It was really helpful in deciding what improvements to make.” (TF1)

“It is reassuring. Letting me know I’m going in the right direction and am valued by the group.” (FFF1)

In this way it would appear that students did consider there to be value in working in a network and there was a reduced feeling of isolation for students when completing their work. This appeared to be considered by students to be driven by the student rather than by academic staff and where feedback was given it appears that this was often considered to be constructive and useful:

“We were all honest and appreciated useful feedback as to why certain things were not working.” (WWSY1)

However whilst this reportedly occurred in some cases this success was not universal and did not occur automatically or immediately for all students indicating that students perhaps did not feel that building connections with networks was something which came naturally to all students:

“At first we were all too polite, but before the end we had relaxed a bit and were still positive, but offering proper feedback.” (IJ1)

For some students the academic staff were required and invited into the community initially within the project in order to initiate discussion and critical feedback:

“We needed prompting to use it as more than a “look at what I’ve done!” blog and were giving each other constructive comments towards the end.” (IJ1)

The reason for staff involvement appeared to be for some students an issue of confidence in their own opinions and the ability to share their views with other students.

“I found the comments valuable but I think because of the ‘newness’ of the group it was a bit difficult to be completely honest. Also I’m sure that one’s opinions are only subjective, so I did not want to comment on the blog, lest it be misunderstood – would have preferred to discuss it in person with the others on a one to one basis.” (FFF1)

Whilst therefore it appears that the connectivist environment and blogs appeared to work well for some students the success of the blogs was not universal. Whilst some blogs saw interaction from all of the group:

“Everyone actively left comments and feedback within good time” (TF1)

A number of students felt that posts and responses often came from the same students thereby indicating that the network formed was possibly not working as well as it should be and not all nodes within the network were playing a part in the knowledge creation and sharing process:

“Comments were usually from the same people it would have been nice to have feedback from all members.” (WWSY1)

“Some members were active and some were not. It was the inactive that concerned me.” (TF2)

This might therefore provide an indication that not all students were actively engaged or learning through the collective blog and therefore the connections required for learning to occur were not sufficiently strong. This manifested not just through lack of engagement but also through a lack of timely engagement. For example:

“A lot of people in our group didn’t post their work up on the blog until it had been submitted leaving no opportunity for other people from the group to suggest improvements.” (WWSY1)

Additionally in terms of connectivism it is perhaps surprising that some students found that the technology itself appeared to be a barrier to use and not all participants appeared to embrace the technology to its fullest extent:

"We tended to do more in class/face to face than on blog...we did (show really early ideas) in person so no point in doing on blog for the sake of it." (T1)

The manner in which the connectivist-learning model is considered to be a learning theory for the digital age makes the lack of engagement with digital technologies, amongst students, surprising and perhaps indicate that the extent to which all students engage with digital technologies is not as high as would be expected with the "digital age".

In fact it is important to note that whilst some students considered that face-to-face communication replaced online communications all teams discussed using a variety of methods of communication, both online and offline, throughout the project indicating that students are not solely reliant upon digital technologies with their studies.

Overall therefore from the perspective of a connectivist-learning model it appears that students found and made connections, although to varying degrees, within the collective team blogs created and were able to use these to learn to some extent.

"We all used the team blog to display and discuss work as it progressed. It allowed us to critique each other and make suggestions." (TF1)

Whilst the views of students have therefore given insight into the way in which learning occurred through the use of collective blogs, further comprehension can be found from considering the manner in which staff felt both their own and student roles changed as a result of the use of collective blogs within a connectivist-learning environment.

6.2 Staff Views of learning within a connectivist blogging environment

From the results of the staff surveys it is evident that academic staff felt both their own role within this project, and the roles undertaken by students had changed from the usual roles taken within such a project:

"The teaching team "played" the role of art director rather than tutor throughout.... Although students could approach staff for art direction whenever they wished only a handful of students took this opportunity consistently." (ST1)

In this way therefore the academic staff considered that the creation of networks and connections between students was successful and students were no longer seeing staff as:

"...Automatically the first port of call for asking for advice and feedback (as students) have to use each other for feedback outside of the classroom to get feedback on their own ideas through peer critique." (ST2)

Lecturers therefore considered that students were largely self-managing their learning through the establishment of a learning network and considered that:

"Students not only learn individual skills in terms of working to briefs but they also develop critical thinking and reflection skills in terms of critiquing their own and others work." (ST1)

However whilst this generally was considered to have worked successfully, academic staff did feel that the use of student-based networks did result in a loss of critical review that students might receive from academic staff, as they stated that students were "*sometimes just too polite.*" (ST2)

This therefore reflects the views of students who noted that peers were too polite and did not wish to be critical of each other and although it appears this became less of an issue as connections between individuals became strengthened through interaction staff noted that:

"The blogs setup for the race were not continued after the game had ended...and most students returned to their own peer group of friends to discuss their work." (ST1)

This may therefore indicate that connections made were not strong or enduring or were perhaps not of high value to students. Alternatively however within a connectivist-learning model this may be the expected result of the ending of the project, as the specific relevance of the network did not necessarily exist following the end of the project. Following the completion of the project students may have chosen to revert to existing networks or to build new networks whether these are mediated through digital technology or simply face-to-face networks.

Within this case study academic staff did not consider themselves to become part of the learning network but instead remained on the edges of the learning process. In this case academic staff did not therefore become peers as may be expected within a connectivist-learning model. However whilst this is the case staff did not consider themselves to be removed from the learning process entirely but the role of staff became much more focused towards providing critical feedback and acting as an art director:

“There was still a sense that we were still seen as authority figures with the race – setting the work, judging the editorials, providing critical feedback.” (ST1)

Staff did express concern at the lack of engagement by some students within the blogging environment and were concerned that this could affect the success of the project and the learning that occurs. This is particularly a concern within a connectivist-learning model, as all nodes within the network are required to be effectively working together. It is only when all nodes are working together in this way that the true value from within the network, when considered from a connectivist-learning model, can be established as each node will hold knowledge that the others do not and this must be shared with others:

“It is clear that some students learnt so much more from the blog than others largely because as a whole group they were ensuring the blogs worked effectively for them. There’s that moment when an effective online critiquing community is completely dependent on that need for that community to be fully engaged.” (ST1)

Overall it would appear that academic staff considered that the use of collective blogs within this project did change, to some extent, the way in which both staff and students managed the learning process within this project and the roles and responsibilities for learning did appear to be affected by the use of collective blogs for student learning. This however does not appear to entirely meet the expectations of the connectivist model of learning. The implications of these findings shall therefore be considered in more detail in terms of the manner in which a connectivist-learning model can be applied as a result of the use of collective blogs within this case.

7. Discussion

From the findings it is clear that both staff and students consider that the use of collective blogs within this project had a fundamental impact, not only in terms of the increased opportunities the technology itself allowed for collaboration and interaction, but also in terms of the degree to which a connectivist-learning model can be applied when using collective blogs for learning..

For both staff and students a connectivist-learning model appeared to be largely delivered through the use of blogs, as students were empowered to create peer communities and communicate, collaborate and interact using technology. However unlike the connectivist model, it is important to note that student groups were not self-initiated and networks did not form or grow organically outside of the groups staff assigned. It could therefore be argued that the networks created were not formed using the conditions required of a connectivist-learning network and therefore could not be considered to be truly connectivist-learning networks.

The manner in which academic staff maintained an authoritative role within the learning process and whilst not engaging within the blog, as would be expected within a connectivist-learning model, were still looked to as an authoritative source of learning by students, also suggests that the connectivist-learning model was not entirely successful in this case. However whilst this should be noted, it would appear that within this model the responsibility for learning did become more focused toward the student and the network formed as would be expected within a connectivist-learning model. Whilst this is the case though students did not appear to be able to fully engage with the level of peer critique and feedback that appears to be required even though it did occur in some cases. Where peer critique and feedback did occur, it appeared to be of benefit to the student, particularly as confidence grew and critiquing became easier. Within this case study staff did not check the levels of engagement of students and therefore the groups were required to be self-managing. The need to be accountable for themselves and the learning of others is an important aspect of a connectivist-learning environment but something, which some students found hard to adapt to. Where some students failed to engage, staff noted that this negatively affected the learning of all within the group. This perhaps indicates that the connectivist-learning model, whilst not present in all cases here, is applicable to learning within this way as when the conditions of the connectivist-learning model were not present learning occurred to a lesser degree.

It is interesting to note when considering the nature of connectivism as a theory for the digital age that for academic staff the use of digital technology represented no barrier. This is indicated by the way that staff initiated the choice of such tools. It should be noted though that academic staff had no input into the blogs themselves. The manner in which the academic staff made the choice of the tool to be used would have required an understanding of the capability of the tool and a desire for usage of digital tools.

By comparison, for students, the use of technology did appear to represent a barrier to use, shown through the manner in which some students preferred to work in an offline manner. It is interesting to note that therefore the assumption that the digital age has resulted in the need for a new learning theory may be unsupported in this case.

Overall it would appear from this case study that collective blogs do reflect many of the principles of a connectivist-learning environment and largely were a successful model in this case. One key benefit was the manner in which students were required to take responsibility for their own learning and, on the whole, this led to students creating their own networks and connections. The networks created also appear to have been relatively successful and learning did occur as a result. This was not however successful in all cases and students still appeared to look to staff as authority figures and appeared to do little to extend, manage or continue the network following the project. Whilst this may be partly expected within a connectivist-learning model, as it could be argued the network was no longer needed, some continued connections or use of online tools would have been expected if the model and network had been found to be useful to students.

8. Conclusions and recommendations

This research has examined the extent to which a connectivist-learning model can be considered to have enhanced learning from an academic staff and student perspective when using collective blogs to undertake a project. This study has found that the roles of staff and students clearly change as a result of the use of blogs and these would largely appear to meet the expectations of a connectivist learning model but not entirely.

The findings from this case study would suggest that the use of collective blogs in this way does result in the creation of a network which is more focused towards seeking and providing peer-critique, support and guidance however this only appears to occur fully when students are actively engaged and willing participants within group learning. In this case study, when viewed through a connectivist-learning perspective, it would appear that the student role in this model becomes increasingly concerned with the creation and self-management of the network and the need to take greater responsibility for individual learning. However this does not necessarily appear to occur naturally for students.

Due to the changes seen in student roles, it would also appear that academic staff become less involved in the individual learning process of each student and instead focus on providing the opportunities for learning and overall summative critique at the end of the task. This change will also not necessarily occur naturally and may need to be practised and refined by staff.

Whilst the changes in roles demonstrate that some elements of connectivism can be seen within this case study it is clear that the roles identified were not adopted in all cases, particularly amongst students. As a result some students may have failed to actively or fully engage with the project and consequently the degree to which they have developed their network and connections may have resulted in learning being affected. One method by which this is likely to be resolved if the project were formally assessed, however this would need to be carefully considered in the future when setting such activities as formal assessment could change the dynamics of the group and the fundamental nature of the activity.

From this case study it is possible to see that collective blog usage has had a positive effect on the manner in which the project was managed and the learning that took place which can be seen through a lens of connectivist-learning. However this was a relatively short project following which students appeared to disengage with the collective blogs created. The result of this case study therefore suggests a need for further empirical research to be conducted within this area.

Further research may consider the use of collective blogs within a longitudinal study, within other disciplines and with greater student numbers. In terms of a connectivist-learning model, the use of blogs should be continued and the use of external experts and self-organised groups could be utilised in order to further develop the positive changes seen in both student and staff roles and the manner in which both teaching and learning may be further developed using connectivism as a theory for the digital age.

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