

USING BLOGS AS A SKILL DEVELOPMENT TOOL FOR CONSTRUCTION MANAGEMENT STUDENTS

Veronica Latorre¹, Michael J. Riley² and Felipe Ossio²

¹ School of Civil Construction, Faculty of Engineering, Pontificia Universidad Catolica de Chile, Chile

² School of Architecture, Design and Environment, Faculty of Arts, University of Plymouth, PL4 8AA, UK

Information and communication technologies (ICTs) offer a growing range of teaching and learning tools. This paper explores the use of blogging as a means of achieving a greater understanding of teaching and learning, and the impact ICTs can have on professional practice. This research has been developed with a group of final year construction management students, and is presented here in two stages. The first stage enabled the cohort to explore the scope of blogging as a tool for learning through reflection, and the second stage was designed to measure the impact this blogging forum had in facilitating the development of skills, particularly those in high demand by the construction industry. This study identifies which interventions are perceived as most relevant by the cohort as a means of developing skills. Results also indicate that the blogging platform format influences the impact blogging may produce. Collected data shows that undergraduate students perceive they improve their critical, analytical and communicational skills; however they don't perceive they have learned or that better prepares them for professional practice. Students conceive blogging as having potential far beyond the objectives of the curricula.

Keywords: blogs, information technology, professional skills, construction manager.

INTRODUCTION

The increasing number of students enrolling on undergraduate programmes challenges educationalists to explore new teaching methods to ensure the quality of the learning process. Information and communication technologies (ICT) offer an increased number of teaching and learning tools.

A weblog, or 'blog', is a frequently updated webpage which is maintained through the chronological publication of entries left by an individual. The ability of readers to leave comments in this interactive format is an important part of many successful blogs (Oravec 2003a). Research has shown that there are numerous educational benefits of blogs, as not only are they effective forums for collaboration and discussion, but they are also a powerful tool which enable the further development of communication skills, particularly writing and other related skills (Ferdig and Trammell 2004).

Our initial exploratory use of blogging has shown not only that transferable skills can be explored through the use of blogs, but also that the students demonstrate considerable levels of engagement in discussions of skills development.

¹ mlatorrb@uc.cl

As blogs are easy to create and can be updated efficiently, they are increasingly being used by academics and students within universities as an educational tool (Oravec 2003a). So, blogs can be used as a development tool by lecturers in order to bring together a group of knowledgeable individuals within a given unit of study, allowing for the students to network and conference with each other; expert or peer mentoring advice can also be easily kept for future reference, as different from logs or other kinds of record-keeping systems.

The use of blogs provides a way by which the lecturers can monitor their students understanding of curriculum objectives in an alternative way to coursework and written examinations without the need for face-to-face, daily contact.

The Pontificia Universidad Catolica de Chile (UC) has an IT support system that offers the opportunity for students to take advantage of the opportunities for social learning using a blogging community that will be comfortable to use. In addition to the online system allowing for the posting of all teaching modules and lecture notes, each module site has its own blogging forum. This enables interactive discussion between students to take place thus enriching their learning experience; however it has been found that this facility has not been generally taken up and used. The last online UC survey in July 2009, consisted of a sample of 2,105 students, of which 85% agree that access is easy and simple, and that information is displayed in a way in which is available. 42.8% agreed that module websites allow them to interact with their lecturers, however 83.5% of the respondents stated they had never visited the blogging forum (UC 2010). This is somewhat disappointing and not expected; leading to this research being undertaken to find out how blogging might be better used by undergraduate students.

The blog provides an example of how ICT can be integrated to higher education in order to produce skilled, confident, self-aware students and graduates, who also have the ability to assess their own work against those of their peers in a reflective, concrete and understandable manner. Thus the purpose of this study is to present new research exploring the use of blogging as a means of achieving a greater understanding of professional practice within higher education,

LITERATURE REVIEW

The majority of the current ideas about student learning are based in constructivism (Fry *et al.* 2003). Constructionism claims that “meanings are constructed by human beings as they engage with the world they are interpreting” (Crotty 1998,43), therefore blogging, and particularly, collective blogging or blogging communities work under a constructivist paradigm, where knowledge is created, shaped and developed collectively. Oravec (2003a) recommends forming and maintaining knowledge communities as a strategy, amongst others, to use in order to incorporate blogging spaces into learning processes. In support of this idea, Ferdig and Trammell (2004) stress that knowledge construction develops through the social process of language. Blogging provides an insight concerning the social construction of knowledge demonstrating how knowledge communities merge and emphasizes the value of intellectual property.

In recent years educators have begun to see the potential for blogs within the teaching and learning environment. Blogs and the activity of ‘blogging’ enables the development of a virtual space, and provides an environment, in which the students can ‘meet’ with each other and their teachers. Building upon the basis of

Constructionism, deeper knowledge and understanding is created by students who have been involved in the creation of their own knowledge and the effectiveness of using weblogs within education, however few formal studies have specifically examined the use of blogs within a university setting.

Various major educational institutions all over the world have begun to use blogging in order to build 'intellectual bridges' (Schiano 2004). These 'intellectual bridges' enable the flow of information and ideas between people within universities, as well as providing the foundations for building communities around common themes; for example, the construction management undergraduate students in this study.

Blogs have been explored as an established online learning tool and create a stimulating and reflective learning environment which allows for the expansion of students' information retrieval and evaluation skills, besides other skills relevant to construction managers. Equality and diversity issues have been addressed in the use of blogging, as students are provided with more time to read, understand and respond, due to the leeway students are afforded as individuals (Oravec 2003a).

Blogging creates a platform upon which members can provide support, offer advice and find a space for knowledge sharing (Herring *et al.* 2005); which allows students to approach the learning process (own and others) with a different demeanour. This new and collective approach facilitates the students' development and their ability to become critically analytical in their thinking (Oravec 2003a, Oravec 2003b), actions, and written work.

The creation of blogs involves the chronological aggregation of time-stamped records called 'posts'; posts are narratives that represent autobiographical reflections, providing useful insights about the recent history of a field or profession as individuals can trace through chronological posts. As students gather and transform knowledge through blogging in an educational setting they must then have the opportunity to publish that knowledge (Trimarco 2006), in an environment in which the student can be reassured by the others in their cohort and teachers. Blogging encourages individual development as they acknowledge their individual contributions (Oravec 2003a), therefore providing value to testimonies such as the experiences placement students go through and the obstacles they encounter. The blog entries provide an opportunity for students to see how they have progressed and to access their published material for later reflection, analysis and responses from peers; thus the process enriches the students' learning experience and maintains peer group support throughout periods of study, or as individuals while working off-campus. Oravec (2003a) also highlights the usefulness of blogs to share hyperlinks as it may be useful to students when they require sharing discipline-specific information, particularly about a new topic; blogging would therefore reinforce and strengthen students' acquisition of knowledge and development of skills.

Traditional teaching practices have assumed that knowledge can be abstracted from the situations in which it is learnt and used, often limiting the effectiveness of such practices. Research into cognition show that knowledge is 'situated', being a product of the activity, context, and culture in which it is developed and used (Brown *et al.* 1989). This view of knowledge affects the students' learning, and conventional views often ignore the influence the culture has on the quality of the learning process.

In response to the situated nature of knowledge, a cognitive apprenticeship is proposed which responds to the situated nature of knowledge (Brown *et al.* 1989). This idea is reasserted by Lave and Wenger (1991) who postulate that becoming a

participant of a group is a social process, in which the participant acquires certain skills and the meaning of learning is shaped. The creation of the online blogging community would assist this process by allowing this 'social group' referred to by Lave and Wenger to be created, however in a virtual world. From a student's perspective this would be a safe environment, as they would know who else is blogging and they are exposed to a known cohort, however they are in an arena which enables discussion within a setting physically distant.

Social learning is the process by means of which acquisition of new information is caused or favoured by their being exposed to one another in a common environment (Conte and Paolucci 2001), and is based upon social facilitation and imitation (Bandura 1977).

Construction management degree programme background

This research was conducted in the final year of a 5-year construction management undergraduate programme that forms professionals in Chile; who are able to perform in different capacities within the multidisciplinary field of construction management. Completion of the degree programme achieves both UC degree and the equivalent of full "chartered" professional status in Chile without the need for further assessment by any professional body.

In order to obtain both the academic degree and the professional credentials, students must complete their degree and successfully meet the requirements of a professional exam. During the final year of the degree, students will undertake professional modules. One professional module is oriented towards professional literacy; providing a scenario to integrate knowledge and values delivered throughout the degree, by using real case scenarios, practice-based work and lectures, therefore being the culmination of the formation of the undergraduates. The aim of this module is to develop the ability to select, integrate and apply the tools and knowledge acquired throughout the programme, in order to exercise decision-making towards the development, elaboration and project management within the construction business.

Final-year students who undertake this module have already passed all construction processes and techniques modules, and can offer well argued viewpoints of the different industry's processes being almost at the beginning of their professional career.

Characteristics of the IT/blogging platform

For each module, a default website is created within the university intranet, which includes a blogging forum. The administrator for the forum is the module leader and participation is only by students who are enrolled on the module, by using their universities username and password; for this reason each user within the blogging forum is identified by their full name against each blog, as it appears on their university registration form.

The format of the blogging forum allows the user to post and to respond on posts only. This means each blogger can submit a title for their post, next to which appears their name with a date and time stamp. Each individual post is separated with only a thin green line and the blog begins with the most recent post appearing at the top of the webpage; therefore the entire platform is shown in reverse chronological order, creating a poor readability for users.

The blogging forum cannot be changed in terms of format; there is no option to change the typology. Along with the use of thin, green lines (which are not very clear)

to separate posts, if the user wishes to post to the blog then they must scroll to the bottom of the forum, their entry is then moved to the top of the blog as the most recent post.

During this study, different forums were created on a weekly basis. However, the characteristics of this particular platform meant that each forum was separate from the last; allowing only for users to only view the information posted in that particular forum. There is no ability to respond or consider other entries in other forums.

METHOD

This research utilizes a constructivist approach to using blogs as a tool by which students can learn and develop their skills. The research was undertaken to determine how groups of construction management students studying at the UC engaged with blogging tools. Questionnaires and focus groups were used as the means of collecting data. The collection of data occurred in two stages; first stage went from August to December of 2009, and the second stage took place in the first semester, March to May of 2010.

STAGE 1: To ensure students became familiar and confident with blogging. The blogging forum was used for the first time between August and November 2009. This first stage lasted 13 weeks. A cohort of 68 students participated weekly by posting and responding to somebody else's post. Students were allowed to choose the topic at will, as long as it was relevant to their construction management degree and their professional development. This provided a set of 1176 participations on the forum, of which 337 were posts and 839 were responses to posts. Coding identified the one or two main topics on each contribution, for each comment, per student.

STAGE 2: To help understand, from the user's perspective, the three areas within blogging: posting, the quality of individual posts and quality of the overall activity. These perspectives then help future design of blogging activities. The cohort was divided into three groups, of fifteen students – total number of students: 45. Each group was directed with a particular task; group 1 was asked to post on the blog with a requirement to attract the interest of their peers, group 2 was required to comment on a post to the blog, and group 3 had to read all the posts and the comments from the members of the first two groups, and vote in order to choose the best/their favourite post and comment of the week. The three groups were rotated weekly in order to allow all students to experience each task, however the term began late due to the earthquake in Chile, so by the time this paper had been submitted, students were already 8 weeks into the term.

The students were asked to complete a short questionnaire following the completion of their weeks in either group 1, 2 or 3. This short, fast method of data collection consisted of five questions which were completed by those students who attended the lectures in weeks 4, 5 and 6. These three questionnaires allowed an insight into understanding if students found the forum useful, and what they had learnt.

In the final week invitations were offered to the students who were nominated by their peers as the best 'blogger' or best 'commenter' to attend a focus group. 14 out of the 16 nominated attended and discussion included how blogging worked, what the students found to be good, bad and useful. The cohort were involved in discussion and analysis of what had happened and were there any factors which could have been improved or advanced by the use of the forum. The focus group was transcribed and

coding was performed according to topics; all coding was completed by analysing the data and collating it into categories, as done by Latorre (2009).

RESULTS

STAGE 1:

The students felt they had an opportunity to learn from others, to be closely monitored by tutors, and to present personal views and approaches to professional life, it allowed students to expose themselves to the experiences of their peers and lecturers, enriching and enhancing their own learning experiences.

The students noted their concern and lack of confidence in their own professional skills; the students were comfortable sharing their concerns with each other in a familiar online environment. Students displayed interest in broadly discussing four main topics: the construction sector, their own career, formation undertaken at the school and the university, and their responsibility towards social issues. The topic that received the largest number of posts and responses was the construction sector, and when linked to other topics, the response-post (R/p) rate was higher for career and formation. Further analysis of those posts and comments concluded that students were concerned, and unconfident about what they could do professionally, their competencies and future performance; however, they felt comfortable sharing their concerns in the knowledge that those comments can be read by anyone within the university community. Blogging Use Data: Students were asked to complete blogging tasks during the first 7 weeks of the term; there were 65 comments and 113 responses, which give an overall R/p rate of 1.7. The construction sector and the education students received at university account for over 80% of the overall participation in the blogging forum.

Immediately following the earthquake, the students studying construction were required to perform in a professional manner in order to assist other people, or their own relatives, whose homes had been destroyed. Dealing with a situation so close to the students hearts, whilst maintaining complete professionalism, impacted on their ability to reflect upon how well prepared they were to face the challenges of such a distressing situation. Formation issues had the higher R/p rate with 2.5.

STAGE 2:

Generally academics felt that by using the blogging forum skills were developed as per the module and curriculum objectives.

Questionnaires

First questionnaire, week 4: 62% of the students found their experience useful, primarily as they felt it provided them with an opportunity to be more involved and up-to-date with what occurs in the industry at a professional level on a daily basis. Other reasons noted in the responses were that the cohort enjoyed reading their peers thoughts, and therefore forced themselves to research further into the relevant aspects of industry, building upon their knowledge base. Only 30% thought it would be useful for the development of their career, as it was widely believed amongst them that the blogging experience did not provide further technical skills or knowledge which they felt were pertinent to the professional construction industry. At this stage, students dedicated time to express that they found the platform confusing and difficult to handle. These comments relate directly to the aim of exploring the support that blogging might have in helping greater understanding of professional practice.

There was general consensus across the group that clearer guidelines were required regarding the suggested topics of discussion, and the depth to which they were expected to develop the topic whilst blogging. In order to assist with this, examples and explanations were provided to the class briefly during a following lecture.

Second questionnaire, week 5: Bloggers said they had learnt how to become more succinct during the second questionnaire, which helped them to understand how to create a debate that would engage people in discussion. Commenter's said they learnt how to create debate and express different points of view, which would lead to a deeper discussion with the rest of the group. The students commenting on the blogs began requesting for those who were blogging to include more research in their posts. This resulted with the cohort engaging with one another and the blogging forum, while at the same time increasing their standards and views with reference to what made for good knowledge/research/discussion. Observers unanimously agreed that voting on the content of the blogs allowed them to develop their analytical and assessment skills. However, 87% of the cohort agreed that they had learnt nothing from what their peers had posted or commented on the blogging forum. These comments relate directly to the aim of exploring the support that blogging might have in helping greater understanding of professional practice; or at least the skills needed to enhance professional practice.

Third questionnaire, week 6: 62% of the respondents commenting that based on what they had seen during the week, they would approach tasks differently in the future. The changes included spending time to plan their blog and its content, to participate more, and to use more hard facts and consult scholarship. Commenter's said they should focus on professional development, as they realized that technical knowledge created more debate amongst the group; and observers said that more facts based in research and on previous scholarship should be included in the posting and commenting of blogs. In terms of how much the cohort said they had learnt, 95% agreed that they had learned nothing from what they had seen from their peers. These comments relate directly to the aim of exploring the support that blogging might have in helping greater understanding of professional practice; or at least help improve the use of the posting to do this.

The focus group was held at the end of week 8 and derived from the results of the questionnaire, the topics for the focus group were: incentives to blog, the different roles commanded in the use of blogs, the platform of the blog, and the use of blogging with their peers.

The incentive proposed was viewed by the students as being a 'compulsory' task rather than voluntary participation; although the students agreed that if the blogging task had not been obligatory, then they would not have participated. It was also noted that the students declared an interest in the blogging tasks being conducted within a more flexible framework.

Students saw the different roles of blogger, commenter and reviewer as being useful in understanding the differences between the types of participation, however it was felt the different roles did not develop different skills. Students also noted the role of the observer was seen to be the only role which required reading the whole set of posts and comments in the forum.

The students thought that blogging and this exercise were extremely necessary for students in their earlier years, as it is a formative assignment, however they perceive it would make more of an impact earlier in their degree studies. People who perceived

themselves as experienced bloggers also mentioned the construction of the blogging platform as being too ‘rigid’ and ‘user-unfriendly’.

The students were confronted with the figures and results which show the high percentage of their peers who expressed declined perceived learning, and the response generated from the group was that of being a closed community generated those results. They also expressed they would like to be exposed to the opinions of other lecturers, as well as clients and professionals from within the construction industry. This belief supports the results from the first questionnaire; the students would like to have a broader knowledge of what goes on in industry, as they believe they would learn more from being able to explore the reflections of other professionals, rather than the opinions of their classmates.

Students declared that forcing them to give “... an opinion, even though we may not be particularly interested in the topic, is part of being professional; we will have to perform tasks we don’t like.” The cohort recognizes that the practice of blogging increases their resilience; this is extremely important step forward in terms of developing their professional development within a familiar, online environment.

Other students noted that “...having to use several criteria to vote and determine which is the most important or relevant topic is an important skill”, and

“It was interesting for me to see what others thought and how they reflected that. To see what my classmates thought and that we have all been through the same; to know whether they think or not the same as I do. Lecturers, for example, do they see them the same way I do? Or do they think different? I think it [the blogging forum] is of value since it allows you to see others views, opinions and experiences”

The cohort agreed that, being exposed to the opinions of their peers and their logic is useful, and overall it did influence their future blogs and comments; this supports the idea that blogging does work under a constructivist paradigm and that knowledge is collected, shaped and then developed.

As well as supporting the constructivist paradigm, blogs work to create inclusivity and promote diversity, which is excellent in terms of building and maintaining knowledge communities and blogs are a supportive platform for socialization into a particular community helping to enable learning strategies.

CONCLUSION

The use of blogs within this research has confirmed they provide an inclusive ‘space’ where to communicate. Furthermore, despite suggestions in the literature, results demonstrated very clearly that students were not concerned about their opinions being known to other members of the wider university community. In fact, they showed an interest in using the platform to communicate even wider; interacting with people outside of their cohort. They saw this inclusion of others in the blogging community as an opportunity to bring fresh, new ideas to the discussion, and the ability to incorporate experts and experienced opinions into their ongoing dialogue.

Students acknowledge that they expose themselves to the opinion of others when posting, commenting or voting within a blogging ‘space’ and that these opinions directly informed their decision making for what future participation in the forum required; however they don’t regard that as ‘learning’. There is a need to explore the avenues in which students develop self-awareness and the relevance of transferable skills, so undergraduate students can understand how the process of learning takes

place. This, in turn, will provide confidence and an informed appreciation of their learning and knowledge development; increasing the value they allocate to experiences like blogging.

Although students felt that voting for the best blogger or commenter of the week did not help them to develop skills, they acknowledge that it was the only role which required reading the whole set of posts and comments. This demonstrates that use of a voting system along with an incentivization format, will promote a thorough review of the posts and comments. In the future this will lead to students being exposed further to their peers' opinions, providing additional opportunities for students to learn from their blogging community.

Students agreed that the structure of the UC blogging forum does not lend itself for simple and easy search or communication. This suggests that the structure of the platform determines how students will 'behave' within the virtual community, how their own participation impacts on what they have learnt and how they learn through their participation. Recommendations for changing the format of the blog include allowing for search options, and better navigation through the blogging forum.

When discussing the topic of blogging, undergraduate students view the action as relevant and useful to their development. They see the scope of their blogging as having potential to involve the whole school, suggestions included using the blogging forum to mentor younger undergraduate students and network with the alumni.

ACKNOWLEDGEMENTS

The results here presented are part of the work undertaken by Dr. Veronica Latorre within the Academic Insertion into Research Programme 2010, from the Pontificia Universidad Catolica de Chile. Nicolas Rodriguez, a final-year construction management student, collaborated with collating the data.

REFERENCES

- Bandura, A (1977) *Social Learning Theory*. New Jersey: Prentice-Hall.
- Brown, J S, Collins, A and Duguid, S (1989) Situated cognition and the culture of learning. *Educational Researcher*, **18**(1), 32–42.
- Conte, R and Paolucci, M (2001) Intelligent social learning. *Journal of Artificial Societies and Social Simulation*, **4**(1).
- Crotty, M (1998) *The foundations of social research: meaning and perspective in the research process*. London: Sage Publications.
- Ferdig, R and Trammell, K (2004) Content Delivery in the 'Blogsphere'. *Technological Horizons in Education Journal*, **20**(2), 232-247.
- Fry, H Ketteridge, S and Marshall, S (2003) understanding student learning. In: Fry, H Ketteridge, S and Marshall, S (Eds) (2003) *A handbook for teaching and learning in higher education: enhancing academic practice*. 2nd ed. London and New York: Routledge Falmer.
- Herring, S Scheidt, L Wright, E and Bonus, S (2005) *Weblogs as a bridging genre* www.emeraldinsight.com/0959-3845.htm [Accessed 11 July 2008]
- Latorre, V (2009) *Construction manager's influence on project success*, Unpublished PhD thesis, Department of Engineering, University of Plymouth.
- Lave, J and Wenger, E (1991) *Situated learning: legitimate peripheral participation* (16e). New York: Cambridge University Press.

- Schiano, D Nardi, B A, Gumbrecht, M and Swartz, L (2004) Blogging by the rest of us. <http://home.comcast.net/~diane.schiano/CHI04.Blog.pdf> [Accessed 2 July 2008].
- Oravec, J A (2003a) Blending by blogging: weblogs in blended learning initiatives. *Learning, Media and Technology*, **28**(3), 225-233.
- Oravec, J A (2003b) Weblogs as an emerging genre in higher education. *Journal of Computing in Higher Education*, **14**(2), 21-44.
- Trimarco, R (2006) The use of blogs in college courses: examples from the past and suggestions for the future. http://tmiket.viawiki.com/File:SDSU_Blog_Analysis/RUTH-lit_review_trimarco.doc. [Accessed 11 July 2008].
- UC (2010) Evaluación Sitos Web de Cursos, Primer Semestre 2009. http://www.uc.cl/informatica/escritorio_virtual/eval_1sem09.pps [Accessed 15 May 2010]
- Wall, J and Ahmed, V (2005) Issues in developing a blended learning initiative to meet continuing professional development needs of construction professionals in Ireland. *In: Khosrowshahi, F (ed.) 21st Annual ARCOM Conference, 7-9 September 2005, School of Oriental and African Studies. Association of Researchers in Construction Management, Vol. 2, 1289-1298.*