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**LEARNING ‘THROUGH’ OR LEARNING ‘ABOUT’? THE RIDICULOUS AND EXTRAVAGANT MEDIUM OF OPERA: GARDNER’S MULTIPLE INTELLIGENCES IN PRE-SERVICE TEACHER EDUCATION**

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**ABSTRACT**

In recent years, pre-service teacher education has attempted to incorporate into programs an understanding of Gardner’s theory of multiple intelligences as it applies to schools. In this paper the tension between ‘learning about’ multiple intelligences and ‘learning through’ multiple intelligences supports Gardner’s (1993) distinction between ‘understanding’ and ‘coverage’. This paper examines the use of the performing arts in the professional studies component of our teacher education program. During 2002 at The University of Melbourne, a group of education students were offered the opportunity to develop an opera in order to learn about assessment and curriculum. Thirty-seven of the students volunteered to be involved and over a period of six months met this challenge. Our action research study asked two critical questions. To what extent is the understanding of multiple intelligences by pre-service teachers improved by ‘learning through’? Can pre-service teachers address fundamental issues in curriculum and assessment through the development of a performance? This experience would be of value to other teacher educators.

**Introduction**

My participation in the opera was an amazing experience...what started off as a daunting trip into the unknown, turned out to be an extremely educational and rewarding journey...the learning that went on for each individual while putting this project together was far greater than what

we learnt in class which many conservative teachers would find uncanny because it was all done out of the classroom and without textbooks. The most astonishing thing for me, and the very point when I learnt the most, was watching the audiences faces during the performance. If I compare the looks on their faces and the attention they gave us while we performed with the look that my students give me when I say, ‘OK guys, take out your books and open to page eleven’, there is no comparison. I would expect that by watching our performance the audience learnt almost (if not as much) as we did by participating in it. I could physically see the learning that they were experiencing through their eyes – it was a bit of a shock, but also really fulfilling that our planning over the past semester had payed off. It was my biggest lesson of the semester. I had been told by lecturers and read over and over about multiple intelligences...and ways of learning, but never had it been more evident to me than seeing it happen while the performance was on. It was a truly memorable experience and one that has motivated me...

(Andy, University of Melbourne Opera Group (UMOG), Personal Reflection, October 2002)

This paper examines the place of Gardner’s (1983) theory of Multiple Intelligences within the tertiary context. We have found this theory a useful frame for thinking about inclusion of all students and increasing the range of learning experiences open to pre-service education

students. In this paper, we do not engage in discussion of psychological critiques of the theory (Roper and Davis, 2000), nor do we address the learning styles debate (Stage, Muller, Kinzie and Simmons, 1998). Drawing on a Project Zero (2000) study of adult learning and Multiple Intelligences theory, we sought to inform our practice through an action research project centred around the following two questions:

1. To what extent is the understanding of multiple intelligences by pre-service teachers improved by 'learning through'? (Gardner, 1999);
2. Can pre-service teachers address fundamental issues in curriculum and assessment through the development of a performance?

In semester one of 2002 we engaged in a number of conversations about our teaching practice and had become conscious of the need to enact some of the ideas we had been talking about in a theoretical way with our students. Within the core subject, Learning and Teaching, we had both been increasingly encouraging our students to use the visual and performing arts to demonstrate their learning about pedagogy. This culminated in one afternoon when we grouped our students together to offer them an option of working on an extended piece. We had predetermined the tasks – one group would paint a response to the issue of 'classroom relationships and management'; another would prepare a dance, another a mime, another a series of role-played vignettes and another an opera. We really thought that the opera was a bit ridiculous and even extravagant, but intuitively we felt that the larger-than-life aspect could provide a rich opportunity for learning. Our understanding of this art form was limited. The elements we assumed would be involved were singing, movement, a story and some dramatic tensions. Our expectations weren't very high, but we were curious to see what would happen.

At the end of a ninety-minute period we regrouped for performances. Most of the performances and presentations reflected our regular classroom practice. The dance was exciting and the role-plays were poignant. But what was so surprising was the students' response to the challenge of operatic form. The students had arranged the performance into several segments where a number of classroom stories were told with great passion and gusto using popular song, enthusiasm and humour.

This was our beginning.

### Methodology

Jack Whitehead's (1993, 1999, 2000) influential approach to research has inspired and informed both our practice in general and this study in particular. His thirty-year history of inquiry, focused on the key question, 'How do I improve my practice' (1988) connected with our values. Connelly and Clandinin's (1988, 1995, 1996, 1998, 1999 and 2000) approach to research with teachers through narrative has also influenced our approach. We are fascinated by 'teachers as knowers: knowers of themselves, of their situations, of children, of subject matter, of teaching, of learning' (Connelly and Clandinin, 1999, p.1). Like Whitehead (2000), we intend to share one of our 'stories to live by' (p.3) which has shaped our identities as teacher educators and educational researchers (p. 3). Our inquiry reflects the tradition of action research and can be:

*distinguished from other approaches in the tradition through its inclusion of 'I' as a living contradiction within the presentation of a claim to educational knowledge. (Whitehead, 1988, p. 42)*

We planned to promote reflective practice, encourage our students to 'learn through' (Gardner, 1999) practice rather than 'learn about' (Gardner, 1999) in an abstract and theoretical way. We sought to have the students explore significant ideas in the

three core elements of the subject: curriculum, assessment and teachers' work. The students brought their individual perspectives together with the newness and rawness to these issues. While we, the lecturers, were confident about the teaching processes, we felt raw and new with both the Multiple Intelligences frame and the operatic form. We sought to "end the dislocation of research from practice" (Education Action Research Online Journal, p. 1) and demonstrate authentic learning and assessment processes. We turned to the field of action research to support this work.

Kosnik and Beck (2000), in a discussion about the many forms of action research, point to the following as common key elements:

- ∞ teachers engage in critical reflection on specific aspects of their curriculum and pedagogy;
- ∞ they get to know their students well, interact with them, observe them and gather 'data';
- ∞ they engage critically with the research literature relevant to their research;
- ∞ they collaborate with their peers;
- ∞ they modify curriculum and pedagogy in ways that empower their students and meet a wide range of their needs, including academic ones;
- ∞ they assess the programme modifications and begin another cycle of modification and assessment;
- ∞ they present and discuss their research publicly (p. 117).

In our study, we have attempted to address each of these and have also used Arthur, Gordon and Butterfield's (2003) four stages in action research (p. 212) as a useful frame.

Firstly, the 'pondering' stage occurred. For us the pondering was our interest in improving our practice and in incorporating the arts into our program – even though neither of us had any expertise or experience in the arts. We pondered about the authenticity of talking about

theories such as Gardner's (1983) Multiple Intelligences without enacting them. We pondered about 'learning through' rather than 'learning about' (Gardner, 1999) and wondered how we could improve the educational experiences for our students.

The second stage of Arthur, Gordon and Butterfield's (2003) model of action research is what they call 'planning'. Part of our planning was posing the challenge to our students and being most surprised at their interest in and commitment to this unchartered territory. We considered the content and assessment arrangements and worked our way through the logistics of the opera as a substantial project within the second semester core subject called 'Curriculum and Assessment'. We invited a colleague with some experience in the performing arts to provide us with some support. Lynda supported the development of the opera in a range of quite specific ways. Firstly, she was so enamoured of the whole idea she made sure that she was available to spend significant amounts of time with the students helping them to develop the narrative elements and supporting them with the technical aspects of singing and moving. She took on the responsibility for the editorial role, pieced together the elements and found linking and cohesive threads. Her expertise in the performing arts supported our teaching and ensured that the product was achieved.

The third stage of the model (Arthur, Gordon and Butterfield, 2003) is 'Putting in a strategy'. This involved us explaining our ideas and offering the project to our group of seventy students - thirty-seven of whom chose to join us. Subsequently, the opera had to be negotiated and developed in terms of story, action and song and the students needed to form into a group that could work together. There were workshops, rehearsals and performances. This part of the action research process took four months.

The final stage, 'Pulling back to refine your initiative' (Arthur, Gordon and Butterfield, 2003) is the one we worked on from November 2002 until June 2003. This involved our analysis of the students' reflections on their participation and learning together with our reflections. For us, the need to be reflexive (Robertson, 2000; Alvesson and Skoldberg, 2000) was central. How our practice would be informed for the next phase was of great importance.

### Literature Review

Gardner's Multiple Intelligences Theory has been of significant interest in Australian primary and secondary schools (McGrath and Noble, 1995). Teacher educators have also engaged with this theory. Multiple Intelligences theory is widely considered within pre-service education courses. There is little evidence, however, of the application of this theory to tertiary level teaching.

Gardner's theory of Multiple Intelligences provides a critique of the claim that there is only one form of intelligence. For Gardner (1983), an intelligence is a biopsychological predisposition that can be encouraged by the natural environment. He posited a view that eight intelligences exist rather than just one. The eight intelligences he has so far proposed are: rhythmical-musical, bodily-kinaesthetic, logical-mathematical, visual-spatial, verbal-

linguistic, interpersonal, intrapersonal and naturalistic (1999). However, it is outside the scope and intent of this paper to provide a critique of this theory.

There has been little research on the application of Multiple Intelligences theory in tertiary institutions (Kezar 2001, Soares 1998). One study, The 'Adult Multiple Intelligences' study (2000), generated five propositions about the application of Multiple Intelligences theory to adult learning situations:

1. Using MI theory leads teachers to offer a greater variety of learning activities
2. *The most engaging MI based lessons use content and approaches that are meaningful to students*
3. MI based approaches advance learning goals
4. Implementing MI informed practices involve teachers taking risks
5. MI informed learning activities increase student initiative and control over the content and direction of the activities (Project Zero, 2000).

It was 'A systematic, intentional inquiry by teachers about their own school and classroom work' (Project Zero: Teacher Research and Adult Multiple Intelligences 2000). That study found that Multiple Intelligences theory supported the identification, understanding and valuing of adult students' learning.

In her argument for the application of Multiple Intelligences theory in tertiary settings, Kezar (2001) emphasizes the possibility it allows for access and teaching a diverse range of learners. Soares (1998) developed a pre-service education program based on Multiple Intelligences theory and found that there were more opportunities for the students to develop strengths and achieve mastery, more time for the students to connect the content areas and more provision for improved assessment. However, few precedents to establish a

tertiary course around Multiple Intelligences theory existed.

In their application of Multiple Intelligences within a tertiary setting, Stage et al (1998) raised three questions: Firstly, is it possible to modify curricula and course requirements to capitalise on the full range of intelligences? Secondly, do such modifications make a difference in students' learning? And finally, do college students represent the range of intelligences? (Stage et al, 1998). The second question is of most significance for us in this action research study. We wanted to know what contribution this 'learning through' (Gardner, 1999) would make to our students' learning.

## Findings

### The opera

*Opera! You have to be kidding!*

### Opera! Well maybe

*Opera! Why not*

*(Joan, UMOG, Personal Reflection)*

The opera research project involved a close study of both the students and the staff. We were originally interested to gauge the ways learning through this project supported or extended the students' knowledges of curriculum and assessment. We wanted to identify the ways in which this process engaged the student learning about Multiple Intelligences theory. Our findings, so far, have surprised us and informed the direction of the next phase of our Action Research project. However, the student learning went beyond the expectations and boundaries we set as the students revealed ownership and articulation of their learning processes.

### 'Learning Through': Curriculum and Assessment

The students were able to articulate in their reflections and understandings which

encompassed the range of concepts which would normally be addressed within 'Curriculum and Assessment' subject. Gardner's (1999) 'learning through' frame was enacted through this process. In the student written reflections about the opera project, it has been interesting for us to observe the strong emphasis on curriculum and assessment. The students came away with a very clear understanding that the development of the opera was a curriculum-making process. They made clear links about tensions for them with both curriculum and assessment issues. They had worked through the collaboration required to plan, make decisions and implement curriculum change, assessment requirements in the context of their performance. They identified the need to hear all voices, the need for leadership and, most significantly, they identified their professional responsibility to ensure that their voices were heard in curriculum decision-making. Bernice synthesizes these learnings:

As teachers we will need to play an active role in understanding, contributing to and delivering the curriculum. We will need to work with people with different ideas and personalities to our own to come up with the best curriculum we can... one must be reflective and think about the impact of the curriculum on a range of individuals ... Working in a collaborative way in the project has allowed me to be exposed to the different experiences and perspectives on curriculum from different people in the group. It is vital when drawing up curriculum to be conscious of this diversity. One must try to address the interests and needs of as many students as possible.

*(Bernice, UMOG, Personal Reflection)*

For Andy leadership in curriculum decision-making has become vital:

*Obvious constraints placed on curriculum decision making were that there were too many people trying to make the groups run*

- which could easily be translated into a school situation. The curriculum of any given school could be debated by the entire staff or even the entire state but for any progress to be made there needs to be leaders which may come in the form of directors of departments, co-ordinators, the CSF or even the government

(Andy, UMOG, Personal Reflection)

For Eva, the opera was a metaphor for curriculum development

*During the final teaching round I listened to students and observed students. The 'voices in the line' scene in the opera reflected the concept of teacher input versus student input. I realised the importance of listening to both and compromising in order to make progressive changes. Just like an opera, it is a process; a seed which needs to be fermented in order to grow and mutate. It involves negotiation, persistence and initiative. We as teachers are responsible for our own role and hence we are performers who can make a difference in curriculum and implement assessment strategies that include the valued contribution of the learner*

(Eva, UMOG, Personal Reflection)

Ian, a long time instrumental music teacher, confidently asserted that he was an 'academic rationalist' early in the year. In his reflection about the opera, he identified a shift in his curriculum orientation to one of student choice and student voice

"instead of teaching to get results... to teaching as a facilitator of learning."

(Ian, UMOG, Personal Reflection)

It would be rash of us to argue that these students would not have expressed these ideas if they were not involved in the opera. However, the language they use in articulating their positions and beliefs is striking. Throughout the reflections we

heard 'I realised...', 'I understood...', 'I now know...', 'I made these discoveries...', It is here that the impact of ownership of these curriculum positions from the lived experience of the opera is felt.

### **'Learning Through' : Multiple Intelligences Theory**

*There are two things I loathe; singing and group work. As I am meticulous, linear, manage my own time and prefer to produce my own work, I was dubious as to how I was going to compromise my comfort zone in a large group...On reflection, this was an invitation to break from traditional set tasks, allowing the students the opportunity to demonstrate how a pedagogical alternative informs, teaches, motivates, assesses and encourages the collaborative, cognitive and meta-cognitive development. I was overcome with curiosity and an appetite for a pioneering challenge.*

(Eva, UMOG, Personal Reflection)

In the opera project, our focus was clearly on curriculum and assessment issues – not Gardner's Multiple Intelligences theory. We were not intending for our students to learn 'about' Multiple Intelligences theory. In the first semester of 2002, within the 'Learning and Teaching' subject, the students had been introduced to Gardner's theory. When we initially spoke with the students about the possibility of the opera, we mentioned this theory as part of our rationale. Within the written reflections of the project, the students only occasionally mentioned the theory.

*The greatest thing about teaching through opera is the great diversity of expression that this medium has to offer. Whether through word, shape, design, movement, dance, music, song. Poem or speech, all*

*participants found an effective means of expressing their learning in anyway that best suited them. This was an opportunity not only to display personal talents and perform at one's best but also to learn new methods of expression and challenge the self in new ways. In my observations I noted many occasions where people encountered and conquered some demon or other.*

(Graham, UMOG, Personal Reflection)

Graham's words certainly reflect some blurring of learning styles and Multiple Intelligences theory. For Eva, there was an awakening of understanding of Multiple Intelligences

*Glancing around the room each week, it became evident that each person had something valuable to contribute. No one had been in an opera previously, some had never attended a performance, yet there were dancers, singers, poets, musicians and actors amongst us.*

(Eva, UMOG, Personal Reflection)

And for Andy there was a strong realisation of the power of learning in many ways

*If there is one thing that I can clearly take away with me it is the knowledge that there are many ways of learning. We learn through reading, acting, seeing, working in groups, hearing, feeling... and participating in the opera was no exception. Actually it was proof!*

(Andy, UMOG, Personal Reflection)

The opera project attracted students with a performance background and we wondered if they would learn anything new. Bill wove together his new learnings about Multiple Intelligences and curriculum and assessment:

*However the question occurred to me "What did I actually learn?" I was already an experienced performer, so where had my personal learning taken place? Upon reflection I realised that working with concepts in a kinaesthetic way and attempting to produce dramatic depictions of the inherent conflicts between curriculum and assessment had meant that I had internalised those concepts in a very deep and real way. Writing a song for the production forced me to consider that idea I wanted to put across, how it was relevant for those I was teaching, how it was to develop and then fit in with the narrative we were presenting, as well as conforming to the rhythmic, metric and melodic structure that I had chosen. In such a context the learning of key concepts becomes automatic and essential if one is to be able to complete the task, so automatic in fact that I almost did not notice.*

(Bill, UMOG, Personal Reflection)

Bill expressed the complexity of his learning. He learned about pedagogy, curriculum and assessment as well as the place of Multiple Intelligences theory within teacher planning.

### **'Learning Through': Unintentional Learnings**

This project was designed with particular learnings in mind. Like all educational situations, there were unintended outcomes. Most powerful of these was the possibility of student ownership. The students referred to the project as 'Our Opera'. They were initially frustrated by the openness and borderless nature of the project. Repeatedly, different individuals involved in the project acknowledged their satisfaction in making it their own. Many of the students made the link between this experience and the implications it has for their own teaching. Frank clearly articulated this link:

*As a metaphor for curriculum planning I had made the following important discoveries regarding my position on curriculum making*

∞ *Everybody involved needs to have an input, if the end product is to be worthwhile*

∞ *Everybody's views are equally valid; there are solutions for contrasting views and opinions*

∞ *It is essential to begin by searching yourself, and knowing what you believe in and stand for*

∞ *Finding a time to all meet up and work together might be difficult but it is essential*

(Frank, UMOG, Personal Reflection)

The students also confronted the fear involved in their learning. As involvement in this project was voluntary, we were surprised at the number of students who joined even though they were threatened by the process. For example Joan commented:

*The idea of participating in an alternative type of assessment was at first quite daunting...I'm not a performer. I don't even sing in the shower*

(Joan, UMOG, Personal Reflection)

Andy indicated his shift from fear to reward in his comment:

*My participation in the opera was an amazing experience. From what started off as a daunting trip into the unknown, turned out to be an extremely educational and rewarding journey*

(Andy, UMOG, Personal Reflection)

And finally many students reflected on the need to consider their future students in the curriculum process

*I have come away from this experience with a wealth of insight on student needs and anxieties. Now my next challenge will be to use my skills and understandings to help guide and expand student learning experiences through the educational minefield.*

(Joan, UMOG, Personal Reflection)

## **Conclusion**

As a reflexive process we have been centrally concerned to act on learning. As in the Teacher Research Project on Multiple Intelligences classrooms, we were able to see our students in different ways to that available in the traditional classroom. This brought greater depth to the quality of the feedback we were able to give our students.

Our action research study asked two critical questions: 'To what extent is the understanding of Multiple Intelligences by pre-service teachers improved by 'learning through'? and 'Can pre-service teachers address fundamental issues in curriculum and assessment through the development of a performance?' Our analysis of the data at this point indicates that there are definite possibilities for this as a learning frame for pre-service teachers. It is anticipated that during the next phase of our action research project our response to these questions will be further developed. As we reflected on the opera – before, during and afterwards – in this action research process, we consistently attempted to apply our learning towards improving our practice. In this way, we were reflexive rather than just reflective. We stepped back, thought about what we had wanted to do, what learning seemed to have occurred, and what could be improved – in the messy way that characterizes teachers' planning (Nichol, 1996). We were self-congratulatory and highly critical of ourselves at times – sometimes all at once.

Now, our discussions begin with ‘In the next opera...|’”

## References

- Alvesson, M. and Skoldberg, K. (eds) (2000) *Reflexive Methodology: New vistas for Qualitative Research*, London, Sage.
- Arthur, M. Gordon, C. and Butterfield, N. (2003) *Classroom Management: Creating Positive Learning Environments*, Melbourne, Thomson.
- Bruner, J. (1996) *The Culture of Education*, Boston, Harvard University Press.
- Clandinin, D. J. and Connelly, F. M. (1995) *Teachers' Professional Knowledge Landscapes*, New York, Teachers College Press.
- Clandinin, D. J. and Connelly, F. M. (1996) ‘Teachers’ professional knowledge landscapes: Teacher stories - stories of teachers - school stories - stories of schools’ *Educational Researcher*, Vol. 25, No. 3, pp. 24-30.
- Clandinin, D. J. and Connelly, F. M. (1998) ‘Personal Experience Methods’ in Denzin, N. K. and Guba, Y. S. (eds) *Collecting and Interpreting Qualitative Materials*, Thousand Oaks, California, Sage.
- Clandinin, D. J. and Connelly, F. M. (2000) *Narrative Enquiry: Experience and Story in Qualitative Research*, San Francisco, Jossey-Bass.
- Connelly, F. M. and Clandinin, D. J. (1988) *Teachers as Curriculum Planners: Narratives of Experience*, New York, Teachers College Press.
- Education Action Research Journal* (2003) <http://www.triangle.co.uk/ear/> (accessed 19/5/03).
- Education Action Research Journal*, (2001) Vol. 9, No. 2. <http://www.triangle.co.uk/ear/> (accessed 19/5/03).
- Gardner, H. (1983) *Frames of Mind*, New York, Basic Books.
- Gardner, H. (1993) *Multiple Intelligences: The Theory in Practice*, New York, Basic Books.
- Gardner, H. (1995) ‘Reflections on Multiple Intelligences: Myths and Messages’ *Phi Delta Kappan* Vol. 77, No. 3, pp. 200-209.
- Gardner, H. (1999) ‘Howard Gardner Answers’ video recording, Project Zero, Boston, Harvard University
- Grundy, S. (1995) ‘Action Research as Professional Development’ Occasional Paper No. 1, Murdoch University, W.A. Innovative Links between Universities and Schools for Teacher Professional Development: a National Professional Development Project.
- Kezar, A. (2001) ‘Theory of Multiple Intelligences: Implications for Higher Education’ *Innovative Higher Education* Vol. 26. No. 2, pp.141-154.
- Kosnik, C. and Beck, C. (2000) ‘The Action Research Process as a Means of Helping Student Teachers Understand and Fulfil the Complex Role of the Teacher’ *Educational Action Research*, Vol. 8, No. 1, pp. 115-136.
- McGrath, H. and Noble, T. (1995) *Seven Ways at Once*, Melbourne, Longman.
- Nicol, V. (ed) (1996) *May I See Your Program Please?* N.S.W., Primary English Teaching Association.
- Project Zero (2003) ‘Adult Multiple Intelligences MI-Inspired Instruction’ <http://pzweb.harvard.edu.au/ami/miimstruction.htm> (accessed on 20/05/03).
- Project Zero (2003) ‘Teacher Research and Adult Multiple Intelligences’ <http://pzweb.harvard.edu/ami/teacherresearch.htm> (accessed on 20/05/03).
- Project Zero (2003) ‘Adult Multiple Intelligences- MI Reflections’ <http://pzweb.harvard.edu/ami/mireflection.htm> (accessed on 20/05/03).
- Robertson, J. (2000) ‘The Three Rs of Action Research Methodology: Reciprocity, Reflexivity and Reflection on Reality’ *Educational Action Research* Vol.8, No. 2, pp. 307-326.
- Roper, B and Davis, D. (2000) ‘Howard Gardner: Knowledge, Learning and Development in Drama and Arts Education’

*Research in Drama Education* Vol. 5, No. 2, pp. 217-233.

Soares, L. (1998) 'Structure, Content, and Process in Teacher Training: The Relevance of Copernicus, Gardner, and Dewey' *The Clearing House* Washington Vol. 71, No. 4, pp. 217-220.

Stage, F., Muller, P., Kinzie, J. and Simmons, A. (1998) 'Creating Learning Centred Classrooms: What Does Learning Theory Have to Say?' Washington DC, ASHE-ERIC Higher Education Report Series, Vol. 26, No. 4.

Whitehead, J. (1988) 'Creating a Living Educational Theory from Questions of the Kind: How do I improve my practice?' *Cambridge Journal of Education*, Vol. 19, No.1, pp. 41-52.

Whitehead, J. (2000) 'How do I Improve my Practice? Creating a Discipline of Education Through Educational Enquiry' Baton Rouge, Louisiana, A paper presented to the 2000 International Conference on Teacher Research.

Whitehead, J. (2003) 'Action Research' <http://www.bath.ac.uk/~edsajw/> (Accessed 28/5/03).