Improving aural skills within the curriculum: A literature review

Sarah Barlow

Ballarat Clarendon College

Abstract

Success in music theory studies appears to be simply a matter of learning the rules and applying them. This is not the case with aural skills, which include labelling a scale played on piano, or writing a rhythm heard on a drum. Student success in aural tasks is not always consistent, and the student skill seems to fade over time if there is no practice on a regular basis. Final music examinations, such as Victorian Certificate of Education and tertiary entrance exams, don't allow students to reproduce the sound during the examination. The reason for this is obvious – students cannot share results in an exam situation – but this also makes for a much more difficult task. So what is the key to steady and lasting improvement in aural skills? The following literature review explores various approaches which could be of use in the Australian classroom.

Key words: aural skills, classroom music, contemporary music in the classroom, Victorian Certificate of Education, tonal context.

Victorian Journal of Music Education 2016:1, 23-28

Introduction

Aural work, although essential, is not often the main motivation for students to learn music. It can very easily be seen as irrelevant to the young musician (Heimonen, 2014). From my anecdotal experience, it also is the most elusive when it comes to seeing improvement in student work. This makes for a decrease in motivation: some students cannot overcome the hurdle of the aural aspect of the course. Unfortunately, it might even contribute to students stopping their formal studies.

When a student performs from a written source, such as sheet music, a series of mental imageries occur in order to access and manipulate musical patterns, and to access motor control (Keller, 2012). This is the internal mechanism that aids the output of the desired music. So if students can make meaning when reading music, how can they make meaning when hearing music?

This paper is a literature review with the purpose to investigate approaches to instruction for aural concepts in the primary and secondary classroom. It is to seek ideas for engaging students and retaining skills. The structure includes literature comparing genres of music and their approaches to aural concepts, studies on music's effect on the brain, instructional theories on introducing aural concepts, effect sizes on success in music education and comparison of verbal and musical feedback.

The generalizability of much published research on this issue is problematic. It seems that it halts when the difference between musicians and non-musicians is explored, such as Magne, Schol, and Besson (2006) and Musacchia, Sams, and Kraus (2007). However, as music teachers, we need to know more. What is the difference between musicians? What specifically happens in the musical brain when aural excerpts are deciphered? The

literature review below is significant in curriculum development throughout all developmental stages. This literature review will investigate: what do empirical studies demonstrate relating to engagement and retention of aural concepts in the music classroom?

Methodology

This paper is an initial literature review to explore effective approaches towards aural studies within a music curriculum. Publications were included if they discussed student internal mechanisms when hearing music, student aptitude for aural skills, aural studies within the wider music curriculum and comparing subsets of students (such as classical and contemporary and intelligence groupings). Additional references were included if they are already being used for aural studies in the Australian curriculum.

The literature reviewed were predominantly peer reviewed articles from international music, psychology and education journals, and also from Victorian curriculum website and music teaching software. The database search included "aural music education", "cognition" and "music", "aural skills" and "aural discrimination". Journals were excluded if they were written prior to 1980 in order to include the more recent educational and psychological approaches to music. These twenty references were mainly research articles.

The brain in music

What a student sees in their mind's eye when hearing music has been a source of much research (Keller, 2012; Mehta, Zhu & Cheema, 2012; Schmidt, 2012; Hayward & Gromko, 2009; Brodsky, Henick, Rubenstein & Zorman, 2003). Brodsky et al. (2003), in a study of auditory imagery in musicians, found that music making has an effect on no one particular mental locus, and so it compounds the difficulty of pinpointing the reasons for success in any aural task. Further to this, some evidence has shown that linking kinaesthetic associations with music activities can contribute to the development of verbal skills (Kendall, 1988). There is little in the literature surveyed, however, focussing specifically on how to harness these for improving aural skills. This is clearly an area for further research.

Contemporary musicians use aural skills regularly during their music making. They learn songs primarily "by ear". Historically, folk, indigenous and contemporary music has been an oral tradition, as the musicians didn't have a means to write their music down, and imitation and improvisation were a large part of the culture (Green, 2008; Jaffurs, 2004). No studies could be found, however, about whether these musicians have more accuracy in aural skills than their classical counterparts.

Musical imitation is often used in the music classroom, which raises several questions: how can imitation be used to teach new aural concepts? What cognitions is the musician employing while imitating accurately? How is the practical imitation useful to understanding music theory? The question of the effectiveness of teacher modelling was investigated by Woody (1999). The study considered the effects of explicit planning on dynamic variations in performance. Within the scope of instrumental teaching, it was deemed effective when the teacher performed and then the student imitated. The question remains whether this is effective for aural tasks; however, as students need to perform tasks in a test situation, and cannot make any noise or gestures. Further to this, there is some evidence of timbre specific effectiveness (Pantev, Roberts, Schultz, Engelien, & Ross, 2000), which may help some musicians more than others, depending on their instrument. Pantev et al., (2000) found that, for example, the trumpeter was more accurate when hearing a trumpet playing an aural excerpt than another instrument player.

Indicators of aural successes

Aural studies in context

A great deal of research into aural tasks has focused on deconstructing for meaning (Schmidt, 2012;

Hayward & Gromko, 2009; Musacchis, Sams & Kraus, 2007; Magne, Schol & Besson, 2006). This research has found that listening can manifest in several ways, such as an authority listening to a learner and supplying feedback for improvement; listening for audio cues for the needs of others; and mis-listening, for example, not recreating the aural excerpt exactly the same as the original. This last one sounds a warning – there is danger in thinking that a flawless musical performance is the epitome of an excellent one, and the converse is also true. Schmidt (2012) suggests that the meaning created by music may not be consistent for each musician, thus producing some great and new ideas. Gordon (2007) states that it is better to "audiate" (learning through one's own ears (p.10)) rather than "imitate" (learning through someone else's ears (p.10)).

There is a growing body of literature that has investigated the effect of the students' own aptitudes or experience with musical success (Magne, Schol & Besson, 2006; Harrison, Asmus, & Serpe, 1994). This particular 1994 study researched the effect sizes of five variables: musical talent, academic achievement, intelligence, musical experience and motivation for music. The strongest effect on musical achievement were musical talent, academic achievement and musical experience. The tests in this study included both aural and sightreading tasks, which didn't produce strong correlations with long term musical success. Harrison, Asmus, and Serpe, (1994) suggested the clinical nature of these tests (that mirrored a final exam), and not including other music making tasks, may be partially responsible.

Aural studies in tonal context

Of particular significance to our research question, some research has been centred on teaching aural concepts as part of a tonal context, that is, within a harmonic framework (Grutzmacher, 1987). One example of this is to teach a minor 3rd interval as part of the major scale, between the mediant (or 3rd note) and the dominant (the 5th note). In order for the students to understand intervals, chords, rhythm, scales and melody within a tonal context may help them achieve more consistently. Spatial reasoning is similar, such as sight-reading (Hayward & Gromko, 2009). If the student can see the distance of the minor 3rd interval on the page, and two notes away from the tonic, and then reproduce it on their instrument, then the distance (or interval) is reinforced. Further work has been done researching into teaching aural skills embedded across curriculum in areas such as composition (Mehta, Zhu, & Cheema, 2012) and sight-reading (Hayward & Gromko, 2009). The latter has been coined "notational audiation" by Gordon (1999, p.42), and it is the musical term of making meaning on reading. Despite such findings, however, the matter of placing the aural skills into context has not been seriously examined. Further research is needed to specify how to place aural skills into a context.

Aural studies in contemporary music

Contemporary musicians typically learn "by ear" (Green, 2008). The ease with which these musicians both demonstrate and discuss music shows how aural skills can be harnessed by even the inexperienced musician. Green (2008) suggests that the three main prongs of music education through contemporary music are performing, creating and listening. It is quite significant that there is no mention of writing or reading here. Green (2008) suggests that the contemporary musician tends to become skilled by being immersed in music through trial and error. This trial and error is not through summative testing: it is through immediate aural feedback. The most common practice is to imitate recordings by ear. Interestingly, Green (2008) differentiates between listening as the sole activity, and listening while completing another activity (that is listening to a recording sub-consciously and learning it while completing another task such as exercising) (also in Schmidt, 2012; Mehta, Zhu & Cheema, 2012). There is another lesson to be learned by these keen beginner contemporary musicians – they form bands and rehearse and perform much earlier in their musical

life than the typical classical musician, often when their skills are not up to the task. This is when their aural feedback becomes paramount (Green, 2008; Jaffurs, 2004). It is encouraging that this skill has been recognized in formal education – the Victorian Curriculum and Assessment Authority (VCAA, 2016) Music Performance study design (commenced in 2017) has implemented a new assessed activity to imitate a recording only five minutes after first hearing it. Interestingly, Woody (1999) found that, when observing teachers teaching musical expression, it was beneficial for students to verbalize what they hear. A number of questions remain unanswered, however: Is it beneficial for students to verbalise what they can differentiate in aural tasks? Is it the immediate imitation that the students need to complete, or a discussion of what they have heard?

Overall, important themes have emerged from this literature, such as the need for an aural context, an embedding within the curriculum with regular practice and using contemporary music as a guide.

Discussion

The literature highlights three indicators for aural success. None of these represents any summative aural tasks which could be used in the classroom, however.

The need for an aural context

Students need to know why they are learning something. Although research suggests that motivation to learn music has no strong link with musical ability (Harrison, Asmus, & Serpe, 1994), coupling any new concept with a known concept is fundamental to all learning (Deshler, et al., 2001). Teaching, for example, a dominant 7th chord out of context of a blues style, or not relating to the tonic tonality, really doesn't make sense, particularly to a contemporary musician, who knows a dominant 7th chord as just a "7th chord", as they automatically lower the 7th note. If a student understands the note they are performing are within a hierarchy of pitches within a tonal centre, then this understanding can be transferred (Grutzmacher, 1987). Using the example of the dominant 7th chord above, the student can link this to a perfect cadence, to a Mozart Symphony, to jazz improvisation and key signatures. If the student makes meaning of a dominant 7th chord through multiple associations, then the concept is more likely to be retained (Snyder, 2001).

The embedding within the curriculum

Certainly more enjoyable for the student, and more robust for the curriculum, is putting aural skills as a fundamental part of the curriculum. Imitation is a building block for improvisation (Green, 2008; Woody, 1999). Mis-listening (Schmidt, 2012) can create some new ideas in composition, and in other aural skills (Mehta, Zhu, & Cheema, 2012). Modelling and discussion with a teacher in performance creates an expressive performance (Woody, 1999). Aural feedback is a useful tool in improvisation, composition, analysis and performance. For instance, an improvisation will be better if the improviser uses aural feedback to assess their note choices, and after knowing about the chord progression and scale tones that work best within the style, as opposed to randomly and spontaneously selecting any note without an aim or stylistic context.

Contemporary music

Contemporary music in this context includes all genres of music learned by ear. This also includes folk, indigenous and jazz genres. Green's (2008) book is an in-depth discussion of contemporary musicians' uses of aural skills in learning. Usually the beginner contemporary musician would jump right into performing full songs with other musicians (Green, 2008), using the original recording, a YouTube tutorial, a tab chart (which has no rhythm or notes notated on it) or another musician demonstrating how to physically perform them. Here, it is safe to play "mistakes" until the student

is happy with the result. Here, the student may stumble upon a new sound. Here, the student uses immediate aural feedback and then alters their own body to make improvements.

Current practices in the light of the research findings

Aural skills is an integral part of formal music education in Australia. There are text and online supports for educators in this field. An example of a curriculum is described below – the one that I am currently teaching, which is located in Victoria.

The five most recent Victorian Certificate of Education final examinations for Music Performance (the only music study that includes aural studies that we are discussing here) included aural questions in slightly over half of the examination. Music literacy assessment in this same subject makes up 30% of the whole final grade (VCAA, 2016). Deb Smith and Melinda Ceresoli have produced texts that have been used widely in Victorian VCE classrooms (see, e.g., Smith 2016; Ceresoli, 2016) and a digital resource commonly used is "Auralia" by Rising Software (Rising Software, 2016). These texts each give the student opportunity to practise exam-style questions comprehensively, which is useful once the student understands the concept. There seems to be a lack of texts to show how to teach those concepts effectively and with long term success.

Conclusion

This purpose of this paper is to investigate the research into engagement and retention of aural concepts in the music classroom. Through the literature, the use of aural feedback and deconstructing for meaning have been used in many ways. It is understood that every musician needs to use aural skills, and therefore, this skill needs to be honed. Three main threads appeared – teaching within an aural context, teaching through all areas of the curriculum through regular practice, and using contemporary music culture of learning as a guide. Further research is needed to explore the effect sizes of three indicators as listed above, a fine-grained look into the teaching methods of specific aural skills, and how to internalize this so the student can silently answer aural questions in a final exam. Aural skills are vital for the music student's development: steady and lasting improvement is the key.

References

Brodsky, W., Henick, A., Rubenstein, B.-S., & Zorman, M. (2003). Auditory imagery from musical notation in expert musicians. *Perception & Psychophysics, 65*(4), 602-612.

Ceresoli, M. (2016). *VCE music language essentials, student workbook: units 3&4*. Melbourne: Ceresoli.

Deshler, D., Schumaker, J., Bulgren, J., Lenz, K., Jantzen, J.-E., Adams, G., . . . Marquis, J. (2001). Making learning easier: connecting new knowledge to things students already know. *Teaching Exceptional Children*, 82-85.

Gordon, E. (1999). All about audiation and music aptitudes. *Music Educators Journal*, 41-44.

Green, L. (2008). Music, informal learning and the school: a new classroom pegagogy. Hampshire, England: Ashgate.

Grutzmacher, P. (1987). The effect of tonal pattern training on the aural perception, reading recognition and, melodic sight-reading achievement of first-year instrumental music students. *Journal of Research in Music Education, 35*(3), 171-181.

Harrison, C., Asmus, E., & Serpe, R. (1994). Effects of musical aptitude, academic ability, music experience and motivation on aural skills. *Journal of Research in Music Education, 42*(2), 131-144.

Hayward, C., & Gromko, J. (2009). Relationships among music sight-reading and technical proficiency, spatial visualization, and aural discrimination. *Journal of Research in Music Education, 57*(1), 26-36.

Heimonen, M. (2014). "Bildung" and music education. *Philosophy of music education review, 22*(2), 188-208.

Jaffurs, S. (2004). Developing musiciality formal and informal practices. *Action, Criticism and Theory for Music Education*, 1-17.

Keller, P. E. (2012). Mental imagery in music performance: underlying mechanisms and potential benefits. *Annals of the New York Academy of Sciences*, 206-213.

Kendall, M. (1988). Two instructional approaches to the development of aural and instrumnetal performance skills. *Journal of Research in Music Education, 36*(4), 205-219.

Magne, C., Schol, D., & Besson, M. (2006). Musician children detectpitch violations in both music and language beter than nonmusician children: behavioural and electrophysiological approaches. *Journal of cognitive neuroscience, 18*(2), 199-211.

Mehta, R., Zhu, R. (., & Cheema, A. (2012, December). Is noise always bad? Exploring the effects of ambient noise on creative cognition. *Journal of Consumer Research, 39*, 784-799.

Musacchia, G., Sams, M., & Kraus, N. (2007). Musicians have enhanced subcortical auditory and audiovisual processing of speech and music. *Proceedings of the National Academy of Sciences*, 1-10.

Pantev, C., Roberts, L. E., Schultz, M., Engelien, A., & Ross, B. (2000). Timbre-specific enhancement of auditory cortical representations in musicians. *Cognitive Neuroscience and Neuropsychology, 12*(1), 169-174.

Rising Software. (2016). Auralia 5. Melbourne, Victoria, Australia.

Schmidt, P. (2012). What we hear is meaning too. Deconstructions, dialogue, and music. *Philosophy of Music Education Review, 20*(1), 3-24.

Smith, D. (2016). *Musicianship and aural training for the secondary school level 3 student book 2nd edition*. Melbourne: DS Music.

Snyder, S. (2001). Connection, correlation, and integration. *Music Educators Journal*, 32-29+70.

VCAA. (2016, August 8). *Victorian Curriculum and Assessment Authority Music Performance Units 3 & 4*. Retrieved from http://www.vcaa.vic.edu.au/Pages/vce/studies/music/musicperformunits3-4/musicperformunits3-4index.aspx

Woody, R. H. (1999). The relationship between explicit planning and expressive performance of dynamic variations in an audal modeling task. *Journal of Research in Music Education, 47*(4), 331-342.

Sarah Barlow holds a Bachelor of Music from The University of Melbourne, where she studied clarinet and a music therapy major. She also holds a Graduate Diploma of Education (secondary music studio and music classroom) from Monash University and a Master of Education from The University of Melbourne. She is currently Head of Music at Ballarat Clarendon College where she teaches senior music classes and directs contemporary bands.