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Collaborative gathering, evaluating and communicating 'wisdom' using iPods

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Abstract:

The processes of gathering and evaluating evidence are essential to inform and guide professional practice. This chapter explores the use of iPods as a tool to bring together the teaching field and the tertiary classroom. We report on two iterative cycles where we have designed and implemented a learning experience to engage our students in collecting, evaluating and reflecting upon knowledge shared by practitioners in the field. The task encourages students to consider the 'teacher wisdom' (Labbo, Leu, Kinzer, Teale, Cammack, Kara-Soteriou & Sanny, 2003) that can be gathered and disseminated through podcasts as they plan, record and edit an oral text to share with their student colleagues through their subject website.

The challenge of moving from preservice to early career teacher

The teaching profession is holder to many 'secrets'. Why does a noisy class of students suddenly become quiet when a teacher enters the space? How do teachers know how to navigate the curricula? How do teachers manage the complex relationships between and among the students? Early career teachers are bombarded with so many questions as they make the transition from student to teacher. This time of transition is identified as crucial for the construction of professional knowledge (Griffin, 2003; Peters & LeCornu, 2006). Relationships, with opportunities for informal and formal interaction, are paramount for the development of knowledge, values and attitudes to support one's professional practice (McCormack, 2004). Such interactions enable a teacher to build relationships, reflect upon practice and to shape deeper pedagogical knowledge (Dettori, 2007; Labbo, Leu, Kinzer, Teale, Cammack, Kara-Soteriou & Sanny, 2003; McCormack, 2004). The sharing of story is promoted as a powerful way to encourage this interaction because often accompanying the story, is the spontaneous sharing of 'wisdom' about the intricacies of the culture (Labbo et al., 2003).

Through interaction with participants within the culture one can 'learn' the profession (Lacey, 1995). Each profession has its own specific knowledge, skills and behaviours; for teachers these are related to curriculum, pedagogical understandings and awareness of how children learn and their role within each of these (Blackledge, 2002). Allen (2005) argues teacher professional identities are not taught; rather they are shaped through critical incidents within the workplace and one's professional and social networks. Having opportunity to examine those critical incidents, with the support and knowledge of more experienced colleagues, makes for powerful learning. Moving from a preservice to an early career teacher requires significant adjustments be made to one's professional identity with specific emphasis on the way people behave and how this defines them as professionals (Sparks & Shepherd, 1992; Stets & Burke, 2000). These perspectives need to be explored and examined to

consider how individual experiences can come together to create shared meanings and understandings.

Through interaction with members of the professional setting, one is able to learn the norms, values and beliefs of the communities within which they operate (Kervin, Mantei & Herrington, 2009). Lave and Wenger (1991) describe that participation in social practices enables '…explicit focus on the person, but as person-in-the-world, as member of a sociocultural community' (p. 52). It is through this process that individuals come to know who they are, what they are, how they should behave and what they still need to know. This, coupled with Billings' (2005) description of quality learning achieved through connections between their study and work contexts and Glickman's (2002) assertion that teachers cannot define, improve, and reflect upon their craft in isolation, presents an interesting challenge. As teacher educators, we believe our primary goal is to support the entry of our students into the teaching profession. To do this, we acknowledge the possibilities mobile technologies (such as iPods) afford educators as we examine how we can contextualise and explicate professional knowledge as we collect and examine the expertise from the field within the tertiary setting.

Technology to support learning

Mobile technologies have the potential to support early career teachers to learn about the culture of teaching (Lacey, 1995) and what it is to be a teacher. The technology affords students opportunities for systematic quality learning through access to audio files and the potential to create such texts as important connections are made between study and work contexts (Billings, 2005).

Research conducted around the use of iPods within the tertiary setting is broadly focused on transmission of information from teacher to learner (For example, Pownell, 2006; McCombs & Liu, 2006; Scott, Nishimura & Kato, 2006; Miller & Piller, 2005). Belanger (2005) identified five categories of iPod use in academic settings: course content dissemination, classroom recording, field recording, study support and file storage and transfer. Saunders and Moore (2003) similarly identify iPods as a useful mechanism for the storage and transfer of files. Such research argues that iPods have the potential to support students who are not part of a face to face learning context for a range of reasons, such as distance learning or a lack of engagement with the traditional tertiary classroom setting. Pownell (2006) identifies benefits for learning supported by iPods as providing opportunities to engage learners outside of the regular learning timetable and the physical classroom setting because subject material and activities can be accessed at the learner's convenience. Further, Pownell (2006) argues that iPods provide opportunities for teacher educators to model the use of technology in education, a perspective which supports Dede's (2005) call for educators to teach in ways that acknowledge the technology rich environment within which most students operate in their out of school lives.

Taking another perspective, Switzer and Csapo (2005) argue that mobile technologies such as iPods are an 'effective tool for encouraging team work and information sharing among students' (p.

133), presenting opportunity for students to demonstrate their own understandings and to learn from the understandings of others. Slykhuis (2006) describes the capturing of audio data as a non-native function of the iPod. We believe that iPods, enhanced by the addition of the audio recorder, have another powerful use in acting as a tool to bring together the teaching field and the tertiary classroom.

Introducing our research context

The Faculty of Education at the University of Wollongong has a total enrolment of undergraduate and postgraduate students of approximately fourteen hundred. A Bachelor of Teaching degree can be completed over a three-year period (full time). Each year two semesters are offered (Autumn and Spring); a full time student can study up to four subjects per semester. Successful completion of the three-year degree qualifies the participant to teach in primary (Kindergarten to Grade 6) schools within the state. Upon completion of a Bachelor of Teaching degree, participants are eligible to apply for a fourth year of study to complete the Bachelor of Education (Primary) or apply for Bachelor of Education (Honours) degree. This qualification enables the participant to teach in most other Australian states and overseas. During this fourth year of study there are compulsory subjects for students, and curriculum elective courses. This structure puts our students in a unique position as many study for their fourth year concurrently with their entry into the profession.

Reflective Practice is a compulsory subject for all fourth year students. The subject builds upon the premise that reflective activity makes a powerful contribution to the learning and professional development of teachers. The capacity to reflect is identified as an important professional attribute. The subject aims to provide practical insights into the day-to-day decision making of teachers and the range of areas within their professional role that they need to be aware of and reflect upon. The subject explores these with opportunity for students to make connections between subject materials and professional experience as they examine the subsequent implications. In 2008, two cohorts of students were enrolled in the subject. Table 1 provides an overview of specific details for each cohort.

Table 1: Participant demographics

	Autumn session	Spring session
Student enrolment	48	29
Scheduled time of the class	Monday 4:30 – 7:30 pm	Monday 1:30 – 4:30 pm
Number of students engaged in part-time or casual teaching positions	32 (67%)	20 (69%)
Number of students engaged in full-time teaching positions	6 (13%)	0 (0%)
Number of students not engaged in any teaching during the session	10 (20%)	9 (31%)

An online community of learners called the *BEST site: Beginning and Establishing Successful Teachers* was developed specifically for primary and early childhood students in the Faculty of Education at the University of Wollongong and is embedded within the *Reflective Practice* subject. The site hosts a range of features including online

mentoring space, opportunity to create and read weblogs, forums and professional reading resources (Herrington, Herrington, Kervin & Ferry, 2006). Figure 1 illustrates the home page for the BEST site.

Figure 1: The BEST site
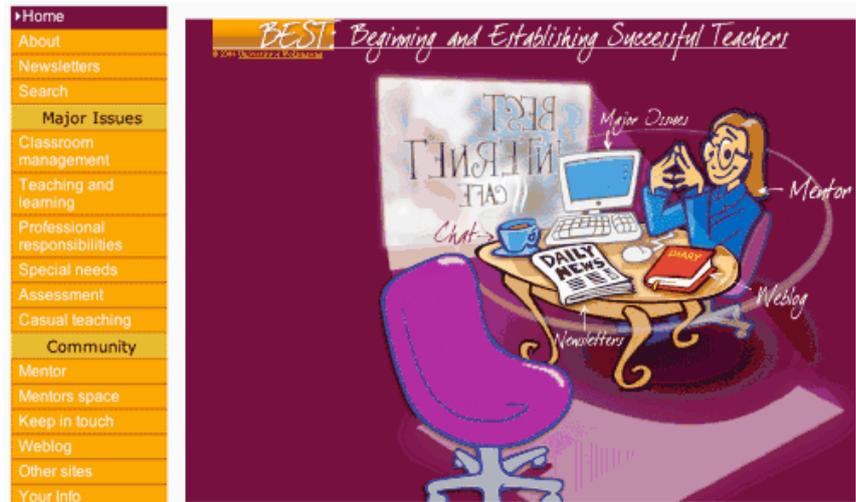
Engaging with Design-based Research to develop, refine and implement the task

Design based research is focused on 'research, design and pedagogical practice' as the researcher engages with an identified practical problem (Joseph, 2004, p. 235). Collins, Joseph and Bielaczyc (2004) describe the aims of this research approach as to refine both theory and practice as researchers develop plausible solutions to complex theoretical problems (Reeves, 2006). In the research reported herein, design based research was selected to guide us in the development of the 'teacher wisdom' learning task and to help us as researchers and teacher educators to better understand the potential of mobile technologies when used as a medium between learning contexts. The four phases of design based research are now described in connection with this inquiry.

Phase 1: Analysis of practical problems by researchers and practitioners in collaboration

During this phase the researchers articulated the problem for investigation. In this research, the problem identified was focused on ways that our students as early career teachers can gather and evaluate knowledge from the field and communicate this to their peers in the tertiary classroom environment. To guide the research, the following questions were posed:

- How do opportunities to collaborate with colleagues (both peers and practitioners) inform the pedagogical knowledge and understandings of participants?
- What processes do the students move through as they collaboratively evaluate and communicate knowledge using iPods, the BEST website environment and their tertiary classroom?
- How can iPods support students to gather, reflect upon and share knowledge from the field?

Phase 2: Development of solutions informed by existing design principles and technological innovations

The researchers moved between the first and second phases through recursive cycles as we investigated ways to support the students make connections between the university and school contexts. The phase finished with the design of the intervention - a learning task for students underpinned by the guidance identified and explored in the literature and from our own analysis of our previous experiences working with early career teachers both in school and tertiary contexts.

Phase 3: Iterative cycles of testing and refinement of solutions in practice

Over the course of 2008, two cohorts of students were enrolled in the *Reflective Practice* subject; one during Autumn semester, one during Spring semester. Each cohort made up an iteration of the research as data were collected and analysed to inform the teaching task. Interviews, observation and analysis of work samples comprise the data collection procedures during this phase. We built upon the BEST site to also include a link entitled *Professional Dialogue* within which the 'wisdom stories' could be housed for other students to access. The analysis of data from the first iteration informed the changes and refinements we made to the task as we reflected upon what the students were asked to do and how it supported their professional understandings. The recursive nature of data collection and analysis in this phase allows us to observe the interactions between and among the participants with the task from two distinct cohorts.

Phase 4: Reflection to produce 'design principles' and enhance solution implementation

This final phase provided us with opportunity to examine collected data and subsequent analysis to articulate deep and comprehensive understanding of guiding principles to support students to work in collaborative teams to gather, evaluate and communicate knowledge and the role of mobile technologies within this.

The 'teacher wisdom story' task: Iteration 1

Description of the task

In collaborative groups of two to three over a five week period, the 48 students were provided with an iPod and microphone and were asked to identify a focus for a 'teacher wisdom story'. Once a focus was determined, they then planned, recorded and edited an oral 'wisdom' story to be shared. Drawing upon their own emerging professional networks, and our more established ones, groups identified and made contact with practitioner/s who could share their 'wisdom' in response to the focus. Informed consent was obtained prior to any recording. Groups devised a series of questions to guide their discussion with practitioners and recorded the interview/s using the iPods. These recordings were then edited with either GarageBand or Audacity to include the practitioner/s wisdom and the group's synthesis of this. A 10 to 15 minute audio file was then uploaded to the subject website with an accompanying 100 word abstract summarising the focus of the 'wisdom story'.

Analysis of collected data

The students (with the informed consent of the participating teacher) were able to capture the story 'in the field', reflect on the connections

they made to their own understanding and share it for the benefit of fellow students through their online and physical communities. The opportunity to identify a topic of interest appeared to support their professional identities with sustained time and focus on something that was connected to their context. Students justified their selection of topic based on 'interest', 'appropriate to our situation', 'a particular teacher that we knew', 'what had been happening in my class', and 'a focus that directly impacted and informed our current practices'. The authentic nature of the task made for a powerful learning experience.

Students identified a range of learning gains from the task; some of which were related to the opportunities for collaboration with peers, some were related to professional knowledge, others to technological knowledge. 15 students identified professional relationships as a particular strength of the task, describing that these either emerged or were consolidated through the process. One student wrote about 'the kudos' he felt the task afforded them as emerging professionals. Another participant described her perceived value in being able to engage someone she respected in a sustained professional conversation. Another student described the 'confidence' she now felt in talking about her focus to other teachers and parents.

Overwhelmingly the students reported that the use of the mobile technologies supported their collection and sharing of the wisdom stories; only 3 from the cohort of 42 identified that their experience in using the technology for the purposes of the task was negative. Interestingly, 36 students described a sense of anxiety about using the iPods at the beginning of the task. In the initial instance students described feeling: 'threatened', 'nervous', 'daunted', 'overwhelmed', 'little experience', 'forced', yet also 'curious' 'motivated' and 'challenged' with the possibilities. One student explained 'at first glance I almost had a panic attack', and went on to talk about the experience being 'a roller coaster ride'. Of the 36 students who expressed initial negative feeling, only one reported that they felt the same way at the end. Our own observational data revealed that the majority of the students had little to no exposure to iPod technology before the project. They did need significant support through demonstration, encouragement and feedback during the process.

From the cohort, 38 students reported some kind of learning gain with the technology. Some students identified that using the software to edit the audio text presented a significant learning curve. One student described as 'extensive' the text they had collected in an 'elaborate and lengthy' 45 minute interview which needed to be edited into 10 minutes. While not directly related to the iPod, this example provides evidence of the complex decision making the students engaged with as they made professional decisions about what to keep and what to disregard to enable them to provide 'wisdom' about their topic. Another student described 'I was forced to experiment and through trial and error discover the best way to use this piece of technology to assist me'. One student described, 'I also feel I can approach my colleagues at school … without feeling embarrassed … I now know I don't have to figure everything out on my own'. Many students were able to examine their own experiences to identify subsequent classroom implications for their own use of the technology with their own students.

Changes and refinements to the task

While the task appeared a positive experience for most participants, we did identify some areas for further refinement. Our analysis of the work product created by the students provided clear evidence of their gathering of the 'wisdom' from the field, but showed little evidence of how the students had reflected upon and internalised their meanings. We felt there was a need to give stronger emphasis to their role, and indeed their voice, within the stories they shared.

Most of the collaborative groups spoke only with one teacher. Upon reflection we could attribute this to the time given to the task and the limited professional networks the students may have had to draw upon. While the wisdom they obtained from the one teacher was interesting, it didn't allow opportunity to compare and contrast stories to build a consistent line of discussion. We felt it was necessary to increase the number of practitioners incorporated by each group and in doing this, provide more time in terms of the length of the final product.

The physical manipulation of the iPods and editing software was a barrier for some students. While we had alerted them to software that was available, we had assumed that they would have the resources to be able to explore and operate this for the purposes of the task. The time this took in student consultation and trouble shooting during class time was considerable and something we wished to avoid in future iterations. We decided that scheduled time to model and scaffold strategies to use the technology would support the focus of the task being on the learning rather than the technology. Further, while the majority of the students enjoyed the task and reported significant learning gains, there were some who did not respond to this particular style of learning. As teacher educators we felt it necessary to look at this task as one pathway to the achievement of our outcomes.

The 'teacher wisdom story' task: Iteration 2

Description of the task

In collaborative groups of two to three over a six week period, the 29 students decided to create either a teacher wisdom story or a teacher professional journal. Those that decided to create a wisdom story (19 of the 29 students) were provided with an iPod and microphone and were asked to identify a focus for a 'teacher wisdom story'. The same process was then followed as in Iteration 1.

Analysis of collected data

Again, the students demonstrated they found the opportunity to capture the wisdom stories and engage with these through both online and physical communities to be a positive learning experience. While not all students opted to participate in this task, our monitoring of the BEST website revealed that most students accessed the range of stories provided by their peers. This cohort presented significant range in the stories offered with themes focusing on issues such as special education, entering the teaching profession, resilience, indigenous education and strategies for the beginning of a school year. Some of these are represented in Figure 2. Students again justified their selection of topic based on interest, however they also identified that their focus was derived from 'who we knew' in their own professional networks.

Figure 2: Incorporating professional dialogue on the BEST site
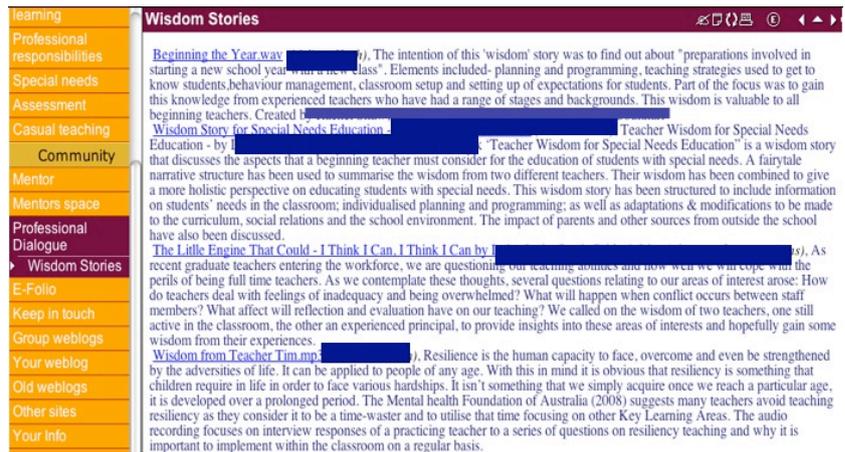
Building in our expectation that students would annotate their 'wisdom story' to help advance their line of discussion proved to be a powerful addition to the task. One student described the process her group went through to do this:

> The teachers responded to a series of questions … the digital audio recordings were then transcribed, analysed and edited … this process involved identifying key themes in the data, parsing excerpts of the interview that best captured these themes, then scripting and recording a commentary to 'stitch together' the themed excerpts from the interview … such a complex task necessitates reflection to enhance the learning process.

As our understandings of the task improved so too did the expectations we set for the students. This addition increased the complexity of the learning gains we were able to observe as we talked with the students and examined their work product.

Again the majority of the students identified themselves as having little to no experience using mobile technologies. However, for 17 of the 19 students, our inclusion of specific input focused on how to use the iPods and editing software was identified to be supportive and alleviated much of their anxiety about the technology. Interestingly, 6 of the 19 students identified that the reason that they had selected the 'teacher wisdom story' task, as opposed to the other more traditional task, was to increase their awareness and capabilities with the technology.

All 19 students who engaged with the task reported learning gains associated with the technology and indicated that the task was useful in demonstrating the ways that they could use technology in their own teaching contexts. One student described 'a reduced learning curve' with the technology due to increased familiarity with iPods and their capabilities. Another described that 'time spent learning how to use audio editing software is invaluable … teachers are using audio clips and editing software more frequently in the classroom'.

Reflective comments about mobile technologies from the perspective of this learning task

Our analysis of the two iterations presents us with principles to guide processes of collaboratively gathering, evaluating and communication of knowledge through mobile technologies.

Access
Mobile technologies allow students to gather information from places not accessible in traditional tertiary education structures as the students took their iPods into their professional settings. This access could then be transferred between and among other students as they each shared their stories from the field.

Learner directed
This task empowered students as they selected an appropriate focus, designed an interview and worked within pre-determined parameters to create a product that could be shared. The task allowed learners to prioritise their needs and then meet them supported by the portability and flexibility of mobile technologies.

Responsibility
The expectation that students would annotate their stories heightened the reflective processes as they made sense of, accounted for, made connections between and among their existing knowledge and this new information and internalised the viewpoints they recorded.

Audience
Knowledge that the product would be shared in physical and virtual communities produced a heightened sense of responsibility for the quality of the product; the need to visit and revisit different stages within the process revealed the authors' awareness of their peer audience and their desire to be considered 'professional' in presenting the wisdom they had sought.

Enriching and building new networks
For our students, the task broadened their professional standing as they were able to engage in and capture focused, purposeful talk about an area of professional interest. Their prior research in designing the interview and drawing on experiences in the classroom equipped them to contribute to the dialogue knowledgeably with a more experienced practitioner.

The task valued the connections students had already made in the professional context, facilitated the deepening of those connections and encouraged the establishment of new ones as the students drew on relationships built throughout preservice teacher training and early teaching placements. These connections were shared between group members as they collaborated to create one product. Connections were further made as one student's professional network was opened to the rest of the class (and us!) as stories were disseminated through the BEST site.

Conclusion

The task we have developed to engage our students in the processes of gathering and evaluating evidence has informed and guided their emerging professional practice. This chapter provides example of how

iPods can be used as a tool to bring together the teaching field and the tertiary classroom. We believe our use of technology is one where the technology is adequately fulfilling a much needed role, yet is transparent as the focus remains on the learning of important curricula content.

The two iterative cycles we have described have enabled us to design, implement and reflect upon how we can engage our students in collecting, evaluating and reflecting upon knowledge shared by practitioners in the field as they consider the 'teacher wisdom' (Labbo et al., 2003) that can be gathered and disseminated through audio files. The benefits of this learning task are three-fold. The students were able to: begin building a repository of teacher experiences, gain confidence approaching other teachers for guidance and assistance, and gain confidence using technology tools. The archive of wisdom stories that have been created through the two iterations will serve as a valuable resource made accessible to future cohorts. The skills students acquired during the task as they interacted with other teachers will service them throughout their career, as will increased technological confidence. We believe this learning task has significant potential and replication of this project would be an asset to any teacher education program.

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