

DRO

Deakin University's Research Repository

This is the published version:

Casey, Gail and Wells, Muriel 2015, Remixing to design learning: social media and peer-to-peer interaction, *Journal of learning design*, vol. 8, no. 1, pp. 38-54.

Available from Deakin Research Online:

<http://hdl.handle.net/10536/DRO/DU:30070598>

Reproduced with the kind permission of the copyright owner. OA permission granted to the author.

Copyright : 2015, Queensland University of Technology

Remixing to design learning: Social media and peer-to-peer interaction

Gail Casey

Deakin Learning Futures Division
Deakin University, Australia
gail.casey@deakin.edu.au

Muriel Wells

School of Education
Deakin University, Australia
muriel.wells@deakin.edu.au

Abstract

Social and participatory media offer opportunities to interact and share user-generated content. After some investigation and research, the authors are in their initial stages of using such media to provide a pathway for thinking about learning design in higher education. Using the concept of remixing, the authors aim to creatively blend and manipulate ideas to build a sustainable approach to course/program enhancement. Remixing is touted as one of the most important practices within the field of open educational resources, but it is not mainstream practice in educational thinking or design. This article highlights the authors' approach and uses their pre-service teacher education work and a previous high school study as an example of remixing. The high school study involved the integration of social and participatory media into the face-to-face classroom. This article articulates the use of online social environments at the high school level to highlight concepts of sharing and remixing as a creative and social approach to designing learning in higher education. It also attempts to consider this within a course-wide approach.

Keywords

Learning design, Remix, social media, action research, Web 2.0, teaching and learning, teacher education

Introduction

We live in an era where “students can potentially download and stream media whatever, wherever and whenever they like, affording great flexibility in learning

experiences, and potentially de-tethering learning from the bricks and mortar university classroom” (Thomson, Bridgstock, & Willems, 2014, p. 67). This flexibility combined with the potentially empowering qualities of social tools can help to provide opportunities to remix, to interrogate, to borrow by taking the best from a range of approaches (Markham, 2013). Markham explained that remix relies on sampling, borrowing, and creatively reassembling to develop something that is used to move or persuade others. She described it as a creative way of thinking in which pieces of ongoing conversations take place over time, and understandings occurs in collaborative and varying ways. This is now becoming apparent within a number of online educational social networks such as: *ScoopIt*¹ and *Pinterest*². Other forms of social networking that are potentially useful for teacher education include *Paper.li*³ and YouTube⁴ as well as LinkedIn⁵.

The authors have experienced, first hand, learning experiences involving social and participatory media and such experiences have helped to inform their own learning design. Examples of these experiences include the involvement of a range of free online teaching and learning conference and webinar sites. Such sites provide a notable presence of new media across educational sectors and help to support professional learning as well as leading by example in the area of learning design⁶. When considering the learning design of these sites, Callaghan and Bower’s (2012) research demonstrated the critical role of the teacher in creating engaging and effective online learning in social networking environments. They argued that these environments promote greater levels of student motivation and engagement, and enable students to use higher order thinking. However, despite concerted efforts on the part of teacher education programs, technology integration into classroom learning activities in higher education settings remains mostly superficial (Kearney, 2013; Lindstrom, 2012). Kearney (2013) explained that one solution could be the restructuring of preservice teacher education to allow increased levels of technology integration throughout academic programs with an emphasis on authentic problem solving and design-based projects.

As argued by Bahr and Lloyd (2011, p. 21), designing a course at a university is the easy part, but it is when “parts become more important than the whole” that the focus on a single unit of study results in the loss of focus on course wide outcomes. At Deakin University (Australia), a process of course enhancement⁷ is in place which involves collaborative teams supporting the development of a university vision and understanding within their courses. Ravenscroft and Boyle (2010) posed an interesting question, “how does or will the increasing prevalence of the social and media-rich Web, or Web 2.0 or future Web # influence the ways

¹ <<http://www.scoop.it/t/teaching-with-technology-for-preservice-teachers>>

² <<http://www.pinterest.com/search/pins/?q=Preservice%20teachers>>

³ <http://paper.li/iste_sigol>

⁴ <<http://www.youtube.com/user/teachersloungeshow>>

⁵ <<http://www.linkedin.com>>

⁶ See, for example, <<http://www.globaleducationconference.com/page/2014-conference>> and

<<http://www.youtube.com/user/ICTEV>>

⁷ <<http://www.deakin.edu.au/learning/designing-assessing-and-evaluating-learning/enhancing-courses>>

individuals communicate, think and learn?” (p. 2). In response, they discussed the need for a deeper understanding of learning design that is more suitable for the digital age. In considering the growing use of social media, this article articulates the use of online social environments at the high school level to highlight concepts of sharing and remixing as a creative and social approach to designing learning in higher education. It also attempts to consider this within a course-wide approach.

Social media and remixing

Social media offer students, of all ages, opportunities to interact and post user-generated content whilst also providing members with opportunities to take the content and remix it. The concept of remix is not new. Knobel and Lankshear (2008) explained that to “remix” is to take cultural artefacts and combine and manipulate them into new kinds of creative blends. Amiel (2013) explained that remix is now touted as one of the most important practices within the field of open educational resources, but it is still not mainstream practice in education. In this article, remix is used as a strategy for thinking about learning design while using a high school action research study to inform the thinking behind teaching and learning design in higher education and, in particular, for pre-service teacher education programs.

In the context of learning design, the authors see remixing as a creative way of thinking about curriculum design. We define remixing as blending and manipulating ideas from one or more teaching and learning experiences and then using these to inform the thinking in other areas within subject or course development. Remixing encourages the open sharing of content while extrapolating or making appropriate amendments or even morphing what the designer find useful in one learning environment and considers its relevance within another. Thus, remixing inevitably involves qualitative change, and this makes it highly suitable for use in conjunction with an action research cycle of continuous improvement or with an approach involving educational design-based research (Anderson & Shattuck, 2012). These two research approaches involve the inclusion of reflective practice and critical friend feedback, potentially building a shared approach to course-wide thinking.

Within educational contexts and in supporting teachers to understand the opportunities afforded by newer forms of media, such as remix, it is valuable to review what it means to be social. Latour (2007) described “social” not as a special domain, a specific realm, or a particular sort of thing, but as a very peculiar movement of re-association and reassembling. Social networking applications are somewhat unique as they allow individuals to meet strangers, but they also enable users to articulate and make visible their social networks; this can result in connections between individuals that might not otherwise be made (boyd & Ellison, 2007). An example of this is the Friends list on *Facebook* which, as boyd and Ellison explained, contains links to each user’s Friend profile, enabling

viewers to traverse the network graph by clicking through the Friends list to open up opportunities to view a seemingly endless list of posts and potential friends.

Social media, the high school study and the potential to remix

The authors' current ongoing project aims to use their experience from the following qualitative high school study to inform their approach to learning design in higher education. The high school study integrated social and participatory media into face-to-face high school classes ($n=13$), over an 18-month period. It used action research to redesign the curriculum programs and aimed to integrate many qualities/opportunities of social media into the teaching and learning of these classes.

The high school study incorporated a wide range of online tools that are now available within many school and university Learning Management Systems. This has encouraged the authors to explore the concept of remixing to help embed social media activities into their university programs. The high school study designed one social site each semester, three in total, and each were shared across all of Casey's high school classes during that semester. Each site housed class projects and allowed students to create interest groups and, hence, interact both formally and informally. These sites were open for all to view, and allowed other teachers in the school to gain some understanding of how the social media tools could be used. For privacy reasons, students used pseudonyms when online and they interacted within and across classes using a range of social media. The data came largely from Mathematics and Information Technology (IT) classes. The average class size was ~25, students were predominantly from mid-range socioeconomic backgrounds and the school student population was approximately 900. All students during the first two semesters were from one Year 7-12 co-educational public school in Australia. Many classes, within this study, were part of the school's one-to-one laptop program. This study supported the high school's drive to build technology rich pedagogical programs embedded within and across the curriculum.

During the planning stages of the high school study, it was identified that the integration of social and participatory media into the face-to-face classroom would be challenging and, hence, continuous improvement to practice through critical reflection (Kemmis & McTaggart, 2005) was needed. Action research, being a sustainable form of professional learning (King & Newman, 2001), was chosen for its continual cycles of improvement involving planning, acting, observing and reflecting on classroom practice. Each action research cycle was, generally, one class topic within any one class. Armstrong and Moore's (2004) action research framework was used throughout the study and this was chosen for its elastic and permeable nature. Armstrong and Moore's (2004) framework encourages an inclusive process with particular foci on thinking in regard to

language, creativity, reflexivity, democracy, power relations and barriers to inclusion. Action research in higher education has not been well documented and appears to be unknown to many. However, its cycles of reflection through critical friends are significant where a course-wide understanding is required.

Underlying the high school study was Nuthall's (2007) premise that much of what students learn comes from their peers, and that educators need to become involved with the peer culture and to work with this to manage students' learning. Nuthall's (2007) lens on learning was used to ensure sensitivity and adaptation in teaching: adjusting to the here-and-now circumstances of particular students. This also supported the concept of multilayered learning and involved extracting information from, and making sense of, student experiences while peer-to-peer interaction provided the backdrop for active peer communication.

Data collection, analysis and findings - the high school study

The high school study demonstrated a structured use of *OneNote* for data collection where folders and templates were set up to help with the consistency of teacher planning and field notes. The high school data included:

- teacher planning documents which incorporated teacher-directed activities, thoughts for future development of projects, resources and general ideas on integrating Web2.0 into projects and helping students become more independent learners;
- field notes from the teacher while in the classroom and/or reflections soon after each class was concluded;
- end-of-week teacher reflections as well as “bigger picture” planning and reflections at the end of each five week period;
- student work which included screen clips from student online activity and scans of hand-written student self-evaluations and reflections; and
- summary notes from teacher critical-friend discussions.

Most of the student data were from screen clips of the online interactions within the social network environment called a ‘Ning’⁸. Data were coded into the three themes: Students, Learning and the Teacher. More details of the research direction within these themes are shown in Figure 1.

⁸ <<http://www.ning.com>>

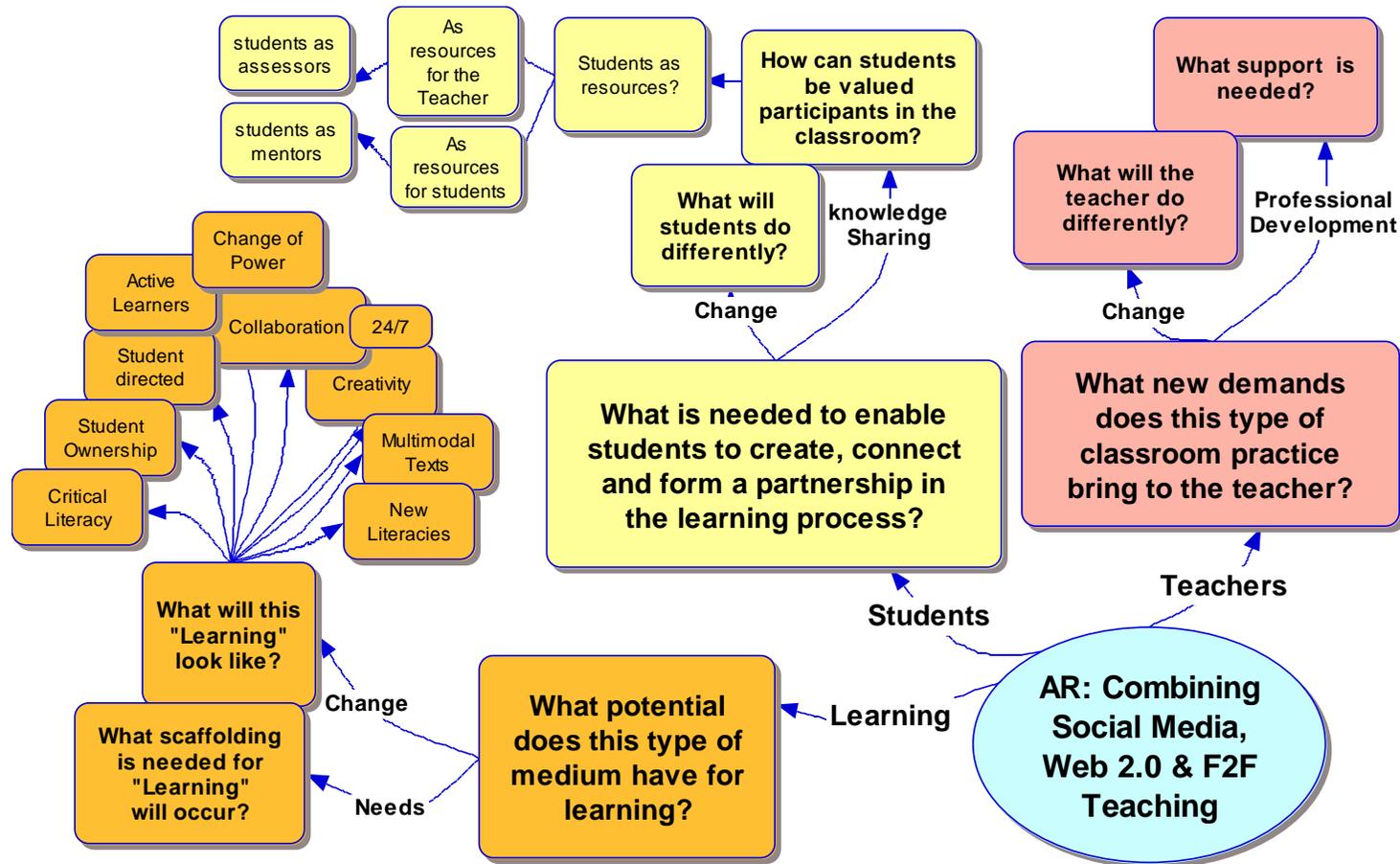


Figure 1. The research direction contained three themes, these being (1) teachers, (2) learning and (3) students

The themes were broken down into the categories and sub-categories shown in Table 1. Data tags were developed from these categories to use for coding. The tags ensured that the data collected could be associated with at least one of the three themes. The data was tagged during reflection writing and teacher planning time. It should be noted that the themes were not mutually exclusive.

Table 1
Tags used in coding within the three research themes

Themes		Tags
1. Teacher	1.1	Things that worked, class activities and student reactions were positive and exciting
	1.2	Things that did not work, when the class activities and reaction were disappointing
	1.3	Issues/Inappropriate, this included <ul style="list-style-type: none"> • inappropriate student behaviour • inappropriate publishing and uploading • inappropriate student online comments to others
	1.4	The effect on teacher time, this included: <ul style="list-style-type: none"> • preparation • monitoring • feedback • assessment
2. Students	2.1	Students as resources, this included: <ul style="list-style-type: none"> • to the teacher • to the student – mentors
	2.2	Students working differently
	2.3	Students behaving differently
3. Learning	3.1	Student directed
	3.2	Student ownership
	3.3	Power
	3.4	Critical Literacy
	3.5	Creativity
	3.6	“Real Learning”

An overview of the many types of content, activities, interactions and assessment that were collected is shown in Figure 2.

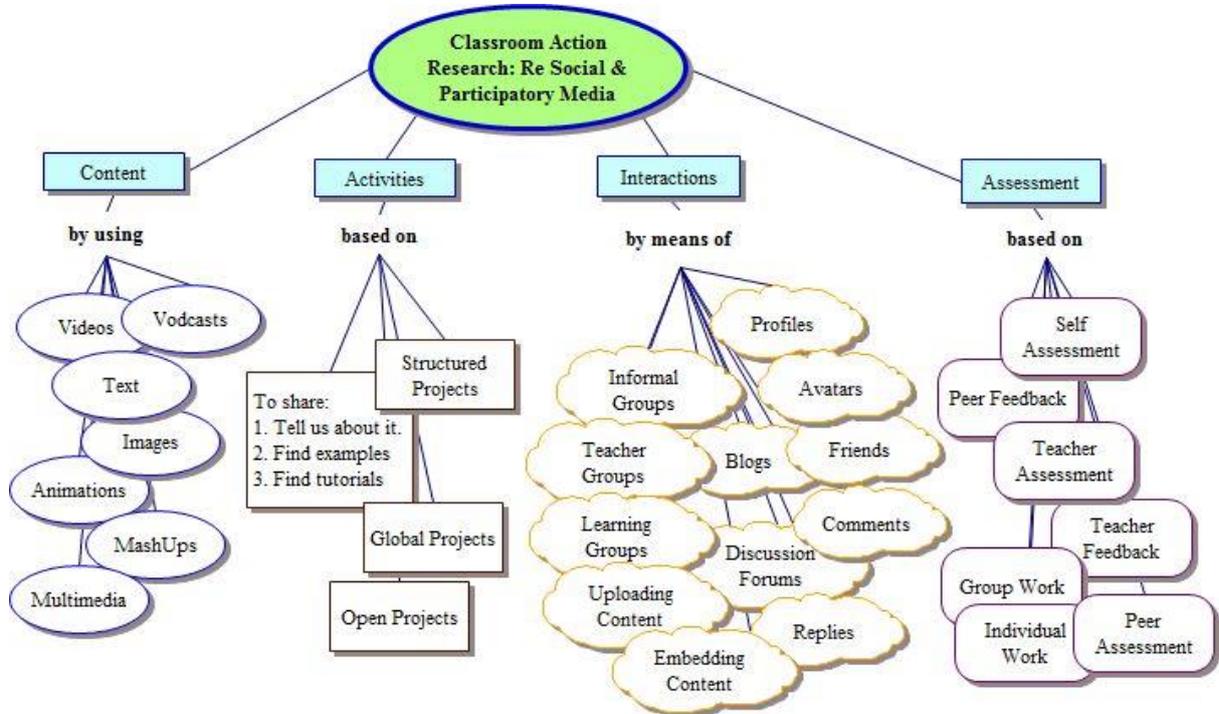


Figure 2. A summary of the relevant data collection

Tagged data were summarised into categories within the three themes and a range of summary tables, for each curriculum topic within each class, were created. At the end of each semester, these were further summarised; one part of one of these, relating to Students, is shown in Table 2.

Table 2

Sample analysis table used to summarise the tagged data relating to students during one semester

Sub-category	Sample Data
2.1 Students as resources for their peers	<ul style="list-style-type: none"> • Student made help videos tutorials • Humour, support & encouragement • Constructive peer feedback
2.2 Students working differently	<ul style="list-style-type: none"> • Using students as part of the learning support structure throughout projects • Using websites as part of their knowledge building then sharing these with peers so that they can also benefit from what has been found. • Out-of-school Ning activity • Peers and teacher giving ‘Gifts’ & ‘Likes’ • Students using pseudonyms and can change their profiles and names • Students publishing their work including use of blogs & discussion forums • Students having the flexibility to leave comments for any member of the Ning and the ability to join any Ning group • Students joining groups that were created for and by other classes – collaboration • Posting screen clips of their work to help others visualise and understand what they are explaining. • Students are posting their work and this helps to model the teacher expectations for peers • Time for improvement after peer feedback and before final assessment • Students identifying what they would like to discuss, learn and post
2.3 Students behaving differently	<ul style="list-style-type: none"> • Quiet students can be very vocal and/or different online (they usually only need to be reminded of appropriate behaviour) • Vocal students are often quiet online • 2 quiet girls became friends online but would never sit next to each other or talk in class • Feedback to peers • Students asking peers to check their work online • Student Ning activity outside of class time

Further, for each of the three themes, visual mind-maps were created to help identify links between the key concepts found. Figure 3, shows the connections social media made to the Learning Theme in Mathematics.

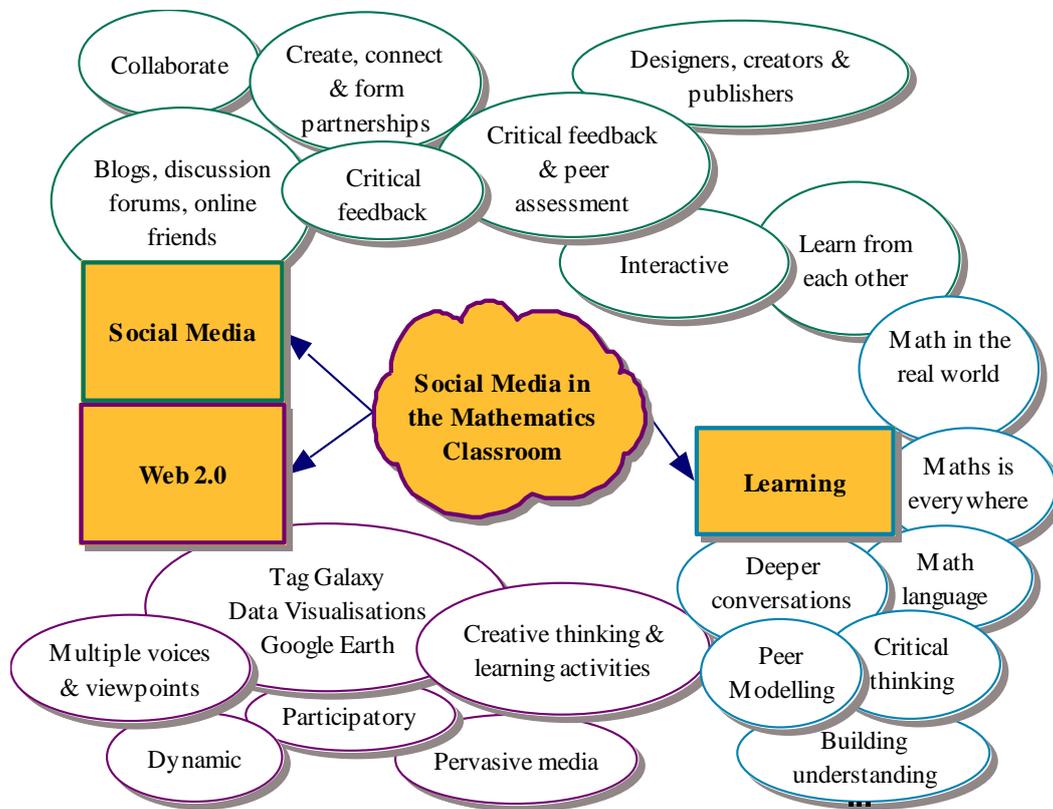


Figure 3. Mind-map connecting findings within the use of social media to the Learning theme.

The mind-map shown in Figure 4 connects the changes, which occurred over time and within class project designs, to the use of technology within the Learning Theme. Figure 4 also identifies key supporting literature.

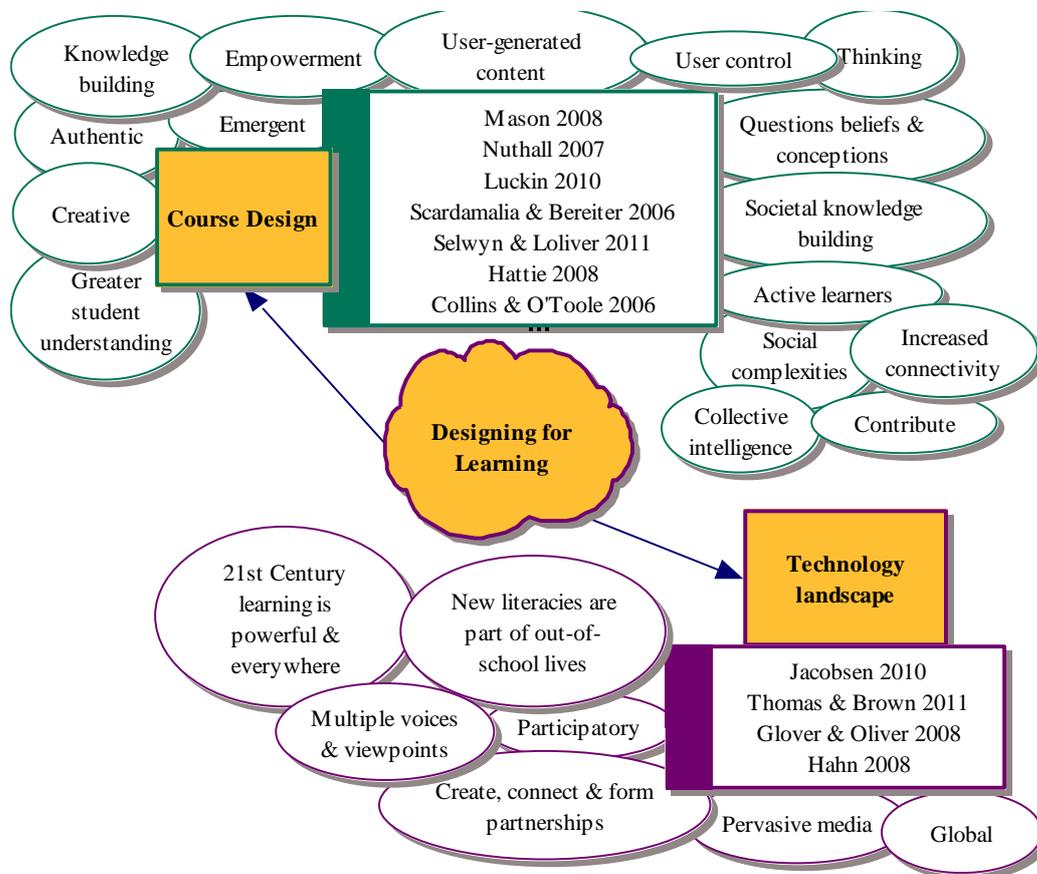


Figure 4. Mind-map connecting the changes to course designs within the research to the learning theme and literature in this area.

The authors used the ideas generated in Figures 3 and 4, as part of the remixed approach. Many of the elements identified in social media in the mathematics classroom were found to be transferrable to many subjects and courses within higher education. Specifically in preservice teacher education, the authors integrated many of their approaches as discussed later in this article.

Potential to remix - peer-to-peer learning, peer-feedback and the sharing of experiences

The Ning social network used in the high school study mimicked many of the online social tools of sites such as Facebook⁹. Each member (student) within the Ning had their own “My Page.” This is similar to an individual’s main Facebook page where the visual theme of the page can be personalised, and it also links to the member’s Friends, Groups, Blogs and other content. On this social network, students could also change their profile, avatar and pseudonym, similar to that of Facebook. These social tools and activities helped to incorporate, into the

⁹ <<https://www.facebook.com>>

classroom, a range of online interactions from the students' out-of-school lives. These types of activities support many new literacy practices becoming part of classroom projects (Casey, 2013a, 2013b). These concepts involve critical and imaginative thinking within a social and active environment (see, for example, Alvarez, 2001; Fletcher, 2007; Glover & Oliver, 2008; Hahn, 2008).

Web 2.0 and participatory media sites were integrated into the high school projects and offered students new and different ways to interact with peers and project content. These often provided students with interest and enthusiasm for their classwork and encouraged them to take an active interest in the work of their peers. Of particular note was the common occurrence of interaction of students with peers with whom they did not usually interact in the face-to-face classroom.

The integration of social and participatory media resulted in a great deal of online interaction and the publication of a wide range of user-generated content. The teacher reflection data confirmed that students were, generally, very engaged with class projects involving social and participatory media and that students were, generally, interested in the work of their peers. As each semester progressed and through the action research cycle, this engagement, interaction and interest in the work of peers developed into a more structured peer-feedback and peer-assessment process being implemented in each class group.

One example demonstrating constructive peer-feedback can be seen in Figure 5. This feedback was noted during a mathematics project in which each student was required to keep a record of how they spent their time during one particular week. After collecting their data for one week, they had developed their own categories for data and were able to analyse and post their graphs online. Peers could then compare the time they spent on certain activities in any one week and exchange ideas and opinions. For this project, students were asked to provide feedback to three peers, with the aim of helping them fully understand the task and of improving the quality of the graphs posted. Figure 5 shows the feedback given to a student with the pseudonym "Sebastian Vettel" by a student with the pseudonym "Anonymous".

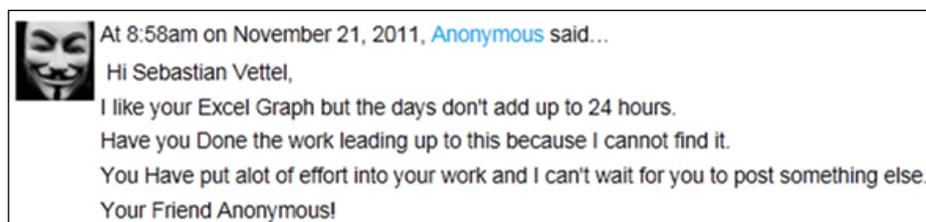


Figure 5. Example of constructive feedback between peers

This type of peer feedback particularly appeared to help the students who did not pay attention to detail and were not self-motivating. Such feedback became appreciated by students and, within the face-to-face classroom, students would

often be seen physically seeking their three peers for constructive feedback. During major projects, this type of feedback evolved into peer-assessment. One example of this was in a class project where students created video “help” tutorials for their peers. In Mathematics, the purpose of these tutorials was to support their peers in understanding mathematical concepts, while in IT, video help tutorials were used to support students in learning new software programs or the advanced features of common software or of new versions of software. Figure 6 shows one example of an IT student giving appreciation while providing assessment to a peer. In this example, the student using the pseudonym “It’s O.K. I’m a Ninja!!” is providing feedback to the student using the pseudonym “The Mysterious Unknown”. Students were expected to use the video tutorials of three peers and although the quality of peer-feedback varied, the process of going through the stages of either giving or receiving feedback supported the students’ understanding of the task at hand. The teacher reflection data showed that, generally, students appreciated honest and timely feedback from their peers. It was interesting to note that, once students became accustomed to and began to value peer feedback, they began actively to seek it.

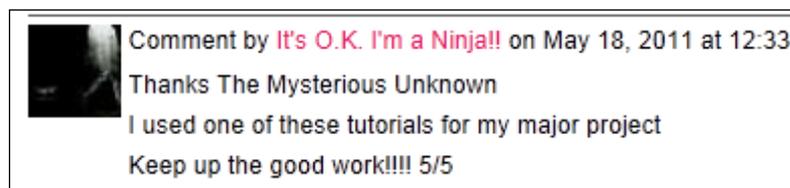


Figure 6. Student feedback on a video tutorial

The teacher reflection data of student in-class conversations showed that peer modelling became apparent as students viewed the user-generated content of their peers and read the many-posted interactions. As each semester progressed, it was clearly noted that students progressively began to appreciate the online interaction and feedback and they valued the available online resources. Within the social environment, informal learning could be seen in the many interest groups created by students. Such groups included a range of sport, music, television, games and hobbies. As the number of informal groups increased, the teacher found it necessary to highlight the important personal qualities such as understanding and empathy. This was particularly important when students posted information such as the loss of important elements or people in their lives.

Examples and implications – remixing the learning for pre-service teacher education

The authors attempted to remix aspects of the learning design from the high school study for use the professional experience placement of pre-service teachers. Thus, in this situation, the university students are both teachers and students at the same time. One could consider that they are being supported, but they are also being evaluated and are placed in an uneven relationship between the school teachers, school leaders, school parents, school students and faculty from

the university. The complexities of these relationships caused the authors to wonder whether the most effective people to provide timely feedback to students during such professional experience placements might be other students. Feedback from peers was a strong element that has been highlighted in the high school study.

Deakin University, having had a series of upgrades to their online learning management system, now provides access for students to social media elements such as Chat, Blogs, Discussion Forums and Groups. The availability of such social media tools opens up further possibilities for remixing the ideas gleaned from high school study. Much of the peer-to-peer interaction discussed earlier aligns with the desire of the authors' university to renew their curriculum, to make better use of the technological world, to use "intelligent, future-focused solutions" in higher education and to ensure that students become highly employable graduates. This draws on the University's plan to bring the affordances of the digital age into the real world of learning. Deakin University (2014) declared that, through its eStrategy, it "is committed to providing the digital capabilities and state-of-the-art technology to ensure the University and its partners have the support, services and skillsets to stay ahead of the curve, both now and in the future" (para. 1). As many school and university Learning Management Systems become more able to embed social activities into their programs, the concept of remixing can offer a different way of thinking about learning design in higher education: one that could involve the improvement cycle of action research rather than what Bahr and Lloyd (2011) called the process of "birth and death" (p. 30).

Practitioner research embedded within the high school study opened up opportunities for critical thinking and learning as well as cycles of improvement through action research. Practitioner research is an important element when reviewing the high school study and the action research approach or "teachers as researchers" (Wells, 2011, p. 6) was significant in building a sustainable improvement approach to research design over the 18-month study. This holds many possible implications for the authors' pre-service education work and other university programs.

The following lists further examples of how the authors remixed many elements of the high school study into their pre-service teacher education programs.

- Posting reflections about tutorial work on blogs. This was a strategy to encourage the writing of feedback by students for students.
- Using the chat tools to engage in conversation during lectures and tutorials. This helped to document a wide range of teaching ideas while concepts were fresh in their minds.
- Establishment of online groups for students to use in the preparation of assessment projects.
- Using online groups for specific topics such as teaching approaches and strategies that pre-service teachers found to be effective for specific purposes.

- Using online resources, such as discussion forums and blogs, as knowledge banks that evolve over time. These provided a collection of pre-service teacher experiences and have the potential to provide connections to ‘experts’ in a range of areas;
- Finally, and most importantly, was the use of an online site to comment on and discuss professional experience placements in mentor schools. This was seen as a possible way to address the isolation often experienced by pre-service teachers during school placements and a response to the complexity of relationships they have to navigate during these times.

In the case of our pre-service students, their goals were to successfully navigate their professional experience placements in their mentor schools and to learn as much as they could about how to improve their teaching practices. These goals do not necessarily work together and can at times be in conflict. Encouraging peer-to-peer interaction during placements within the university’s Learning Management System can offer a shared space where all peers can learn from each other and build resources. The authors are only at the initial stages of their Remix project and look forward to bringing a larger component of practitioner research into play in future times. Through active engagement with online discussions, the pre-service teachers gained personal experience and opportunities to help make informed decisions. Considering the availability of social tools within the University site, students were discouraged from using external social networks such as Facebook for their peer-to-peer interaction. The authors’ aim was for the pre-service teacher’s learning to be visible. However, external sites were avoided because of their potential to add barriers and privacy issues (in relation to persons beyond the University’s own personnel and students). Such issues were a concern for lecturers and pre-service teachers alike.

Conclusion

For the authors, the high school study was used to inform their practices within higher education. It did this through the concepts of remixing and taking what was found useful in one area and exploring it elsewhere in a variety of ways. The integration of the Ning social environment into the face-to-face high school classroom opened up many opportunities for students to learn by doing rather than by watching, listening and memorising. These elements are what the authors are looking for in their learning design at University level. The 18-month high school action research study provided much evidence to indicate that social and participatory media can offer a very active student-centred learning environment where peer-to-peer interaction can provide important avenues for knowledge growth rather than only for knowledge dissemination. This has potential implications for many areas in higher education, such as pre-service teacher education. In the high school study, it was evident that peer-to-peer modelling had a positive impact on students and this provided further opportunities for learners to be supported; a design element that the authors aim to embed in their courses.

Within this article, the concept of remixing was important in understanding how the high school study could inform pre-service teacher education. Some of these concepts were explicit, while others could be further unpacked, if space and time permitted.

References

- Alvarez, M. C. (Ed.). (2001). *Developing critical and imaginative thinking within electronic literacy*. Newark, NJ: International Reading Association.
- Anderson, T., & Shattuck, J. (2012). Design-based research: A decade of progress in education research. *Educational Researcher*, 41(1), 16-25.
- Amiel, T. (2013). Identifying barriers to the remix of translated Open Educational Resources. *The International Review of Research in Open and Distance Learning*, 14(1), 126-144.
- Armstrong, F., & Moore, M. (2004). Action research: Developing inclusive practice and transforming cultures. In F. Armstrong & M. Moore (Eds.), *Action research for inclusive education: Changing places, changing practice, changing minds* (pp. 1-16). London: RoutledgeFalmer.
- Bahr, N., & Lloyd, M. (2011). Course cohesion: An elusive goal for tertiary education. *Journal of Learning Design*, 4(4), 21-30.
- boyd, D., & Ellison, N. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, 13(1), 210-230. doi: 10.1111/j.1083-6101.2007.00393.x/full
- Callaghan, N., & Bower, M. (2012). Learning through social networking sites - The critical role of the teacher. *Educational Media International*, 49(1), 1-17.
- Casey, G. (2013a). Building a student-centred learning framework using social software in the middle years classroom: An action research study. *Journal of Information Technology Education Research*, 12, 159-189. Retrieved from <http://www.jite.org/documents/Vol12/JITEv12ResearchP159-189Casey1186.pdf>
- Casey, G. (2013b). Interdisciplinary literacy through social media in the Mathematics classroom: An action research study. *Journal of Adolescent and Adult Literacy*, 57(1), 58-69. Doi: 10.1002/jaal.216
- Deakin University. (2014). The Deakin eStrategy. Retrieved from <http://www.deakin.edu.au/about-deakin/administrative-divisions/esolutions/the-deakin-estrategy>
- Fletcher, G. H. (2007). Bloggers welcome here: Social networking tools appear poised to enter the school system. It's a breakthrough long overdue.(commentary). *T H E Journal (Technological Horizons In Education)*, 34(11), 8.
- Glover, I., & Oliver, A. (2008). *Hybridisation of social networking and learning environments*. Paper presented at the World Conference on Educational Multimedia, Hypermedia and Telecommunications 2008, Vienna, Austria.
- Hahn, J. (2008). Born digital: Understanding the first generation of digital natives [Book Review]. *Library Journal*, 133(13), 105.

- Kearney, M. (2013). Learner-generated digital video: Using ideas videos in teacher education. *Journal of Technology and Teacher Education*, 21(3), 321-336.
- Kemmis, S., & McTaggart, R. (2005). Participatory action research: Communicative action and the public sphere. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (3rd ed., pp. 559-603). Thousand Oaks: SAGE.
- King, M. B., & Newmann, F. M. (2001). Building school capacity through professional development: Conceptual and empirical considerations. *International Journal of Educational Management*, 15(2), 86-93.
- Knobel, M., & Lankshear, C. (2008). Remix: The art and craft of endless hybridization. *Journal of Adolescent & Adult Literacy*, 52(1), 22-33.
- Latour, B. (2007). *Reassembling the social*. New York: Oxford University Press.
- Lindstrom, D. (2012). New literacies, teacher education, and Third-Space pedagogy. *Journal of Digital Learning in Teacher Education*, 28(3), 91.
- Markham, A. (2013). Remix cultures, remix methods: Reframing qualitative inquiry for social media contexts. In N. Denzin & M. Giardina (Eds.), *Global Dimensions of Qualitative Inquiry* (pp. 63-81). Walnut Creek, CA: Left Coast Press.
- Nuthall, G. (2007). *The hidden lives of learners*. Wellington, New Zealand: New Zealand Council for Educational Research.
- Ravenscroft, A., & Boyle, T. (2010). A dialogue and social software perspective on deep learning design. *Journal of Interactive Media in Education*, (*Special Issue on Researching Computers and Learning*). Retrieved from <http://jime.open.ac.uk/2010/12>
- Thomson, A., Bridgstock, R., & Willems, C. (2014). Teachers flipped out beyond the online lecture: Maximising the educational potential of video. *Journal of Learning Design*, 7(3), 67-78.
- Wells, M. (2011). Teachers as researchers: Models of professional learning. In I. Saleh & M. Khine (Eds.), *Practitioner Research in Teacher education* (pp. 101-120). Frankfurt, Germany: P. Lang.

Acknowledgement

The authors would like to acknowledge the work of Emeritus Professor Terry Evans, Deakin University, for the high standards he encouraged as Principal Supervisor throughout the high school doctoral study.