

AGENTS OF ENGAGEMENT:

TRIALLING THE USE OF COLLABORATIVE TECHNOLOGY WORKSHOPS TO ENGAGE AT-RISK YOUTH AND TEACHERS IN VET

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1. Abstract

A number of models exist for deploying digital technologies to enhance student engagement. Many emphasise the centrality of collaborative activities in stimulating engagement, such as Engagement Theory (Kearsley and Shneiderman 1999), Prodsusage (Bruns 2005) and Participatory Cultures (Jenkins 2006). This paper describes the evaluation of a collaborative technology project entitled *EngageME*, undertaken in 2009 by Victoria University in partnership with Adult Multicultural Education Services (AMES), and outlines practical steps that educators can take to improve the success of technology-based learning using collaborative strategies. Through a series of technology skills workshops, the *EngageME* project brought together young at-risk VET students and their teachers from Adult and Community Education (ACE) providers in Melbourne and regional Victoria. Workshops consisted of tuition in narrative and storytelling, followed by digital media creation, editing and sharing (video, comics and virtual worlds). For teachers, these workshops provided a new form of professional development and for their students, new skills in media production. Evaluation data were gathered using pre-and-post workshop surveys based on the 2008 E-learning Benchmarking survey for Teachers (Australian Flexible Learning Framework), focus groups, facilitator observations and an online forum. In reflecting on these evaluations, this paper explores the role of technology and collaboration in facilitating and hindering engagement, and provides suggestions on how technology-facilitated engagement can be facilitated in a classroom setting.

2. Introduction

This paper describes the evaluation of the *EngageME* project, a 2009 collaborative workshop pilot delivering digital media skills to both 16-24 year old at-risk young people studying in Victoria's Adult and Community Education (ACE) sector, and their teachers. In doing so, this paper outlines some collaborative strategies that educators may find useful when working with technology-based learning projects.

A partnership between Victoria University (VU) and the Resourcing, Learning and Innovation unit of Adult Multicultural Education Services (AMES), the *EngageME* project involved workshop-based tuition by VU TAFE Multimedia and Professional Writing staff in the creation, editing and sharing of digital media narratives (videos, comics and virtual worlds) using free, cheap or readily available technology. Participants were studying or teaching VCAL, literacy and other VET programs at outer Melbourne and regional ACE providers. Funding for the project was sourced via the Victorian Government's ACFE Youth Project grants scheme. The project sought both to trial new ways of engaging at-risk young people in education, and to provide innovative forms of professional development to ACE sector teachers. It also sought to pilot collaborative

cross-generational approaches to learning about and through digital technologies. The project consisted of a series of four all-day workshops (two for teachers only, two for teachers and students) delivered from March to May 2009. The series was delivered twice: referred to in this paper as Group One and Group Two. Nine students (five female, four male) and seven teachers (four female, three male) completed the full series of four workshops. Eight teachers withdrew at various times during the series; three of these eight places were subsequently filled by new teachers. Participants were aged from 16 to the mid-50s. Workshops were supported by an online mechanism (a *Ning* educational networking website) moderated by a paid AMES staff member and teacher.

The first of the four workshops was for teachers only and focused on story development principles that teachers could use to work with students on their narrative ideas. The developed ideas could then be turned into media such as videos and cartoons using skills learned in the subsequent technology workshops. This initial story workshop was led by a professional writing teacher and involved practical tuition in narrative development including plotting, characterisation, point of view and dialogue. The second workshop, also for teachers only, introduced teachers to free and low-cost media software including video and image processing, comic creation and audio production. This workshop was designed to bring teachers 'up to speed' on media technology prior to both teachers and students working together during the final two workshops. Workshops Three and Four involved teachers working with students to develop comics and videos. It was expected that teachers would continue to work with students between workshops, with online support through a forum on the project website. Workshops Two, Three and Four were facilitated by a multimedia specialist from VU with experience in delivering technology workshops to disadvantaged young people. Activities included digital video and photography basics, shooting and editing video using Flip cameras and Windows Moviemaker, exporting stills and footage, creating comic strips with Comic Life software, basic image processing (Photoshop, Fireworks) and an introduction to virtual worlds (Second Life). All workshops took place at VU premises in central Melbourne. The location was chosen for its centrality, proximity to train and tram transport, and wireless Internet connectivity. It was also designed to introduce tertiary education environments to those young people unfamiliar with TAFE or university. The project hired a 'portable lab' of 20 VU laptop PCs and purchased five Flip video cameras and copies of Comic Life comic creation software. All other software was available for free on the Internet or already installed as part of the Windows operating system (eg Moviemaker).

3. Where engagement meets technology

As the project was called *EngageME*, it is fitting to look at the relationship of the term 'engagement' to the project. In educational literature 'engagement' tends to be loosely defined. Existing conceptualisations of student engagement largely focus on two broad areas: formal involvement in activities run by an educational institution, and personal involvement in informal activities. The US National Survey of Student Engagement breaks down engagement into academic achievement and what it calls the 'student experience' (Kuh 2001). Similarly, McGaw et al.'s concept of 'school effectiveness' is divided into academic achievement and a group of qualities defined as: love of learning; learning how to learn; personal development; self esteem; life skills; problem solving; and the ability to be independent thinkers and well rounded individuals (McGaw et al. 1992). While concepts of student engagement differ, elements of the same duality can be observed widely. Lee et al. (1993: 176), for instance, disassociate formal achievement from student engagement, but engagement is still defined as 'participation, connection, attachment and integration into the school setting and its educative tasks'. Similarly,

whereas Helme and Clarke (2001) emphasise the importance of what they call active involvement, which 'suggests that the person acts to maintain or extend their contact with the object in order to increase their knowledge of it' (Ainley 2001, cited in Helme and Clarke 2001: 131), the cognitive engagement of students is still defined as 'the deliberate task-specific thinking that a student undertakes while participating in a classroom activity' (p. 136). But what of the learning that takes place outside the classroom?

This paper argues that the delineation between these two aspects of engagement - the domains of the student and the training institution - have been undermined by the rise of networked technologies and corresponding changes in how we, and particularly young people, are increasingly living our lives. Whereas in the past engagement has been defined in ways that emphasised the power and agency of the institution over the individual (Sturmey and Crisp 2008), the rise of the internet and related technologies have shifted the balance of power (in terms of access to information and sources of learning) to the individual.

This presents a challenge for educators, who are losing control over the totality of their students' educational experiences. The challenge is also exacerbated by generational aspects since young people are quicker to use online technologies than older people, with under-18s being the most avid of adopters (White 2007: 210-222). In this respect young people are at the vanguard of profound social changes that affect us all and will continue to gather pace (Surveying the Digital Future 2008 & 2009; Lenhart et al. 2008). Evidence suggests that technology, in particular the internet, is being embraced as a fundamental tool in the management of lives and relationships (Grey Global Group 2007; Smart Service Queensland 2007). The 2008 Surveying the Digital Future study found that, in the USA, more than 80 per cent of people over 17 now turn to the internet as their main source of information (p. 2), with young people leading the charge.

So what can teachers do now, all circumstances considered, to engage students in ways that are authentic, meaningful - and, above all, doable? In attempting to answer this question, the *EngageME* project took a constructionist approach of 'learning as a reconstruction rather than as a transmission of knowledge' with learning being most effective when the learner is involved with "constructing a meaningful product" (Papert 1991a, p.1) This involved tapping into young people's interests and, equally importantly, providing ACE teachers with the tools to work in collaboration with students. The story development workshop was intended to help teachers work with students' digital media skills in ways that did not require teachers to become digital media experts themselves, hopefully resulting in mutual learning. This was in response to the observation by our team and partners that, in an age where young people tend to be at the vanguard of early adoption, it is increasingly important that teachers learn to work with students' often superior technical expertise.

Three models of technology-mediated student engagement further informed the constructionist approach of the *EngageME* project: Engagement Theory (Kearsley and Shneiderman 1999), Probusage (Bruns 2005) and Participatory Cultures (Jenkins 2006). Two common themes permeate these models.

The first theme involved embracing the conversational nature of the web, which has evolved into a place of information exchange as opposed to delivery. This has resulted in new opportunities for learning through conversation, both directly from person to person

and through what researcher Jyri Engeström (2004), borrowing from Karin Knorr-Cetina (1997: 1-30), calls 'object-centred sociality': discussion and interaction sparked by photos, videos, links and the like posted to shared online environments such as YouTube.

The second theme involved embracing participatory cultures. Technology has blurred the distinction between producers and consumers of media, resulting in a hybrid that Bruns (2006: 275) calls "produsers". Young people 'creatively respond to electronically produced cultural products in ways that surprise their makers', finding 'meanings and identities never meant to be there' (Willis, 2003, cited in White & Wyn, 2008: 210 – 222). Abbott (1998, cited in Blanchard, 2007) argues that young people's creation of online media 'allows communities to form, responding to young people's desire to participate and feel 'part of something' (p. 14). This is at the heart of what Jenkins (2006) calls participatory cultures, defined as: '...a culture with relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing one's creations, and some type of informal mentorship whereby what is known by the most experienced is passed along to novices' (p. 12). One aspect of participatory culture is what Levy (2000) calls collective intelligence: the ability to pool knowledge and exchange information for a common outcome. This is something that new technologies are increasingly helping to facilitate through online social media. Bruns' Produsage model concurs, emphasising collaborative effort on projects that are real and always emerging. Similarly, Engagement Theory focuses on collective effort through 'creating successful collaborative teams that work on ambitious projects that are meaningful to someone outside the classroom' (Kearsley and Shneiderman 1998: 20).

4. Research Method

Through the *EngageME* project, we sought to learn more about:

- engaging at-risk young people in skills acquisition activity that involve technology
- empowering young people to continue both formal learning activities and informal learning using technology tools
- developing the personal skills of young people
- empowering teachers to use free and low-cost technology in their teaching practice
- increasing confidence and self-efficacy amongst participants
- facilitating the development of new approaches to teaching by ACE staff, and
- integrating technology into the classroom beyond the life of the workshop series .

The evaluation methodology involved the following data collection mechanisms:

- hard copy pre and post-workshop surveys undertaken with teacher participants. Surveys were based on the 2008 E-learning Benchmarking survey for Teachers (Australian Flexible Learning Framework, 2008). Surveys were not undertaken with students on the recommendation of AMES staff, who advised that these young people were unlikely to fill them out based on past experience.
- focus groups undertaken with students and teachers at the conclusion of workshops
- written observations by facilitators, AMES staff and Victoria University staff. Facilitator and staff observations were written either:
 - as occasional emails to project stakeholders
 - as comments on the supporting Ning networking website
- post-workshop follow-up with participating teachers.

5. Findings and Discussion

Workshop activities

Most teachers found the initial storytelling workshop to be interesting and useful, with at least three teachers specifically stating that they looked forward to using the principles to enhance subsequent class work. However whilst all participants bar one responded that they enjoyed the storytelling workshop, three noted that this workshop should have been shorter than a full day, as well as more tightly integrated into the subsequent technology-based workshops. Then again, others noted that that the storytelling workshop taught "a lot of information in a small amount of time" and expressed a desire for *more* storytelling activities. We interpret this as reflecting the diverse interests and backgrounds of the ACE teacher community, highlighting the difficulty of undertaking PD activities with such a diverse and eclectic group. Teachers mostly liked the video, comic and story activities, with one wanting 'more in depth focus on comics and movies'. Some less technologically experienced teachers wanted to learn basic computer skills such as Google searching. The workshop facilitator commented that the generally positive feedback might have been due to the fact that teachers developed useful skills that were new, but nevertheless easy to understand and assimilate.

Students commented positively on the pace and structure of the workshops and particularly liked the video and comic creation activities. Two students thought the workshop series was too short. Two others, who already knew the Moviemaker video software, thought, understandably, that the basic video tuition was boring. Least engaging for students was the introduction to the 3D virtual world Second Life, with comments like: 'it bored the crap out of me', 'it's too slow, there's not much point to it' and 'it's not something I'd really use.' Many teachers thought the same, though two stated that they welcomed the opportunity to explore Second Life in a guided environment. A contributing factor to the low level of engagement in Second Life may have been wireless Internet problems that resulted in Second Life speed lags.

Collaboration

One striking observation was that both teachers and students consistently welcomed the close interaction between teachers and students. Teacher comments included: 'I would have liked to have had more student contact, involve students earlier on', 'the interaction between students and teachers is important - seeing what students do inspires you' and 'we should have students and teachers together from the word go'. Students agreed: besides expressing that they enjoyed the contact with teachers, they were also pleased that 'I'm smarter than them with the software', and expressed a sense of satisfaction in teaching their teachers - a strategy deployed by the workshop facilitator in order to deal with the divergent level of technology skill in the group. In terms of student-student collaboration, students commented that they liked working with peers with two stating that they would have liked to have 'other people on hand to bounce off' and the chance 'to be able to see other people's ideas'. We did observe a palpable difference in the energy levels between the two student groups, with those in Group One more lively and collaborative than Group Two. Focus group discussions gave us some clues as to the reasons. The Group One students were chosen, they told us, on the basis of their existing leadership qualities. They were, as one put it, 'not into stuffing around like the rest of our class at school' and some already knew each other from previous activities in their outer metropolitan locale (Werribee). It seems that the Group 1 students were possibly both more comfortable and less disengaged than the quieter Group Two students, who came

from regional Victoria (Gippsland) and were not chosen by teachers on the basis of leadership qualities. However, feedback from teachers indicates that some of the most lasting outcomes occurred with the Group Two students, in particular one young Indigenous student from Gippsland who became very involved through his interest in creating music videos for his hip-hop songs. In terms of recruiting students, the importance of peer word of mouth was highlighted with teacher comments such as "there were no students interested at first when I mentioned it to them. Then when two students took part, others became interested too."

On teachers collaborating with other teachers, little evidence emerged of collaboration between teachers within Group One. This group had on average five teachers with generally low technology skill levels. In contrast, Group Two had two teachers with relatively high skill levels who appeared to collaborate closely on ideas and strategies. Interestingly, whilst most teachers commented positively on collaborating with students, no comments were made about collaborating with other teachers. This appears to suggest that technical skill levels, motivation and the desire to share ideas with peers are linked. One can speculate about which of these drive the others, and how; a question that would be useful to investigate in future research.

Differing technology skill levels

The difference in skill levels within groups caused some problems for the facilitator. This was especially true of Group One, which was larger and had more teachers needing support. The facilitator noted that: 'the session on Monday was probably one of my more frustrating days as a teacher. I felt like I was being stretched too far from moment to moment.' However the same workshop undertaken with Group Two proved less problematic for the facilitator, who noted that the group was smaller (six in all) and contained 'more people who knew what they were doing than didn't'. This latter group included the two teachers who were the most adept and enthusiastic in their adoption of new technologies with students. One recommendation arising from this pilot is therefore for facilitators to work with smaller groups wherever possible, and to divide participants into those with a basic understanding of computer processes (saving, file creation, web searching, image editing etc) and those without this knowledge. For those without such understandings, the recommendation would be to create a separate beginners' workshop that could feed into the media creation workshops at a later date. Putting people of differing abilities together, the facilitator found, was disempowering for those who felt they were being left behind, frustrating for those who had advanced skills, and problematic for the facilitator. Whilst peer mentoring/tuition strategies can mitigate some of these issues, they cannot eliminate them completely. We should note, however, that an email screening process did take place before the workshops began. An email sent by AMES asked teachers to rate their ability at tasks such as word processing, email, blogging and video editing. All rated themselves as having a basic level of competence, the baseline for inclusion in the workshops. Comparing participants' responses to their actual level of competence, however, suggested that some teachers might have seen themselves as more competent than they actually were. This was reinforced by the teacher survey results. Of the seven teachers who began and completed the workshop series, none agreed to the pre-workshop survey question "computers are hard to use", whereas two did agree in the post-workshop survey. This suggests that some teachers may have been more confident in their computer skills prior to undertaking the workshops. This did not seem, however, to negatively affect their engagement in the workshops, judging by comments made in the post-workshop survey.

The role of the facilitator

It was evident from the feedback that the facilitator was central to the pilot's success. One teacher commented that 'a major motivating factor has been the opportunity for students to work with a real tech professional.' But within the overall approval, opinions diverged, ranging from: "he talks a little fast at times and I had trouble understanding some of the 'tech talk'" to: "I liked his relaxed and friendly style. He was flexible and showed other programs through the workshop." Again, we believe this points to the diversity of participants in the group. Given the broad range of ages, interests and experience in the ACE sector, it is crucial that facilitators are technically adept as well as flexible, and able to move with ease between different kinds of participants. However it should also be stated that no facilitator, no matter how good, can be expected to deal with hugely divergent levels of technical expertise. In this case our facilitator recommended that when such workshops are undertaken in the future, "the prerequisite skill required is having used software to edit or create an image." We conclude that workshop sizes should be kept as small as possible. Six participants seemed to work well for us.

Choices of technology

A central aim of the workshops was to support the use of open source, free or cheap technologies. However our experience modified this view somewhat as a result of a range of technical trouble we had with the 'on-board' Windows Moviemaker software, as well as the desire of some participants to learn more professional-level video software – both of which temporarily had a negative impact on engagement levels. As noted by the facilitator: "I think we need to reconsider the focus on open source software. Nearly everybody has found some money to buy the flip cameras so I think it's quite reasonable to consider looking at paid software packages like Sony Vegas (A\$100-\$150 per version). By the time people learn Moviemaker, they are ready to move on to something more advanced." Despite these problems, video activities were popular with both teachers and students. In part we believe this was due to the Flip video cameras - simple, easy to operate devices that look like mobile phones and that plug into USB ports for easy file transfer - combined with the creative opportunities provided by the central location, the chance to create one's own stories and the possibility of uploading content to video sharing websites to an audience. Teachers in particular liked the Flip cameras, linking their use to a range of successful projects: "I love the Flip cameras, especially the simplicity of them. They're really popular. I'm using them with a student who has one arm – only one button to push"; "On Friday I took my Work Education group to the Wyndham Careers Expo and gave the FLIP camera to one of my students to film the excursion. I love this little camera!" and "I love the flip so much I bought myself one."

Location

The central Melbourne location was rated highly by both teachers and students. Students made comments like "I like all the things to look at and film in the city", "it takes me out of my usual environment" and "the best bit was filming people with the Flip cameras in the city". Teachers echoed students' endorsement with comments such as: "It added a great deal to the project on so many levels. It added to the professional student teacher relationship, it gave the students confidence to be around others and in an unfamiliar environment, interestingly, it gave my students permission to take calculated risks and explore their ideas also." The city location also worked for teachers, with one commenting that: "I liked it because it took me out of my box, teaching hospitality in Bairnsdale. It took me out of the usual classroom situation".

Were they engaged?

In the post-workshop survey, a number of teachers noted that the workshops had helped their teaching practice and expressed their intention of deploying their new knowledge in

classes: “I will use story telling stuff in my classroom”; “the workshops gave me ideas for projects to work on with students”. In terms of actual rather than intended outcomes, however, it was telling that all the feedback on post-workshop outcomes posted to the project website was, firstly, enthusiastic, and secondly, written by the two Group Two teachers who were the most technologically adept. Edifying as such feedback is, a question must be asked about teacher engagement: when are we merely 'preaching to the converted'? Might basic technology classes help to more fully engage those teachers with less technological expertise, given that they too had volunteered to take part in this (unpaid) professional development?

In terms of student engagement, all indications are that the workshop series was engaging for the majority of students. Focus group feedback from both student groups (as well as teachers discussing student engagement) was positive, with the exception of isolated expressions of dissatisfaction from students bored with the Moviemaker software. Teacher and student feedback indicated that the video and comic elements were crucial in fostering engagement, with teacher comments including “we couldn't get them involved in anything, but the movie project has turned this around” and “we tried story writing before and nobody was interested. Now we're doing script writing for literacy. This has really worked. I used my collection of vampire comics to inspire ideas”. Also indicated by the feedback, however, is that ‘digital storytelling’ (a common but vague term whose definition continues to be debated), is not in itself enough to inspire and engage. We believe that the value of the ‘digital’ is really in ease of use, especially in terms of production processes, data transfer capabilities and sharing/broadcasting of artefacts, with exemplars being the Flip cameras, Comic Life software and the YouTube video sharing website. Another crucial factor was the ability for students to explore their own topics. This is where the constructionist approach assisted us greatly, for rather than dictating activities, we left the subject matter open and focused on processes and skills whilst providing some possible directions for students and teachers to follow if stuck. Interests then emerged, as this teacher comment reveals: “another student is a comedian. She's now doing a movie of other comedians, which she's really into.” Teachers also specifically noted the workshop approach: “the movie project is good because it's partly directed but also flexible – it gives students the power to do something that interests them.”

Not surprisingly engagement levels were higher when the facilitator and teachers had the time to work with students individually, reinforcing the need for smaller workshop sizes. As stated by the facilitator: “All the (Group Two) kids were pretty savvy, and were supported well by their teachers who pushed them all a bit. The smaller numbers meant I was free to explore each person's individual interests and suggest ways they could explore them”. Another factor affecting student engagement was the credibility of the facilitator. Our facilitator earned respect from students through his level of technical expertise and ability to guide students to new resources and approaches. This is an important consideration when designing technology programs for young people, and poses a further question: how can teachers retain the respect of students when they themselves are not technical experts? We have tried to answer this question by looking at teachers as guides for channelling students' technical expertise towards specific narrative aims. From the workshops it appears that, at the very least, students are more engaged when teachers are enthusiastic about using new technologies and don't mind ‘having a go’ and learning along with (and from!) their students.

Ethical considerations

As mentioned previously, students enjoyed filming people using the inconspicuous Flip cameras. Such activities raise ethical and privacy issues - but rather than necessarily being

a negative, we believe that if managed properly they offer opportunities for teachers to work with students to reflect on their actions, and thereby learn about issues connected with digital media that are easily translatable to other aspects of students' lives, such as the posting of photographs to social networking websites. One teacher posted an example of this kind of interaction: "How do you teach appropriateness and context? How do you explain when something isn't appropriate? (Some students initially said they wanted to do Jackass videos) I suggested that if it wouldn't be appropriate on Today Tonight, it wouldn't be appropriate here. Subsequent discussion: possibility of generating reflective discussions with students (eg on topic of empathy, in response to YouTube videos of homeless people)". This kind of approach has been recommended in educational literature. Henry Jenkins (2006) states that educators have a role to play through active guidance, since 'young people are creating new modes of expression that are poorly understood by adults, and as a result they receive little to no guidance or supervision. The ethical implications of these emerging practices are fuzzy and ill defined' (p. 25). The 2007 Horizon Report reinforces this, noting that the information literacy skills of 'internet-era' students have not necessarily improved whilst 'the skills of critical thinking, research and evaluation are increasingly required to make sense of the world' (p. 4). The solution is not straightforward. Neither young people nor their elders have all the answers. Rather, says Jenkins, it's the questions that matter: 'For the present moment, asking and working through questions of ethical practices may be more valuable than the answers produced because the process will help everyone to recognise and articulate the different assumptions that guide their behavior' (p. 26).

Resourcing considerations

We discovered from conversations with teachers and students that resourcing in particular plays a part in undermining the good intentions of ACE teachers. The ACE sector is known for its informality, approachability and lack of pretentiousness, which is a great strength when working with marginalised young people. However this is coupled with a lack of digital media resources and professional development opportunities that may work both against engaging young people and equipping their teachers with the tools to develop new activities. Engagement, we believe, will lag until the media tools are in place, working well, and teachers have had the chance to become familiar with them. A number of teacher participants were highly motivated and managed to find ways around many such issues, including using free software, buying equipment such as video cameras or lobbying to purchase equipment through their employer. But trading on the goodwill of individual teachers has its limits, and one wonders how sustainable this is. Since the ACE sector works with some of society's most disadvantaged learners, one can see this as a lingering manifestation of what has been called the 'digital divide', with the most marginalised missing out on opportunities that others take for granted (Blanchard, 2007).

6. Conclusions

As stated by Ainley and Sheret (1992), we can only effectively understand student engagement by looking at the interaction of educational systems and the student experience. With technology increasingly embedded in modern life, and especially the lives of young people, the student experience is no longer confined to the literal or metaphorical walls of the institution. At the same time we need to recognise that institutional settings cannot be dismissed in the ways that some technology evangelists are wont to do (Sefton-Green 2006). Sitting at the interface between institutions, students and the wider world, teachers have a crucial role to play in bringing context and critical awareness to the rest of students' lives, a role that is becoming increasingly important as technology transforms the way we live and run our lives. However not all teachers are or will be experts in technology, nor should they need to be. As a result of the pilot we have

undertaken, we believe that a collaborative, constructionist model of training may offer some ways forward to engaging both teachers and students of varying technical expertise.

In undertaking the *EngageME* workshops we have learned a lot about the practical aspects of fostering engagement with young people and teachers using digital technologies. Following are some of the lessons we have learned that may be applied to other settings.

We learned that smaller groups are better and that it works to have teachers learning alongside students - but also that it's important to minimise differences in technical skill levels within groups. In particular we were surprised at how engaging the joint teacher-student workshops were for all involved.

We discovered that the choice of facilitator or trainer is crucial. The trainer, we found, does need to have a high level of technical expertise, as well as the ability to talk to, not at, young people. They need to establish a sense of technical credibility in order to develop trust and respect amongst participants, and they need to have enough currency with technological tools at hand to suggest new and useful options for taking projects further. In our case, this meant providing participants with a DVD containing relevant free software, recommending video editing software, offering editing tricks, suggesting places to upload and share projects, and pointing participants to a range of further resources.

We also learned that 'object centred sociality' works to generate engagement. This kind of interaction through project activity occurred within groups, between groups and with other people on the web through posting of video material online. As expected we found that video production activities grounded in students' interests are effective in fostering engagement, especially when matched with storytelling and related activities such as comic creation and online sharing of artefacts.

Furthermore, we learned that the choice of technology tools is very important, and that some technologies support engagement whilst others undermine it. In our case, the big successes came by using Comic Life and the Flip video cameras, whereas Moviemaker and Second Life turned some participants off. We also realised that whilst it is important to support the use of free and cheap software for the sake of participants being able to continue their work, what is most important is ease of use for participants.

Overall we found that the four-workshop structure (two teachers-only and two mixed student-teacher workshops) worked reasonably well, but would recommend maximising the amount of time for students and teachers to jointly develop their ideas.

Lastly, we found that location matters, and if possible it is a good idea to run workshops in a setting that encourages participants to explore and discover.

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