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# **iPods and podcasting technologies to support Talking and Listening experiences of Grade 4 students**

## **Abstract**

Traditional primary classrooms (Kindergarten to Grade 6) have been characterised with chalkboards, books, pencils and pens for decades. However, the range of technology available for use is ever increasing across educational sectors; including primary classrooms. Teachers are under increasing pressure to include new technologies into learning experiences and to also consider ways to present curricula content. In 2006 12 x 30GB 5th Generation Video iPods were provided for use in a Grade 4 classroom. This paper explores how one primary teacher integrated iPods and podcasting into learning experiences with emphasis on the Talking and Listening strand of the New South Wales English K-6 syllabus (Board of Studies, 1998) and captured these within a web-based environment to support the teaching of literacy.

## **Introduction**

The push to incorporate technologies into educational experiences is not a new phenomenon. Indeed, the introduction of technologies of 'old' into classrooms – chalkboards, books, pencils, pens, overhead projectors – were surrounded by similar tensions as what we see today with the incorporation of computer-based technologies, associated peripherals (for example, digital cameras, scanners) and mobile technologies (such as iPods). There appears an ever-increasing range of technologies available for incorporation within classroom learning experiences.

It has been argued that there is a partition between the technology that is used within everyday life and that that is used in many classroom settings (Dede, 2005). Sanford and Hopper (2001) report that teachers need new skills and understandings to further consider how they can better support and engage their 21st century students. Such students, often referred to as 'millennial learners' as they have been heavily influenced by information technology, need to be taught using the technology they are accustomed to (see for example, Dede, 2005; Oblinger, 2003). While there appears to

have been a global movement to implement modern education technologies at a tertiary level (Oliver, 2001), it appears the advent of the use of iPods in other educational settings is just starting.

New technologies such as iPods and podcasting permeate the lives and daily routines of many young children as they engage with these technologies in a variety of ways. An iPod is a small, portable music player which now has video capabilities and can be updated when connected to a computer. Podcasting is a method of syndicating electronic content automatically to a computer through RSS (Really Simple Syndication) feeds. More simply, podcasts are audio files (with the possible inclusion of video and other media) that are available for download through the internet. The use of iPods in education is still a relatively new concept, much as the Internet was a decade ago. The opportunity to investigate possibilities for their use in classrooms is both timely and necessary.

### **Considerations for the incorporation of any technology within a classroom setting**

The introduction of any new technology seems to be veiled with the notion of ‘promise’ – what it will do to revolutionise the classroom, how it will change the work of a teacher and how it will support and contribute to student learning. Indeed it has been argued, “if every student, teacher, administrator and staff member in every school had his or her own easily carried computer to be used throughout the school day, integration of technology into the curriculum would probably be accomplished with ease” (Frazel & Souza, 2003, p. 4). However, there appears to be a trend of disappointment after technologies have been introduced with it not really meeting initial expectations. Students are reported to describe technology use as “awesome” and “way cool” within the classroom. Indeed, the use of technology to support student learning is reported to be “... very amenable to learning the use of technology ...” with “reluctant learners often inspired by the use of technology” and “students who are academically talented will use technology to exceed our expectations and discover successful learning experiences of their own” (Frazel & Souza, 2003, p. 4). However, reports from teachers can be quite different. It is necessary for educators to be realistic about what may happen with technology use and how its introduction,

implementation and evaluation can be carefully planned for. With this in mind, we embarked on this project with Roblyer's (2006) guidelines clearly in mind. Each guideline will be explored in connection with connections to our iPod project.

*Guideline 1: Good teaching comes first (Roblyer, 2006)*

Teachers have considerable knowledge about their profession – what constitutes 'good' pedagogy, the nature of learning and ways to engage students in the classroom. Roblyer (2006) describes, "...technology is, above all, a channel for helping teachers communicate better with students. It can make good teaching even better, but it cannot make bad teaching good" (p. v). Technology is not a substitute for good classroom practice. As such, it is vital that as educators we have a clear rationale and purpose for what we do with technology in our classrooms in connection with curriculum goals, student learning gains and our own personal philosophies.

*Guideline 2: Technology is us (Roblyer, 2006)*

Technology has become a part of contemporary life. Roblyer (2006) suggests, "rather than seeing technology as some foreign invader there to confuse and complicate the simple life of the past, we can recognize that technology is very much our own response to overcoming obstacles that stand in the way of a better, more productive way of life" (p. v). With this in mind, it is important to consider how we can use technology to support the problems we encounter with communicating information to students, supporting them with the representation and manipulation of complex material and encouraging them to reflect on their own learning.

*Guideline 3: We control how technology is used in education (Roblyer, 2006)*

Educators are experts in pedagogy, not necessarily technology. As such, it is vital that we consider how our incorporation of technology supports our understanding of both learning theory and teaching practice; more simply, why is it that we're doing what we're doing. Technologies need to be incorporated for the goal of supporting specific teaching and learning needs within the cohort of students in a specific context. Educators are in an enormous position of power, as "...enlightened shapers

of our future. Each teacher must help to articulate the vision for what the future of education should look like” (Robyler, 2006, p. v). The role new technologies play within education is a significant part of this future.

### **Merging iPod technology with Talking and Listening**

With these guidelines in mind, before embarking on any technology project, we felt it was appropriate to consider how a specific technology (in this case iPods) could be used to support student learning and the teacher’s teaching within a curriculum area. The Talking and Listening strand within the New South Wales English K-6 curriculum (Board of Studies, 1998) seemed an appropriate place to start.

Traditionally, the reading and writing performances of students have measured literacy achievement. Loban’s (1976, 1979) longitudinal study identified significant connections between literacy, talking and listening. In particular, children who are proficient in oral language - that is talking and listening – were found to be able to use more complex language and better understand the conventions of language, which in turn impacted upon their performance across the literacy spectrum. Even with such findings, it appears that talking and listening are “suppressed” within the literacy classroom (Cox, 2005, p. 154).

It appears that opportunities for Talking and Listening have been limited in many classrooms. Rankin’s 1928 study showed that 68% of each day is spent in communication with the teacher doing the talking and the students listening. More recent investigations (for example, Chaney & Burk, 1998) have confirmed that this trend continues. Detailed analysis of classroom transcriptions has found that in two-thirds of the time someone is talking within classrooms, it is the teacher (Fox, 1983). Cox (2005) describes, “in general, students have fewer opportunities to talk in school than they do at home” (p. 154). While this finding could be dismissed due to the sheer ratio of students within a classroom, it is nonetheless important as educators consider the oral literacy learning experiences within the classroom context.

Pinnell and Jaggar (2003, p. 902-904) identified six principles that should underlie talking and listening experiences within the classroom:

1. The classroom must engage the students in talk
2. The classroom must provide a range of learning contexts that require the development and use of a wide range of language
3. Experiences should expand the intellectual, personal and social purposes for which students use language
4. A constructivist interpretation of curriculum should involve language interactions of many different kinds
5. Context is crucial to oral language learning
6. Oral language is a means to learning

Further, they describe that oral language is best taught and learned using "...small group student discussions and project work, informal conversations between students and their peers and teachers, language games, storytelling, creative dramatics, role-playing, improvisation, and for older students, more formal drama" (Pinnell & Jaggar, 2003, p. 903). These understandings provided us with a framework as we considered how we could use iPod and podcasting technologies within a classroom environment to support the Talking and Listening experiences of Grade 4 students.

### **Description of the research project and methodology:**

The project reported in this paper was supported with an Apple University Development Fund (AUDF) grant from The Apple University Consortium (obtained by Dr Doug Reid and Dr Lisa Kervin in 2005). In 2006 the 19x30GB 5<sup>th</sup> Generation Video iPods were provided for student use in two Grade 4 classrooms at two neighbouring schools. This paper focuses on the way the iPods were used and incorporated within teaching and learning experiences in ways that were responsive and connected to curriculum outcomes within the Talking and Listening strand in the English curriculum (Board of Studies, 1998) at one of these school sites. In particular it aims to:

- explore ways iPods and podcasting can be incorporated within classroom based learning experiences with focus on Talking and Listening, and
- examine the teacher's reflections on the planning, implementation and evaluation of student learning from such experiences.

The two stream (two of each class) independent primary school where this project was conducted is located in metropolitan New South Wales, south of Sydney. The school has an enrolment of approximately 370 students, with 24 students enrolled in the focus class for this project.

The class teacher has more than ten years teaching experience across Kindergarten to Grade 6 in a number of schools. At the time of the inquiry he held a leadership position within the school, with 'technology' being his area of responsibility. This role saw him responsible for the purchasing and maintenance of equipment, supporting the professional learning experiences for teachers and trouble shooting problems as they arose within the school. The teacher nominated that he would like to explore the use of the iPods with his whole class and to facilitate this, he was provided with 12 video iPods, 12 splitters (to enable two students to use each iPod) and 12 sets of headphones. Each student in the class was provided with access to the equipment at a ratio of one iPod per two students. This technology was formally incorporated into the classroom in May 2006.

From the period of May to November 2006 (term 2 to mid term 4) the students in this class engaged with a range of tasks that incorporated the iPods within their classroom learning experiences, with emphasis on Talking and Listening. These tasks were planned, implemented and evaluated as the teacher worked through an action research (Kemmis & McTaggart, 1988; Stringer, 1996) process. It was envisioned that such an approach might empower the participant teacher as he explored issues that emerged as he worked with the academic partners to develop pedagogical understandings and subsequent classroom teaching practices to incorporate this technology. Further, this process would enable the teacher and academic partners to explore, experiment, reflect upon, talk about, and rethink practices to represent their increased understandings throughout the project.

The teacher, often in consultation with one or both academic partners, designed a series of tasks for the students to engage with as they explored the Talking and Listening strand while also complementing existing classroom processes, themes and curriculum outcomes. The class teacher was supported throughout the duration of the research project with visits from the academic partners once or twice each week (term

2 – mid term 4 2006) and opportunity to engage with a project listserv. An academic partner interviewed him regularly, and entries to the listserv, planning documents and student work samples were analysed by the research team and served to guide the project.

At the beginning of the project each student was interviewed individually by an academic partner. At this time, they were asked to articulate their understanding of the Talking and Listening strand of the English curriculum. Analysis of these interview transcripts revealed that in the most the students understood ‘Talking’ to be something that was done by one person at a time in the classroom (mostly the teacher), while ‘Listening’ was something they did while that person was talking. No student within this class, at this time, were able to explicate the strand further, nor articulate what it meant for their literacy learning other than giving and receiving instructions. An academic partner interviewed the students individually at regular intervals to identify their understandings, which fed into subsequent planning of experiences. What follows are descriptions of tasks undertaken as the students engaged in Talking and Listening experiences.

### **Classroom Talking and Listening experiences incorporating the iPods**

Building upon our understanding of Talking and Listening, from the syllabus (Board of Studies, 1998) and literature, experiences were developed, implemented and evaluated in this classroom. Each experience was designed to engage students in purposeful investigation of oral language in a context that was supportive and built upon the experiences of the students. These experiences did not occur in a linear order. Rather, the teacher created multiple opportunities for the students to engage with them over the course of the period of investigation. The experiences have been grouped into like categories as they are described in connection with their particular emphasis within the Talking and Listening curriculum expectations.

#### *Exploring the listening process*

The skill of listening is complex and multifaceted (Tompkins, 2005); although it is reported to be a skill that many teachers take for granted as something students ‘do’ in

the classroom. Wolvin and Coakley (1985) describe that the listening process involves three steps: receiving, attending, and assigning meaning. To engage the students with these three steps the teacher created a series of podcasts for the students to engage with which required them to make sense of information, do something with the information and report back with these new understandings. More specifically, the teacher created a series of open-ended mathematics podcasts that required the students to listen to the mathematics problem, work through the problem and present a solution. While the grounding for the use of the technology was within the Talking and Listening strand of the English curriculum, the teacher was mindful that this strand was one that could be integrated across the curriculum.

To begin the process, the students accessed the podcast and listened to it. Using the iPods to facilitate this appeared to support the students learning as the private nature of the technology ensured that distractions (for example, classroom noise, peers) were minimised. Further, the technology enabled the students to listen to the oral text as many times as they needed to internalise, understand and assign meaning to what they were being asked to do. As the students prepared their response to the mathematics problem posed they switched roles as they became the communicator and prepared their own oral text working through their solution to present their answer. The teacher reported this process to be an enormous equalizer within the classroom – more students appeared successful as they were in a position of power to control their access to the information and frequency of this free from many typical classroom distractions. This type of experience was repeated several times by the teacher over the duration of the project.

A summary of findings from our data for these experiences from both the teacher and students perspectives is included in Table 1.

Teacher reflections
<ul style="list-style-type: none"> <li>• Recording the mathematics tasks as podcasts provided students greater access to the information and increased responsibility. They were able to listen to each podcast as many times as they needed to understand the instructions.</li> <li>• As the students listened to the podcasts, which included instructions and some ‘tips’ for completion, the teacher found that he had more time to engage with students who struggled in maths or with the deciphering of the information.</li> <li>• The initial podcast tasks were difficult for some students, as they were</li> </ul>

<p>presented with the information in a different form. However, once students became familiar with the genre of podcasts, future tasks became easier.</p> <ul style="list-style-type: none"> <li>• Completing mathematics tasks this way appeared to enable more students to be successful. They had access to all the information they needed and did not have to ask for instructions to be repeated, or write the question and then interpret the written form. They demonstrated they were able to listen to the task repeatedly if required.</li> <li>• The podcasts supported the students engage with the processes of confirmation or checking once they had created a response to the task. Students were observed to complete the task and then listen to it again with their detailed answer in front of them to ensure accuracy and completion with what they had done.</li> </ul>
<p>Student engagement with the tasks</p>
<ul style="list-style-type: none"> <li>• Student engagement in these tasks appeared high. More students appeared to be involved in the task, more so than when a question was written on the board.</li> <li>• Student engagement appeared fueled by the use of the technology; initially some students appeared to listen to the podcasts numerous times so they could use the iPods, others listened numerous times to make meaning of the task.</li> <li>• The podcasts served as a reference point for students as they checked their responses to the questions. Using the iPods, the students appeared eager to go back and listen to the task again to ensure they had heard all information and were presenting the most correct answer they could.</li> </ul>

**Table 1: Summary of data as the listening process was explored**

*Radio shows to engage students in audio text creation and critical listening*

The students engaged with a five-week unit of work collaboratively developed by the teacher and academic partners. This unit involved the students working with radio shows. In particular, students engaged with:

- Investigation and deconstruction of oral texts
- Exploration of the parts of a radio show
- Creation of the parts of a radio show
- Putting together the class radio show
- Evaluation of the radio show

The students deconstructed sample audio texts to critically analyse features of text organisation, grammatical characteristics and the structure of the text to support them in the creation of their own. Students worked in teams as they planned, scripted, recorded and edited their own radio show. Each team within the class were able to successfully create their own ‘radio ad’ to be included within a radio show. What became interesting in this process was that while the focus was on the audio text, the

students soon discovered how to incorporate visual images to accompany the meaning of their texts.

Once the students had completed their radio ads students from another class were involved in listening and working with the students to evaluate their work product. As this was their first experience at creating and recording an audio text, this feedback provided important input from an audience and was used to guide further development and refinement. More importantly, it engaged the students in the process of ‘critical listening’ (Tompkins, 2005, p. 327) as they engaged in critical thinking and listening with opportunity to articulate their thoughts. In particular, as the students evaluated the message within the recorded advertisements the students were encouraged to consider:

- The speaker’s purpose in creating the text
- The intellectual appeal of the text
- The emotional appeal of the text
- The persuasive nature of the next
- The language choices used by the creators

A summary of findings from our data for these experiences from both the teacher and students perspectives is included in Table 2.

Teacher reflections
<ul style="list-style-type: none"><li>• The experiences incorporated within this unit supported the students as they explored and looked at the dynamics of oral text. As example, the students were able to identify different elements of speech and identify a specific purpose. They were able to identify different ways in which their voice can be used to differing effect.</li><li>• Creating ads as an oral text involved a lot of planning. The students had to heavily script their ad to ensure the time was spent wisely. (They were only allowed 30 seconds for the final product).</li><li>• The students were able to clearly define a purpose for their text. For example, in one ad the students spoke with accents, their reasoning for this was to attract tourists.</li><li>• Over the course of the experiences within this unit, the students became better at using and manipulating oral language to meet a purpose. For example, they were able to identify their need to use persuasive or emotive language in given situations. This was an unfamiliar concept for many students at the beginning of the unit.</li><li>• The students became more critical of their own work and were able to identify areas that needed improvement without teacher direction. They also became</li></ul>

<p>acutely aware of the audience for whom their texts were created.</p> <ul style="list-style-type: none"> <li>• The students also became more critical of other work as well as becoming accepting of that critical feedback. In fact, they searched for it. When students met with a critical friend who wasn't critical enough, they sought out someone else. This served to create a range of networks amongst the students within the class.</li> </ul>
<p><b>Student engagement with the tasks</b></p>
<ul style="list-style-type: none"> <li>• Initial engagement in unit experiences appeared 'normal' as they had to script their ads before they could record. Initially, some students found this to be mundane, as they just wanted to record and use the technology straight away. Once they had a script, the student's engagement with the task rose considerably. It increased again when they saw the importance of their script for the recording process.</li> <li>• Once the students began recording and editing and revising their scripts, they became more aware of the purpose of the genre and subsequently more critical of what they were producing. Some students started again, while others edited their scripts heavily to ensure they were meeting requirements of the task and the needs of the audience.</li> <li>• The students were able to seek critical feedback from students outside their class. While an initial network was created with the neighbouring class, some forged relationships with students in higher grades to seek their input. This need for external advice was not something they had previously sought with their written texts.</li> <li>• When the final ad was ready, engagement levels rose once more with the introduction of sound effects and backing tracks. These features 'polished' the ads and the depth of their recordings with each improvement they made excited the students. This then encouraged them to make all oral texts as polished as possible.</li> </ul>

**Table 2: Summary of data through the process of audio text creation and critical listening**

*Podcasts to engage students in purposeful, sustained talk*

The initial focus on deconstruction, reconstruction, interaction and evaluation with audio texts appeared to equip the students with a range of skills and strategies. Their apparent eagerness to engage with such texts resulted in the teacher providing regular opportunities for the students to plan and create podcasts for their peers. Students worked in teams to create podcasts on a variety of topics; such as key issues in the news, school events, student experiences, audio tours and student opinion pieces. More directed podcasts were also created discussing key curriculum themes and interviews with visitors to the school. The podcasts that emerged from the project resulted in a number of high profile people visiting the classroom to create podcasts with the students. Such visitors included:

- Children's author Sue Whiting visited the class to be interviewed by the students to create a podcast

- Professor Yoshiharu Masuda from Nagoya Gakuin University in Japan came to talk with the students about the historical representations of sound, students conducted a podcast with him to further capture his knowledge
- Children’s author Susanne Gervay visited the class to be interviewed by the students to create a podcast
- Two teachers from another school visited the class to observe the iPods in use and podcasted their reflections with the students

Prior to the recording of any podcast, the students engaged in significant research, planning and articulation of purpose. The teacher developed clear proformas to guide this process and engage the students in critical thinking about the purpose of the podcast and intended audience. What became powerful about these experiences were the opportunities they provided for students to work together in small groups as they planned, conducted and evaluated their podcasted conversation. Providing opportunity for all students to engage in such experiences worked to create a community of learners in the classroom where each student felt responsible for their learning (Kaufman, 2000). A climate of trust was created where students worked together to create a work product that was valued by the teacher and their peers.

A summary of findings from our data for these experiences from both the teacher and students perspectives is included in Table 3.

Teacher reflections
<ul style="list-style-type: none"> <li>• The previous unit left the students with a good understanding of purpose in both written and oral texts. The move into creating podcasts seemed to be the next logical step for these students.</li> <li>• The students saw the purpose of planning and became more and more proficient in planning for their oral texts as they invested time in researching the particular area, preparing for the dialogue and organising necessary equipment and resources.</li> <li>• The podcasts were completed in groups so the students learned valuable skills in the area of group work. In particular they focused on making effective use of time, clear articulation about the purpose of the podcast, and how they could work together as a team to achieve their goals.</li> <li>• The students appeared to become more critically aware; they had to design questions that would give them the answers that they wanted in light of their research and awareness of purpose.</li> <li>• The students became better ‘active listeners’ through this process. Initially they would devise a series of questions and then ask them, regardless of the</li> </ul>

answers they received. As this process evolved, they became more attentive in their dialogue as they listened to answers and then directed or re-directed subsequent questions.
<b>Student engagement with the tasks</b>
<ul style="list-style-type: none"> <li>• Engagement in tasks involving the creation of podcasts was high. It built upon the previous work the students had done with the deconstruction and reconstruction of oral texts and allowed them some flexibility as they explored their knowledge and new techniques.</li> <li>• Visitors to the classroom were amazed at the student’s abilities to manipulate the technology and also with the extensive planning the students put into their podcasts. The students appeared eager to, and enjoyed demonstrating their skills and abilities.</li> <li>• The collaborative nature of creating podcasts ensured all students were involved in some capacity and the students worked consistently well in these situations. They were able to identify roles, assume responsibility and delegate tasks. Due to the various elements within a podcast, all the students felt they had something important to offer.</li> <li>• When the students were able to create their own podcasts individually, their engagement became almost obsessive. They were no longer playing Pacman during wet weather, they were making podcasts! Some students were observed to take home planning proformas to complete in preparation for ‘personal interest’ podcasts.</li> </ul>

**Table 3: Summary of data from purposeful, sustained talk generated through creation of podcasts**

*Listening tasks requiring student action using the iPods*

Audio stories were accessed and downloaded to individual iPods for students to engage with during ‘reading’ opportunities in the classroom. These were downloaded from <http://librivox.org/childrens-literature/> a site containing audio books, free from copyright. Such opportunity to engage with ‘storytelling’ entertained and stimulated the student’s imaginations while also expanding their language abilities as they engaged with language, internalized the characteristics of the narrative text and developed interpretations of these stories (Tompkins, 2005). These were positively received by the students and acted as examples of ‘exemplary’ oral reading. They provided clear models for the students and demonstrated high levels of phrasing and fluency when reading. Opportunities to listen to these texts enabled the students to identify characteristics of engaging oral texts that supported their subsequent evaluation and critique of their own oral texts. Further, these experiences ‘taught’ the students how to tell stories as the technology modeled changes in voice for dialogue, emphasis on repetitive phrases and the power of accompanying images.

Websites housing podcasts available for download were connected with in the course of classroom study. The teacher identified these sites as supportive resources for the students as they investigated specific curriculum content. As example, when constructing information reports on animals, the students accessed podcasts from Minnesota Zoo and San Diego Zoo to support their gathering of information. During these experiences the students displayed high levels of efferent and aesthetic listening as they engaged with the texts. The teacher observed that many students were able to remember information more efficiently and better understand the content they were listening. Further, engaging with an audio text appeared to activate their note taking skills, as they were able to listen to the text a number of times as they compiled information using their own words. The students written information reports further substantiated these observations.

A summary of findings from our data for these experiences from both the teacher and students perspectives is included in Table 4.

Teacher reflections
<ul style="list-style-type: none"> <li>• The incorporation of podcasts became a regular feature within the classroom. Some students had subscribed to different ones through iTunes. However, the teacher reflected his underestimation of their power in assisting students to construct written texts, such as writing information reports. The power of these podcasts was fascinating. The teacher observed that the students would locate podcasts on different animals and then use that information to write a report, much the same way the would gather data from a website or book. The students were able to listen to the information presented and then record it on their planning proforma. As they could replay the information with ease they were able to listen to the information multiple times, which added considerable depth to their research and understandings.</li> <li>• The accessibility the iPod tool offered to the students became paramount. Some students within the class would normally be unable to read such dense information texts due to the technical nature of the language. Being able to listen and internalise information rather than trying to decode and interpret difficult written text was a major enabler to the process.</li> <li>• The podcasts accessed by the students provided tangible examples of an effective information report and oral text.</li> <li>• Having a variety of podcasts available for the students also freed up the teacher's time, in turn allowing him to focus on students with difficulties and assist those who needed help in note taking.</li> </ul>
Student engagement with the tasks
<ul style="list-style-type: none"> <li>• Initially, when the students were told they were going to write information reports interest and subsequent engagement appeared low. However, once the podcasts were introduced, the teacher observed that engagement rose</li> </ul>

significantly.

- The students were still required to consult texts and websites for information. However, allowing them to download podcasts as an information source appeared to motivate them with the task as they used these as a springboard into other sources. This resulted in information reports that were structurally sound and contained more information. The teacher noted they were considerably stronger texts than those previously completed within the classroom.
- Once they had finished their reports, some went on to create their own information report podcast on an animal. They had become more critical of what they were listening to.

**Table 4: Summary of data from listening tasks requiring student action**

*Development of a class website to store work product and create a wider sense of audience for the students*

To support the facilitation of information and sharing of student work product, a class website was developed. The teacher, when talking about initial plans with the researchers, identified that such a space would allow students to easily access podcasts they needed for classroom experiences while also providing a forum where work samples could be posted and shared among the class members. The website was seen as a way to further extend the seamless integration of the iPod and podcasting technologies within the classroom to support student learning. Further, the site provided parents with access to the student's work samples, which they could peruse at a time convenient to them. Our data indicates that this website provided avenue for the students to further explore the Talking and Listening artifacts they had created and explain these to those they directed to the site.

The site proved to connect the students, and the class as a whole, with the wider community. The teacher described this connection process as a form of ownership. The students created the site, they knew the work samples that were contained within the site and therefore owned the site. The students appeared to be increasingly motivated to share the webpage with others, which resulted in increased interest in the project from families within the school and the local community in general. The students were increasingly aware of this attention and the knowledge of having a wider audience for their work product appeared to motivate their creation of more, higher quality samples of work. This cycle of extrinsic and intrinsic motivation was an unexpected positive outcome that led the students to excel and take the initiative in

their Talking and Listening activities. The website can be accessed through the URL: <http://web.mac.com/ipodproject/>

A summary of findings from our data for these experiences from both the teacher and students perspectives is included in Table 5.

Teacher reflections
<ul style="list-style-type: none"> <li>• The creation of a website to house the developed podcasts became a critical part of the project. The virtual space fed into the students understanding of purpose for what they were creating. The students were acutely aware of the extensive audience the World Wide Web provided and knew that their work wasn't just written in a book, it was available for the world to see.</li> <li>• The website connected the students with others in a variety of settings. For example; those within the school, other schools, family and other social contacts were able to access the developed podcasts.</li> <li>• The website gave the project an audience. The students were aware that schools across a variety of regions were accessing their work and subscribing to podcasts. Further, family members were doing the same at home or at work. There were even instances where families overseas were logging on to see what was happening in their grandchild/niece/nephew/cousin's classroom.</li> <li>• Student ownership was the major outcome from the website. The students created the content of the site and they knew everything that the site contained, they therefore saw it as their own and promoted it in such a way as they strived for its regular update and high work quality.</li> </ul>
Student engagement with the tasks
<ul style="list-style-type: none"> <li>• The students were able to view their work on the website. They could identify the specific parts they had contributed to. The students wanted the site to be professional and of a high quality, therefore strived to produce polished podcasts to be published to the site.</li> <li>• Many students critiqued their work and set goals for themselves for future tasks. They communicated to the teacher and their peers their desire for the work that was uploaded to be of the highest quality. This increased expectation from them did much to increase motivation and eagerness to engage in future tasks.</li> </ul>

**Table 5: Summary of data from the development of the class website**

## **Discussion**

The Grade 4 students within this classroom demonstrated that the described Talking and Listening learning experiences, offered through the incorporation of iPods and podcasting technologies, supported their engagement with and understanding of oral language. In particular, the more hands-on approach to learning these abstract and sophisticated concepts within the English curriculum appeared supportive for these students. The types and richness of experiences offered during this project challenged

traditional notions of ratios between teacher and student talk, promoted student access to and engagement with a linguistically rich environment, and engaged the students in active language interaction with their peers, teacher and academic partners.

The iPods themselves appeared to offer a number of affordances to learning experiences within this classroom. The ability for the technological tools to display audio and video multimedia content, and for the students to use them to create multimedia material, present and share student work, and control the playback of materials appeared to support the developed classroom experiences. Further, the support the iPods availed focused inquiry on the Talking and Listening strand of the English curriculum (such as deconstruction and reconstruction of audio texts) and facilitated student interaction in a new engaging fashion. The capacity for students to have personal access to an iPod provided them with “anytime/anywhere” technology access, which in turn supported the integration of the technology within the classroom learning experiences.

Engagement with, and student construction of podcasts was found to be an effective use of the technology to support and enhance student learning in this classroom. The complex nature of the podcast creation process included many educational opportunities. From the onset of each of the tasks, students directed the process from the planning to the publication of the podcast. This process had many steps including: topic selection, planning of content, acquisition of content, organising the timeline and locations of the recordings, recording, quality assurance of the recording, inclusion of appropriate sound and visual multimedia to support the focus of the podcast, editing the work, reviewing and accepting feedback and finally making the podcast available for others to access through the website. These steps involved the students within the complex processes of Talking and Listening as oral texts were created. The students themselves alerted us to their minimal experience and awareness with this strand of literacy at the beginning of the research project. Therefore, each stage required carefully thought-out structures to be put into place to support the students. Structures and scaffolds such as modelling, time for extensive planning, rubrics to clearly explain the elements of an oral text and continual teacher support were made available to support student learning and their achievement of nominated outcomes.

These students appeared able to take greater responsibility for their own learning as they individualised their learning environment to support their use of the technology. The students and their teacher were operating in a physical classroom environment that was very traditional and old-fashioned. Their ability to reinvent this space to create areas for recording, procedures for safely managing the equipment and the development of a virtual environment to support the dissemination of work samples changed their use of this traditional environment. The attitudes and experiences regarding technology, held by these students and their teacher, did much to reinvent this space and see the potential of the technology. Regular opportunities to engage with processes of facilitation and reflection with each other and members of the project team appeared to support their articulation of learning within Talking and Listening, the questions the technologies raised for them and the setting of future learning goals. Such opportunities for collaboration supported student-learning outcomes in the technologically integrated environment, as students helped to create a synergetic atmosphere in the classroom. Students appeared to share with each other and push themselves to improve their work to create more sophisticated products to better demonstrate their mastery of concepts in the curriculum areas they engaged with.

The student centered environment that was created also led to positive learning experiences for the students. Flexibility in the classroom to enable students to find time to work together and prepare for the creation of the podcast as well as the re-thinking of the physical space appeared to support the incorporation of the technology within this classroom. They had ownership of their work and appeared proud of what they had accomplished. The students controlled the content and quality of the work and set high standards for themselves after they understood what this emerging genre of work was like and their expanded audience. The opportunities to create and to examine podcasts from other students and people from other countries gave them a greater insight into the complex nature of Talking and Listening, perhaps more so than students traditionally have in primary school classrooms.

### **Concluding Comments**

The research conducted within this classroom has revealed that the inclusion of these on-demand technologies within primary contexts has the potential to transform and enrich learning experiences for many students. However, it is critical that the technology is used in ways that are both *authentic* and *pedagogically appropriate* for the nominated curriculum focus. The technology needs to support the philosophy of the teacher and be integrated into classroom experiences in ways that contribute to their pedagogical expertise and knowledge of their students.

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