

How do string majors become teachers?

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Abstract

This study was motivated by the desire to understand how to support the development of competent and confident string instrument teachers. This research investigates early-career string instrument teachers' experiences of pre-service tertiary education and induction, and how these experiences impacted early-career string teachers' competence to teach. Further, this inquiry seeks to identify what these teachers believe needs to be done during this initial stage in order, firstly, to better prepare string teachers, and secondly, to foster and sustain the growth in teachers to ensure the availability of competent teachers in the field. Findings of this interpretative phenomenological case study indicated that the provision of formal string teacher preparation courses at the tertiary level, and provision of support from experienced teachers for beginning teachers during the induction phase may contribute to fostering and sustaining the growth in string teachers while ensuring competent teachers in the field. This research has implications for the provision of learning to teach and becoming a teacher that could lead to the development of more competent and skilled teachers

Keywords: String instrument teachers, string teacher education, string teacher induction, beginning teachers, instrumental pedagogy

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Introduction

Previous research has found that beginning teachers (classroom music and instrumental music teachers) feel ill-prepared, concerned, isolated and overwhelmed (Krueger, 2000; Meister & Melnick, 2003; Conway & Zerman, 2004). This indicates that beginning teachers lack the preparation, competence and confidence to meet the challenges involved in starting to teach, which can hinder teachers from providing quality instruction and impinge upon student learning.

Teacher preparedness and competence are critical issues in instrumental music teaching because the way in which instrumental music teachers impart their knowledge determines students' learning outcomes (Kennell, 2002).

Teacher competence is particularly significant in string instrument education because it is an intricate process that requires teachers to assume various responsibilities and possess a multitude of skills (Brenner, 2010). Accordingly, this study was motivated by the desire to understand how to nurture prepared, competent and confident string instrument teachers.

Existing literature in general education indicates that the extent and quality of teacher education influence effectiveness of teachers who educate children (Darling-Hammond, 2000), and that induction (provision of support, guidance, and orientation programs for beginning primary and secondary school teachers during the transition into their first teaching jobs) is essential to the effectiveness of beginning teachers (Feiman-

Nemser, Schuille, Carver & Yusko, 1999). Despite its importance, there is an apparent lack of formal string teacher preparation courses at the tertiary level, which has been a concern of researchers for many decades (Boney, 1969; Lesniak, 2008). In addition, there is lack of research on the induction of string instrument teachers.

This research investigates early-career string instrument teachers' experiences of pre-service tertiary education and induction, and how these experiences impact their preparedness and competence to teach. Further, it seeks to identify, based on their own experiences, what these teachers believe needs to be done during this initial stage in order, firstly, to better prepare string teachers, and secondly, to foster and sustain the growth in teachers to ensure the availability of competent teachers in the field. Findings of this study may have implications for the development of the process of learning to teach and becoming a teacher, thereby leading to the production of more competent and skilled teachers. Hopefully, this will, in turn, result in higher-quality teaching outcomes for prospective teachers and their students.

Four questions guided the research: (a) What impact has pre-service tertiary education had on the teaching practices of early career string teachers, (b) How do early-career string teachers describe their beginning to teach experience?, (c) What impact has beginning career induction had on the teaching practices of early career string teachers, and (d) What are their suggestions about pre-service tertiary education and induction for prospective string instrument teachers?

Methodology

The present study employed interpretative phenomenological case study methodology, which is a combination of two qualitative approaches, namely, interpretative phenomenological analysis (IPA) and a case study design. IPA is committed to exploring how people make sense of lived experience (Wagstaff et al., 2014) and a case study is an in-depth systematic investigation of particular

individuals or phenomena in a real-life context, which involves various data sources (Yin, 2009; Wimmer & Dominick, 2014).

In an IPA study, often potential participants are contacted via "*referral*, from various kinds of gatekeepers; *opportunities*, as a result of one's own contacts; or *snowballing* (which amounts to referral by participants)" (Smith, Flowers, & Larkin, 2009, pp. 48–49). This study employed convenience sampling introduced by Smith and colleagues to recruit participants who were known to the researcher. The researcher initially introduced the research project either verbally or by email. Once participation was confirmed, an official invitation was sent along with an explanatory statement and a consent form, which was the official procedure in the recruitment of participants to ensure ethical compliance. The participants were four early-career string teachers at primary and secondary schools, and music schools in Australia. These teachers majored in string instruments at the tertiary level, and graduated no earlier than 2010. All participants have been given pseudonyms.

Permission to undertake the research having been granted by Monash University Human Ethics Committee, data collection started in March 2014. This study employed in-depth semi-structured interviews to gather rich, detailed, first person accounts of participants' experiences (Smith, Flowers & Larkin, 2009; Yin, 2009; Creswell, 2013). An in-depth interview is one of the most effective ways to elicit the participants' stories, thoughts, opinions and feelings about their experiences (Smith, Flowers & Larkin, 2009; Rubin & Rubin, 2012). Each teacher was interviewed twice.

The analysis procedure involved the processes introduced by Smith, Flowers and Larkin (2009). The audio recording was listened multiple times and then transcribed. The resultant transcript was read repeatedly and notes were taken on the participant's key experiences, emotions, and opinions. Working primarily with the initial notes, emergent themes were identified. Then by finding patterns/connections between emergent themes,

the super-ordinate themes were identified. The next step involved organising a table which listed super-ordinate themes, its emergent themes and initial notes. Finally, patterns across cases were identified.

Findings: Individual Stories

This section presents the stories of four early-career string teachers with regard to their experiences in the process of becoming teachers.

Heather

Heather completed her Bachelor of Music degree majoring in cello at an established conservatorium in Australia. She started giving private lessons in 2010 while still a university student, and, after graduating in 2013, she began at the beginning of 2014 to teach at two Preparatory [Kindergarten]-Year12 schools. At the time of the first interview, she was about four months into teaching in schools and she currently teaches individuals, groups, classes and ensembles.

Heather mentioned that she entered university without a clear goal for the future. She knew that she wanted to be able to make a living out of music, and because she enjoyed performing, she wished to become a performer. She did not have interest in teaching so she undertook the performance stream where the focus was on practical elements. Throughout her degree, Heather studied a number of different subjects including practical lessons, ensembles, history subjects (from medieval to 20th century music), music theory, and aural studies. Teaching subjects were not a prerequisite for students in the performance stream. Heather said, *I think I was more interested in performing ... I don't remember there being any teaching subjects. There might have been a couple but I didn't choose to do them ... I didn't look into it. I don't remember if there actually were any teaching subjects ... when I was studying, I was more interested in performance ... so even if that subject had existed, I wouldn't have done it.*

When Heather was studying at university, she had a strong identity as a performer and overlooked the possibility of teaching.

Somewhat contradictorily Heather's teaching career began rather early when she was still a first year student at the university. Her first student was an adult beginner who she found through an advertisement she placed on the Internet. She reflected on and described her first teaching experience:

I didn't really know what to expect. I kind of just did the same lesson that I remember having when I had my first cello lesson. I taught using the first page of a method book that I was taught with when I began learning cello as a young child ... it was just something on the side to earn some money.

Heather entered teaching without formal preparation. Thus, she taught based on her experience of learning, modelling her former teachers.

By the time Heather began teaching in schools, she already had three years experience of private teaching. She believes this experience helped her to cope with one-on-one teaching in schools. Heather found working with groups of students more difficult:

The private lessons are kind of just the same as private teaching but teaching in the group was a bit of a learning curve because as well as teaching the students you have to control the class a little bit as well, which I found a bit challenging at the start because I wasn't used to it and we didn't really learn about that at uni.

Heather related how controlling the class and ensuring students' concentration was too challenging and that she felt exhausted after teaching the group string class for the first time. Group instrument instruction was very different to how Heather learnt the cello, which may explain why she found this particularly exhausting.

Heather's tertiary education had no significant influence on her teaching. Among a number of other factors that has influenced the evolution

of Heather's teaching the one that has had most impact is trial and error. During the interview, Heather frequently used the phrase "now I've worked it out". By this she meant that at the start of the year she was uncertain of what she was supposed to be doing, but after four months of teaching she has worked out what she wants to do. When she was asked how she had worked it out, she elaborated: "I guess trial and error because I just (pause) you try some things with students and they don't really work, so you stop doing it and look for something else".

Trial and error enabled Heather to broaden her knowledge of appropriate repertoire for beginners and to learn what students like and dislike playing. She explained how she has been exposed to more repertoire than she herself learnt when she was a beginning cello student. She remarked:

certain exercises that I thought were really good didn't really work. I used to have this open string exercise from the Piatti cello method book ... but for students who aren't that interested in the cello, it's really hard to get them to do it so I sort of abandoned that exercise. And I guess because that exercise was all notated and I find that's too much for students who don't know how to read yet. ... I also found that teaching them tunes that they know is a very good way to help them learn to read music as well. If you teach them hot cross buns, it's really easy for them to learn the tune because they already know it.

Her initial teaching was modelled on her teachers. She used the same repertoire and taught in the same way that she was taught. After repeated trial and error, she has worked out her own ways of teaching, which combines the methods of her former teachers and her own approach. Heather believes that knowledge of a wider repertoire and a better understanding of students' tastes have fostered her understanding of how to keep students interested and motivated, which in turn has helped her to become more comfortable teaching groups, something that, as we have seen, she found particularly challenging when she began

teaching in schools. In the beginning, she had to rely solely on her own experience of learning cello, but trial and error has helped her to become more independent in making decisions about what and how to teach. Heather commented that she now teaches the way that she herself thinks is right.

Guidance from experienced teachers in schools was another factor that influenced Heather's teaching. Heather received significant support from the String Program Coordinator in one school. The String Coordinator, as a more experienced teacher, assisted Heather by providing a lesson plan for string class and helping her select a method book and choose repertoire. The lesson plan indicated expectations for what all the students should learn during the term and what needed to be taught in each class. This very useful reference enabled Heather to prepare and organise her lessons better. In addition to the lesson plan, the String Coordinator selected a method book called *Fiddle Time Starters*. Heather found this book particularly useful because it is organised in an order that she was able to implement in her own teaching. Moreover, it comprises pieces that younger students find interesting. The String Coordinator also helped by organising repertoire for the class concerts, which can be a challenging task for a beginner teacher. Additionally, the String Coordinator has been willing to discuss with Heather issues that arise in her teaching. For Heather, this support has been very helpful. In the other school, Heather works more independently. Less support was given, but she was able to manage well because she used the lesson plan and repertoire book from the other school. Heather believes that if the String Coordinator had not helped her she would have felt more responsible and would have had to do more work. She said that she is happy with teaching because of the support from the String Coordinator.

Heather believes that it would be valuable to offer string instrument performance majors training for teaching because many of them also teach. She insisted that string majors would benefit

from training on aspects that she found difficult during the initial stage of teaching. As she found group teaching challenging, she believes there should be opportunities to work with children in groups during university and before obtaining a job. In particular, she believes that she would have improved her teaching by obtaining comments from experienced teachers through supervised pre-service teaching opportunities. Moreover, because she still finds teaching cello technique difficult and because string teachers usually teach beginners during the initial stage, she recommends instruction in string teaching techniques for beginners. Another challenge for Heather was teaching how to read music. Although she had not undertaken any formal pedagogic classes she felt that it would have been advantageous to cover this during university study. Based on her experience, having a good knowledge of repertoire helps keeping students motivated. Consequently, in her opinion it would be valuable during university to explore repertoire suitable for younger beginners. In addition, she believes that learning different types of string teaching methods (for example, Suzuki) during university and being capable of implementing them would be beneficial as such skills are sometimes demanded of string teachers in schools. Finally, because Heather learns from watching her colleagues teaching, she considers that opportunities to observe other people teaching would be helpful. She pointed out that universities provide advanced level master classes, which are not suitable for teaching beginners who early-career string teachers usually teach. Heather suggested that universities should offer opportunities for teaching observation, particularly the teaching of beginners. Given her initial resistance to the notion of being a teacher, Heather's hindsight seems unrealistic. If she had considered teaching a possibility she might have sought out a teacher education course of some kind.

In terms of her suggestions for the first few years of teaching, Heather stated that guidance

from experienced teachers is valuable. Heather's experience of the initial stage of her teaching career indicates that beginning to teach is challenging (particularly for the unprepared). Trial and error, along with experienced teachers' support, contributed most to the evolution of her teaching. She believes that teaching preparation at university and experienced teachers' guidance during the initial stage of teaching is of great value.

Katie

Katie completed her Bachelor of Music degree, majoring in violin performance, in 2011. She began teaching while still a tertiary student (in 2009) in a government school and at a music school. She has been teaching since then, and at the time of the interview, she was about six years into her teaching career. She currently teaches violin and viola to individual students, and assists a string quartet and string orchestra in two P-12 schools in Australia.

Katie asserted that teaching was not her goal and she still wants to be a performer. She started teaching rather early and has continued to teach because she wants to earn money. She mentioned, *It was just something on the side to get a bit of extra money. I enjoy teaching but it's not what I'm going to do forever. I don't particularly want to teach. That's just the honest thing. It's a job I can do quite easily and I need a source of income and it does that.*

In the second interview she described the reality of string teachers:

I think lots of string teachers aren't teaching because they want to. They're just teaching because it's easing money. And I think those ones don't even care that they are not trained. They just do it. I just think from my personal opinion, there are a lot of teachers out there who don't care about what they do. They just want money. Because, also, realistically, there is not very many performing jobs out there and so a lot of musicians finish their degree and realise the only part there for them is to teach.

Katie started teaching without preparation and a sense of responsibility in order to earn money.

Upon reflection, Katie does not believe that her pre-service tertiary education influenced her teaching in any way. Apart from practical subjects such as applied instruction and ensemble, she studied aural studies, music history, music theory, Alexander Technique, rhythm subjects and private studio teaching. She emphasised that the subject of private studio teaching was particularly disappointing because she had chosen this subject with high hopes, and expected to learn how to teach more effectively. This subject was open to all performance students and was not focused on string instruments. She remembered brainstorming about how to deal with parents and how to protest when not paid enough which she thinks was “a bit of a waste of time”.

When she started teaching, she received no help. There was no induction and she was left on her own. As an itinerant teacher she visited the school once a week, and used the term “scary” to describe her experiences. The following excerpt from the interview illustrates her feelings of being anxious and unsure:

I was scared because I didn't really know what to do. So, I was kind of anxious. I was just drawing on the way I remember being taught. So I used the exact same book that I was taught on because I didn't know how else to teach.

As a beginning teacher, she found choosing the repertoire and working with a group of children particularly difficult, and because she had no training or induction, she learned to teach by trial and error. For instance, Katie used Suzuki repertoire books, which her former teacher used. By trial and error she realised that this book did not suit beginners. She explained “Suzuki book one is too hard for a young beginner because the first piece is *twinkle twinkle little star*. What they really should be doing is learning how to play open strings first, so I use a different book”. Furthermore, Katie realised that when teaching younger students, it is better to use a repertoire book that has short pieces with

illustrations. She explained,

If a younger student is reading off from a book that only has line after line of music that won't be very motivating. So, there might be a book that has two big lines of music and lots of colourful pictures around the edges.

Katie struggled with teaching in the beginning of her career because she lacked knowledge about the beginning violin repertoire books for children. In order to broaden her knowledge of repertoire, she visited a music store to do research and purchased a stack of books, after which she said teaching became a bit more comfortable.

Katie also found it difficult to work with children, particularly the string quartet involving four students. Teaching the music itself was not difficult, since they played simple beginner pieces; however disciplining children's misbehaviour was hard. Initially, she taught rigidly, modelling her university ensemble director, but through trial and error she learned that the understanding of age differences is important. Katie confessed that she lacks knowledge in this area and teaching a group continues to be stressful for her. Clearly, Katie teaches the way she was taught, and through experimentation her teaching has evolved. Katie highlighted, “I'm a bit more experienced and I know what repertoires are out there and I teach how I want to teach rather than just how I thought it would work from my experience”.

Based on her own experience, Katie believes that string majors would benefit from teacher training offered as part of the music performance degree. She found the private studio teaching subject unhelpful, and believes that the provision of string-focused subjects that teach string methods (i.e., *Colourstrings*¹), different repertoires, and effective group teaching skills, with opportunities to watch experienced teachers teaching, would be valuable. Katie added that currently she is supported by the head of strings. He assists her with questions or

1. A string teaching method developed by Géza Szilvay and Csaba Szilvay.

problems, and helps her with repertoire selection for the string quartet. She feels that he substitutes as a mentor, and finds this helpful. Overall, Katie's opinion is that teacher training at the tertiary level and support for new teacher in schools are valuable for string teachers.

Alice

Alice completed her Bachelor's Degree in viola performance in Australia, and her Master's in viola in the United States. Her first teaching experience was private lessons while she was an undergraduate student. Alice called the teaching she did as "something casual", and explained that she taught more regularly and seriously after completing her Master's Degree. Returning from the United States in 2013, she taught full time in two private music schools, as well as privately. She currently teaches viola and violin to students from the age of four years, as well as adults.

When Alice was a tertiary student, she had a strong performer identity: "I always thought that if I had a choice, I would not teach but perform". She aspired to be a performer; thus, she chose the performance stream over the teaching stream. Because she was in the performance stream, her timetable was filled with practical subjects (i.e., applied instruction, chamber music and ensembles) and other compulsory subjects, such as music history (baroque to contemporary), music theory and aural studies. There was a teaching subject, but she did not study it because she preferred practical subjects. Her Master's Degree was even more performance focused, in that history and theory were compulsory, but their emphasis was on orchestral playing, chamber music, solo recitals and orchestra audition preparation. The university provided some teaching opportunities, and encouraged participating students to undertake the Suzuki and Sassmannshaus² method courses, which Alice could not afford financially.

2. A string teaching method for beginning violin, viola and cello students developed by Kurt Sassmannshaus.

In the beginning, Alice taught based on her experience of learning because she did not know how else to teach: "I wasn't sure where to start so I just thought about how I learnt and tried to do the same thing. I tried to copy what my teacher did when I first started learning". Her initial teaching was modelled after her own teacher, but it did not suit some of her students. After finishing her Master's, Alice found teaching challenging. There was no formal induction provided in the two private music studios where she taught.

Alice felt the need to broaden her knowledge of teaching approaches so she asked her former teachers, had discussions with her musician friends, searched online and observed other teachers. Alice sought advice from her former teacher about repertoire and pedagogy books. Occasionally, she discussed this with her musician friends when problems arose. She searched online for string teaching resources and attended Suzuki lessons to observe the Suzuki teachers; however, the biggest influence on her teaching was her own experiences of teaching. She explained that she is now aware of common playing problems and has remedies for each one. Now she feels that she knows how to teach, and is much more confident.

Alice confessed that she regrets not taking any teaching courses while she was a tertiary student. She said,

When I was a student, I thought I might teach and I thought I would do it well. But actually sometimes I find it hard. I know how to play but I don't know how to explain. It takes time to figure out how to teach something ... Now I teach more so I hope that I actually took some teaching course. When I was younger, I hoped to get an orchestral job because I really like playing in an orchestra. But now I realise it's impossible not to teach. All music teachers and musicians kind of have to do both.

She believes that it would have been valuable if she had been encouraged to prepare for teaching. Additionally, she thinks that university professors should advise performance majors of the reality of musicians, in which there are limited performing

opportunities, and that even if they become performers, it is likely that they will have to teach.

Alice also brought up the topic of a teaching credentials and said that sometimes she is not employed by schools because she does not have a teaching certificate. Despite recognizing this, Alice thinks that completing a degree in teaching would be too time consuming and possibly irrelevant as they are designed for classroom teachers. Alice believes a degree in performance and instrumental music teaching that leads to a teaching certificate would be valuable. She thinks that the course should comprise string teaching methods (i.e. the Suzuki method), string teaching techniques (i.e., how to teach fundamental string techniques), the Alexander technique (which she herself found very useful), the principles of teaching children (how to form connections with students), as well as performance courses. Alice's experience indicates that developing teacher's identities through string teaching subjects would be valuable for prospective string teachers.

Rachael

Rachael has seven years of experience teaching in P-12 independent schools, and currently teaches violin, viola and cello to individuals, groups and ensembles. While she was a first year undergraduate student majoring in violin performance, she started teaching at her old school where the music director encouraged her to teach. She said it was a "daunting" experience, particularly teaching primary school age children. She said,

I remember being really daunted. I think the thing that I found most challenging with that was particularly primary school age children not having any training in actually teaching, it's hard to remember when you are 18, 19 years old, what you did, how your teacher taught you when you were 4 or 5. So being able to give them material that helps the young beginner pick up the instrument and being creative that sort of stuff, I found a bit daunting.

She found string pedagogy and conducting, which she took while she was an undergraduate, helpful when she started teaching. While working with children was challenging for Rachael, she found teaching violin techniques less difficult because in the string pedagogy class she learned from a string specialist about different approaches and exercises to encourage children to have good technique. In addition, she learned basic cello techniques, which she finds useful because in the public schools where she teaches they cannot afford to hire many string teachers, thus, she is asked to teach cello as well as violin. In the same respect, she found conducting class valuable because string teachers are often expected to teach ensembles. Rachael insisted that subjects that gave practical training are useful because she implemented them in her teaching. Apart from string pedagogy and conducting, Rachael believes that learning to play the violin influenced her teaching, and that one of the most important skills for teaching string instrument is knowing how to play, and being able to play well. She claimed "I knew how to play my instrument and therefore I was able to communicate how to play it to other people".

Rachael began a Diploma of Education so that she could acquire registration with the Victorian Institute of Teaching (VIT). She mentioned "there's a little bit of an issue if I don't have a DipEd, I might lose my job in some of my schools because some schools require a Dip. Ed. for VIT registration". Rachael found the Diploma of Education unhelpful as it was comprised of research components and classroom placements that were not string specific, and a performance class that involved all musicians. She decided that this was worthless and withdrew. Rachael criticised,

So when you have 30 people in a class how often do you get to see a string player play? I think in my whole year of doing that class, we had string specialists come in twice. So I was like nah, I'm not interested in it anymore, this is just not working for me. So, not enough specialisation in the courses that I could see were available to me really.

Her tightly focused understanding of herself as a teacher of strings rather than as a teacher *per se* led her to reject what might have been useful material.

Apart from her undergraduate education, Rachael believes her own experience of learning and teaching, and help from her former teachers and experienced colleagues, influenced her teaching. She explains that, "My undergrad teacher was into pedagogy so every now and then I asked him for a bit of a guidance with students". Rachael notes that, "the head of strings was always up for a chat ... so sometimes I call him and ask him where I should send my students to get new instruments, and so he was sort a vague mentor". She also asks more experienced colleagues for advice about how to communicate with parents, how to deal with students not attending lessons and other day-to-day matters.

Thinking back to her own process of becoming a string teacher, she thinks she would have benefited from a string specific teaching course and that the following subjects would be valuable: learning about different teaching approaches and exercises, how to teach basic techniques to young children, learning other string instruments, conducting skills in different ensembles settings and effective ways of working with children. Furthermore, because she learns from her own experience of teaching and help from more experienced colleagues, she believes that early field work with mentors during undergraduate study would be beneficial. In addition, she thinks collegial conversations and support from the head of strings can be helpful.

Discussion and Conclusion

What impact has pre-service tertiary education had on the teaching practices of early career string teachers?

The participants in this study sought tertiary courses that focused on performance. To varying degrees they had little to no notion of themselves as future teachers despite the reality that many

performers also teach. Usually performance majors are not required to complete any teaching courses even though many performing musicians ultimately teach (Bruhn, 1990; Little, 2013). None of the participants undertook any teaching courses because they were performance majors. Unsurprisingly Heather, Katie and Alice indicated that they do not think their tertiary education had a significant influence on their teaching, whereas Rachael found only the string pedagogy and conducting subjects helpful. Katie and Rachael even criticised the fact that there are problems in the quality of the current instrumental teaching subjects and found them useless, while Rachael went so far as to withdraw. Forty years ago Boney (1969) asked, "What are the colleges doing to educate string players so that they can teach?" (p. 63) and Lesniak (2008) highlighted that "students are not receiving adequate string techniques/ methods classes in their undergraduate curriculum, and colleges are not producing enough future teachers proficient in string teaching" (p. 59). The role of string teacher education requires further research. For example, as young tertiary students, the participants seemed unaware of the common experience of most performers who need to combine performing with teaching. This small-scale study suggests that this conversation could be part of tertiary music courses and that opportunities might be more available to introduce pedagogical principles and practices to future instrumental teachers.

How do early-career string teachers describe their beginning to teach experience?

All four participants began teaching while they were still university students without proper teacher training, and taught by modelling their former teachers and their experiences of learning as students. Teaching was difficult, and they described their beginning teaching experience as not knowing what to do, challenging, anxious, scary,

learning curve, tired and daunting. Particularly, teaching groups, working with children, teaching fundamental techniques and choosing repertoire were challenging. They learned to teach through their experiences of teaching, as well as trial and error. This finding supports Bruhn (1990) who highlighted that many instrumental music teachers lack knowledge regarding the different areas of pedagogy in general and music pedagogy in particular. Moreover several of the participants in this study were resistant to the notion of teaching which suggests a lack of understanding of the music profession. Livingston and Murray (1992) insisted that instrumental teachers learn to teach through long and fraught process of trial and error which seems to be the case for the participants in this study.

What impact has beginning career induction had on the teaching practices of early career string teachers?

None of the participants received a proper induction when they started teaching in schools and/or music schools; however, they found the advice of more experienced teacher helpful. Heather had a String Program Coordinator who helped her with lesson planning, a method book and repertoire selection, and supported her by conversing with her when issues arose in her teaching. Katie did not have any support in the beginning, but currently, she is being supported by the head of strings who helps her when she has questions and problems with teaching and assists her with repertoire selection. Alice sought advice from her former teacher, and Rachael received support from a former teacher, the head of strings and more experienced colleagues. This finding supports Krueger (2000) who indicated that teachers who had a strong mentor or support system were more satisfied than those who did not.

What are their suggestions about pre-service tertiary education and induction for prospective string instrument teachers?

Integrating the opinions of the participants, in order to nurture quality string teachers, a more string specific course is needed that combines performance and teaching, which can also lead to teacher registration. They believe that the pre-service tertiary education needs to teach: string teaching methods (i.e., Suzuki, Colourstrings, different teaching approaches and exercises); string teaching techniques (i.e., how to teach fundamental string techniques); string playing skills (applied instruction, learning other string instruments); string music repertoire (for different age groups and levels); general music teaching skills (i.e., conducting, the Alexander technique, how to read music); general teaching skills (organisational and lesson planning skills, skills to control the class, group teaching skills); and general principals of teaching children (how to form connections with children). Furthermore, they asserted that early field experience in various settings (individual, group, ensemble), with help and feedback from a supervisor, would be valuable. Also, opportunities to observe other teachers, particularly experienced teachers' teaching of beginners, would be beneficial. With regards to induction, the participants believed that guidance from experienced teachers, such as the head of strings, is valuable.

Clearly, the provision of formal string teacher preparation courses at the tertiary level, and provision of support from experienced teachers for beginning teachers during the induction phase may contribute to fostering and sustaining the growth in string teachers while ensuring competent teachers in the field. However, it is most important that string performance majors realise that he/she may become a teacher and prepare for teaching.

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