

# Voyage of the SS *Discovery* and *The Truman Show*: Fifty years of lessons in trans-disciplinary curriculum

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## Abstract

*During the early part of this century trans-disciplinary curriculum was enthusiastically embraced by many Australian education systems as a means of making learning more relevant and cohesive, and of cultivating student voice and civic engagement. However, given the apparent problematic nature of fully implementing such curriculum, including most notably Tasmania and Western Australia, John Dewey's 1930s rebuke of school systems for their segregation of knowledge and inability to connect school-based knowledge to their lived experiences would seem to ring even more true in the 2000s. This emphasises that the cyclical nature of curriculum implementation is a matter of historical fact, as are the many lessons history can teach us about what does and does not work in the classroom.*

*In this paper, the co-researchers present evidence from two trans-disciplinary projects conducted almost half a century apart to argue that certain characteristics always have, and perhaps always will, encourage success with this style of curriculum development. In the first project, a grade two teacher in a regional Tasmanian school sailed her class around the world in a virtual ship, facilitating enthusiastic creative, cultural and academic learning by her students. Illustrated by a rich array of photographs, authentic hand-written 'log' entries, and interviews with class members and the teacher 44 years after the voyage, this case study demonstrates the power of a literacy-arts rich program to engage students in multi-disciplined learning in the primary setting. As a method of contrast, a recent trans-disciplinary project in a Victorian secondary school explore students' perceptions of 'reality' through film analysis, writing and discussion within the disciplines of Science, English and Religion. Resulting interview transcripts and writing samples acknowledged the role teachers played in opening up spaces for students to ask questions, to explore each other's ideas and to engage in independent thinking. The students valued the creation of opportunities for extended dialogic interactive learning which they identified as enabling them to develop depth and complexity of understanding. In this paper, the content, teaching styles and student artefacts of the two programmes are examined, discussed and compared to identify epistemological and pedagogical traits common to these successful – but historically separated – trans-disciplinary projects.*

## Introduction

Despite cross disciplinary approaches being both demonized and defended by educators, they have ultimately received systemic endorsement in contemporary Australian curriculum frameworks. The related pedagogical shifts that accompany these curriculum designs, assumes teachers will teach beyond the disciplinary boundaries of their subjects. The International Baccalaureate Organization (2007) has likewise embraced a cross disciplinary approach in its Primary Years Program (PYP) and Middle Years Program (MYP). In the US and in Australia, cross disciplinary approaches to curriculum design have often been viewed as a solution to

student disengagement in the Middle Years (Beane, 1997, 2006; Kruse, 2001; Wallace *et al.* 2005) by making learning more relevant and cohesive, and by cultivating student voice and civic engagement (Apple & Beane, 1995; Littky, 2004). John Dewey in the 1930s noted the need for a more cohesive conceptualisation of learning and rebuked school systems for their segregation of knowledge. He attributed students' inability to connect school-based knowledge to their lived experiences to the fragmentation and segregation of knowledge that occurs in schools.

Recognition that the teaching of English must cross the subject divides is acknowledged in the recently released National English Curriculum: Framing Paper acknowledges that

[c]utting across the learning areas into which the school curriculum has traditionally been divided are important general capabilities that schools should also help students develop. The histories of disciplines and the curriculums they support, and more recent reflections on the nature of learning and work in the 21st century, all point in particular to literacy, numeracy, and ICT capabilities as having general cross-curricular significance. (National Curriculum Board, 2008, p. 8).

Drawing on Langer's (2001) research, the paper states that schools which are performing more strongly than demographically predicted on reading and writing in English engage with cross curricular pedagogy. In these schools, 'while teaching and learning focused on curriculum content is common, clear and cumulative connections are also made between knowledge and skills across multiple curriculum areas instead of treating each domain of knowledge and skill as discrete'. Peter Cole (2007), in his paper submitted to the National Curriculum Board advised that subject content should support inter-disciplinary study and promote 'big picture' general knowledge. In the UK, the national curriculum makes explicit the importance of cross curricular connectivity with Qualifications and Curriculum Authority (<<http://www.qca.org.uk/>>) stating that: 'cross-curriculum dimensions are essential tools to help young people make sense of the wider world' and should permeate the curriculum development and the life of a school.

Despite the rhetoric, the Cambridge Primary Review, recently released in the UK, notes that 'primary education is increasingly but needlessly compromised by the 'standards' agenda' (University of Cambridge, 2009). The report laments that 'the most conspicuous casualties are the arts, the humanities and those kinds of learning in all subjects which require time for talking, problem solving and the extended exploration of ideas'. (University of Cambridge, 2009). These casualties, the report argues, are a result of assessment driven curriculum. In Australian primary schools, the prioritizing of blocked time for literacy and numeracy, and the focus on reporting of student assessment outcomes has similarly impacted curriculum design and pedagogical practices (Moss & Godinho, 2007).

In secondary schools there is the added dilemma of teachers being assigned specific subjects to teach. As such, secondary teachers frequently assume the role of gatekeeper of their

subject, believing that cross disciplinary approaches to curriculum design will devalue, dilute or subsume discipline knowledge. The subsequent multiple departments in secondary school contribute to issues such as:

- the logistics of time-tabling;
- the intellectual challenge of developing conceptual understandings that cross their subject boundaries to create a connected, cohesive curriculum (Schulman & Sherin, 2004); and
- the complexity of designing assessment tasks across the subjects.

These issues that often present as blockers to crossing the disciplinary divides result in units that often tokenistic — a one off special event —such as the ubiquitous study of ‘life in the city’ by Year 9 students.

For both primary and secondary schools, professional learning to support integrative curriculum planning processes is generally a low priority given the aforementioned emphasis on the government requirement of reporting to standards and benchmarks. There is often an inherent assumption that ‘curriculum breadth is incompatible with the pursuit of standards in “the basics”’ (Cambridge University, 2009). In our two case studies we argue that standards need not be compromised by cross disciplinary approaches that are rich, broad, coherent and holistic. Our data from both a primary and secondary class indicate that English literacy practices are enriched not diluted by curriculum design that crosses the disciplinary/subject divides.

### Cross disciplinary approaches

As we have signaled, there are multiple approaches to cross disciplinary curriculum design. Interdisciplinary curriculum, transdisciplinary curriculum, multidisciplinary curriculum and integrated curriculum are terms often used interchangeably, albeit inappropriately. However, there are commonalities across these approaches that include:

- topic contexts that are appropriate and meaningful developmentally to the learner;
- content that is relevant to the students’ lives;
- a focus on at least two disciplines ;
- emphasis on process rather than product;
- constructivist pedagogy; and
- authentic assessment of learning outcomes (Godinho, 2008).

While it is beyond the scope of this paper to tease out in detail the diversity of cross curricular designs, we briefly distinguish between the two distinct approaches that can be identified with the case study schools. Transdisciplinary (IBO, 2007) and integrated curriculum approaches (see Woolley & Pigdon, 1992; Hornsby & Murdoch, 1997; Wilson & Wing Jan, 2003) resonate with the curriculum design implemented in the Tasmanian primary school. These approaches first examine a topic through a specific discipline with content from other disciplines added, thus

emphasising the fluidity of the curricular frameworks and the interrelatedness of the disciplines. By contrast, the secondary school located in the suburbs of Melbourne, engaged with an interdisciplinary curriculum approach (Gardner, 1999; Strathern 2006; Wineberg & Grossman, 2000). This approach views the disciplines as discreet lenses through which to view the world, orienting and enriching student perspectives by offering different methods and content knowledge (Gardner, 1999; Wineberg & Grossman, 2000). Veronica Boix-Mansilla and Howard Gardner, of the Harvard Graduate School of Education, believe that schools can only engage with an interdisciplinary design after students have become conversant in the disciplines. Therefore they advocate that this approach is more suited to secondary students.

Somewhat surprisingly, there is a paucity of empirical research evidence that documents how learning is enhanced through the implementation of cross curricular design and pedagogy. In this paper, we explore how two classes in different time frames, in different school settings, and whose students are at different cognitive stages of development experience curriculum breadth, balance and coherence without compromising the disciplinary knowledge invested in the subjects.

### A Case Study strategy

In choosing a case study strategy we were mindful that this is not a methodological choice but a choice of what is to be studied (Stake, 2005, p. 443) — a qualitative concentration on the case. The epistemological question underpinning this study is ‘What can be learned about cross disciplinary curriculum from the case?’ Our cases studies are what Stake terms *intrinsic* cases. Essentially we wanted an understanding of how cross curricula design can add breadth, balance and coherence to the enacted curriculum without seemingly compromising the disciplinary knowledge. Although there was no intention to generalize the findings beyond the cases themselves, we believe that the findings are likely to resonate with those who are undertaking similar approaches to curriculum design but have reservations about compromising the discipline knowledge and content. The boundedness of the case is its confinement to two schools and two year levels classes, albeit situated very differently both temporally and spatially.

Merriam (1998) assigns three characteristics to case studies: particularistic, heuristic and descriptive. Our cases studies are heuristic in that as researchers we must interpret the data from the interviews with teachers and students, the documents that were collected and the videotapes of classroom practice. The studies are descriptive as the end product relies on the analysis of words to provide a thick description (Geertz, 1973) of teacher and student perspectives, and they are particularistic in their boundedness to the Year 8 and Year 2 classes of specific teachers and students in two schools. Finally, the research can be categorized as an exploratory case study (Yin, 1995; 2005) because in the wider context the study addresses the question: What does the cross disciplinary curriculum design look like in these two settings? Merriam (1998) also

emphasises the importance of case studies helping to develop the understanding of persons in their particular contexts and from their perspectives. The interviews with teachers provided opportunities for them to grapple with both theorising and evaluating the effectiveness of their curriculum design in a more formalised inquiry approach (Thomas & James, 2006). We are of course mindful that in the Year 2 setting, we are asking the teacher and former students to draw on their long term memories. As such, the partiality of the data must be acknowledged.

### **Design of the study**

This study emerged from collegial conversations about curriculum design and our shared interest in cross disciplinary approaches. The Cambridge Primary Review (Cambridge University, 2009) report provided a catalyst for revisiting some historical data and juxtaposing this information with some very recent data collected in schools. In light of the report's claim that the most conspicuous casualty in the UK's national curriculum was the arts, we believe the Tasmanian study has particular significance, given its focus on the arts and the humanities. Informed consent was obtained from all participants and the study was approved by the University of Melbourne Human Research Ethics Committee.

### ***Selection of sites and participants***

The primary school case study was a convenience sample<sup>1</sup> in that one of the authors was a student during the year in question, had access to a wealth of primary data collected during that year, and was fortunate to be allowed interviews with the (now) octogenarian teacher and a number of students still living in the country town. This came about through a somewhat reminiscent visit to the teacher in the early 1980s, and again in 2007. A research focus eventuated when the primary data that emerged was shown to colleagues at the University of Melbourne. A snowball sampling<sup>1</sup> instigated by the teacher determined the participants for the 2009 interviews.

In 1965 the primary school is situated in a working class suburb of Devonport: 'We used to call it the Bronx, remember?' (Brett's interview). In 2009, 80% of the schools families are on special assistance funding and the school has recently been allocated \$350,000 by the Commonwealth Government to support learning programs. While in 2009 the school focus is on improving literacy and numeracy standards, in 1965 centralised curriculum and teaching supervision allowed little school-based curriculum development. Into this scenario a 29 year old Margaret Richmond, recently returned from years traveling overseas, was allowed unique freedom to implement a program of her own choosing. Driven by 'a need to be creative', and a 'desire to learn what goes on inside children's heads', Margaret converted the classroom into a ship sailing around the world. Each child was given a daily ship-board task, and the SS Discovery 'visited' countries in Asia, Europe, Africa and South America, with the children building

models, creating artworks, reading stories and role-playing historical events relevant to each port visited. A Ships' Log and a Crew's Log was created by the students, and letters were often written home with frequent length replies from parents. These were delivered by the local postman free-of-charge, typifying the community participation Margaret engendered around the project. Given this wealth of experience and the quality of the primary data, the participants in the primary school case study include all students from 1965, despite relocation, unavailability and death meaning only a relatively small sample (6) participated in the interviews.

The secondary school, is a large K-12 co-educational independent school. Students are of diverse cultural backgrounds and their families are generally in the middle to high economic status band. Site selection was based on the teachers' sustained professional learning about interdisciplinary curriculum led by a school consultant, Dr Julie Landvogt, who supported staff in developing their curriculum framework, and the backing of this approach by the school leadership team. The teacher participants were from three disciplines and were at different career points as Table 1 reveals. All had expressed interest in the unit *Reality Bites* which was based on the concepts of truth and reality and sought to integrate knowledge and thinking modes across three disciplines: English, Science and Religious Education (RE). Timetabling determined the two Year 8 classes that participated in the study.

**Table 1: Teacher Participants**

Primary School Teacher (pseudonym)	Career Point	
Secondary School Teacher (pseudonym)	Discipline	Career Point
Janice	English	Mid-career
Nigel	English	Early career (first year of teaching)
Max	Science	Mid-career
Tom	Religion	Late career
Mike	Religion	Late career

## Methods

Given the retrospective nature of the primary school data collection, the collection methods across the two schools were approached differently. Interviews were conducted individually with the Year 2 teacher and with a selection of the former students. As such, audio-taping provided sufficient detail for our purposes. To supplement the data, documents and artifacts, which had been preserved by the teacher and students, were also collected. By contrast, in the secondary school, permission was granted by teachers and students to video-

tape in situ the planning and implementing of lessons associated with the enactment of interdisciplinary curriculum. Given, the number of teachers and students involved in this study, focus group interviews were conducted and video-taped to validate the identification of participants.

### **Interviews and Focus groups**

In regard to the primary school case study, a conversational interview was conducted with the teacher of the 1965, Year 2 class in Devonport, Tasmania. Four students from this class and their teacher were also invited to participate in a focus group interview, and a semi-structured interview was conducted with one former student unable to attend the focus group. This contrasted with the secondary school case study where a representative group of students from the two Year 8, 2007 classes (total of 12 students), were invited to give their thoughts on the experience of participating in the interdisciplinary curriculum (two focus groups). Similarly, teachers who had taught lessons associated with the interdisciplinary curriculum (total of 5 teachers) were invited to participate in a focus group.

### **Video data collection: secondary school**

In total, twelve hours of video material were collected over a three month period — with data collection occurring on four occasions. Two classes of students were video-taped as they participated in Science, Religion and English lessons associated with the interdisciplinary curriculum. Lessons were recorded using two digital video cameras with one focused on the class teacher while the second camera was directed at students. High quality sound equipment including a wireless lapel microphone (for teachers) and two microphones traditionally utilized for recording theatre productions (for students) were used to capture class discourse. Following suggestions by DuFon (2002) and others (for example, Iino, 1998) equipment was selected that achieved maximal recording quality while not being overly obtrusive.

### **Artifacts**

In addition to approximately six hours of transcribed interviews conducted in 2007 and 2009, the primary school case study data included 150 pages of hand written documents and 113 photographs, all created in 1965 during the voyage of the SS Discovery. Of the hand written documents 25 pages (approximately) were letters, postcards and facsimile telegrams written to the children by parents, teachers in other schools, and the school administration personnel. The letters home and associated replies maintained in every case the role appropriate to the characters: the home parent missing their traveling child, the shipping agent representative (the Headmaster) accepting an invitation aboard (Figure 1), the child excited to tell their parents about traveling on a double-decker bus in London or fishing in Hong Kong Harbour (Figure 2).

The photographs depicted the students in their every-day life conducting ship-board tasks such as daily reading and recording of the barometer, ringing the ships' bell every half hour, and writing up the Ships' Log (Figure 3). Also depicted were the mass of activities undertaken by the students to enrich their daily learning: constructing large cardboard animals and then going on Safari in the bush beside the classroom (Figure 4), walking to the local beach to re-enact the battle of Tenochtitlan between the Aztecs and Spaniards (Figure 5), and fishing from a porthole (constructed using cellophane paper) in Japan (Figure 6).

### **Data analysis**

Interview data were analysed using the system of codes developed by the researchers to identify key themes (Miles & Huberman, 1994). The process of sorting and analysing data enabled the researcher to carry out data reduction to make it more manageable and to identify essential features, themes, concepts, assertions and their relationships. Consistent with Patton's recommendations (2002, pp. 485-486):

- key phrases and statements were located.
- All data were given equal weight initially and then arranged in meaningful clusters or emergent themes;
- the meanings were inspected for what they revealed about the essential recurring features of the cross disciplinary curriculum; and
- verification was sought of emergent themes from data collected.

Analysis of the data addressed the key question: Do transdisciplinary approaches to curriculum allow students to experience curriculum breadth, balance and coherence without compromising the disciplinary knowledge invested in the subjects?

## **The Case Studies**

### **1. Voyage of the SS Discovery**

In the early 1960's a quite remarkable (partly trained) young teacher returned from a number of years traveling and working overseas. Margaret Richmond was encouraged to take up an infant teaching position at East Devonport Primary. As self confessed 'square peg', she took advantage of a lack of an infant mistress supervising the established curriculum to undertake quite remarkable programs with her students. One year her class was a spaceship traveling to the moon, another year it was a time machine, revisiting famous periods in history. In 1965 the class was a ship sailing the world.

Not may people remember their grade two class, particularly after nearly half a century. But the group of students we interviewed over the past six months to discuss SS Discovery

reminisced with remarkable detail the events of that year and its impact on their own development.

Those interviews, and analysis of the rich and voluminous primary data that still exists from that year, have resonance with the focus of this conference. In 1965 a teacher was actively bringing the global into the local of a regional school classroom, implementing a creative and innovative trans-disciplinary curriculum that highlighted how progressive teaching practices, practices that intertwine sound literacy development seamlessly with children simply having fun, is not a new development, rather a product of ageless, creative teaching practice. The images of this trip complement *The Truman Show's* more contemporary video example of trans-disciplinary curriculum. A review of the voyage will provide some analysis of the data gained through the interviews, and will begin the process of identifying common trends in two such different initiatives that are divided both spatially and temporally.

### ***The voyage - 1965***

SS Discovery left Devonport on a beautiful summers day, in February 1965. The mothers held ends of streamers dangled from the ships portholes in a practice customary before airplane travel (Figure 1). There were many tears in eyes as their young ones sailed away for a

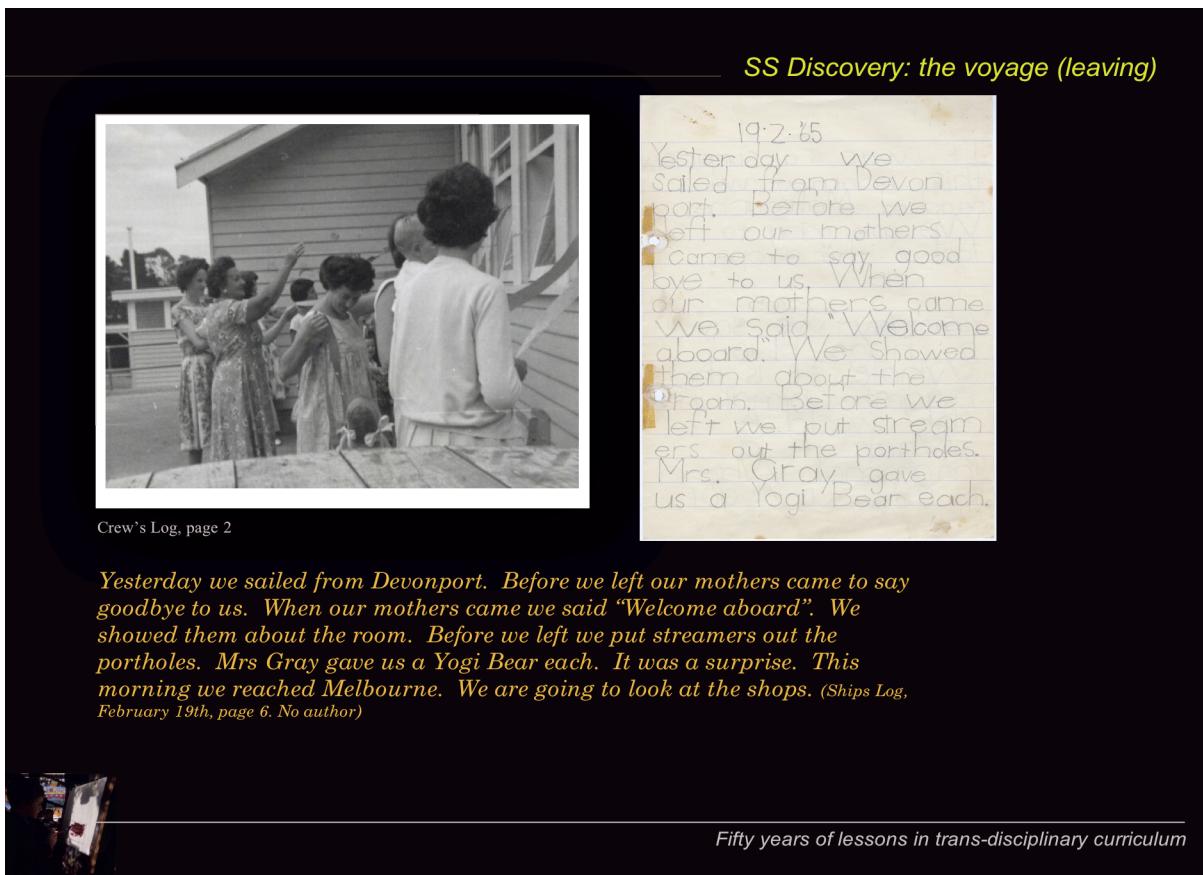


Figure 1: Leaving

year of adventure. SS Discovery did not have a motley crew or a mutinous rabble. To the contrary, their lives in that classroom were ordered in a most shipshape manner. They had a captain to take command and mates to relieve the watches. They had navigators, librarians, orderlies, a paymaster, helmsmen, weathermen and ships writers. There was a ship's doctor who immunised everyone before leaving, even a quartermaster who rang the bell on the half-hour, in proper nautical sequence, every day of the year to come (Figure 2). Duties were carefully explained in the crew's log, with tasks matching their temperament. This was not a spur of the moment adventure, rather something that (in hindsight) suggested extraordinary planning, imagination, energy, commitment and application.

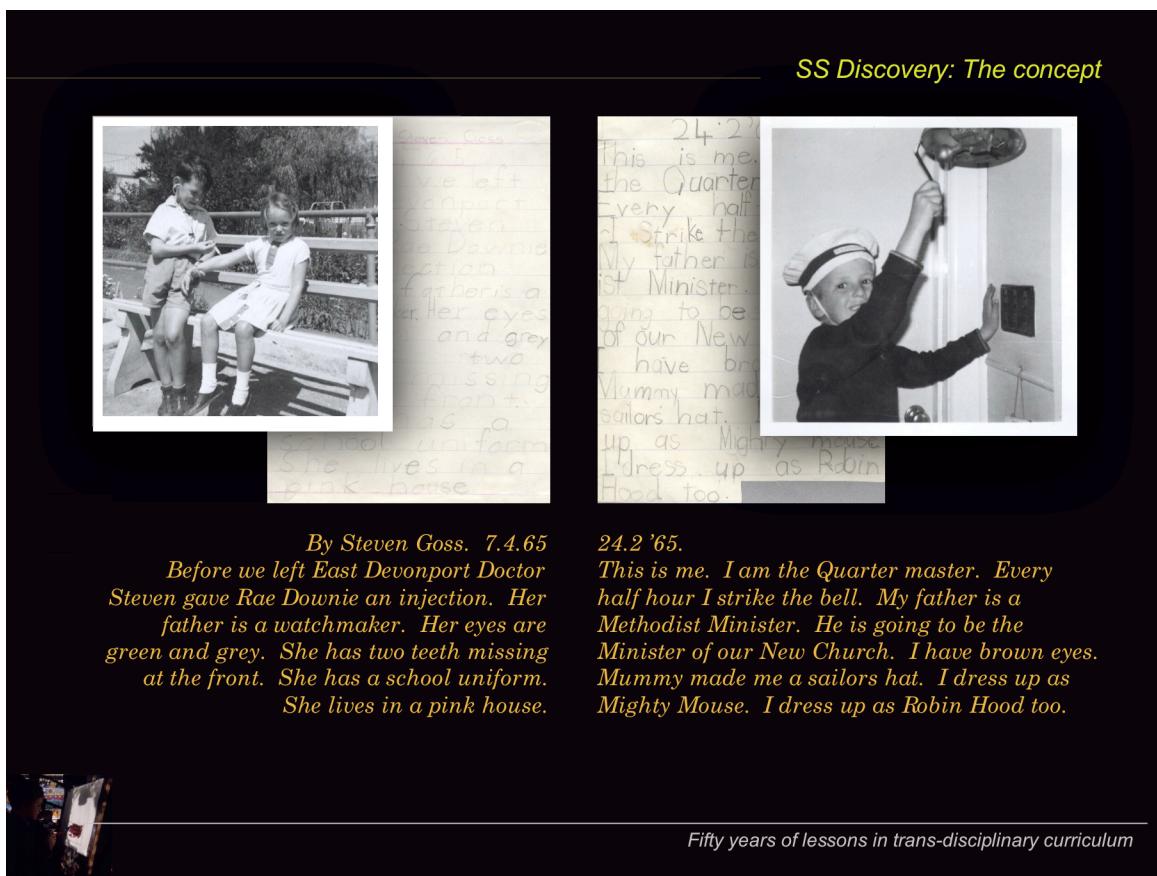


Figure 2: Roles and tasks

Evidence of this remarkable trip remains in the form of a ships log, a 100 page document filled with a rich variety of genres of writing common to that age – postcards, letters, log entries, children's observations of the world that passed them by, the adventures they had, all exhibiting quite remarkable attention to the craftsmanship of writing. It constitutes a kaleidoscope of written communication from a time perhaps now passing us by – the hand written letter, replies from

loving parents, the attention to descriptive and accurate detail, all done by grade 2 students visiting places that existed only in their rich imaginations.

The children visited wonderful places. In Africa they shot (with a camera, of course) zebra and giraffe (Figure 3). In London they traveled on open topped double-decker buses. In Switzerland they ate chocolate and skied down majestic slopes, in Holland they traveled by barge on marvelous canals. Each place they visited spawned a flurry of creative activity. Costumes were made by mothers and brought from home and proudly worn. Boxes were converted with imagination into zebras, giraffes, airplanes, Swiss Chalets. The ships log began to bulge with children's accounts of these places, gained from details gleaned from their teacher's own travels, communicated with clarity to the children sitting on the mat, and also through the literature specific to that place that was constantly read to them.

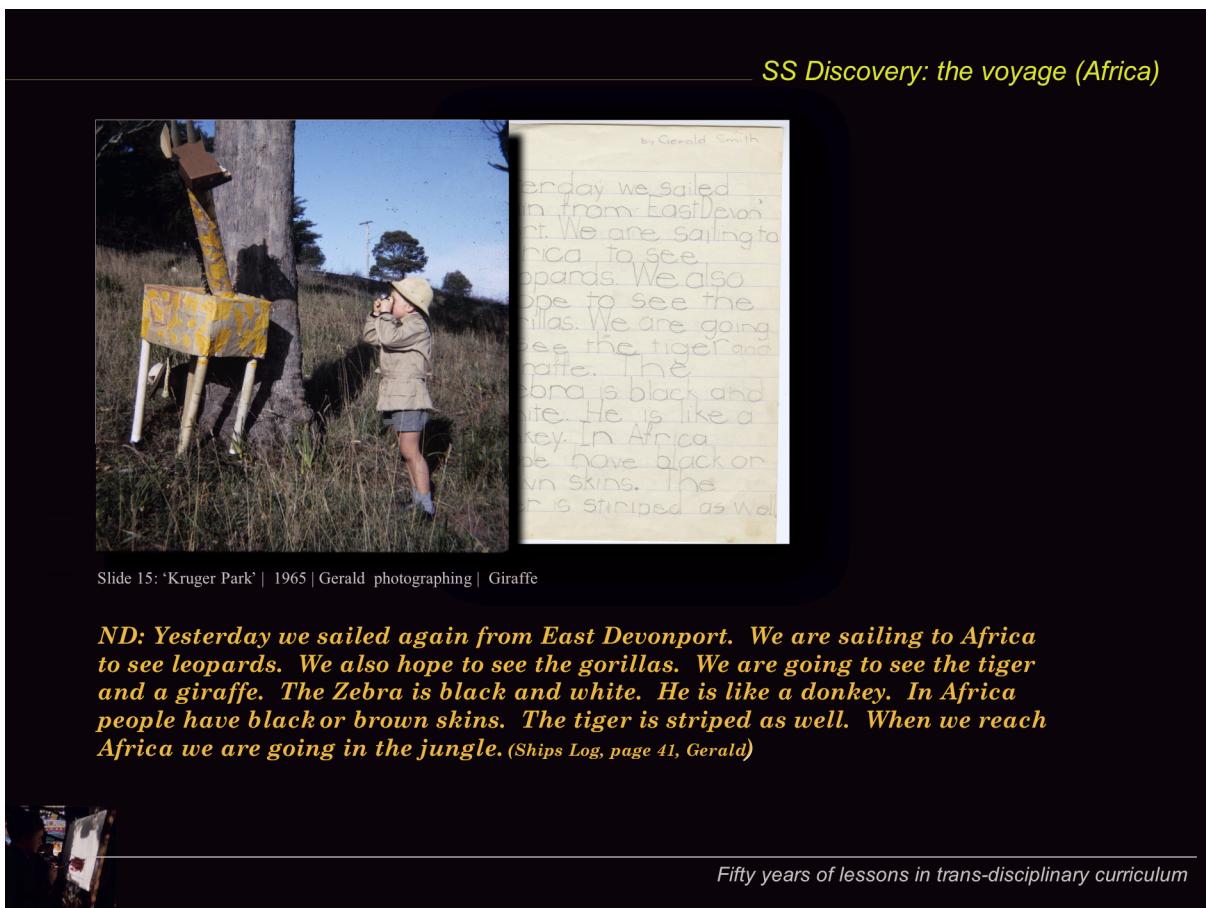


Figure 3: 'Shooting' a giraffe, Africa

Looking back (and having now visited these places for real), many of these students during our interviews marveled at the detail contained in the pages of the log, the quality of not only the expressive writing but also the penmanship, the pride in presentation. And also the way

in which as a group they launched themselves into creating fiction so real it felt as if they were really there, places only seen by one set of eyes in that classroom, but quite real to them all.

The places that were visited inspired artworks. There was a great deal of construction, creating, expression. Huge models and paintings and dramatic sets were built then used in further studies, being carted them up and down hillsides, to the beach, to school assemblies. Each port of call created opportunities for imaginative role playing; tea parties in Japan, safaris in Africa, mountain climbing in Switzerland, were all events looked forward to for days. They presented to these children in a low socio-economic, regional 1960s Australian school, new and exciting concepts explored through reading, writing, dressing up and acting, and making artworks. The students fished for octopi from SS Discovery's portholes in Hong Kong harbour, they fought the unfortunate natives in the USA, they re-enacted the battle of Tentochillian between the Spanish and Aztecs. In the process they learned about cultures and cultural practices specific to the places they travelled. These were the occasions where normal people revert to quite inexplicable practices that have at their heart a sense of play and celebration and history, such as crossing the equator, which brought forth King (and Queen) Neptune to officiate over a ceremony as old as ships themselves (Figure 4).

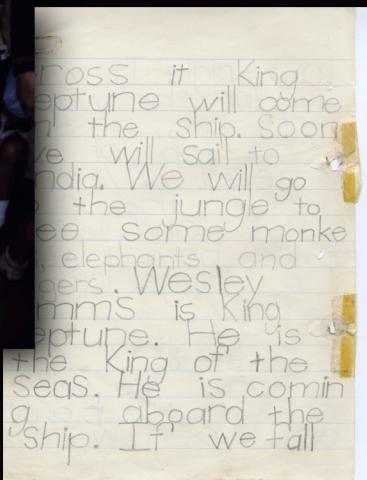
*SS Discovery: the voyage (crossing the line)*



Slide 25: Crossing the Line | 16 | 1965 | King Neptune (+) Queen



Slide 26: Gerald Smith | 15 | 1965 | Crossing the Line | SS Discovery



Cross it King Neptune will come on the ship. Soon we will sail to India. We will go top the jungle to see some monkeys, elephants and tigers. Wesley Imms is King Neptune. He is the King of the seas. He is coming aboard the ship. If we fall overboard the fish are not allowed to hurt us. (Ships Log, April 30<sup>th</sup>, page 8-10. No author)



Fifty years of lessons in trans-disciplinary curriculum

Figure 4: Crossing the line

It was not all excitement, in travel or classroom learning. The students also learned about the humdrum of life on board a boat. Between adventures in new ports and countries, shipboard life allowed time for another style of learning. Each day times tables were learned, writing and reading skills were taught, science and physical education and music classes were held as normal (Figure 5). But each offered opportunities to experiment, to study geography using stamps, to navigate the ship using mathematics, to understand the weather using science, to attack the library to read up on ports to come or ones just left, to construct and build and create and explore what they had learned through symbolism, artifacts, and role playing. They did maths while spending their meagre sailors earnings at the ship's shop, they did science while learning about the circumference of the earth, they did music while hearing the strange sounds of Africa and Asia. Most often of all, they wrote up their accounts of the adventures they were having in the ships log, and in rich descriptive letters home to parents – delivered free of charge by a delighted local postman.



Figure 5: Shipboard life

### **Themes arising from the 2009 interviews**

Over the past six months, as researchers we have been fortunate to revisit this wonderful year with some of these shipmates, and the now octogenarian teacher. Through taped group and individual interviews we were able to discuss the importance of that year – what made it special, what impact it had on them. A number of consistent themes emerged through the interviews.

*Areas of strength (and weakness).* The voyage allowed the teacher to build upon her areas of personal interest. Having just returned from a lengthy overseas trip (quite unusual in those post-war days for single young women), Margaret drew upon personal experience to make vivid scenarios for her students. Her aptitude for the arts made possible the creative activities used to explore educational outcomes.

*Environment.* Learning was not restricted to the classroom. Considerable use was made of the wider environment, including the local beach and a hillside outside the classroom. These became *theatres* for activities, and provided the students a sense excitement, of place or ownership of the environment, and a degree of relevance to those parts of the voyage not naturally sited in a classroom (Figure 6).

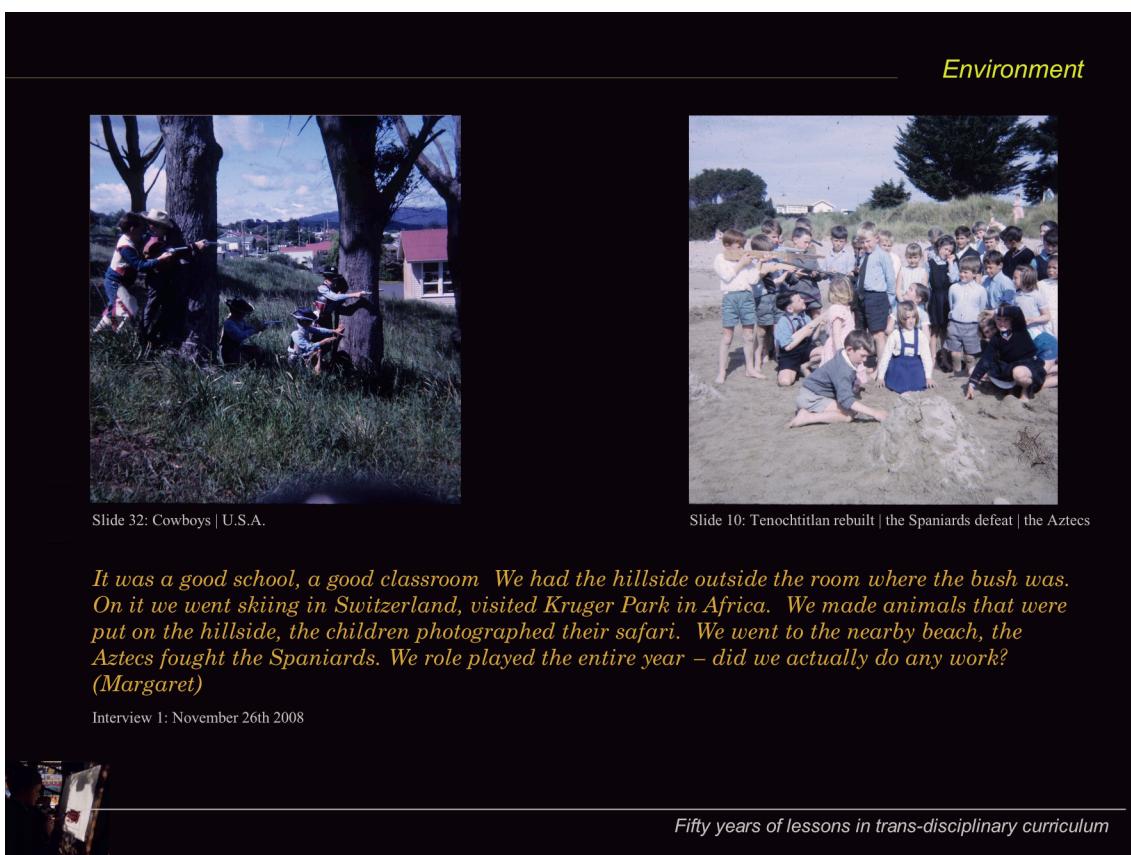


Figure 6: Use of the local environment

*Teaching philosophy.* In interviews, the teacher's role, personality and imagination was consistently remarked upon. Many mentioned that in their many years of learning, the style of learning undertaken in this class was unique, and this was due to Margaret's personal teaching philosophy. For Margaret, this was embodied under a few short headings: Fun – students had to enjoy their classroom; knowledge of the students – each child had a personal strength, an area of particular interest, and the teacher's role was to find and use this quality; creativity – building and making and play-acting opened avenues to children's learning not normally accessible. The students identified their own set of qualities common to Margaret's teaching. Of these, the following were consistent across the interviews: consistency, imagination, a sense of play and enjoyment in the classroom, relevance to their teacher's own life (she could speak with knowledge), the ability by the teacher to "get inside students' heads", the ability to create scenarios that the students found enjoyable and challenging (Figure 7).



**Teaching philosophy**

*I believe children learn through their senses, using their imagination. We need to get adults to understand what goes on in children's heads. We don't really know, do we? I always wondered what went on in their heads...*

*What is most important is the relationship you have with each child. I was always devising ways to interact with each child. If they had a toy, we'd chat about it, then we'd make up a song about it. (Margaret)*

Interview 1: November 26th 2008

Slide 48: 1965 / Stamp Collecting / Gerald Smith

**Fifty years of lessons in trans-disciplinary curriculum**

Figure 7: Teaching philosophy

*Community of learning.* Students felt they had ownership of their voyage, and by default, their year of learning. Even at that young age they recognised the participation of 'outsiders' in their voyage – the Headmaster (Shipping Magnate), the local postman, parents and family who

wrote letters and came to functions, other teachers who visited and sent communications. Another aspect of this theme was the sense of purpose created by the voyage; the ongoing theme allowed their young imaginations to feed off each other - not unlike children's play - and over a full year, they felt they could play a role in their own instruction and learning.

*Motivation, behaviour.* This is where the students wanted to be. Participants remember the low level of absences, low levels of misbehaviour, and high levels of 'anticipation' (Figure 8).

*Standards.* The high quality of learning was consistently recognised in interviews. Standards were maintained rigorously throughout the voyage (evidenced by the quality of the Log Book and Ships Journal, and the remarkable art works and models). This was not done didactically, rather in a manner that drew students into the task, and with a sense of purpose.

*Curriculum.* Disciplined, focused learning remained consistent throughout the year. Times tables, writing and spelling tasks were done traditionally, but interspersed with 'linked' activities relating to the voyage. Students recollected that maths, literacy, science, the arts, sport and health, and geography were all covered, but often within the theme of the trip, intertwined into the daily shipboard life of SS Discovery.



**Motivation**

*We loved being there. We used to climb through that porthole [the ship's main entrance] and into another world. (Colleen)*

*I remember being naughty in the other classes. But not in Miss Richmond's. (Another voice: We were too busy in Miss Richmond's). It was too interesting. (Rae)*

*You have to get children interested and enthused about [reading and writing]. I got vicarious pleasure out of getting children to express themselves. (Margaret)*

Interview 3 & 1: April 2nd 2009, November 26th 2008

Slide 47: Tower Bridge



*Fifty years of lessons in trans-disciplinary curriculum*

Figure 8: Motivation

*Engagement.* Interviewees were adamant that this was the year of their schooling in which they were most engaged. While most of their schooling ‘blurred’ into a non-recognisable whole, SS Discovery remained a vivid and exciting memory. This was due to their immersion in the theme; the voyage had relevance (and links) to daily class work, and to their outside lives through letters home, costume construction, events and celebratory parties. This combined to built a memorable sense of commitment to the voyage.

*Serendipity.* Pedagogically, this phase of education in this school consisted of happy accidents. Margaret consistently remarked on how incidents in her own schooling, her travelling, opportune mentorship, lack of formal supervision, and a number of other factors combined to make SS Discovery (and the two or three adjacent years of ‘unusual teaching) serendipitous. The interviewees remarked that serendipity aside, the year was a consequence of having a strong willed and energetic teacher, a teacher with ‘life experience’, a teacher with creative flair and imagination, and a teacher who ‘made do’, creating artifacts and learning experiences from what was available at the time.

## **2. Reality Bites: *The Truman Show* project**

Veronica Boix-Mansilla, researcher with the Harvard Graduate School of Education, argues that ‘leverage is gained from combining the disciplinary lens’ (2004, p. 4) but insists that when implementing a cross disciplinary unit the disciplinary standards must be upheld. Margaret Richmond, likewise, honoured the disciplinary standards and knowledge. The interdisciplinary approach, however, used by the secondary school is a synergy of different disciplinary perspectives, which Howard Gardner (1999) cautions cannot be undertaken until students have mastery of at least two disciplines. He argues students need to be able to identify the methodological and epistemological contributions the disciplines make, which generally does not occur in the primary years. The *Reality Bites* unit fits the context of interdisciplinary learning by exploring the concept of truth through the disciplinary lenses of English, Religion (RE) and Science. In this case study the analysis of the data focuses on the students’ oral language, which is at ‘the centre of English curriculum and pedagogy (STELLA, 2002, p. 1), rather than their written work.

The capacity of the students to engage at this level was demonstrated when students responded to an English teacher’s provocation: ‘Bringing together this idea of imagination and fact which seem as though they might be at opposite ends of the spectrum, the lesson this morning seems to have made a link between those two things. Can you articulate what the link is?’ As one student explained:

There was one idea in that science lesson that blew me away. I thought it was amazing. I was completely blown away by the idea: And that was the idea that we have become so conditioned to only believing in what we

already know and what we already see and what we are used to seeing and knowing that our brain has almost become insensitive to things we haven't seen before.

The context for this was explained by another student telling the teacher that in the Science class:

There was this story about these native Americans and there was a ship that came in on the horizon and the tribal leader was wondering what was making the ridges on the water, but he couldn't see the ship, because he didn't kind of believe it was there. He didn't know what a ship was. You don't have to see reality for it to be real.

Yet another student noted:

... The way we view our perspective can change our whole reality. It kind of made me look at it in a different way. Like I never thought an observer could have much of an impact on anything.

These comments reveal the students' capacity to acquire new knowledge from their Science class and through applying their language skills broaden their configuration of the abstract ideas of reality and truth.

Encouragement to make links between Science and English lessons enabled the students to revisit their study of the *Truman Show*, a film that chronicles the life of a man who discovers he is living in a constructed reality soap opera. As the following dialogue excerpt reveals the students 'moving to and fro between the general and the specific, the abstract and the concrete and the argument and the evidence' (National Curriculum Board, 2008, p, 10) . These students are extending their language resources to support to increasingly complex learning as Element 1 of the English Framing Paper advocates, and in doing so are expanding their knowledge and beliefs about the way the world functions.

Seeing the boats – they said that we see or process a million images but only use about three thousand parts. So, the reason they didn't see the boats is because it didn't follow a pattern of what they were used to.

They were saying we pick up patterns like in our mind, whatever. That makes us like see things, so then I don't really understand. They lived on an island which had trees on it. Trees are made out of wood and the boat was made out of wood...

They were just saying that the reason the reason they didn't see it was because there weren't any patterns on the boat they had seen before.

Like they had never seen a boat before and like what I don't understand is how they didn't see it at first, because it was just a massive thing of wood, and they are surrounded by wood.

I was just thinking back to what Harry said, we discard the things that don't fit the pattern that we're used to. So if you relate that to the Truman Show, I think with Kristov and his executive team they started to get worried when Truman didn't fit the patterns of reality they had set for him...

In the final utterance, the student demonstrates how the Science lesson and engagement in this discussion has transformed his ideas about reality and to subsequently make connections with the unfolding of events in the Truman Show. As in most discussions, exploration of ideas is not a neat linear process; confusion and uncertainty are evidenced as students grapple with the notion that one does not notice what has not been part of one's reality. Yet the students' voices reveal an emergent awareness of the language of the disciplines and how this assists in the informing and refining of abstract ideas. As one student suggested:

Science mostly doesn't interest me personally but when they bring in stuff like that — like it forces you to think. It really challenges you and it kind of pushes you to your limit. And so you think well hang on there could be something more that I'm not thinking about. And in a way it sort of forces you to learn even if you don't want to.

Despite an emergent awareness of Science providing a different lens through which the notion of reality and truth can be explored, the religion classes did not offer a disciplinary perspective. Discussions in these classes did, however, provide further opportunities to explore reality through questions such as: 'Is there more to life than meets the eye?' What is the difference between meaning and fact?

Meaning brings it down to a whole new level about how humans see themselves so much above animals ... sure we are probably are a little more intelligent than they are but we are still an animal. I much prefer meaning because meaning lets your thoughts come through. It opens another door for thought whereas a fact is just bare.

Facts are sort of simple and you get facts through an education and that's how you structure an argument, and that's how you do certain things. But with a meaning it can forever be explored. And there can be more meanings than ... that's the whole idea of philosophy.

A fact is put in front of you; whereas a meaning - it's put out there to be discussed.

The students asserted that religion was circumnavigated rather than confronted and they expressed a desire for it to have a deeper involvement in the unit, as evidenced in their dialogue:

We should bring religion more into it because I reckon it would be fun to you know.

Yeah, because religion becomes a taboo to discuss ... you know like if you go against my religion I'll stab you sort of thing.

I reckon we have become so, like we don't want to offend anyone in society... We don't want to offend anyone so we kind of tip toe around the edges and hope that we get through. And I think we really didn't nail it like we did with Science or English.

I wanted to actually talk about certain religions, like meditation and Buddhism.

Conversely, the RE teachers were more positive about the making of cross curricular connections. Of particular significance for Mike was the

cumulative effect taking place so that during my lessons the students were intentionally drawing on what they'd been working on in English and what they'd been working on in Science and the lesson became much richer.

Mike believes students pigeon-hole RE and that planning around big conceptual ideas meant students gave it a fairer hearing because these ideas resonated with issues confronting them in their own lives. Both Mike and Tom noted changes in students' discursive practices. They found students to be more 'switched on' and the quality of class conversations to be much richer. Mike emphasised the deeper level thinking that students engaged with in his RE class. And Tom referred to a deeper respect for religious inquiry that came from the support of the other disciplines.

Students and teachers alike affirm that breadth and coherence of curriculum are experienced. Although English is heavily weighted, the focus group students unanimously agreed that

What was really good about it was that we just didn't do it in English, we did it in Science and RE and it meant that because often with something you might learn in English you just learn it and that's the English side but you don't get a chance to do it in a different way.

The *Reality Bites* unit did ‘integrate knowledge and modes of thinking in two or more disciplines to produce a cognitive advancement’ (Boix-Mansilla, 2004, p. 4), consistent with Boix-Mansilla’s defining of interdisciplinary curriculum. However, in relation to fulfilling the stringent four core premises that research (Boix-Mansilla, Gardner & Miller, 1998) identifies with interdisciplinary understanding, the teachers are striving to achieve this end. These four criteria ideally require students to have the capacity to: use new knowledge, as opposed to simply acquiring it; have understandings that are deeply informed by disciplinary expertise; integrate rather than juxtapose disciplinary perspectives; and achieve a cognitive advancement: a new insight, solution, account or explanation.

## Discussion

The case studies present two seemingly very different approaches to bridging the disciplinary divides: a thematic or correlated curriculum approach and an interdisciplinary approach. Yet their commonality is the implicit purpose of making students powerfully literate. The Standards for Teachers of English Language and Literacy (STELLA) offer insights into how these teachers engaged with cross disciplinary curriculum designs, which created rich linguistic communities that valued oral communication and encouraged students to engage in the language of the classroom. Their effectiveness in bridging the disciplinary divide can be attributed to the framing statement for the STELLA standards: the teachers’ professional knowledge, their professional practice; and their professional engagement.

When pressed to theorise her approach to teaching, Margaret Richmond recalled: ‘What is most important is the relationship you have with each child. I was always devising ways to interact with each child’. Knowing her students was pivotal to engaging them in learning. The Ship’s log documents the roles she created for each individual child, such as Captain, quarter master, storekeeper, weather assistant, paymaster and doctor. Margaret Richmond’s philosophy resonates with Bruner’s assertion that ‘any subject can be taught effectively in some intellectually honest form to any child at any stage of development (1966, p. 33). This emerged from her experience of being marginalized at school: ‘Scholastically I was a flop. As a student I wanted to do Science but my Headmaster said it was beyond me... I had little confidence as a student, but the occasional teacher ‘rescued’ me.’ As Rae, a former student testified the classroom was inclusive and as she astutely observed, ‘There were no discipline problems in Margaret Richmond’s classes because everyone was so engaged and involved... I was always getting into trouble in other classes but not in Margaret’s class.’ Brett too stated that, ‘We fed off each other and supported each other.’

The secondary school students acknowledged the role their teachers played in opening up spaces to ask questions, to explore each other's ideas and to engage in some independent thinking. They valued the creation of opportunities for extended dialogic interactive learning which they identified as enabling them to develop depth and complexity of understanding. As one teacher noted 'students who would not normally speak up in class were saying quite profound things... the whole collective of who generally speaks in class opened up and across the board everyone spoke much more than they would in our other English units'. Yet creating and maintaining a challenging learning environment entails dedicated time to planning and documentation. The scanned artefacts of the Year 2 class remain as testimony to the time Margaret Richmond spent in promoting deep cognitive learning in her students and to the rigour of her literacy practices

In current educational systems, if approaches that cross the disciplinary divide are to be successful, there needs to be: continuous professional learning; working and learning in collegial teams; building a capacity for change and risk; developing and drawing on collective intelligence; and fostering trust in processes. Andy Hargreaves refers to this as the 'new professionalism' (2003, p. 15). While Margaret Richmond believes the effectiveness of her curriculum can be attributed 'to a lack of supervision' and being left to her own devices, the increased emphasis today on teacher accountability and the expectation that teachers will be active members of their professional community render this unlikely. Moreover, the intellectual challenge of developing a conceptual framework that crosses disciplinary divides to create a connected, cohesive curriculum (Schulman & Sherin, 2004) requires extensive dialogue to defuse, tensions and share knowledge and experiences and to grapple with the unanswerable questions.

## Conclusion

The two case studies have shown that cross disciplinary approaches to curriculum allow students to experience curriculum breadth and coherence without compromising the disciplinary knowledge invested in the subjects. However, we concur with Howard Gardner's (1998) premise that disciplinary understandings come before interdisciplinary connections. In both case studies the cross disciplinary approach generally did not devalue, dilute or subsume the discipline knowledge, but preserved the integrity of the disciplines. However, it may be argued that in some instances such as the RE classes the focus on disciplinary perspective was underplayed.

We likewise endorse Marilyn Strathern's (2006, p. 196) claim that we can cross the disciplines but not transcend them. To attempt to do so would be to diminish the perspectives the disciplinary lenses offer us to look at the world and to interpret it (Masilla-Boix, et al. 1996), as the students undertaking the *Reality Bites* unit discovered. Importantly, as Nikitina (2002) suggests, it is cross curricular approaches, such as those implemented in the two case studies which

enhance disciplinary learning. Yet curriculum that crosses the disciplinary divides in the ways in which these cases studies have highlighted, is not for the faint hearted. It is both time and labor intensive and requires the support and endorsement from school administration, the detail of which has only been alluded to in this paper (see Godinho & Shrimpton, 2008). One can but imagine the hours that Margaret spent creating the classroom environment and learning experiences that so inspired her students ("We would come in at the start of the day and the whole room would be different. 'Where are we going to now?' It must have taken her hours to move the room, set things up..." Brett's interview) What these case studies both make explicit is that the English is the catalyst for the extended exploration and development of ideas. But they also affirm that powerful literacy skills are nurtured in relevant and meaningful curriculum contexts that are rich, broad, coherent and holistic. Cross curricular connections as Peter Cole (2007) claims are essential tools to help young people make sense of the wider world.

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*The authors would like to express their appreciation to Ms Margaret Richmond and the students from her 1965 Grade 2 class at East Devonport Primary School who participated in the interviews, for their generous donation of time and reminisces. They would also like to thank the staff and students at Wesley College, Prahran Campus. An early version of this paper was presented at the 2009 Australian Literacy Educators Association national conference, Hobart Tasmania.*

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