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Pre-service primary teachers' experiences and self-efficacy to teach music: Are they ready?

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Music is essential in developing the young brain, particularly skills relating to concentration, filtering, information retrieval, verbal competencies, mental visualisation, problem solving, empathy and personal expression. With the introduction of the Australian National Curriculum and its adoption as the basis of the Western Australian P-10 music syllabus, there is cause to reflect on the effectiveness of music provision within teacher education courses and pre-service generalist teachers' abilities to deliver the new music syllabus. Accordingly, a mixed method study was conducted with first and fourth year Bachelor of Education primary students at a Western Australian university, to investigate students' music experiences prior to and during the course. Fourth year graduating students were also asked to reflect on their self-efficacy to teach music based upon the course. For this article, selected data from 2013 and 2014 is presented as descriptive statistics along with interview observations to contextualise the findings. While students generally reported encouraging levels of musical engagement, this did not translate into self-efficacy to teach music. This article emphasises the importance of building pre-service teacher self-efficacy to support ongoing personal and professional engagement with music so future generations of young people can benefit from sustained, quality music education in primary schools.

Introduction

The introduction of the Australian National Curriculum (ACARA, 2013) and its subsequent adoption by Western Australia (WA) as the basis of its new P-10 music syllabus (SCSA, 2016) provides an appropriate time for reflecting on teacher education in music for generalist primary teachers in Australia. Such reflection is critical, as new research reveals the vital role music plays in the development of the young brain, including the building of complex neural pathways involved in coordinating sensory activities (Altenmuller et. al., 2000) resulting in the improved ability to concentrate, filter information, remember and retrieve information (Martin, 2012). Music training strengthens verbal competencies and language recall (Martin, 2012; Rogalsky, Rong, Saberi & Hickok, 2011), builds spatial intelligence and mental visualisation (important in the development of numeracy skills), develops problem solving skills and aids in the development of empathy, personal expression and coordination (Deasy, Catterall, Hetland & Winner 2002; Flohr, 2009; Lummis, Morris & Paolino, 2014; Martin, 2012; Russell-Bowie, 2009).

As the value of music education to student development is increasingly realised, it becomes critical that pre-service teachers have the knowledge and practical skills to teach music meaningfully. An arts research group, comprising five arts lecturers, was formed four years ago to examine the music experiences of students within the Bachelor of Education primary (BEd primary) course at Edith Cowan University, as these pre-service

teachers will be expected to deliver the first formal music experiences to future generations of WA students. Both first and fourth year students participated in the research. First year students were selected to examine the music experiences they brought with them upon entering the course, and fourth year students were selected to examine their preparedness to teach music upon course graduation. Snap-shots of musical experiences were investigated across a range of contexts: the childhood home, primary school, secondary school, current recreation and tertiary experiences. These experiences could be utilised to understand the range and depth of musical experiences students bring to the course, determine areas of student needs while in the course, and provide a rationale for future course development and research, particularly into building self-efficacy to teach music among pre-service teachers.

The changing landscape of pre-service teacher education in Australia

Teacher education in Australia has been impacted by major sector reforms since the 1980s. Previously, Australian tertiary institutions were valued for their role in maintaining cultural values, and developing individuals who could contribute to the national economy (Pick, 2006). However, since the 1980s, tertiary institutions have been forced to become increasingly competitive due to reduced government financial support (Bessant, 2002; Marginson, 2004; Pick, 2006), which has included the reintroduction of student fees and changing educational profiles for tertiary institutions (Bessant, 2002).

Marginson (2000) claimed that changes in educational profiles are in response to globalisation and reflect “the formation of world financial markets, the development of the internet and the increase in international travel” (pp. 24-25). As a result, tertiary institutions have been expected to provide education marketed to meet student needs in a global world (Bessant, 2002). With greater student mobility has arisen the need for greater competitive edge among universities to attract students and private funding (Marginson, 2000; Pick, 2006), resulting in increasing privatisation. These reforms across the wider tertiary sector have had major implications for teacher education.

Reform has been coupled with changes to the primary curriculum across Australia, including WA (Dinham, 2007). The implementation of the WA Curriculum Framework in 1998 saw music grouped together with dance, drama, media and visual arts as part of an Arts Learning Area (Curriculum Council, 1998) resulting in diminished classroom time for music in many primary schools (Dinham, 2007). This was coupled with a shift from arts specialists to generalist teachers (Dinham, 2007). While instrumental music provision in the state system is still provided by specialist teachers to selected students, classroom music for all is now the domain of the generalist teacher. However, generalist teachers often have limited music knowledge and practical skills, and pre-service teachers bring limited music experience, including practical skills with them into their pre-service courses (Alter, Hays & O’Hara, 2009; Russell-Bowie, 2009). In addition, the ‘crowded curriculum’ in which increasing emphasis is placed upon teaching outcomes across more subjects has placed further pressure on teachers endeavouring to actively engage students across all

five arts subjects, when placed alongside the demands of other learning areas (Berlach & McNaught, 2007; Russell-Bowie, 2009).

The introduction of outcomes-based education and international standardised testing, designed to improve literacy and numeracy have further impacted music education and the arts in general (Berlach & McNaught, 2007; Paolino, 2013). With the pressures of standardised testing in primary schools and a market driven tertiary sector, tertiary institutions have little incentive to promote music and the arts within teacher education courses (Garvis, 2008). When tertiary institutions follow the market and marginalise the arts in favour of other curriculum demands, they risk producing students who have had limited arts experiences prior to entering university, and who in turn graduate with limited practical abilities or self-efficacy to successfully teach music as a result of their tertiary training (Dinham, 2007; Lemon & Garvis, 2013; Russell-Bowie, 2009).

Music as an essential learning area

Graduate teachers with limited knowledge, skills and resultant low efficacy to teach music are a major concern for a number of reasons. Aside from its neurological benefits, music education helps develop sensory perception of culture, supports cognitive and social development, fosters critical and creative thinking and unleashes imagination (Anderson, 2003; Eisner, 2002). These skills are critical for developing individuals capable of navigating a globalised world increasingly dependent upon technology and diverse cultural situations requiring multiple modes of thinking (Deasy et. al., 2002).

Music is one medium through which students can explore “our sense of self, our sense of place, our sense of community ... it is not the end in itself” (Anderson, 2003, p. 64). Music links to various intelligences described by Gardner, as acknowledged within the WA curriculum, including linguistic, mathematical and spatial intelligences (Gardner, 2006). Music has the ability to develop both intrapersonal and interpersonal intelligences through exploration of self and through collaboration (Gardner, 2006), thus supporting the personal and social development of students, listed as important general capabilities in the Australian Curriculum (ACARA, 2013). Furthermore, music assists cognitive development by building stronger neurological networks linking sensory perception to philosophical and social understandings (Altenmuller et al., 2000; Eisner, 2002; Martin, 2012).

Music also supports the development of critical thinking. As students manipulate the sonic environment, they become ‘change agents’ through being “generative, creative, proactive and reflective, not just reactive” (Bandura, 2001, p.4). These students have greater ability to problem solve and adapt when confronted with task demands (Bandura, 2001). Further, in terms of aesthetic experience, students learn through process, not just product, developing motivation to learn and critical reflection skills (Webster & Wolfe, 2013). Importantly, primary school is where these foundations skills are generated and cultivated.

While music is essential for student development, it becomes just as important that teachers are similarly equipped with the subject and pedagogical content knowledge to deliver the curriculum. Research demonstrates that teacher self-efficacy in the arts, founded on knowledge and practical skills, influences the likelihood of engaging teaching and learning in music (Lemon & Garvis, 2013; Mills, 1989). As such it is essential for pre-service teachers to meaningfully engage with music and build the self-efficacy necessary to deliver it to primary school children.

Teacher self-efficacy and engagement in music

Self-efficacy is a theory relating to self-regulation, in which an individual's beliefs produce actions resulting in outcome expectations. Self-efficacy for teaching music is built through engagement with music. Positive experiences that build personal interest in music leads to high self-efficacy (Garvis, 2008). Further, perceived mastery of skills impacts intrinsic motivation and builds confidence of discipline knowledge (Bandura, 2001; Ryan & Deci, 2000). However, teachers' anxiety about their mastery of music skills impacts their self-efficacy and recent research into the arts has found that teachers with low self-efficacy in the arts limited or ignored the arts in their classrooms (Garvis, 2008; Lemon & Garvis, 2013; Russell-Bowie, 2009).

The strong relationship between music experiences promoting content knowledge, skills and self-efficacy suggests pre-service teachers would benefit from increased positive engagement with music. As there is a link between school curriculum and the market demands on tertiary institutions, it is conceivable that change at a tertiary level could result in better prepared graduates to teach music. However, tertiary level engagement is tempered by students' prior experiences in both personal (home and recreation) and educational (primary, secondary and post-compulsory) contexts (Fredricks, Blumenfeld & Paris, 2004; Garvis, 2008).

The ability to teach music in primary school requires basic skills that may not have been acquired in pre-service teachers' education prior to course commencement (Dinham, 2007). Garvis (2008) stated that teachers, especially generalist primary teachers, require more opportunities to engage in professional development to develop practical skills, thus giving them mastery which translates into the self-efficacy required to teach the subject. However, pre-service teacher engagement, as with primary students' engagement, requires a learning environment in which pre-service teachers feel supported to take learning risks based upon positive relationships with teachers, peers and family (Appleton et al., 2006). If tertiary institutions provide opportunities to build practical skills and knowledge that leads to effective disciplinary mastery in music, teachers are more likely to have increased self-efficacy resulting in greater engagement with music in their classrooms.

Background to the study

The arts research group has noted a decline in the music instruction time within primary teacher education courses at Edith Cowan University in Western Australia. The decline is

documented in the University's handbooks over the past 30 years as the course has evolved from a Diploma of Teaching to a Bachelor of Arts (Education) and finally a Bachelor of Education. Prior to the 1988 Dawkins Report, there were between 22-26 tenured staff across the Art and Music Education departments (Western Australian College of Advanced Education, 1985, 1987). Pre-service teachers in the three year Diploma course studied one core, four hour music unit per week throughout the three year course, and could complete another two elective units. Music and visual art were the only two arts subjects offered at the time, as the other arts were covered under the umbrella of other learning areas.

Following the Dawkins Report, staff numbers in both music and visual art were halved as the primary education course changed to a Bachelor of Arts (Education) while the number of music units on offer to students remained the same (Edith Cowan University, 2002). Following the release of the 2003 Nelson Report and the creation of the Arts Learning Area (Curriculum Council, 1998), the number of arts units on offer increased while staffing remained static (Edith Cowan University, 2005), and time spent in each unit declined from four to three hours per week per unit. By 2008, unit offerings had reduced to three core units across all the arts, with one elective specialist music unit, and staff numbers reduced to five tenured staff members across all the arts.

In 2013, arts offerings were further reduced in the course to two core units covering all five art forms in five weekly, two hour blocks (Edith Cowan University, 2013). Effectively, music education was reduced to 10 hours of training and development across the entire pre-service teaching degree. The decline in instruction time and increased competition to deliver all the arts has raised concerns within the arts research group that students would enter and exit the course with limited knowledge in the arts, as forecast by Dinham (2007), and has become the catalyst for investigation of students' experiences and self-efficacy. Knowledge of student experiences in the new global tertiary paradigm can help the arts research group shape tertiary experiences to best meet the needs of pre-service teachers, increasing their self-efficacy to successfully deliver the national curriculum in the arts, and meet the *Australian Professional Standards for Teachers*.

Methods

The arts research group posed two research questions:

1. What music experiences have first and fourth year BEd primary students participated in, within the following contexts:
 - a. childhood home
 - b. compulsory education
 - c. post compulsory education
 - d. current personal recreation
2. How well prepared are fourth year BEd primary students to teach music as a result of their teacher education course?

To answer the questions, the research group administered an online *Qualtrics* questionnaire to all first and fourth year BEd primary students in 2013 and 2014, with full ethics approval from the university. Following completion of the questionnaire, students were invited to participate in follow-up interviews. An explanatory research design was used to triangulate quantitative data with qualitative data (Punch, 2009), and to gather specific feedback on student experiences through narrative discourse. A constructivist theoretical framework was employed, based upon the position that reality is an ensemble constructed by social groups reaching a consensus of knowledge (Guba & Lincoln, 2000). The notion of derived meaning is central to this epistemology, as meaning is the careful assimilation of new knowledge with individual beliefs, values and concepts. In this project, the questionnaire and interviews were used to build shared meaning of students' music experiences.

The questionnaire and interviews were deemed to be an important way of gauging students' self-efficacy to teach music, and their motivation for active participation (or otherwise) in the music education components of their pre-service course. The research overall represents an initial investigation supporting reflection on arts practice in Australia, as well as the construction of instruments to measure students' experiences in music, both within and external to their coursework.

In addition to documenting the range of student musical experiences prior to and outside their BEd course, the fourth year students were asked to rate their self-efficacy, subject and pedagogical content knowledge as a result of the course. The questionnaire was piloted with third year BEd primary students in 2013 to check for comprehension and validity. Pilot data revealed a Cronbach alpha over 0.80 across the questionnaire, and only minor feedback from students regarding language required addressing.

Table 1: Data collection process for questionnaire and interviews

Month	Data collection tasks
March	Pilot test conducted for all instruments (2013). Refinements made based upon feedback and initial reliability testing (Cronbach alpha coefficient).
April – May	Questionnaire administered to first-year BEd primary students (post-mid-semester break).
May – July	Fourth year students completing final teaching practicum.
August – Sep	Interviews conducted with first-year BEd students. Questionnaires administered to fourth-year BEd primary students.
October – Nov	Interviews conducted with fourth-year BEd primary students.

Table 1 outlines the data collection process. First year students' participation occurred in September each year, prior to any music-based units within the course, while fourth year students completed the questionnaire and interviews in second semester following completion of their final teaching practicum. These times were selected so first year responses would not be influenced by any music participation within the course, while

fourth years had the opportunity to reflect upon their music teaching experiences in light of their final practicum. A comparative number of students participated in the interviews, representing 18% of first year students ($n = 108$, 2013; $n = 107$, 2014) and 16% of fourth year students ($n = 25$, 2013; $n = 17$, 2014).

Demographic information was obtained from the questionnaire. Across both cohorts, 93% of respondents were female, 72% between 17 and 25 years of age, and 2% were of Aboriginal or Torres Strait Islander backgrounds. In terms of previous educational experience, 65% had attended government primary schools, 51% attended government secondary schools and 74% had no previous post-secondary awards prior to commencing the BEd primary course.

In the fourth year sample, 92% were female, 40% aged between 17 and 25, and 24% between 26 and 30 years of age. A total of 60% attended government primary and secondary schools, and while 44% had no previous post-secondary awards, 32% had TAFE qualifications prior to commencing the BEd primary course. Selected findings from both groups are presented in relation to their music experiences, self-efficacy and potential implications for WA teacher education in music.

Quantitative findings

Findings are presented comparatively according to the question contexts, while the discussion section elaborates on the findings independently.

Table 2 illustrates student responses to childhood engagement with music in the home. On a five-point scale, a slight majority students across both years agreed with the statement. However, there was a small decline in the first year mean scores between 2013 and 2014, and a much larger decline in fourth year mean scores from 2013 to 2014.

Table 2: Mean responses to the statement
“When I was a child I had lots of music experiences at home”

Music	1st year students	4th year students
2013	3.26 (Agree)	3.32 (Agree)
2014	3.03 (Agree)	2.76 (Agree)

As most students indicated a degree of musical experiences in the home as a child, somewhat predictably, these experiences appeared to impact on their value of music. Table 3 illustrates the mean impact of childhood musical experiences on a five-point scale in the home upon valuing of music as a discipline. Most notably, the mean valuing of music as a discipline is slightly below the mean for musical experiences, and a small decline in mean valuing is evident in the 2014 cohort, across both year groups.

Table 3: Mean response to the influence of childhood music experiences at home on value of music as a discipline

Music	1st year students	4th year students
2013	2.99 (Mod-High)	3.08 (High)
2014	2.72 (Moderate)	2.58 (Moderate)

In addition to the home, students were asked to rate their musical experiences in primary school. Given that positive and negative experiences impact self-efficacy and sustained engagement (Bandura & Locke, 2003), positive musical experiences could see students developing sustained engagement with music both personally and professionally beyond primary school. Table 4 presents responses to enjoyment of music in primary school on a five-point scale. While year groups reported largely positive experiences, the mean rating from the 2014 cohort was notably lower than the 2013 cohort.

Table 4: Mean responses to the statement: "I always enjoyed music as a subject in primary school"

Music	1st year students	4th year students
2013	3.26 (Agree)	3.16 (Agree)
2014	2.96 (Agree)	2.88 (Agree)

Table 4 responses along with Bandura's self-efficacy theories warranted investigation of the level of achievement in secondary school where music becomes largely an elective subject. It was anticipated that the level of achievement in secondary school would correspond to the level of enjoyment in primary school; however, this was not the case. As music is generally compulsory in Year 8, data from Year 9 upwards was considered more pertinent. The figures presented in Table 5 illustrate the mode value of students' highest year level attained in music in secondary school. Despite moderately high enjoyment of music in primary school, most students did not proceed beyond Year 9, while the majority of the 2014 fourth year cohort did not elect to proceed beyond compulsory Year 8 music.

Table 5: Mode values of highest year level achieved in music in secondary school

Music	1st year students	4th year students
2013	Year 10 (14%)	Year 9 (20%)
2014	Year 9 (20%)	Year 8 (23%)

While not reported in Table 5, the questionnaire also revealed that of the 2014 cohort, only 3% undertook music as a subject to Year 12, and none of the fourth year cohort. The questionnaire then sought to document current music participation, in addition to prior experiences. Table 6 illustrates the percentage of students engaging in recreational music activities, external to their university music experiences. Importantly, the questionnaire

asked students to rate their active musical participation, i.e. playing, singing or creating music, as opposed to their passive consumption of music.

Table 6: Percentage of students who currently participate in recreational music activities

Music	1st year students	4th year students
2013	41.70%	36.00%
2014	40.70%	35.30%

Interestingly, the amount of active participation in music between the 2013 and 2014 cohorts was remarkably similar, despite consistently lower ratings on all other measures by the 2014 cohort. Further, active participation declined only slightly between first and fourth year for both cohorts indicating continued participation outside the course throughout their time at university. Table 7 then sought to measure the frequency of active outside music engagement per month.

Table 7: Mean quantity of current recreational music time per month

Music	1st year students	4th year students
2013	2.96 (Mod-High)	2.89 (Moderate)
2014	2.43 (Moderate)	2.33 (Moderate)

Again, all cohorts reported similar moderate levels of active musical engagement outside the university from first to fourth year, although the 2014 cohort reported slightly lower findings across both years, consistent with findings on most other measures.

In addition to investigating musical experiences, fourth year students were asked to rate their preparedness to teach music as a result of their university training. 'Preparedness' to teach was measured by students' rating of their self-efficacy. Students were asked to respond to the following statement:

1. I feel confident to teach music to primary children.

Table 8 presents the self-efficacy findings. On a five-point scale, both fourth year cohorts indicated moderately low levels of self-efficacy with the 2014 cohort reporting a slightly lower level in alignment with their lower reported levels of experience with music overall.

Table 8: Mean levels of self-efficacy among fourth year students to teach music upon graduation

Music	2013	2014
	2.80 (Moderate)	2.47 (Moderate)

While both the 2013 and 2014 cohorts indicated moderate levels of active outside participation in music consistently across the four years of their course outside the

university, this did not appear to translate directly into higher levels of self-efficacy overall as a result of skills and knowledge acquired through participation. Again, this raises the question of the quality and depth of students' outside engagement and its perceived transferability to the classroom context.

Qualitative findings

Following administration of the questionnaire, both first and fourth year students were invited to participate in follow-up interviews. Interviews were utilised to triangulate the data; however, only a small number of students volunteered to participate. Given the small sample, the researchers are aware that the interview data has limited reliability. Despite this, some observations have been included to contextualise the quantitative findings. Further research is required with a larger sample to construct reliable themes within the interview data.

First year students across both years discussed the role their families played in encouraging participation in music from a young age:

My family were always playing music, not actual instruments, but music of all ages and I would attend concerts with my parents etc... because they were the people who enjoyed music the same as I did... (Jenny)

However, another first year student contrasted Jenny's reflection, saying:

No, we rarely had any music in the house at all... (Gillian)

The first year students indicated a range of primary school music experiences, reflecting the range of mean values found in the quantitative data. Some students enjoyed their music experiences in primary school:

I remember being in Grade 6 and touring the Opera House and I got to listen to the SSO in rehearsal... I was in tears. Then we got to have an opera singer sing... opera and they did a theatre thing... finally a moment where I went "yes, real music"... (Dave)

Others enjoyed class music activities in primary school:

We had music once a week, we would all get together and sing and play the recorder, I loved it. To this day I still love to sing... (Phillipa)

Others were limited by their primary school experiences:

We had a music program in primary school but the teacher just made us sing along to a CD. That was music and we were taught to play recorder on a ruler! (Nellie)

Further problems were identified:

I was never properly taught in my old school how to read music so when I changed schools, I was overwhelmed by how behind I was and how much I didn't know. It scared me from learning music... (Annie)

In general, of those interviewed, the majority stated that their personal preferences for music influenced their university experiences. These students discussed feelings of discomfort when presented with unfamiliar content such as classical music (as opposed to contemporary music). These students commented that self-efficacy definitely influenced their likelihood to teach music. Again, more investigation is required into the link between self-efficacy, past musical experiences and teaching music, and the role of teacher training institutions in building self-efficacy among pre-service teachers.

Discussion

The findings across the two years reveal that most first year students report moderate levels of musical experiences prior to entering the course. Students indicated relatively high levels of musical exposure in the home, and this generally reflects in their valuing of music as a discipline. Prior personal experiences in which students build mastery and receive encouragement are important in building self-efficacy (Bandura & Locke, 2003; Lemon & Garvis, 2013), and first year students' reported exposure to music in the home and its influence on their valuing of music would appear to support the theory. This is reinforced by the reported decline in home exposure and subsequent valuing across the 2014 cohort. In primary school, both year groups indicated enjoyment of music, but again, findings for the 2014 cohort were notably lower. While all respondents indicated a general enjoyment of music in primary school, it is acknowledged that the data did not capture the quality of those experiences and can therefore not suggest why a decline has occurred between year cohorts. Further, enjoyment in primary school did not translate into high level study in secondary school, with all four cohorts reporting an average highest attainment level of Year 9 in music, with only 3% completing senior secondary music courses. This finding may be tempered by students who learned a musical instrument at school but did not engage in formal secondary school class music study, but importantly, these frequencies do not include students who did not participate in any secondary music courses, of which there was a large majority. Despite moderate levels of music experiences in the home and primary school, it can be assumed that the lack of high level study in music in secondary school means that the majority of students entering the BEd primary course will lack higher level skills and knowledge in music.

By contrast, the low participation in music in secondary school is not necessarily reflected in current music participation. Between 35 and 40% of participants indicated a moderate amount of active musical engagement, and further study is required as to the motivation of students to participate, considering disengagement in secondary school. These levels of involvement are encouraging, as Lemon and Gravis (2013) noted that prior experiences influence self-efficacy for future professional involvement. However, levels of active current participation in music did decline slightly into fourth year, possibly reflecting increased student course loads, family commitments, or increasingly divergent interests into other areas, and again, the data did not capture the quality of these experiences. Yet

again, the 2014 cohort reported notably lower current active engagement amongst both first and fourth year students. Despite this, the moderately high levels of active engagement suggest that students do not necessarily need to engage with music from an early age to develop an interest in music. The interview data supports this with many students indicating their interest was acquired through primary school and not their family. Building upon current active musical involvement among pre-service teachers may also be a key in increasing their understanding and valuing of music as a subject, and prolonged participation may be a critical factor in building self-efficacy to teach music.

Despite the potential for positive outcomes suggested by moderately high levels of outside musical involvement among pre-service teachers, this did not translate to reported self-efficacy to teach music among fourth years in either year group. Fourth year students, when asked to rate their university experiences in terms of acquiring subject and pedagogical content knowledge, and resulting self-efficacy reported low levels of preparedness to teach music in primary schools. Further, interview data suggested that many students attributed this to their perceived low levels of practical skills, which impacted their confidence in their pedagogical content mastery, and therefore their self-efficacy to teach the subject. This finding was alarming, as Bandura and Locke (2003) suggested that low confidences of practical and pedagogical skills leads to poor self-efficacy and diminished time practising the task. Subsequently, poor self-efficacy can lead to graduate teachers spending less time teaching music to primary children, perpetuating a cycle of limited school-based musical experiences.

Conclusion

This research noted that students have a range of musical experiences prior to entering the BEd primary course. It found that for many students musical experiences were generated in the home, and the amount of involvement appeared to translate into a positive valuing of the subject. However, it also found that primary school experiences were important for others, noting their enjoyment of music in primary school to be the catalyst for their interest in music. For others, active involvement in music outside their pre-service course was an important part of their identity. Engagement, whether early in the home, primary school, or outside the course, generally had a positive influence on participants' valuing of music. It also suggests that musical intervention can be successful at any time, although intervention needs to be long-term if it is to build intrinsic motivation (Marks, 2000).

The exit data from fourth year students over 2013/2014 on their self-efficacy to teach music was disappointing. Theories suggest that individuals with low self-efficacy attribute negative association with tasks, and will not partake in activities (Bandura & Locke, 2003). If students complete the BEd primary course with moderately low self-efficacy, there is a very real danger that they will minimise music instruction time in their teaching. Accordingly, it is critical for universities to ensure students' leave teacher education courses with high self-efficacy. High self-efficacy is associated with mastery of skills and knowledge (Bandura, 2001; Marks, 2000), and can be considered an indication of musical mastery as a result of teacher education. The generalised Standard 2 of the *Australian*

Professional Standards for Teachers states that graduate teachers “must know the content [of each subject area] and how to teach it” (AITSL, 2011). If graduate teachers do not feel they have mastered both subject and pedagogical content knowledge, universities are risking graduating teachers who do not meet the National Standards.

The responses from fourth year students across both year groups implied sustained, practical skills-based instruction focused upon subject and pedagogical mastery is required to adequately prepare them to teach music. However, time constraints within teacher education courses limit music instruction. In-depth instruction required for mastery can only occur if appropriate time is allocated to develop these abilities. Accordingly, the major recommendation of the arts research group in relation to music is that the time allocated to effective music education provision within the BEd primary course be reviewed, and ongoing study be undertaken into maximising the effectiveness of the existing teaching time, particularly in relation to raising student self-efficacy.

For Western Australians to compete in the new global marketplace, quality education is the key to future success. Given and increasing understanding of the value of a sustained music education in developing the neurological capacity of the brain, music education is also essential in building thinking capacity, especially in relation to critical and creative thinking, empathy and imagination. It is also central in the development of personal expression and transmission of culture. However, diminishing time in teacher education courses to build the requisite skills and knowledge in pre-service teachers ultimately translates into reduced capacity to teach music effectively, especially in the critical years of primary school, through low self-efficacy to teach the subject. Unwittingly, the new competitive global market in which tertiary institutions operate and which marginalises the arts, may be limiting rather than liberating their graduates, which ultimately then impacts the future capacity of society as a whole.

This project provides an on-going insight into students' experiences and self-efficacy to teach music. However, the study acknowledges its limitations, with the relatively small sample size limiting the generalisability of findings, particularly in relation to interviews. As interviews were voluntary, a natural degree of bias towards music may be expected. Further investigation into pre-service teacher self-efficacy is required, namely into the quality of previous and current musical experiences and why these do not appear to build confidence in practical skills, and in the case of fourth year (and possibly teacher graduates), research into how music instruction can be improved within teacher education courses. The research group involved in this study is participating in on-going research with the aim of addressing some of these issues and improving tertiary music education experiences for their pre-service teachers.

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