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## **What is the Role of the Arts in a Primary School?: An Investigation of Perceptions of Pre-Service Teachers in Australia**

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*Abstract: The arts are an important compulsory subject area in Australian schooling. In 2014, the Australian National Curriculum for the arts is scheduled for implementation. While the arts may be a compulsory subject area and expected to be taught in classrooms by primary school teachers, current perceptions held by teachers may be different to the view held in the Australian National Curriculum. This paper explores the views of pre-service teachers, who will be future primary school teachers. Through the use of a survey, data was collected from two Australian universities to develop an understanding of what pre-service teachers think about the role of the arts in a primary school. Data was analysed using descriptive statistics. Findings provide perceptions about the role of artists in schools, visiting arts galleries, current arts engagement in their own lives and confidence levels to teach the arts. Suggestions are provided for teacher education providers, curriculum developers and policy advisors about ways to support and enhance positive perceptions of arts in primary schools throughout Australia.*

### **Introduction**

Arts education is part of the new National Curriculum for Australia. In 2014, it is scheduled for implementation. For successful implementation however, the curriculum in primary school requires teachers to be capable and confident to teach all of the arts areas, who have the necessary knowledge and skills. Beliefs about the teaching of arts education inform a teacher's capability to teach the arts (dance, drama, media, music and visual arts). If beliefs are positive, the teacher is more likely to engage with arts experiences in their classroom (Garvis & Pendergast, 2010). If beliefs are negative, they will either limit the exposure of arts education in their classroom or ignore it all together (Garvis and Pendergast, 2010). It is for this reason the exploration of teacher beliefs about arts education is important.

Many beliefs about arts education are formed during teacher education and from personal and professional prior experience. This paper explores the perceptions of pre-service teachers currently studying to become primary school teachers. Data was collected from two Australian universities to develop an understanding of teacher beliefs across two states via a survey. While the findings from the study cannot be generalised, they provide insights into what some pre-service teachers think about the role of the teacher with arts education. Findings provide information about engagement with artists, visits to arts galleries and museums and engagement with arts experiences in their own lives. An exploration of perceptions is important to support and enhance the teaching of arts education within the

Australian landscape. Through an understanding of how beliefs are formed, it is possible to build confidence in future teachers regarding arts education.

## **Literature**

### **Teacher Self-efficacy and Perceptions**

Teacher self-efficacy beliefs about their capacity to deliver arts education shapes their perceived competence in teaching the arts, which in turn impacts on the degree and nature of inclusion of arts in the curriculum. If teachers have strong self-efficacy for arts education they are more likely to include integrated arts in the classroom. Alternatively, if teachers have weak teacher self-efficacy for arts education they are less likely to teach the arts across all five strands. However, little is known about teacher self-efficacy beliefs towards arts education in Australian primary schools. Given that arts education is a core element in the National Australian Curriculum that is due for implementation in 2014, investigation of the beliefs that shape teacher practice is necessary.

The construct of teacher self-efficacy is grounded within self-efficacy theory, emphasising that people can exercise influence over what they do (Bandura, 2006). Self-efficacy is defined as “beliefs in one’s capabilities to organise and execute the courses of action required to produce given attainments” (Bandura, 1997, p.3). Self-efficacy theory is one of only a few conceptualisations of human control that describe a distinction between competence and contingency, used as a future oriented judgment. People use efficacy beliefs to guide their lives by being self-organising, proactive, self-regulating and self-reflecting (Bandura, 2006). This means that people may regulate their own behaviour through motivation, thought processes, affective states and actions or changing environmental conditions based around their efficacy beliefs. Perceived self-efficacy provides guidelines for enabling people to exercise some influence over how they live their lives. This study will focus on the perceptions that shape teacher self-efficacy.

Teacher self-efficacy research in individual subject domains influences teacher behaviour in the classroom. Research suggests that in science teacher self-efficacy, beginning teachers who felt lacking in content knowledge tended to avoid teaching topics they did not know well for fear they would be asked questions by their students they could not answer (Rice & Roychoudhury, 2003; Tosun, 2000). Furthermore, pre-service teachers lacking in confidence in the teaching of science deemphasized or avoided teaching science, or taught using transmissive as opposed to inquiry methods (Plourde, 2002). These findings highlight the low level of pedagogical variety used by the teacher if low self-efficacy for that teaching area exists.

Few studies in Australia have investigated the impact of teacher self-efficacy on the overall effectiveness of the teacher with arts education. For generalist primary teachers, Garvis and Pendergast (2010) found that in a study of 201 beginning teachers did not have the perceived capability to teach all of the arts. Garvis (2010) has also found that generalist middle years teachers who do not feel confident or capable of teaching arts education had low levels of teacher self-efficacy for the arts. Rather, generalist middle years teachers would generally prefer a specialist teacher to undertake the role. Teachers in this study also had difficulty defining the nature and purpose of arts education. As yet, limited research has been conducted exploring teacher self-efficacy for arts education. This study helps to fill that void by exploring the perceptions that inform teacher self-efficacy.

### **The Importance of Museums and Art Galleries**

Teachers need to be innovators and to use “more creative and imaginative approaches to make learning engaging, interesting and relevant” (Bamford, 2004, p. 4). This is where teacher education also needs to address the place and value of Art museums and galleries. Pontin & Wollard (2002) reports reasons for not attending an Art museum or gallery such as curriculum priorities and school improvement targets is formidable and Art museums and galleries should look to ways of demonstrating how school visits do impact on the whole school, rather than be narrowly focused on the visit itself. However the option to access these resources of often not addressed in teacher education and thus provides support for those pre-service teachers who do don't see the cultural or educational benefit(s) of these institutions.

The relationship between teacher education courses and the educational programs and exhibitions operating in Art museum and galleries is vital in students' development towards being informed, critically engaged and effective communicators in schools (Hooper-Greenhill 1999; Hein 1998; Ambrose 1987; Baguley, 2005). Encouraging pre-service teachers to utilise Art museums and galleries, which are also striving to make visitors feel engaged, interested and to find relevance in the exhibits, can only benefit both institutions. Arts education instruction is also for socializing students to Art museums and galleries. Research suggestions that early childhood and family experiences in this setting, in combination with visual arts lessons, promote the future attendance of students at museums (Stone 1996). These comments reinforce Eisner's belief in the model concept of teaching which he explains as “learning from other people by observation”(1972, p. 182).

### **Artists in Schools Visits and Programs**

Partnerships between schools and the professional arts sector have been found to play an important role in deepening students' engagement with learning (Lemon & Garvis, in press). In 2003, the Australia Council for the Arts initiated the *Education and the Arts Strategy 2004-2007* to set out to facilitate collaborations by “bringing together the arts sector, the education sector, government and community to find creative ways to enrich the education of children and young people” (Australia Council for the Arts, 2003, p. 2). These partnerships offer much potential for innovation between schools, teachers, artists and the students. All involved can “take advantage of the wealth of arts knowledge and information in the community without stepping outside the school grounds” (Dinham, 2011, p.61).

Innovative artists in school visits and programs can break the cycle of little or no art by providing opportunities for students to engage in learning opportunities that promote creativity, critical thinking and learner autonomy. This integration acknowledges that an education rich in the creative arts maximises opportunities for learners to engage with innovative thinkers and learners, emphasizing not only creativity and innovation, but also the values of broad cultural understandings and social harmony that the arts can engender (Australian Ministerial Council on Education Employment, Training and Youth Affairs (MCEEYTA), 2007).

### **Focus of Study**

In 2013, a survey on teacher self-efficacy and perceptions towards the arts was administered to pre-service teachers studying primary education degrees. Pre-service teachers were about to commence their first arts education course. This study focuses on the

perceptions only of pre-service teachers in two Australian universities (located in Victoria and Queensland) to assess the current perceptions of the arts in primary school. The main research question is: “What is the teacher’s role of the Arts in primary school?” Pre-service teachers were chosen for this study because they will be future teachers. Pre-service teacher education is an important part of teacher development that either confirms or challenges beliefs about education. According to Bandura (2006), once beliefs are formed in the beginning phase of teaching they are resistant to change.

## Method

A survey was administered to pre-service teachers at a Victorian university (group 1) and a Queensland university (group 2). Ethical approval was gained for this project with all considerations followed. Pre-service teachers volunteered to take part in the survey.

From group 1, 85 pre-service teachers responded giving a response rate of 49.7%. The majority of pre-service teachers (81), studied a Bachelor of Education (primary). Other degrees studied were a Graduate Diploma of Education (primary). From group 2, 121 pre-service teachers responded (response rate 53.3%). Seventy-one pre-service teachers studied a Bachelor of Education (primary) and the remaining 73 pre-service teachers studied a Graduate Diploma of Education (primary). The Bachelor of Education pre-service teachers in both Victoria and Queensland had just entered their second year of study. The survey was administered during the beginning of the semester at the start of the academic year. The two groups were kept separate to see if similar views and beliefs were shared across two different contexts within Australia, to illuminate similar viewpoints of pre-service teachers.

The participants age ranged from under 20 years to over 45 years. The majority of students in both groups were aged between 20 and 24 years (84% group 1 and 72% group 2). Findings from the survey are presented and discussed below to provide insight into current perceptions from pre-service teachers about the roles of the arts in primary schools.

## Findings

Initial questions in the survey focused on documenting pre-service teacher prior experiences with the arts to see if prior experiences inform perceptions. In group 1, 11.8% of pre-service teachers had never studied an arts course at university prior to their current second year course. In group 2, 89% of pre-service teachers had never studied an arts course at university. Experiences with art forms outside of university are shared below in Table 1.

Arts strand	Group 1	Group 2
Music	58.8	27.2
Dance	33.3	16.5
Drama	50.6	17.3
Media	38.8	14.8
Visual Arts	47.1	15.7

**Table 1: Experience with arts outside of university**

Table 1 highlights the differences with arts experiences between the two cohorts. The pre-service teachers in group 1 appear to have more experiences with the arts outside of university compared to group two. The most popular experience for both groups was music, followed by drama. Findings in the Table also highlight that a large number of pre-service teachers do not engage with arts experiences outside of university. As prior experience

influences current beliefs towards the arts, it is important to consider the lack of current arts experiences for future teaching of arts education.

Perceptions about arts education were assessed using a five point likert scale (1= strongly disagree, 5= strongly agree). Pre-service teachers were asked to comment on their current participation in the arts as an adult, the role of arts in children’s learning and the role of arts in schools. The responses to questions are presented below in Table 2. From both groups, the pre-service teachers did not appear to participate in the arts. Pre-service teachers in both groups also shared similar views of neutral regarding the role of the arts in primary school and the timetabling of the arts in primary school. This could be because that while the pre-service teachers have experience from the schooling system as students, they have had limited professional experience to understand the arts from a teacher perspective.

	Group 1		Group 2	
	Mean	Ranking	Mean	Ranking
<b>I regularly participate in the arts as an adult</b>	2.86	Disagree	2.54	Disagree
<b>The arts should be at the centre of the primary curriculum</b>	3.30	Neutral	3.17	Neutral
<b>In my experience, most primary schools don’t devote enough time to the arts</b>	3.78	Neutral	3.47	Neutral
<b>In my experience, school timetables tend to be too rigid to develop children’s creativity</b>	3.66	Neutral	3.38	Neutral
<b>Children need to visit museums and galleries as part of their arts education</b>	3.83	Neutral	2.43	Disagree
<b>Children need to work with artists in primary schools</b>	3.29	Neutral	2.95	Disagree
<b>I feel confident to include the arts in my own teaching</b>	3.58	Neutral	4.05	Agree
<b>I know to bring together different art forms in my teaching</b>	3.54	Neutral	4.21	Agree

**Table 2: Perceptions of arts education**

Group 2 disagreed that children needed to visit museums and galleries and that children in schools needed to work with artists. Group 1 shared a neutral perspective on these two questions. Group 2 also had a combined ranking of agreement that they were confident to include the arts in their teaching and that they could bring together different art forms in their teaching even though they had limited experience and did not engage with the arts in their personal lives. Group 1 chose a neutral view to these questions. Findings are discussed below.

**Discussion and Conclusion**

From a teacher self-efficacy perspective, personal experience is important for informing beliefs about master of experience (that is the teaching of the arts). If there is little prior experience to draw upon, the pre-service teacher has limited experiences to draw upon in their planning and programming of arts experiences. Moreover, the pre-service teacher may realise this in a type of ‘reality shock’ in a classroom environment when there are expectations from the school administration and parents to plan meaningful arts experiences for children, yet they have limited understanding and experience of how to implement this successfully. In some instances, the reality shock could be so great (caused by emotional arousal) that the pre-service teacher may simply reject and stop any involvement with teaching arts experiences.

Although the findings present a percentage of students engaging with arts outside of their university teacher education studies a considerable number do not. When considering these students as future teachers, this has serious implications for an already marginalised subject area situated within what is often called a 'crowded curriculum'. The hidden story behind this data points to the need to acknowledge these perspectives in educating/working with pre-service teachers. Highlighted are the stances of both personal and professional and how these influence each other. We see the personal with little to no experiences with arts and engagement with arts outside of university. This can only impact the professional side of arts education in little to no integration into one's teaching and learning practice. The domino effect on young people can also be seen here, after all this has influenced to some degree how the pre-service teachers have been currently positioned. The personal and professional relationship to arts education impacts the place, value and engagement with arts as a whole. This significantly impedes pre-service teachers' confidence, self-efficacy and content knowledge thus placing pressure on teacher educators having to not only address arts education pedagogical content and practices but also having to connect in detail to personal experiences, or lack thereof. As Dinham (2011, p.63) reiterates "the biggest barrier to success will be this mindset" and there is a great deal of work that needs to be done in order to support many pre-service teachers to become confident about teaching in the arts.

Valuing what an arts educator has to do revealed some tension points in relation to roles of the arts in primary schools, timetabling of the arts in primary school, and devotion of time to arts. Although the participants of this study have undertaken limited professional experience, there are questions emerging around observational experiences of the pre-service teachers' own arts experiences as a student and connections to types of offerings within educational contexts and how these may or may not look. The critical reflection and making of connections are not yet present in the beliefs of many of the pre-service teachers surveyed.

The pre-service teachers surveyed did not see the importance of visiting art museums and galleries. Issues around place of museums and art galleries in primary school arts education emerged from the data. The pre-service teachers' lack of experience in engaging with the arts would be a significant influencer of this as visiting cultural institutions such as these are often connected to one's perceived valuing (Griffin & Paroissien, 2011; Falk & Dierking, 2013).

Art museums and galleries make the study of history and culture tangible to society. Art museum or gallery educators contribute to the sharing and exploration of this knowledge, as they have a duty of care to ensure the security and preservation of culturally and economically valuable objects (Caston, 1980). A museum's or art gallery collection can contribute substantially to school instruction especially if teachers know how to use them, however museum/gallery education often expresses concerns that classroom teachers do not always know how. Contributing to this is teachers' acknowledgement of feeling inadequately prepared to teach in galleries (Martinello & Gonzalez, 1987). In addition to helping visitors to understand that art has a language and there are certain ways of reading it, it is also important that Art museums and galleries are relevant to people's lives. If information can be made available about objects being viewed in a relevant and interesting manner, then the viewer will feel more involved with the work itself. As Jensen states:

Museum programs must relate to the life-experiences of the audiences they seek to motivate and engage. As museum staff members come to understand their audiences in greater depth, they can create programs more directly relevant to them (Jensen, 1999, p. 110).

Attracting many visitors to see an exhibition, however, is not the only goal for museums, since visitors go to see exhibitions for different reasons. Sometimes they want to learn something about an exhibition, such as what it is about; sometimes they just want to

spend leisure time and have fun with their family, friends, or companions (Dean, 1994; Falk & Dierking, 1992, 2000, 2002). Hence, educational programming related to exhibitions has emerged. Through such programming, museums can attract more visitors and teach them about the exhibitions. When visitors gain or learn something new and feel comfortable within the museum contexts, they feel satisfied, because the settings and exhibitions meet their needs and expectations.

The success of artists working in schools relies heavily on the teacher(s) seeing the value and connections to the curriculum (Chomley, 2005). The pre-service teachers responses raised appreciation around the lack of awareness of the wealth of knowledge and skills artists can contribute in the educational setting. The lack of knowledge of the advantages that engaging with artists can have to complement the curriculum, share specialist knowledge and provide unique experiences for young people is a tension point of the findings. This indicates the need to integrate this resource into teacher education programs and to encourage multiple cultural plunges in the pre-service teachers arts and cultural group experiences.

The ability to integrate although seen as processing a capacity by some of the pre-service teachers of this study, the finding reiterated the need to also address what this actually looks like in meaningful application within primary school learning environments. By observing examples of practice, this would help inform their self-efficacy to develop positive beliefs about how arts education is taught. Furthermore, the role of integration is stated as an important part of the learning environment for arts education in the Revised Draft Australian Curriculum: The Arts Foundation to Year 10 (ACARA, 2013) released in February 2013. The document states the role of the teacher is to (ACARA, 2013, p.13) “combine aspects of the strands in different ways to provide students with learning experiences that meet their needs and interests. There are opportunities for integration of learning between arts subjects and with other learning areas”. Thus when the document is implemented in 2014, there is a stated need for the role of teachers to understand arts integration as a delivery mode.

More research is clearly needed into the teaching of arts education in the primary school landscape within Australia and the training of pre-service teachers in teacher education programs. If beliefs are unable to be challenged and changed during teacher education programs, what does this mean for the future of arts education within Australia? Questions are also raised about how much can actually be achieved within an arts teacher education subject. Given most universities offer arts education for one semester as part of primary education teacher training, this means the teacher educator must challenge beliefs of the students, build student understanding of integration, build student content knowledge about each of the five arts strands that aligns with the curriculum, highlight the importance of engaging with museums, galleries and local artists and still have a level of enjoyment. Given time constraints of most teaching semesters between six to 13 weeks in duration, the task for the teacher educator appears overwhelming to achieve so many outcomes. A rethink of the role of arts education within teacher education programs is needed to provide positive learning experiences that support the development of the pre-service teacher.

Findings from this survey cannot be generalised as the sample was taken from only two universities. Data was also collected during a teacher education program, not at the end of a program when pre-service teachers are entering the teaching profession. The survey was also voluntary which may imply only students with a strong opinion may have wished to contribute. It would be useful to replicate the study with a larger sample size to confirm the beliefs suggested in this study. It would also provide an opportunity to analyse the influence of teacher education programs on the beliefs of pre-service teachers studying arts education.

This paper ignites much discussion for future movement forward in arts education with pre-service teachers and addressing their needs in conjunction with requirements for teacher education and curriculum requirements in the Australian context. Recommendations



for future unpacking and independent research are clearly present into areas such as pressures in teacher education in preparing and addressing pre-service teachers personal and professional needs, and enhancing opportunities for pre-service teachers to experiences arts personally to develop confidence to then explore with young people in their roles as educators. There is also need to continually promote arts as a valuable subject areas in its own right but also in complementing inquiry into other areas of the curriculum that have a louder voice.

## References

- Australian Curriculum, Assessment and Reporting Authority (ACARA). (2013). *Revised draft Australian curriculum: The arts foundation to year 10*. Retrieved June 27, 2013 from [http://www.acara.edu.au/verve/\\_resources/Draft\\_Arts\\_Curriculum\\_22\\_February\\_2013.pdf](http://www.acara.edu.au/verve/_resources/Draft_Arts_Curriculum_22_February_2013.pdf)
- Ambrose, T. (1987). *Education in museums: museums in education*, Scottish Museums Council, Edinburgh.
- Arts Council Australia. (2003). *Education and the Arts Strategy 2004-2007*. Retrieved online 6 February 2010 from <<http://www.australiacouncil.gov.au/>>
- Baguley, M. (2005). *Engaging museums and galleries in pre-service teacher education*. Retrieved May 2, 2013 from [http://eprints.usq.edu.au/7667/1/Baguley\\_Rhadpsody\\_21C\\_Conference\\_AV.pdf](http://eprints.usq.edu.au/7667/1/Baguley_Rhadpsody_21C_Conference_AV.pdf)
- Bamford, A. (2004). *Art and education: new frontiers*. *NAVA Quarterly*, September, pp. 2–4.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W.H. Freeman.
- Bandura, A. (2006). Adolescent development from an agentic perspective. In F. Pajares & T. Urdan (Eds.), *Self-efficacy beliefs of adolescents* (pp. 1-44). Connecticut: Information Age Publishing.
- Caston, E. (1980). *The object of my affection: Commentary on museumness*. *Art Education*, 33 (1), 21-24.
- Chomley, F. (2005). *Good arts partnerships don't just happen – they have support*. Presentation at Backing our Creativity Education and the Arts Research Policy and Practice, 12-14 September, Victorian College of the Arts, Melbourne.
- Dean, D. (1994). *Museum exhibition: Theory and practice*. London: Routledge.
- Dinham, J. (2011). *Delivering authentic arts education*. South Melbourne: Cengage.
- Eisner, E. (1972). *Educating artistic vision*. New York: Macmillan Publishing Co., Inc.
- Falk, J.H., & Dierking, L.D. (2013). *The museum experience revisited*. Walnut Creek, C.C.: Left Coast Press.
- Falk, J. H., & Dierking, L.D. (2002) *Lessons without limit: how free- choice learning is transforming education* (Walnut Creek, CA, AltaMira Press).
- Falk, J.H., & Dierking, L.D. (2000). *Learning from Museums: Visitor Experiences and the Making of Meaning*. Walnut Creek, CA: AltaMira Press.
- Falk, J. H., & Dierking, L.D. (1992). *The museum experience*. Howells House, Washington, DC.
- Garvis, S. (2010). *An investigation of beginning teacher self-efficacy for the arts in the middle years of schooling (years 4-9)*. *PhD Thesis*. School of Music: University of Queensland.
- Garvis, S. & Pendergast, D. (2010). Supporting Novice Teachers and the Arts. *International Journal of Education and the Arts*, 11(8), Retrieved 7 June 2010.
- Griffin, D., & Paroissien, L. (2011). *Understanding Museums: Australian Museums and Museology*. Canberra: National Museum Australia.
- Hein, G. (1998). *Learning in the museum*. London: Routledge.

- Hooper-Greenhill, E. (1989). *Initiatives in museum education*. Department of Museum Studies, Leicester.
- Jensen, N. (1999). *Children, teenagers and adults in museums: a developmental perspective*. (pp. 110–17). In E. Hooper-Greenhill. (Ed.). *The educational role of the museum*, 2nd Ed. London: Routledge.
- Lemon, N., & Garvis, S. (In press). *Innovative partnerships: opportunities to create, make, explore and respond in the arts*. In Lemon, N., Garvis, S., & Klopper, C. (In press). *Representations of working in the Arts: Deepening the Conversations*. London: Intellect.
- Martinello, M.L., & Gonzalez, M.G. (1987). *The university gallery as a field setting for teacher education*. *The journal of Museum Education*, 12 (3), 16 - 19.
- Ministerial Council on Employment, Education, Training and Youth Affairs. (2007). *National Education and the Arts Statement* [Online]. Retrieved January, 27 2007 from <[http://www.curriculum.edu.au/verve/\\_resources/National\\_Education\\_Arts\\_Statement.pdf](http://www.curriculum.edu.au/verve/_resources/National_Education_Arts_Statement.pdf)>
- Pontin, K., & Wollard, V. (2002). *Museum and gallery inset: teachers' attitudes and priorities*. Retrieved May 2, 2013 <http://www.katepontin.co.uk/wp-content/uploads/2011/12/insetresearchfinal.pdf>
- Plourde, L.A. (2002). The influence of student teaching on preservice elementary teachers' science self-efficacy and outcome expectancy beliefs. *Journal of Instructional Psychology*, 29, 245-253.
- Rice, D. C., & Roychoudhury, A. (2003). Preparing more confident preservice elementary science teachers: One elementary science methods teacher's self-study. *Journal of Science Teacher Education*, 14(2), 97–126.
- Stone, D. (1996). *Preservice art education and learning in art museum*. *Journal of Aesthetic Education*, 30(3), 83-96.
- Tosun, T. (2000). The beliefs of pre-service elementary teachers toward science and science teaching. *School Science and Mathematics*, 100, 374-379.