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Investigating the use of the interactive notebook as a pedagogical tool in a primary music specialist classroom

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This thesis is presented for the degree of

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Abstract

This study aimed to investigate how using the Interactive Notebook as a pedagogical tool in a primary music classroom impacted students' music making and responding and developed their metacognitive skills. Authentic music education is strongly linked to positive social-emotional, physical and academic developmental outcomes. While the importance of a quality music education is highly recognised, generalist trained teachers are commonly placed in the role and may lack confidence. This study used an action research approach with a generalist trained teacher-as-researcher in a Western Australian Year Six music classroom. Observations from video technology and interviews were used to consider how the devices of the Interactive Notebook impacted students' music making and responding skills and developed their metacognitive learning.

The findings from the study concluded that using the Interactive Notebook improved students' music making and responding abilities by embodying High Impact Teaching Strategies using explicit instruction and gradual release to student independence with a new skill or concept. The Interactive Notebook three-part learning cycle also incorporated clear learning intentions with success criteria, a strong organisational structure and learning routines that maximised working memory space and provided multiple exposure to new content knowledge and skill acquisition. Metacognitive strategies were evident in the learning cycle; however, students needed the teacher's direct instruction on how and why to engage with these to maximise the benefits to their learning.

Declaration

I certify this thesis does not, to the best of my knowledge and belief:

I. Incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education;
II. Contain any material previously published or written by another person except where due reference is made in the text of this thesis; Or
III. Contain any defamatory material.

Signed and Dated:

25 September 2019

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Finally, I would like to thank the participants for their willingness to be involved in this study and their enthusiasm during the process.

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Chapter One: Introduction

Introduction

The study of music in Australian primary schools is considered to be an integral part of a well-rounded education, developing critical thinking, aesthetic understanding and creative and expressive potential in all students (School Curriculum and Standards Authority, Government of Western Australia [SCSA], 2014). These skills are essential for students moving into an ever-advancing technological world, yet music education is not always given the educational value it deserves. This study investigated the use of social constructivist pedagogical strategies and tools to enhance student engagement and promote metacognition during primary music specialist classes. An Interactive Notebook (AVID, 2012), a paper-based tool, was used to develop pedagogical conversations between the students and the teacher to increase student engagement and metacognitive learning. In music education, effective student engagement occurs when students are actively participating in sustained music activities with excitement and inquisitiveness, enjoying their experiences and feeling proud while also being challenged and frustrated when learning new skills (Victoria State Government Education and Training, 2018). Metacognitive learning, in music education relates to learners' development of self-awareness and the ability to regulate their thinking towards a learning task and applying known strategies or seeking assistance (Benton, 2014). A modified version of the Metacognitive Awareness Inventory (Schraw & Dennison, 1994) was used to analyse teacher and student behaviours and conversations during music lessons captured through video technology.

A substantial body of research provides insights about the role of music education in students' development. There is growing scientific evidence that music education for children has positive effects on intellectual, social and personal development but that these benefits are only received when students are actively engaged in enjoyable and rewarding music experiences (Hallam, 2010; Russell-Bowie, 2009). Primary school music classrooms are made up of a diverse range of student ability and interests and are often taught by generalist trained teachers who face their own challenges when preparing an authentic music curriculum (Alter, Hays & O'Hara, 2009; De Vries 2013; De Vries, 2015). Dinham (2017) defines authentic arts education (which encompasses music education) as one where "children are given opportunities to explore and develop

their ideas, make and present artworks, reflect on their ideas, their artwork and the artwork of others, and connect their activity to the wider world of cultural expression" (p. 18), thus pointing to music education as a basis for the socio-cultural construction of knowledge. With the advances in research showing the powerful connections of music instruction to cognitive and social-emotional development, it is worthwhile investigating the specific teaching and learning strategies that will assist primary music teachers to deliver the most successful outcomes for students (Hallam, 2010; Hogenes, van Oers, Diekstra & Sklad, 2015; Russell-Bowie, 2007; Scripp, 2013).

The research studies already completed in this field appear to be seeking answers for several areas of interest. Studies have clearly shown that music education can have significant positive effects on neurological, cognitive and social-emotional development (Hallam, 2010; Hogenes et al., 2015; Russell-Bowie, 2007; Scripp, 2013). Several researchers noted that neurological changes that occur with music instruction are only strengthened and transferrable to other areas of learning with sustained active music engagement through authentic music experiences (Hallam, 2010; Russell-Bowie, 2009; Scripp, 2013). Several studies considered whether generalist classroom teachers are capable of delivering authentic music experiences (Alter et al., 2009; De Vries 2013; De Vries, 2015). These studies have shown some consensus that generalist teachers feel anxious about delivering music programs due to lack of training, time constraints and perceived lack of ability. Further studies were conducted to explore how teachers can increase their confidence to implement authentic music activities with recommendations made for delivering music programs that are sequential and developmental, and increasing professional learning opportunities in the creative arts for pre-service and in-service teachers (Alter et al., 2009; De Vries, 2013; De Vries, 2015). This leads to the question, what are the specific teaching and learning strategies that teachers can implement to deliver authentic music education for student engagement and music achievement in both the Making and Responding strands of the Western Australian Music Curriculum? Is the Interactive Notebook a tool that teachers can use to achieve this?

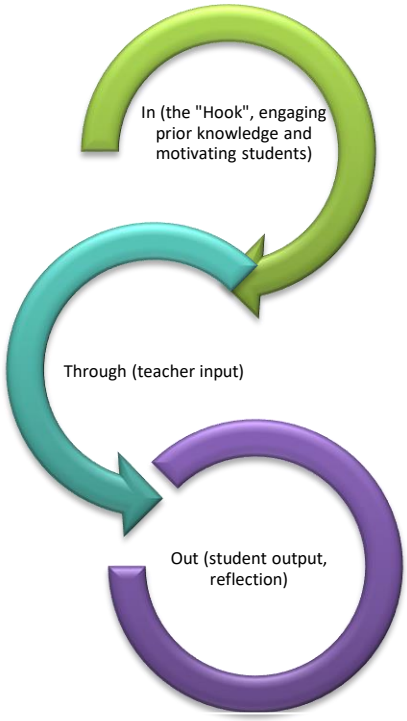


Figure 1. The three-part learning cycle of the Interactive Notebook.

The Use of Interactive Notebooks as a Metacognitive Learning Tool

Interactive Notebooks are a powerful constructivist instructional tool used to enhance learning in an organised manner, encouraging the use of writing across the curriculum, individualising student learning and promoting critical thinking and self-reflection strategies (Chesbro, 2006; Stencel, 1998; Waldman & Crippen, 2009). The notion of students using metacognition to develop their own perceptions of themselves as learners and using these to control their own learning processes is now widely recognised as best practice in education (Benton, 2014; Crawford, Saul, Mathews & MaKinster, 2005; Education Endowment Foundation [EEF], 2018; Ritchart, Church & Morrison, 2011). Use of the Interactive Notebook activates several thinking processes that support the development of metacognition in learners.

Interactive Notebooks work on a three-part learning cycle (Figure 1) of In, Through and Out (Waldman & Crippen, 2009), which follows constructivist pedagogies of explicit instruction matching student learning needs with a release to student interaction with the learning content (Eggen & Kauchak, 2010; Woolfolk & Margetts, 2013). This three-part cycle reflects current trends in music education where student-centred approaches are

promoted for the development of communication, collaboration, self-reflection and problem-solving skills (Hansen & Imse, 2016). Students become engaged in the lesson through the “hook” and also have the opportunity to review prior knowledge and correct misunderstandings (Waldman & Crippen). Hattie (2009) discusses the hook as being a necessary device to place the student in a receptive frame of mind, ready to engage in the lesson. The second phase involves the input for the learning intention of the lesson and student interaction with the learning. Teachers deliver explicit instruction during the first and second phases. The third phase is where the student makes connections to the learning and/or learning processes. It is where the student reflects on their own learning.

The Interactive Notebook used in this study was a paper-based book in which the students created their own notes and reflections during lessons. The teacher provided the structure and required scaffolds for the individual learners’ differentiated abilities. Students were expected to maintain their notebooks in an organised manner and take ownership of their own learning through the making of relevant notes and personalised reflections (Stencel, 1998). The teacher reviewed student work for formative assessment, and assigned a grade based on the organisation and completeness for accountability.

The Interactive Notebook was set up using a right-side and left-side concept, where the lesson input went on the right-side and the student processing (output) of the learning went on the left-side (Chesbro, 2006). The input activities were teacher-directed and involved note-taking, organising information, texts for critical reading or worksheets. The output activities involved reflective writing, drawings, diagrams, compositions, graphic organisers and higher-order thinking questions (Figure 2). These left-sided activities not only served as a means for students to self-direct their understanding of the learning intentions, but it also made their thinking visible; that is, it created a structure for “specific thinking strategies and processes students use to build deeper understanding” (Ritchart et al., 2011. p. 21).

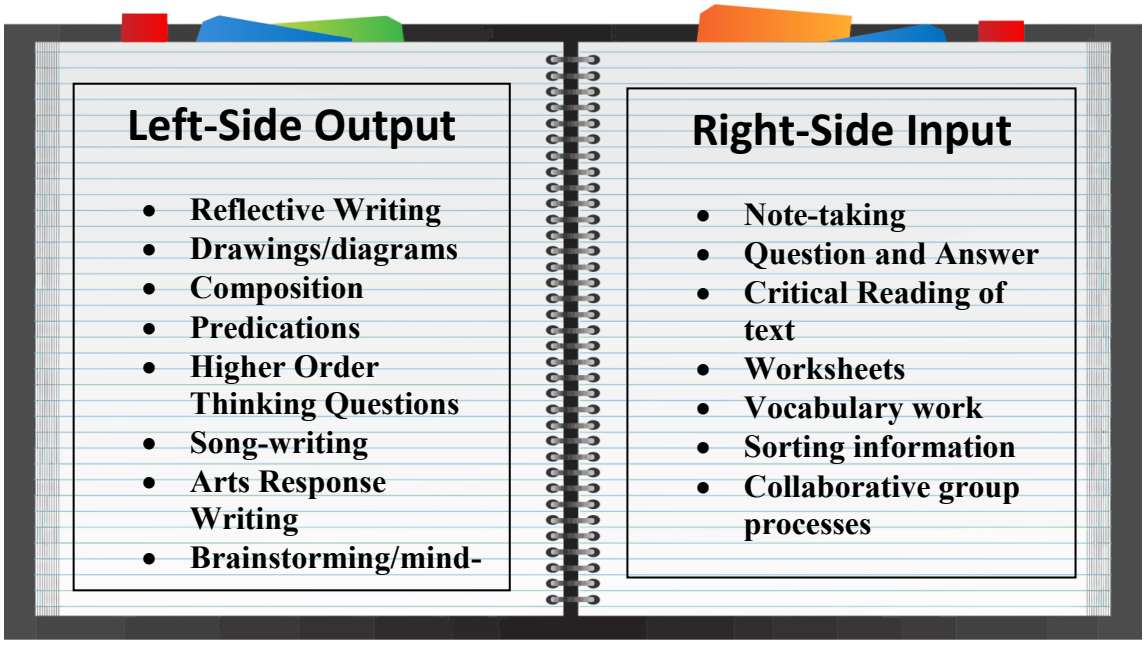


Figure 2. Examples of left-side and right-side activities (Chesbro, 2006; Waldman & Crippen, 2009)

Conceptual Framework

This study is based upon social constructivist theories of learning and used an Activity Theory approach, where a relationship between subject (student), object (music education) and tool (Interactive Notebook) is represented (Hashim & Jones, 2014). The study explored the Interactive Notebook as a tool for student learning based on models of teaching that combined explicit instruction and inquiry-based learning. Within this pedagogical model the learning activities were designed to challenge students in their zone of proximal development 9as explained by Vygotsky, 1987), as "the area between a person's current level of independent functioning and what they can do with appropriate help and support" (as cited in Woolfolk & Margetts, 2013. p. 97). The researcher investigated how this model can be applied to provide authentic music education, where students engage in critical and creative tasks while developing the language of music (Figure 3).

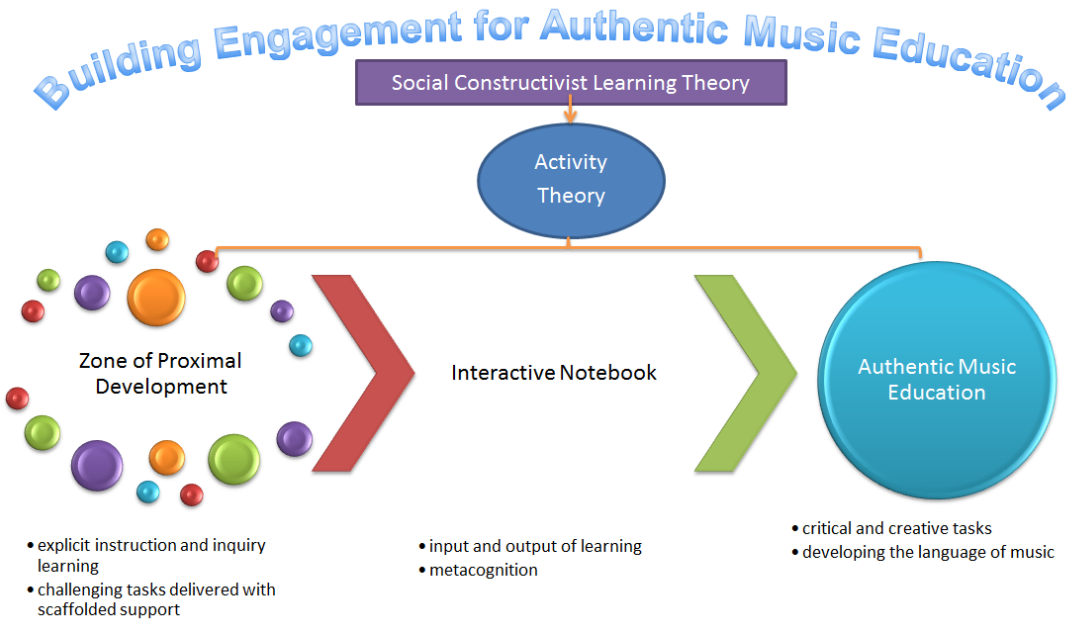


Figure 3. Conceptual Framework

Significance

A review of the literature revealed many previous studies in music education focused particularly on musicianship and instrumental instruction. While these studies are crucial to developing musicians, there appears to be a lack of research around pedagogical content knowledge (Shulman, 1986) for developing understandings and skills relevant to all learners in a primary music classroom setting, particularly relating to generalist trained teachers seeking to deliver a rigorous music curriculum that engages all students. Berger, Rugen and Woodfin (2014, as cited in Hansen & Imse, 2016) define an engaged learner as "one who demonstrates mastery of content and skill-based standards, who explores pathways of learning based on interest and individual choice, and who is supported through challenging tasks and innovative instruction" (p. 25). If primary music teachers are better equipped with the pedagogical content knowledge to increase student engagement in music then the benefits of an authentic music education can be enjoyed by more students.

The Quality Music Education Framework (Victoria State Government Education and Training, 2018) details the significance of all students receiving an authentic music education, stating that strong evidence is shown between exposure to quality music

education and the range of developmental benefits to social, emotional and educational outcomes. This framework also presents three dimensions for student engagement in music learning: behavioural engagement where the student participates in all school areas; emotional engagement where the student feels a sense of belonging to the school environment; and perhaps most significant to this study is cognitive engagement, where the student is invested in and takes ownership of their own learning (Victorian State Government Education and Training, 2018). The pedagogy involved with implementing the Interactive Notebook through the three-part learning cycle aims to increase these areas of engagement, leading to all students being able to access authentic music education.

Interactive Notebooks have been used and discussed significantly in the Science Learning Area, with improvements in students' ability to understand science concepts and use science literacies having been highlighted in personal teaching experiences (Chesbro, 2006; Waldman & Crippen, 2009; Young, 2003). This study was conducted to see if the concepts and literacies of music could also be developed to greater depth using the same learning tool, while also improving students' metacognitive thinking.

Research Questions

This study was developed to answer two research questions.

1. How does the use of Interactive Notebooks by students in a primary music specialist classroom develop students' music making and responding?
2. How do students use the metacognitive devices of the Interactive Notebook to engage with their learning in Music?

Research Methods

The intention of this research was to discover whether the use of the Interactive Notebook as a tool for a blended pedagogy of explicit teaching and inquiry-based learning impacted students' engagement in the Music learning area. It also considered the role of metacognition and how this impacted students' abilities to discuss art works and experiences using the language of music, a key component of authentic music

education. A qualitative research approach was selected to determine the ways in which the Interactive Notebook impacted student engagement and learning in the music classroom. Students were informed of the intention of the project and the ways they could engage in the activities presented to maximise their own learning.

The study was conducted within the qualitative research paradigm. The constructivist theoretical perspective of the research is grounded in a social context and therefore lends itself to an interpretive framework (Biesta, 2015). An action research approach was used, where the practitioner researcher trialled a new approach in an existing system (Bell, 2010). During the action research process, the use of the Interactive Notebook in weekly music lessons was used and analysed to see to what extent integration of this tool supported constructivist learning, in particular, metacognition. The research was conducted with students in Year Six during a one hour a week music lesson over a nine-week period. Semi-structured interviews were conducted with randomly selected students as well as one Focus Group Interview. Observations using video-tracking technology added further depth to the analysis of the intervention. One class of 19 Year Six students participated in this study.

Context

This study was conducted in an independent public primary school in a southern suburb of Perth, Western Australia. The researcher was also the teacher delivering the trial and is a four-year trained Bachelor of Education (Primary) graduate currently in her sixth year of teaching Performing Arts at the same school, which has been her only graduate teaching position. The researcher has a strong interest in performing arts and is active in community musical theatre productions but has no formal music qualifications. Prior to the study, the researcher gained a year's experience in trialling the Interactive Notebook in a specialist music program to refine her teaching practice. The participants in this study had been previously exposed to the use of the Interactive Notebook in the music and science classrooms, in which the researcher had trialled its use.

Bias and Limitations

The researcher was aware that by being the teacher-as-researcher there was danger of bias (Bell, 2010). To mitigate the potential for bias, the researcher continually questioned the practices being used and critically analysed all data for both confirming and unconfirming instances (Miles & Huberman, 1994, as cited in Bell, 2010). Transcripts from interviews were verified by participants to confirm accurate data collection. To address the issue of teacher-as-researcher, the interviews were conducted by an independent interviewer to minimise the potential for participant and response bias (Bell, 2010).

Limitations of the study include:

- The study was conducted by one teacher in one school.
- The population size was small, with participants all coming from one classroom.
- The length of the study was restricted to one school term.

These limitations may result in questions as to the transferability of the findings. Anney (2014) discusses the trustworthiness criteria of qualitative research, and these principles where applied to this study. The researcher ensured credibility in the findings through peer debriefing of emerging themes with the research team, triangulation of data, and persistent observation through the use of video recordings (Anney, 2014). The researcher acknowledges that action research is a study embedded in situated activity located in its natural setting, and therefore the results are interpretive for this particular group of students only. A thick description of the study is given in chapters three, four and five, providing transferability of results to similar contexts (Anney, 2014).

Organisation of Thesis

Chapter One has provided an overview of the study, giving a contextual background to primary music education in Australia. The significance of investigating a pedagogical tool for delivering authentic, high quality music education was also described. Chapter Two contains the literature review for this study. Chapter Three outlines the methodology. The research findings are presented and discussed in Chapter Four. A conclusion to the study is presented in Chapter Five, as well as implications and recommendations for further research.

Chapter 2: Review of the Literature

Introduction

The review of the literature begins with an overview of the current positioning of Arts education in Australia and previous studies on music education in primary schools, following through to a review of specific teaching and learning strategies that demonstrate authentic music experiences to deliver successful outcomes for students. The review concludes with a focused look at explicit instruction and inquiry learning specific to music instruction and the role of metacognition in music education. Figure 4 illustrates the structure of the review of the literature as it relates to this study.

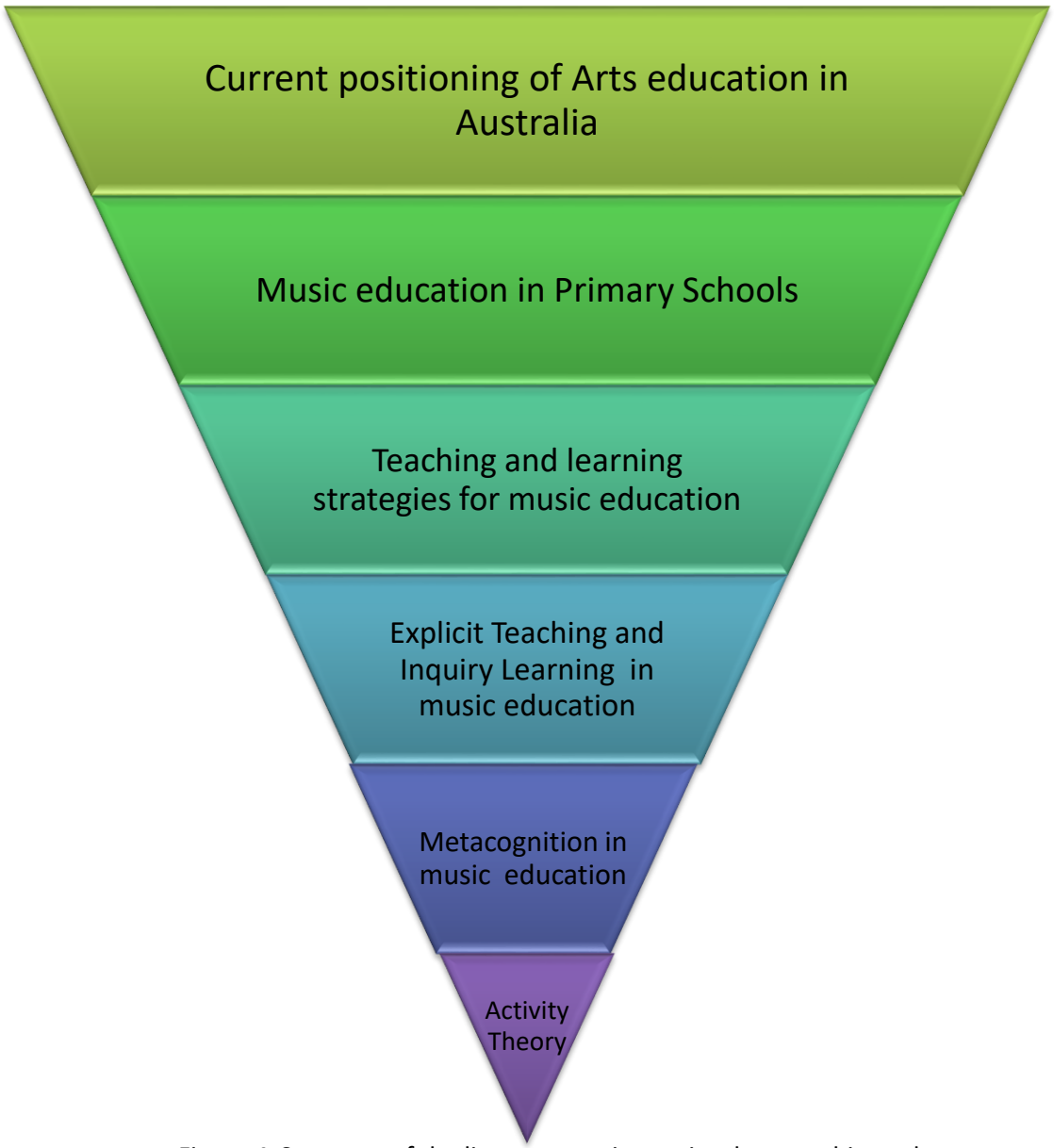


Figure 4. Structure of the literature review as it relates to this study.

The Current Positioning of Arts Education in Australia

The School Curriculum and Standards Authority (SCSA), Government of Western Australia (2014), recognises that the Arts contribute to the community and provide an avenue for the development of confident and creative individuals through the discovery and expression of self and the world, and communication of values and experiences. The importance that SCSA has placed on the Arts learning area, not only by its statement, but also by its inclusion of the Arts as one of the key learning areas in the curriculum, means that teachers must deliver authentic Arts programs so that students are adequately placed to meet the needs and expectations of modern society. Reviews of Arts education in Australia, such as the National Review of School Music Education (Pascoe, Leong, MacCallum, Marsh, Smith & Church, 2005) and the National Review in Visual Arts, Craft, Design and Visual Communication (Davis, 2008) have shown that Arts education has continued to be lacking over the past decade, despite previous studies, such as "The 1985 Taskforce, action: Education and the Arts" (Australia & Boomer, 1985) highlighting the need for further teacher development in Arts pedagogy.

De Vries (2013) discusses that the draft Australian Curriculum: The Arts (Australian Curriculum, Assessment and Reporting Authority [ACARA], 2016) identifies that music should be taught in primary schools but fails to identify who should be teaching this curriculum. Many generalist teachers lack confidence when it comes to teaching the Arts (Alter et al., 2009; De Vries, 2015) but are required to, due to the mandated curriculum and lack of specialist Arts teachers available. Russell-Bowie (2010) attributes this to the lack of funding for primary music specialist teachers. Lowe and Lummis (2015) discuss that in Western Australia, Principals decide whether a school has a specialist Arts teacher, with the majority of schools employing generalist trained teachers for The Arts learning area. The dilemma of generalist teachers teaching the Arts is particularly evident in music education, where teachers' lack of training and own perceptions of themselves as music teachers hinders the delivery of a quality music program (Alter et al., 2009).

Music Education in Primary Schools

There are many studies that have investigated the impact that music education has on students' cognitive development, social-emotional development and academic achievement, and the need for authentic Arts experiences to be delivered to achieve

these benefits (Alter, et al., 2009; De Vries, 2013; De Vries, 2015; Hallam, 2010; Hogenes et al., 2015; Russell-Bowie, 2007; Schlaug, Norton, Overy & Winner, 2005; Scripp, 2013).

Research shows that active musical engagement over extended periods of time creates neurological changes in the brain (Hallam, 2010; Scripp, 2013). A longitudinal study on musical training and neurological development (Schlaug et al., 2005) showed that after 14 months of music lessons, children showed measurable differences in brain bi-lateral activation and structural differences indicated by increased levels of grey matter. Additionally, a cross-sectional group of children who had received four years of music lessons showed transfer effects between musical development and neurological pathways into other areas of learning, such as phonemic awareness, understanding of mathematical concepts, and emotional response (Schlaug et al., 2005). Hallam (2010) supports this claim, stating that listening to music requires our brain to process a large amount of information rapidly, assisting in the development of listening and language skills through similar processing skills.

A recent meta-analysis of 22 research studies investigating the impact of music on child functioning (Hogenes et al., 2015) revealed interesting differences in the research literature which differentiated the studies as follows:

- The influence of music on cognitive functioning (18 studies)
- The influence of music on social-emotional functioning (2 studies)
- The influence of music on motor functioning (2 studies)

Of the 18 studies on cognitive functioning (which included studies related to academic performance, cognitive task performance and facilitating cognitive processes) all except three reported positive or moderate positive effects of music education on academic achievement, phonemic awareness, spatial reasoning, creative thinking and cognitive task performance. The two studies on social-emotional functioning showed a positive effect of music education on interpersonal problem solving, alternative solution thinking, consequential thinking, positive interactions in the classroom, social climate in the classroom and the school as a whole. One of these studies only showed positive effects

in the long term. The two studies on motor functioning showed positive effects on motor independency, jumping and dynamic balance.

In conducting their own quasi-experimental study on the effects of music composition used in pedagogy for music education, Hogenes et al. (2015) focused on music production versus music reproduction. The study randomly assigned three classes to the experimental group (music production/composition) and three classes to the control group (music reproduction) and completed pre and post tests on singing, listening, intelligence, language, reading comprehension and mathematics, with the post-test also including a questionnaire on engagement. The study found the experimental group showed more engagement in music activities than the control group, although positive effects were found in both groups. The experimental group also performed better than the control group in academic performance, namely reading comprehension, with one possible explanation being the extensive use of symbolic notation and focus on the text-like dimensions of their compositions. The study did not show any statistical differences in the effects on intelligence as was hypothesized. Both groups showed progress with singing with no significant difference found in the results, however the control group engaged in a lot more singing activities than the experimental group, showing that musical abilities such as melody, rhythm, expression and comprehensibility can be developed by non-singing music activities.

Another study trialled the use of an Arts project, involving drama, music, dance and visual arts, with 'at-risk' (low self-esteem, low-achieving) primary aged children with the aim of improving self-confidence, and in-turn educational outcomes across the curriculum (Russell-Bowie, 2007). Students participated in discrete and integrated Arts experiences that culminated in an exhibition and a series of workshops during which they taught the Arts skills to their peers. While the study showed students achieved outcomes in the Arts forms of music, media, drama, dance and visual arts, the use of peer teaching to increase self-confidence and leadership skills is noteworthy, particularly as the students received the opportunity to embrace an experience that had previously been unavailable to them due to their life circumstances, and develop success skills that will help them in broader life experiences (Russell-Bowie, 2007).

A qualitative study on the current practices and perceptions of creative arts teachers was conducted by Alter, Hays and O'Hara (2009). This study of 19 teachers from 12 schools in New South Wales from a variety of backgrounds provided a typical cross-section of school and teacher profiles in Australia. The study used grounded theory to analyse interview data to allow concepts and categories to emerge. The key issues the study identified were time and the quantity of curriculum requiring coverage, the accountability to which teachers were held in Key Learning Areas, the broad scope of subject content within the creative arts, evaluation of teachers' own creative arts knowledge and skills and the level of confidence to teach Arts disciplines, and perceptions of the value and status given to the creative arts. The findings showed overall that teachers felt most comfortable teaching visual arts, and least comfortable teaching music, attributed to insufficient music training, the complexity of music as a subject, and their own perceived lack of talent in the subject. Recommendations from the study were to increase the amount of professional development to pre-service and in-service teachers in the creative arts, appoint more specialist teachers, allow greater allocation of time in the curriculum and conduct further research to examine creative arts education practices in Australian schools.

Highlighting some of the difficulties that are facing primary schools when attempting to deliver a quality music education program, De Vries (2013) discusses that previous reviews into music education, dating from the 1960s to present times have indicated that specialist teachers should be teaching music in primary schools and that research indicates that generalists teach music in a substandard way. De Vries reiterates this in another study, stating that the issue of generalist teachers teaching music in the primary school is a significant contemporary issue for music education, and that the responsibility for teaching music is increasingly moving to generalist classroom teachers (De Vries, 2015). He also states that generalist teachers lack the confidence to deliver adequate music programs. Generalists teachers may not have the adequate training and skill set required for confident delivery of the music curriculum, but can be successful in their role through adequate support and collaboration (De Vries, 2015). According to a study by Russell-Bowie (2010), specialist teachers in the Arts are rare in Australian public schools, except for Queensland. This is due to inadequate funding of specialist primary school music teachers. De Vries discusses that principals have the capacity to advertise and appoint teachers with specialist skills, but finding such teachers is sometimes difficult. In a case study of one generalist teacher who has taken on the role of school music teacher, the teacher notes that informal networking with other music educators is beneficial as a

form of on-going professional development and assisted with the delivery of quality music education (De Vries, 2013). Another case study by De Vries (2015) focuses on several classroom teachers in one school in an outer suburb of an Australian city. The teachers elected to be part of the study, with some year levels opting to not be involved. This case study focuses on generalist teachers who are embracing the role of music educator to deliver quality music programs in their classrooms. Hurdles to quality music education were noted as being:

- Lack of preservice teacher music training
- Lack of available time to teach music
- Inadequate resources
- Lack of music education related professional development.

The conclusion of De Vries' (2015) study showed that music teaching was occurring in some classrooms, with singing central to this music teaching. The teaching was sequential and developmental, defying the trend of music education in generalist classrooms being frequently ad hoc and often solely focused on assembly and concert preparations. The role of the school principal supporting the music program was stated to be significant to the success of the music teaching in this school.

To investigate how students with special needs can access music education, a mixed-method study by Gerrity, Hourigan and Horton (2013) was conducted, identifying and defining the conditions that assist music learning for these students. The study identified the three most important factors for success were repetition, student choice and increased response time. Universal design advocates that all students' learning needs can be met if information is presented in multiple ways, through a variety of activities and students are allowed to choose how to demonstrate their understandings (Rose & Meyer, as cited in Gerrity et al., 2013). This study is based on the idea that the musical potential of students with special needs may be unrealized or underdeveloped. The study involved music sessions with pre-service teachers, music therapists, students with special needs and their families. Music concepts were taught with the intention of planning for a performance. Quantitative results showed that music ability was poor at the start of the experimental period, with a significant difference in post-test results. Effective teaching strategies used were repetition, student choice and increased response time, and these strategies led to an increase in student engagement and music learning. These teaching and learning strategies that worked for students with special needs could also exemplify

a model of instruction for all general music classrooms, where students of varied abilities, including those with special needs, take part in weekly music lessons.

The study by Gerrity et al., (2013) embraced the important inclusion of an authentic music program in the curriculum, understanding that music education has a significant positive effect on children's' cognitive, social-emotional and physical development. While specialist teachers have been recommended to deliver music programs, lack of funding and availability of specialist trained music teachers means that generalist teachers are largely filling the role of primary school music educator. These teachers often lack confidence, hindering the quality of music education received by primary school students. The teacher-as-researcher in this study is a generalist trained primary teacher with a personal interest in music education. The study aimed to investigate a pedagogic strategy that can be applied by a generalist teacher in delivering quality music education.

The Use of Explicit Teaching and Inquiry Learning as Pedagogy for Music Education

"The perennial challenge of music education lies in developing, implementing and sustaining a music curriculum that effectively engages students with the full range of benefits which could be derived from being involved with music" (Alter et al., 2009. p. 23). As the music educator role is largely falling to the generalist classroom teacher, there is a need to develop the skills, knowledge and confidence of these teachers to deliver music education in an authentic way, where students are engaged in collaborative musical experiences that involve exploring, developing and reflecting on their work and the work of others (De Vries, 2015; Dinham, 2017).

Advances in neurological science can help music educators provide optimal environments for learning (Helmer, 2014). Firstly, and most importantly, all people are 'hard-wired' for music, and are able to learn, except a very small percentage (one percent) (Levitan, 2006, as cited in Helmer, 2014). This supports the talent versus dedicated practice debate that stems from research on growth mindset (Brundage, 2015; Dweck, 2006, as cited in Helmer, 2014; Scripp, 2013). Green and Hale (2011) present a similar argument from a different viewpoint, promoting an approach to music education that fosters long-term learning in music, rather than who is the top of the class. They call this approach achievement goal theory, which is a learning theory where students focus

on mastering a skill and the authors advocate that students will be more motivated to achieve it if they believe the teacher is emphasizing this learning orientation instead of a grade orientation, and that authentic and meaningful tasks will assist in creating this learning environment. Helmer (2014) discusses that if educators can provide the kind of authentic learning experiences that creates greater musical understanding, students will be successful in developing musical literacies.

Creating learning experiences that are challenging but still achievable is an authentic way to deliver a high-quality Arts programme (Dinham, 2017). Authentic learning experiences should require students to be actively involved in exploring ideas, allowing for creativity and divergent thinking to develop. Inquiry-based learning that revolves around topics that are of interest or relevance to the students are a good way of achieving this. While students will be required to create and present original artworks, the creative process is also valued and supported in an authentic Arts programme.

Constructivism, as discussed by Piaget, Vygotsky, Bruner and Dewey (Eggen & Kauchak, 2010) is now widely accepted as an effective strategy for children's learning development, and is promoted in current curriculum documents (ACARA, 2016; SCSA, 2014). This theoretical perspective advocates that students are able to develop deeper understandings and skills by actively engaging in meaningful learning experiences in collaborative environments (Eggen & Kauchak, 2010; Scott, 2006). Inquiry Learning is based on constructivist principles. Inquiry learning is a process that allows students to develop skills, such as investigating, analysing, comparing and contrasting, taking action, communicating and reflecting, and higher order thinking skills are used and applied to relevant contexts. While knowledge about a topic is created during the process, the skills that are developed are able to be transferred to future inquiries on new topics. This aims to equip students with the critical and creative thinking skills and attributes that they will require to meet the complexities of current and future societal needs (Ministerial Council on Education, Employment, Training and Youth Affairs [MYCEETA], 2009; Temmerman, 2008).

Multiple views on using an inquiry-based approach in music education are presented by Scott (2007). Inquiry learning requires collaborative learning communities to negotiate

questions or problems to be investigated (Dinham, 2017; Scott, 2006, 2007). The role of the teacher is to facilitate learning by modelling the thinking processes of musicians as students explore musical problems or questions (Scott, 2007). Questioning is essential to the inquiry process, and inquiry questions should be developed by the students' assessing their own learning and misunderstandings and pursuing investigations that deepen their own knowledge and areas of interest (Scott, 2006, 2007). Students focus on a problem of listening, performing or composing, just as real life musicians do, and are engaged in deep learning that they will persist even when faced with challenges (Scott, 2006).

The learner-centred approach to music education is also supported by Temmerman (2008). She presents an example of an Australian school that features a high (35 per cent) non-English speaking background population, and consequently the school curriculum devotes significant time to literacy learning. A university partnership saw the school develop a 10 week program that combined the teaching and learning of multiple literacies, including that of the Arts. It aimed to enhance learner communication skills, confidence, creativity and self-expression. The project based learning showed that the students actively engaged with the Arts learning experiences as it was derived from their own cultural interests. Students demonstrated collaboration, time-management, goal setting and reflective skills, exemplifying an inquiry-based model of teaching and learning. Temmerman (2008) does argue that music education should be taught in an interdisciplinary manner to achieve the full advantages of the skills that can be developed using the learner-centred approach. Due to the time-constraints of a specialist teaching role, it would be difficult to present music education in an interdisciplinary way and also effectively cover all music curriculum outcomes.

While the use of an inquiry-based approach to learning music will assist to develop meaningful content knowledge and critical and creative thinking skills, there are many considerations for the teacher when planning such programs. If students construct their own learning content and outcomes, how is success criteria made explicit? Will musical knowledge be sufficiently extended? How much scaffolding will be required to support the inquiry process? What about a sequential and developmental approach to teaching music as recommended in previous studies on music education (Alter et al., 2009; De Vries, 2013; De Vries, 2015)?

A study that compared music education delivered as direct instruction (teacher-centred approach) and as a student-centred approach was conducted with lower secondary school students (Lowe & Belcher, 2012). The purpose of the study was to accelerate the acquisition of music literacy skills, that is, the ability to play and interpret music, in year seven students where class time was diminishing in favour of an integrated Arts taster program. The researchers discuss the impact this decrease in music class time had on developing students that were able to successfully complete senior secondary music courses. The study was conducted on four year seven classes undertaking compulsory music education. Classes were of mixed ability with two experienced music teachers taking the classes, who were aware of the study but were not part of the research team. Farkota (2003, as cited in Lowe & Belcher, 2012) argues that direct instruction is most effective when used in 10 minute bursts at the commencement of regular lessons. The study was developed into 20 lessons covering rhythm and pitch. The teachers delivered the 10 minutes of scripted direct instruction and then continued with their normal teaching program. Results showed a considerable difference in rhythm tests for classes that received the direct instruction, as opposed to classes that did not. The early findings show a significant impact of direct instruction upon student music literacy for the students in this study.

Direct instruction is a teacher-centred approach where the teacher explicitly presents new learning in clear and logical steps, provides guided practice with feedback for students and students move to independent practice of the new learning. The skills or concepts are revised in subsequent sessions to consolidate learning (Rosenshine & Stevens, 1986, as cited in Lowe & Belcher, 2012). Direct instruction makes use of teacher modelling to demonstrate a new skill or concept. When students are able to observe the expert demonstration of a skill, the brain is able to make use of mirror neurons; neurons that operate on a subconscious level to mirror the behaviour of another (Helmer, 2014). Criticism of direct instruction describes it as mere rote learning and memorisation, describing it as failing to address individual student differences and is not motivating for students (Duffrin, 1996, as cited in Lowe & Belcher). Lowe and Belcher dispute this claim, stating that direct instruction is not a didactic approach where teachers assume learning has occurred, but a student-centred approach based on teacher delivery of information and ongoing, immediate feedback to promote student learning.

The conflicting approaches of direct instruction and inquiry-based learning are opposing views of how to teach music education to students. Direct instruction advocates that students who are able to feel competent at their learning due to the guided nature of this approach will show increased motivation and self-belief towards their learning (Lowe & Belcher, 2012). Inquiry-based learning models are based on the belief that students will be motivated to learn and develop deeper connections when they are able to discover concepts for themselves and solve problems using critical and creative thinking (Scott, 2007). Lowe and Belcher (2012. p. 10) claim that "for students to achieve their potential in music, they require long-term sequential programs which allow the development, formalisation and refinement of specific aural and physical skills." Considering the implications on time and resources, effective teaching and learning in music education could include explicit direct instruction, followed by inquiry-based project learning to integrate new skills and concepts into authentic contexts, reaping both the benefits of each teaching and learning strategy. All of these studies on effective music education in relation to inquiry-based learning or direct instruction focused on one or other strategy as the most effective way to approach teaching and learning in music classrooms. Whilst appearing oppositional, they are not mutually exclusive when it comes to learning.

This study has researched engagement and outcomes based on a model of teaching that included explicit instruction and inquiry-based learning projects. The researcher's expected outcome was that explicit instruction organised in a sequential way, focusing on regular repetition to consolidate key concepts and elements of music, combined with inquiry learning environments where students participate in collaborative investigations to analyse, create, compose and improvise through questioning, discussion and problem solving will develop the independent musicianship of students, that is, the knowledge, skill and artistic sensitivity in performing music, increasing engagement and musical understandings for students.

The Role of Metacognition in Music Education

Larkin (2010) discusses metacognition in young children and the relationship between metacognition and creative thinking. Larkin states that while these two ways of thinking can happen independently, metacognitive thinking while trying to be creative can hinder creativity. Teachers can overcome this by providing thinking frameworks that allow for metacognition during creative thinking tasks, such as Gardner's theory of multiple

intelligences, where students can access a creative task from their preferred way of thinking and share this with peers to show how thinking differently can deepen understanding about the Arts (Larkin, 2010). Davis (2000) conducted such a study, using Gardner's theory of multiple intelligences as an entry point for an Arts task, and recommended that teachers be wary of students labelling themselves as a particular learning style. The sharing and evaluating of thinking is important for developing metacognition.

Hallam (2001) conducted a study on the role of metacognition between expert and novice musicians in relation to self-directed practice. The study found that expert musicians were far more metacognitive, with a higher level of awareness of their strengths and weaknesses and strategies for practising to improve performance. Hallam's recommendation for music educators was to foster metacognition in music students through goal-setting, self-evaluation of performance and monitoring their own progress (Hallam, 2001; Larkin 2010).

A study on the correlation between judgement and actual performance in music was conducted by Callender, Franco-Watkins and Roberts (2016). The study found that higher performing students tended to underestimate their results while lower performing students were overconfident. The trial used an intervention of training, incentives and feedback to assist undergraduate students to improve their calibration of their judgements by improving metacognitive skills. The study showed a significant improvement in students' metacognitive awareness of their own ability, with feedback being an important factor (Callender et al., 2016).

Benton (2014) discusses that the goal of music teachers is to move their students along a continuum of achievement from novice musician to expert musician, and that knowing their own strengths and weaknesses and how to apply strategies to correct errors will assist students to progress along this continuum. By teaching students how to use metacognitive skills to monitor their own progress, the students become more autonomous, and can engage in learning tasks independently, without having to wait for teacher direction (Benton, 2014). In a classroom of sometimes 32 students, spending time teaching metacognitive skills to students could increase engagement in the long-

term as students become more independent with being able to successfully complete learning tasks and monitor their own progress towards learning goals.

Socio-cultural Learning and Activity Theory

The use of a learner centred approach through inquiry-based learning and metacognition embraces a social constructivist theoretical perspective. Vygotsky (1978) theorised about socio-cultural learning, claiming that learning occurs in social environments, where knowledge is created through interactions with people, and then internalised by the child. In a social constructivist learning environment, the role of the teacher is to provide support to a student through the use of tools, language and activities that are authentic to the learning experience. Teachers should facilitate learning within the students' zone of proximal development. The Interactive Notebook is a social constructivist learning tool that aims to scaffold learning activities to reach students within their ZPD. It provides opportunities for students to work collaboratively, inquire, discuss and reflect on their learning.

Activity Theory stems from Vygotsky's work and provides a model that defines how learning occurs. Whilst socio-cultural learning has a strong focus on language, Activity Theory emphasises the activity that students engage in to develop their constructions of knowledge (Daniels, 2004). The first-generation model of Activity Theory (Figure 5) identifies a triangular relationship between the subject (the group being studied), the object (intended learning outcome) and mediating artefact (the tool used by the subject to achieve the object) (Hashim & Jones, 2014).

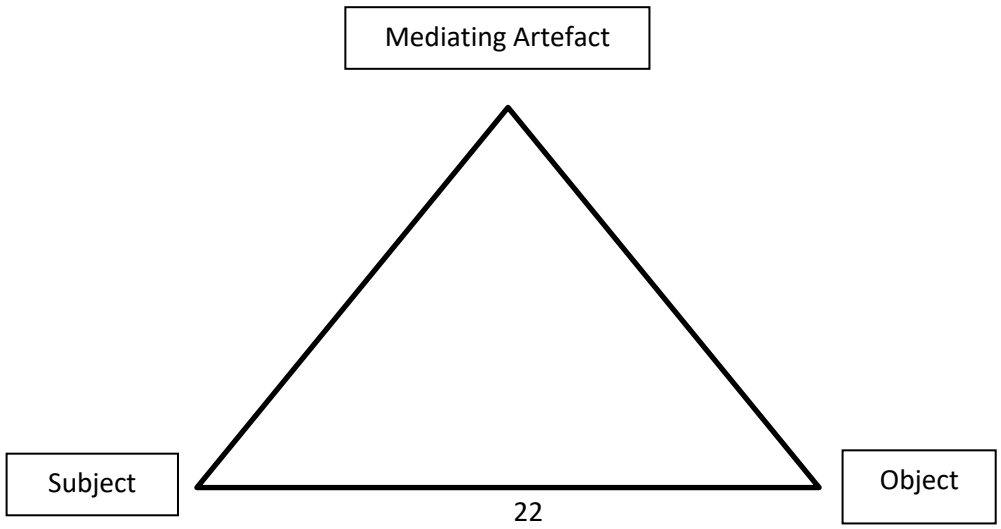


Figure 5. Vygotsky's first generation model of Activity Theory (Engeström, 2001).

Activity Theory guided the analysis of the findings in this study. The subjects are the students that used the mediating artefact, the Interactive Notebook, to work towards the object: improving engagement and promoting metacognition in the music classroom. Engestrom (2001) expanded the activity theory model to include two additional components; rules and division of labour. Rules are the "set of conditions that help to determine how and why individuals may act" (Hashim & Jones, 2007. p. 6). Division of labour refers to how actions are shared between a community of workers (Hashim & Jones, 2007). The addition of rules and division of labour create another element, community, which can be analysed as a unit (Hashim & Jones, 2007). Table 1 demonstrates how Activity Theory was used in this study, including these additional elements.

Table 1
Activity Theory Components in This Study

Activity Theory Components	
Mediating Artefact	Interactive Notebook
Subject	Students
Object	Engagement and metacognition in music
Rules	Classroom behavioural expectations
Division of labour	Collaborative inquiry tasks
Community	Teacher and students working together

Summary

This chapter reviewed the literature relevant to this study. The current positioning of Arts education in Australia sees music education as an important inclusion in the curriculum, having significant positive effects on children's cognitive, social-emotional and physical development. Specialist teachers have been recommended to deliver music programs. But due to lack of funding and availability of specialist trained music teachers, generalist teachers are largely filling the role of primary school music educator. These teachers often lack confidence, hindering the quality of music education received by primary school students.

Specific teaching and learning strategies for an authentic music program highlighted constructivist learning principles, where students that are engaged in collaborative learning processes build greater musical literacies and understandings. Due to time constraints, explicit teaching of musical skills and literacies is recommended to accelerate student acquisition of core musical knowledge. Teachers should explicitly deliver new information with direct instruction and guide student learning with ongoing feedback. Developing metacognitive skills in music students is also recommended.

The Interactive Notebook embodies these recommended teaching and learning strategies. It is a social constructivist learning tool that aims to scaffold learning activities to reach students within their zone of proximal development. It provides opportunities for teachers to deliver direct instruction and build musical literacies, and for students to work collaboratively, inquire, discuss and reflect on their learning.

Chapter 3: Methodology

Introduction

The purpose of this chapter is to outline the methods used to conduct the study. The chapter firstly lists the research questions that guided the study. The discussion then considers the qualitative action research approach undertaken for the study, outlining the research design, including a description of the participants, the data collection methods and data analysis techniques. Reliability, validity and bias considerations are outlined, and potential limitations of the study identified. The chapter finishes with a summary that provides links to the following chapters.

Research Questions

The study was guided by the following research questions.

1. How does the use of Interactive Notebooks by students in a primary music specialist classroom develop students' music making and responding?
2. How do students use the metacognitive devices of the Interactive Notebook to engage with their learning in Music?

Design of the Study

This study employed a qualitative research paradigm. The use of qualitative research methods in educational research is well established as education occurs in a social context, as an event that involves the shared experience of communication and meaning making (Biesta, 2015). The social system of education means it is open and interactive, making a qualitative approach to research a natural fit. Furthermore, a recognition of the subjective nature of human relationships and the values that drive educational practices also guided the decision to adopt a qualitative approach in this educational research project (Berliner, 2002; Biesta, 2015).

A qualitative research approach was selected to determine the ways in which the Interactive Notebook impacted students' learning in the music classroom. The intention of this research was to discover whether the use of the Interactive Notebook as a tool for

inquiry-based learning impacted students' engagement in the Music learning area. It also considered the role of metacognition and how this impacts students' ability to discuss art works and experiences using the language of music. Students were informed of the intention of the project and the ways they could engage in the activities presented to maximize their own learning.

The study used an action research design. Action research seeks to solve a problem and or improve practice (Bell, 2010). Action research is a cyclic process by which change and understanding can be gained through action and critical reflection, over multiple iterative cycles. Each stage in the cycle involves reflection on action to review the previous action and plan the next one. Schön (1983) introduced the notion of reflection-on-action and described how it could be used for professionals across a range of disciplines to improve practice. This study involved the teacher-as-researcher reflecting on observations made through video recordings of lessons and adapting future lessons to improve student learning. Teachers who conduct action research participate in a process of observation and reflection to improve their own knowledge of their professional practice within a given context (Sagor, 2000; Schön, 1983).

The constructivist theoretical perspective was adopted to guide the investigation which was grounded in a social context, enabling an interpretive framework (Biesta, 2015). An action research approach that involved selecting the focus of increasing students' metacognition towards their learning in music, identifying the use of the Interactive Notebook as the tool towards achieving this, collecting data as the tool was implemented, analysing this data using qualitative analytical techniques and reporting the findings in this thesis with recommended actions for future classroom practices (Bell, 2010; Sagor, 2000) provided a research strategy for the teacher-as-researcher to trial a new approach within a Year Six classroom that represented an existing system. Thus, the rationale for using an action research strategy is grounded in the belief that it is:

> A disciplined process of inquiry conducted *by* and *for* those taking the action. The primary reason for engaging in action research is to assist the 'actor' in improving and/or refining his or her actions. (Sagor, 2000, p.3)

Accordingly, action research provided an appropriate methodological framework for teacher-as-researcher to trial a new pedagogic technique in order to meet an identified need, with the goal of enhancing students' performance (Bell, 2010; Sagor, 2000). The main principle guiding this qualitative, action research project included exploring the natural application of the Interactive Notebook in the Year Six classroom and whether students were capable of achieving greater metacognition in music lessons using this tool.

Further, in keeping with the values of qualitative research, and the National Statement for Ethical Conduct for Human Research (National Health and Medical Research Council (Australia), Australian Research Council, & Australian Vice-Chancellors' Committee. 2007), principles of informed consent were followed by clearly obtaining written consent from participating students and their parents, the Department of Education, and the school principal.

Action Research Process

McAteer (2013) presents a five-step action research cycle for teachers that builds upon the plan-act-reflect cycle widely used in educational contexts (Kemmis, McTaggart & Deakin University, 1988). Sagor (2000) advocates a seven-step process for teachers conducting action research. The researcher merged these models to create the action research process for this study. The key stages of this cycle and the actions taken at each stage of this research project are outlined in Table 2.

Table 2

The Action Research Cycle Used for This Study

Stage	Action
1	**Selecting a Focus and Clarifying Research Questions**
	The teacher-as-researcher decided to trial a new pedagogical technique, the use of the Interactive Notebook as a tool for inquiry and metacognitive learning processes in the music classroom and developed initial research questions.
2	**Current Context**
	A literature review was undertaken to contextualise the study and investigate research based pedagogical approaches used in primary music classrooms. Research questions were refined in line with the knowledge that emerged from a study of the research literature
3	**Collecting Data**
	The use of the Interactive Notebook in weekly music lessons was analysed to evaluate the extent integration of this tool supported constructivist learning, in particular, metacognition. The research was conducted with students in Year Six during a one hour a week music lesson over a nine-week period. Semi-structured interviews were conducted with students and observations using video-tracking technology added further depth to the analysis of the intervention. One class of 24 Year Six students were invited to participate in this study. Nineteen students consented and made up the participant group.
4	**Analysing Data**
	Data was analysed following Yin's method of five stages of qualitative data analysis (Creswell, 2006). Stage one, compiling, involved arranging, conducting and transcribing all interviews, gathering video footage and analysing using the Observation Schedule. Stage two, disassembling, is where codes were applied to data, and stage three, reassembling, is where the understanding of emerging themes was developed. In stage four, interpreting, is when meaning was examined and explained (Creswell, 2006)
5	**Reporting Results**
	This involved the fifth stage of Yin's data analysis model, concluding, where the data was conceptualised, conclusions drawn, and recommendations made (Creswell, 2006). This thesis was developed to present and share the results of the study.

Participants

The study took place at a Department of Education Independent Public School in the southern suburbs of Perth, Western Australia, where the researcher is employed as a teacher. The study focused on observations within the classroom environment. Research processes and protocols regarding Department of Education schools were strictly adhered to. A formal authorisation to conduct the study was obtained from the Department of Education. The information letter to the principal and consent form are attached in Appendix A.

The participant group was one class of Year Six students, aged 11 or 12 at the time of the study. Twenty-four students were invited to participate in the study. Information Letters and Consent Forms for Parents and Students are attached in Appendix B and C. Nineteen students and their parents gave consent. Ten of these students were male and nine were female.

This study drew upon students' participation in usual curriculum-based learning, in which all students were engaged. Participation in the research involved interviews and classroom observations involving participating students. As the study used video recordings, non-participating students were placed in an area of the classroom that was not captured by video. These students were still included in regular teaching and learning experiences, but no data was collected on them.

Data Collection

Data collection methods in a qualitative study need to be carefully chosen to be considered valid and dependable during the evaluation phase (Zohrabi, 2013). The use of multiple data collection techniques allows for a more comprehensive analysis of themes using triangulation, where the researcher compares results from multiple data sources (Bell, 2010; Mays & Pope, 2000). Data in this study was triangulated using the multi-method approach through semi structured interviews, focus group interview and observations using self-tracking video technology. Table 3 shows the link between the chosen data collection tools and the research questions being asked in this study.

Table 3

Data Collection Tools and Research Questions

Research Questions	**Data Collection**
How does the use of Interactive Notebooks by students in a primary music specialist classroom develop students' music making and responding?	Semi-structured interviews Focus group interviews Observations using self-tracking video recordings
How do students use the metacognitive devices of the Interactive Notebook to engage with their learning in Music?	Semi-structured interviews Focus group interviews Observations using self-tracking video recordings

Semi Structured Interviews

Semi structured interviews were used in the study to investigate participants' feelings and thoughts on the use of Interactive Notebooks in music, as well as their implicit and explicit understandings around metacognition (Bell, 2010). Semi structured interviews were chosen as a data collection tool as they are a commonly used strategy for teacher action research, providing an insight into participants' own experiences from their perspective (Efron & Ravid, 2013).

A stratified random sampling strategy was used to provide a representation of the population as a whole when selecting participants for semi-structured interviews (Bell, 2010; Thompson, 2012). The researcher attempted to select an equal number of male and female participants for the interviews, as well as ensuring both higher and lower achieving students were represented. The researcher created a list of participants ordered by gender, and sub-ordered by grade received in Music the previous year. The

participant group only contained B and C grade students, and three Unknown grades as students had moved from another school. The Student Services Coordinator at the school was used as an independent interviewer to ensure the researcher could not identify who was interviewed, preventing the potential for researcher bias. She randomly selected students from the created lists, ensuring equal male and female representation as well as representatives from B, C and Unknown grades. Eight students in total were selected to be interviewed. One student declined. Seven interviews were conducted.

Interviews were conducted individually in a face-to-face setting on school grounds by the Student Services Co-ordinator (Information Letter and Confidentiality Agreement are attached in Appendix D) and took approximately 10 minutes per student. This allowed the students to speak freely without any perceived teacher judgement from the teacher researcher. Interview data was audio recorded and transcribed by an independent transcriber (Confidentiality Agreement attached in Appendix E) with all identifying information removed. The interviewer received the transcripts, confirmed all identifying information was removed and verified the transcripts with the participants before passing them on to the researcher for analysis.

The researcher provided the interviewer with interview questions and probing questions (See Appendix F) regarding the use of the Interactive Notebook as a metacognitive tool and also to further reveal student engagement in Music. The flexibility with the interview questions allowed the researcher to collect data in an authentic way and allowed the interviewer to develop and clarify respondents' ideas (Bell, 2010). Flick (2011) argues that good interviews are consistent for comparison but also flexible so that the researcher can adapt to individual participant perspectives. The researcher provided guidelines to the interviewer to ask further clarifying or probing questions during the interviews, ensuring consistency and enabling comparative analysis.

Observations Using Self-Tracking Video Recordings

Self-tracking video technology was used as a data collection tool. The use of observations using video technology as a data collection method is an effective way to analyse classroom practices, providing the opportunity for a teacher-as-researcher to look back on what actually was happening during a lesson and delve deeper into

potential themes (Bowman, 1994). As part of the action research cycle, the researcher was able to look at the video recordings after each lesson and make modifications to future lessons based on the observations made.

The use of self-tracking video technology allowed the researcher to capture teacher-student conversations during music lessons and analyse these for depth of discourse around musical works and competency with using the language of music, as well as incidences of the Interactive Notebook aiding metacognition. Classroom activity was recorded fortnightly (five lessons) for sections of the hour-lesson. Non-participating students completed all classroom activities but were seated away from the camera. The researcher avoided walking too close to the non-participating students and turned off the camera via the remote control when needing to work with the non-participating students. Instances where footage inadvertently captured video or audio of non-participating students resulted in that video being deleted directly from the recording device. Sections of the video were selected and upload to SWIVL on a password protected site for the researcher to analyse.

The focus of observations in a qualitative study should be derived from the research questions (Efron & Ravid, 2013). In action research, the observations could be structured or unstructured, depending on whether the teacher is wanting to generate data on a specific issue or look overall at what is occurring in the classroom (Efron & Ravid, 2013). In this study, an Observation Schedule (see Appendix G) was created to initially collect data around the explicit and implicit occurrences of metacognition in the lessons. The Observation Schedule was adapted from the Metacognitive Awareness Inventory (Schraw & Dennison, 1994). This inventory was developed to measure the metacognitive awareness in adults across eight sub-components under two broad headings: knowledge about cognition and regulation of cognition (Schraw & Dennison, 1994). The original inventory is a self-assessment. The researcher developed the inventory into an Observation Schedule that could be used to analyse how the Interactive Notebook impacted the metacognition in students. The researcher looked for naturally occurring incidences of declarative, procedural and conditional metacognitive knowledge, as well as regulation of cognition to see if the use of Interactive Notebooks led to explicit or implicit occurrences of metacognition. The researcher was also aware that additional information might be observed in the video recordings that could lead to alternative significant data collection.

Focus Group Interviews

The researcher originally planned two focus group interviews where students would participate in a teacher-led socratic discussion around the use of Interactive Notebooks in music. Upon commencing the data collection phase, the researcher realised the students would not be able to participate effectively in the early session due to their inexperience with the metacognitive devices of the Interactive Notebooks and altered the plan to only conduct one session. Flick (2011) states that effective qualitative research has “adequacy.”

> Adequacy means that you check and recheck whether a specific method or design fits your research issue and field. If necessary, this would mean redesigning your study in order to make your choices adequate to what you want to study and where. (p.3)

The decision to amend this data collection method meant that data was more effectively collected.

One researcher-led focus group interview was held in the music room during the final week of data collection, during school hours but not during the normal music learning time, with all 19 students participating. Students engaged in a half hour socratic discussion regarding using the Interactive Notebooks and how they believe it impacted their experience in Music. Students were given a notetaking scaffold (see Appendix H) where they were able to reflect on their own thoughts and experiences and use these notes to contribute to the discussion. The teacher-leader guided the discussion through the following question prompts (See Appendix I).

> Question 1: How have you used the Interactive Notebook in music classes?
> Question 2: How have particular parts of the Interactive Notebook helped you use the language of music?
> Questions 3: How has the Interactive Notebook helped you think about your own learning?

The focus group interview video data failed to upload and was lost. As a data recovery strategy, the researcher compiled notes drawing on memory to aid in the triangulation of data. Figure 6 shows the intended use of video as a data collection tool in this study.

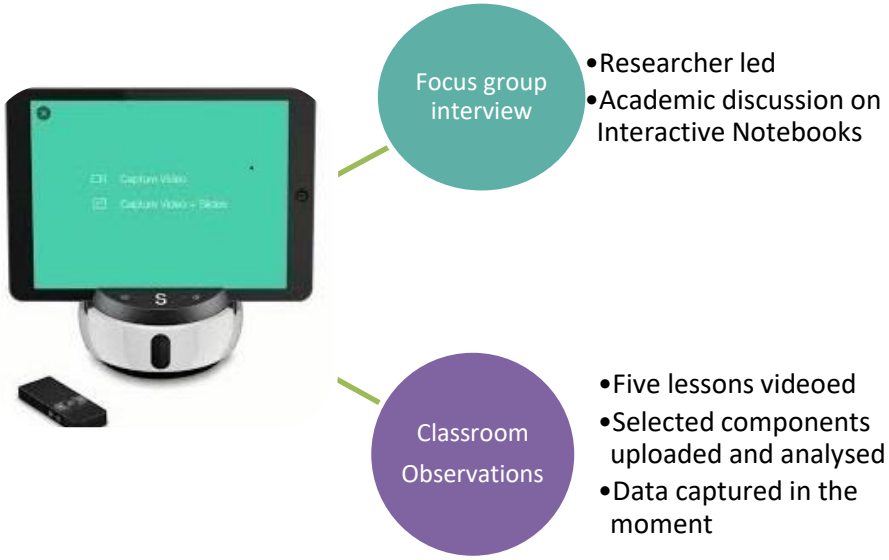


Figure 6. Intended use of video as a data collection tool for classroom observations and focus group interview

Data Management

All video data was immediately uploaded to the password protected SWIVL site and deleted from the iPad recording device, in accordance with the approved research ethics protocol. Interview transcripts, observation schedules and focus group notes were electronically collated by the researcher and stored on an external usb which was kept in a locked drawer in the teacher's classroom in accordance with the approved ethics protocol for this study, obtained by the university and the Department of Education.

Data Analysis and Interpretation

All data collected was analysed using a qualitative approach, where analysis begins to occur as data first emerges and this analysis shapes further data collection (Pope, Ziebland & Mays, 2000). Qualitative analysis also requires continuous review to ensure that emphasis on emerging themes are supported by the data (Gray, 2016; Hutchinson, 1988). The framework used for data analysis was Yin's method of five stages of

qualitative data analysis (Creswell, 2006). Table 4 shows how Yin's method was used for analysing and interpreting the data collected in this study.

Table 4

Qualitative Data Analysis Process Using Yin's (2015) Method

Stage	Data Analysis Process
Compiling	Interviews were transcribed. Video files were viewed, and notations recorded using the Observation Schedule and additional notes made on significant data relevant to the research questions. Focus Group Interview notes were taken
Disassembling	Data was analysed for emerging themes throughout the data collection period. The researcher identified common themes, created codes and revisited data sources for further development of these themes throughout the iterative data collection process. A table was created to organise and record codes and related data.
Reassembling	Memos were created by the researcher about the importance and significance of identified themes and connections to the research questions. A Concept Map was created to track connections between memos and consider how these would answer the research questions.
Interpreting	Meaning was given to the findings using the data from the memos and concept map. A discussion was created interpreting the preliminary findings to answer the research questions.
Concluding	Conclusions were drawn regarding the findings and recommendations made for the use of the Interactive Notebook and further implications for similar research.

By following Yin's (2015) five stage process, data was able to be collated and analysed in an organised manner, allowing for a higher level of rigour in data analysis. The researcher was engaged in reflexive practice, consistently monitoring and evaluating the data for true meaning to ensure confirmability (Anney, 2014). Coding was used to make the emerging themes easily identifiable, creating more manageable data groupings. The codes were analysed to reveal themes to answer the research questions via concept mapping, which is a tool used by qualitative researchers to develop deeper conceptual analysis of the themes emerging from the data (Hay & Kinchin, 2006).

Issues of Reliability and Validity

In all forms of data collection, it is imperative to assess the reliability and validity of the methods being used (Bell, 2010). The use of multiple data collection techniques allowed for a more comprehensive analysis of themes (Anney, 2014; Bell, 2010). Data could be triangulated using the multi-method approach through semi-structured interviews, focus group interview notes and observations via video tracking technology. As themes were identified and codes created, the researcher was able to go through each different data source to find confirming or non-confirming instances of the emerging themes. Themes became more powerful when they were confirmed in multiple data sources as they provided a more comprehensive analysis of the research questions and provide credibility to the research (Anney, 2014; Mays & Pope, 2000).

Bias and Limitations

The researcher is aware that by being the teacher-as-researcher there was danger of bias (Bell, 2010). The researcher continually questioned the practices being used and critically analysed all data for both confirming and non-confirming instances (Miles & Huberman, 1994, as cited in Bell, 2010). To manage the potential for bias, an independent interviewer was engaged to conduct participant interviews. Further, transcripts from interviews were shown to participants by the independent interviewer and verified by participants to confirm accuracy. To address the issue of teacher-as-researcher, memos and concept mapping of the data was shared with members of the research team to verify accuracy in interpretation of emerging themes.

Possible limitations included:

- The study was conducted by one teacher in one school.
- The study population was small (n=19), with participants all coming from one school.
- The length of the study was restricted to one school term.

These limitations may result in questions as to the transferability of the findings to similar settings. The thick description of the study provided in this chapter, and subsequent chapters, allows for reproduction of the study in other contexts, as well as potential transferability of the results in similar settings (Anney, 2014). The researcher acknowledges that action research is a study embedded in situated activity located in its natural setting, and therefore the results are interpretive of this particular group of students in a given context, however other teachers may benefit from this study by understanding implications around metacognition, and the use of the Interactive Notebook in their own classrooms.

Ethical Considerations

As participants are primary aged children, both the participants and their parent/guardian were informed about the research project and written consent was obtained before data collection began (see Appendix B and C). Student participation was voluntary, and participants and their parents were informed of their right to withdraw at any stage and without consequence. Consent forms were signed by parents and participants. The identity of participants has remained confidential and all students remained anonymous in the data analysis and reporting. The researcher has removed all identifying information regarding individual students and has reported findings in a generalised manner.

Videoing in classrooms must be done carefully. All students that were videoed had signed consent forms from their parents or guardian, outlining the use of video in the study. Any students without permission were excluded from any video footage by strategic classroom arrangement of seating positions. Instances where footage inadvertently captured video or audio of non-participating students resulted in that video being deleted directly from the recording device. The self-tracking video technology

worked with the iPad facing away from the students, so minimal disruption to normal classroom routines occurred. Students were initially aware of the camera and asked clarifying questions which were answered honestly by the teacher /researcher. After the initial session, students behaved in their usual classroom manner.

This research was designed following the guidelines and amendments for approval of ethical considerations by the Edith Cowan Research Ethics Committee and the System and School Performance Directorate of the Department of Education. The privacy of all participants was ensured and maintained, and data records kept confidential and secure.

Summary

This chapter presented the qualitative action research methodology used in this study. The data collection methods and analysis processes to answer the research questions were outlined. The action research process enabled the teacher as researcher to effectively analyse her own classroom practice with regards to this study and modify implementation of the Interactive Notebook as a tool in the music classroom. The findings of the data will be discussed in Chapter Four and the results of the study presented in Chapter Five.

Chapter 4: Data Analysis and Findings

Introduction

The purpose of this chapter is to analyse the data that was collected. The chapter will begin with an overview of each data collection method and the analysis techniques that were applied. The data will be presented as a summary with links to identified themes. A discussion of each theme will follow, connecting the findings to relevant literature. Finally, a summary will conclude the chapter, providing an insight into the following chapter where conclusions from the study will be drawn and recommendations made.

Data Collection and Analysis

The first data collection method used was the observations from the self-tracking video technology. Five lessons were recorded with nine sections chosen for analysis. The sections chosen were a mix of the three phases of instruction using the Interactive Notebook; the hook, input and interaction, and reflection. Data was firstly analysed using the Observation Schedule (Appendix G), looking for incidences of metacognitive awareness. Data was collated initially under types of cognition as per the Metacognitive Awareness Inventory (Schraw & Dennison, 1994). Figure 7 shows the percentage of total occurrences of metacognition that were either student understanding, teacher instruction or student misconception. Figure 8 shows the number of occurrences based on type of cognition and whether the incidence was teacher or student led, incidental findings were also noted. After initial coding was applied, the observation data was then re-looked at under the lens of the emerging themes from the semi-structured interview data to aid in the triangulation of data (Appendix J). Examples from the videos were able to support emergent themes.

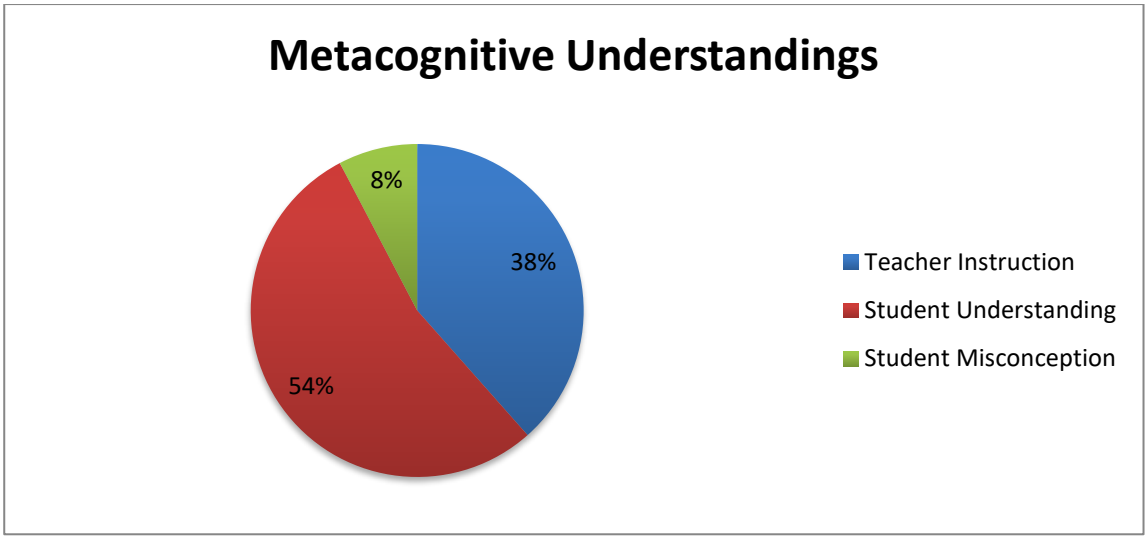


Figure 7. Percentage of occurrences of metacognition based on students or teacher factors

Of all the types of cognition observed, 54% were occurrences where students showed understanding of metacognitive strategies or were engaging in types of cognition without teacher instruction. 38% of occurrences were direct teacher instruction on metacognitive strategies. 8% of occurrences were students observed having a misconception of the learning required or not accessing a strategy to assist their learning.

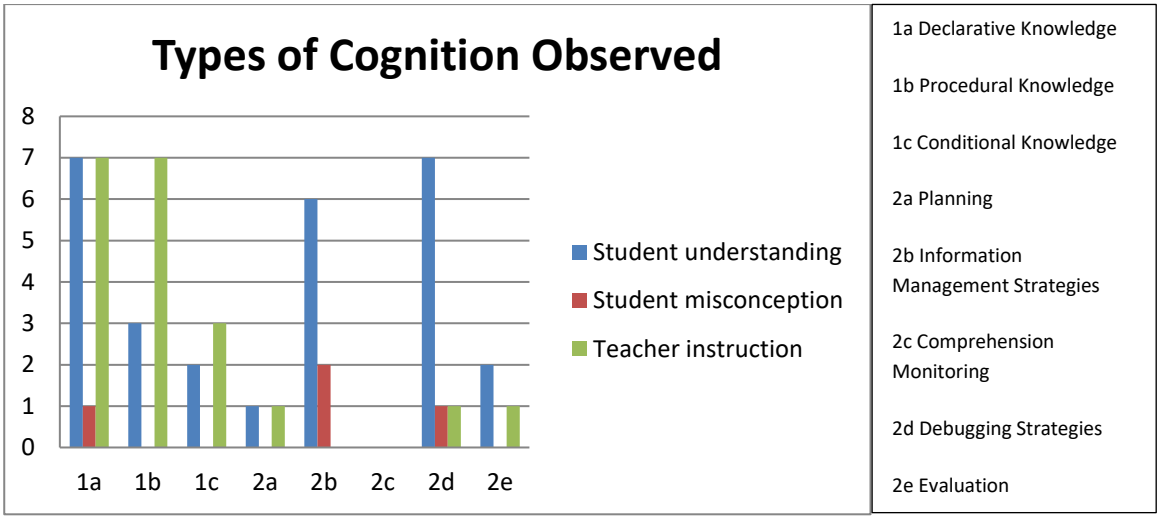


Figure 8. Types of cognition observed in videos

Knowledge of Cognition (Type 1a, 1b and 1c) was observed as occurring more frequently as teacher explicit instruction with 57% of incidences. The teacher was seen to provide explicit instruction of learning intentions, success criteria and the steps needed to complete a task. Regulation of cognition (Type 2a, 2b, 2c, 2d and 2e) occurred more frequently as student-led with 73% of incidences. The students were willing to ask clarifying questions and seek help from both the teacher and their peers. The highest type of cognition observed was declarative knowledge. No comprehension monitoring strategies were observed from either the teacher or the students. This data suggests that when students were clear about the learning intention and given explicit instruction in how to use a strategy, they were able to regulate their own learning when completing learning tasks. This theme will be discussed as "Teacher's direct promotion of self-regulation."

The second data collection method used was semi-structured interviews. Seven students were individually interviewed by an independent interviewer to ensure anonymity of the participants and to allow for freedom of responses. The researcher provided the interviewer with six interview questions, with additional probing questions, as well as allowing the interviewer the chance to ask additional clarifying questions (See Appendix F). The questions provided were:

1. Can you explain to me what metacognition is?
   Do you ever think about how you have learned something?

2. How do you know what the teacher wants you to learn?
   How do you know if you have learned this or not?

3. What are your strengths as a learner in music? Weaknesses?
   Are there things you can do to help yourself learn better in music?

4. What are some strategies you know of that help you to organise your thinking?
   In what way do these strategies help you to think?

5. What do you do when you find work difficult?
   What else could you do if you find work difficult?

6. What is an Interactive Notebook?
   How does it help you to learn?
   Would you be able to use one on your own without teacher guidance now?
   Would you want to continue using an Interactive Notebook? Why or why not?

The questions aimed to provide an insight into six topics that would assist in answering the research questions.

- Topic 1: Student understanding of metacognition.
- Topic 2: Student understanding of learning intention.
- Topic 3: Student awareness of own strengths and weaknesses as a learner.
- Topic 4: Student knowledge of strategies to organise thinking.
- Topic 5: Student awareness of strategies when challenged.
- Topic 6: Student understanding of Interactive Notebooks.

The interview data was analysed for repeated occurrences of themes, which were coded and data matching those codes were collated in a table. The coded table was then further analysed for repeated themes and colour coded memos created (see Appendix K). The memos became the main themes identified in the study and a concept map created (Figure 9). The examples seen in the video observations were analysed against these themes and a further theme emerged: Reduction of Cognitive Load. This will be discussed under two sub-themes: Organisation and Writing to learn.

Concept Map from Interview Data

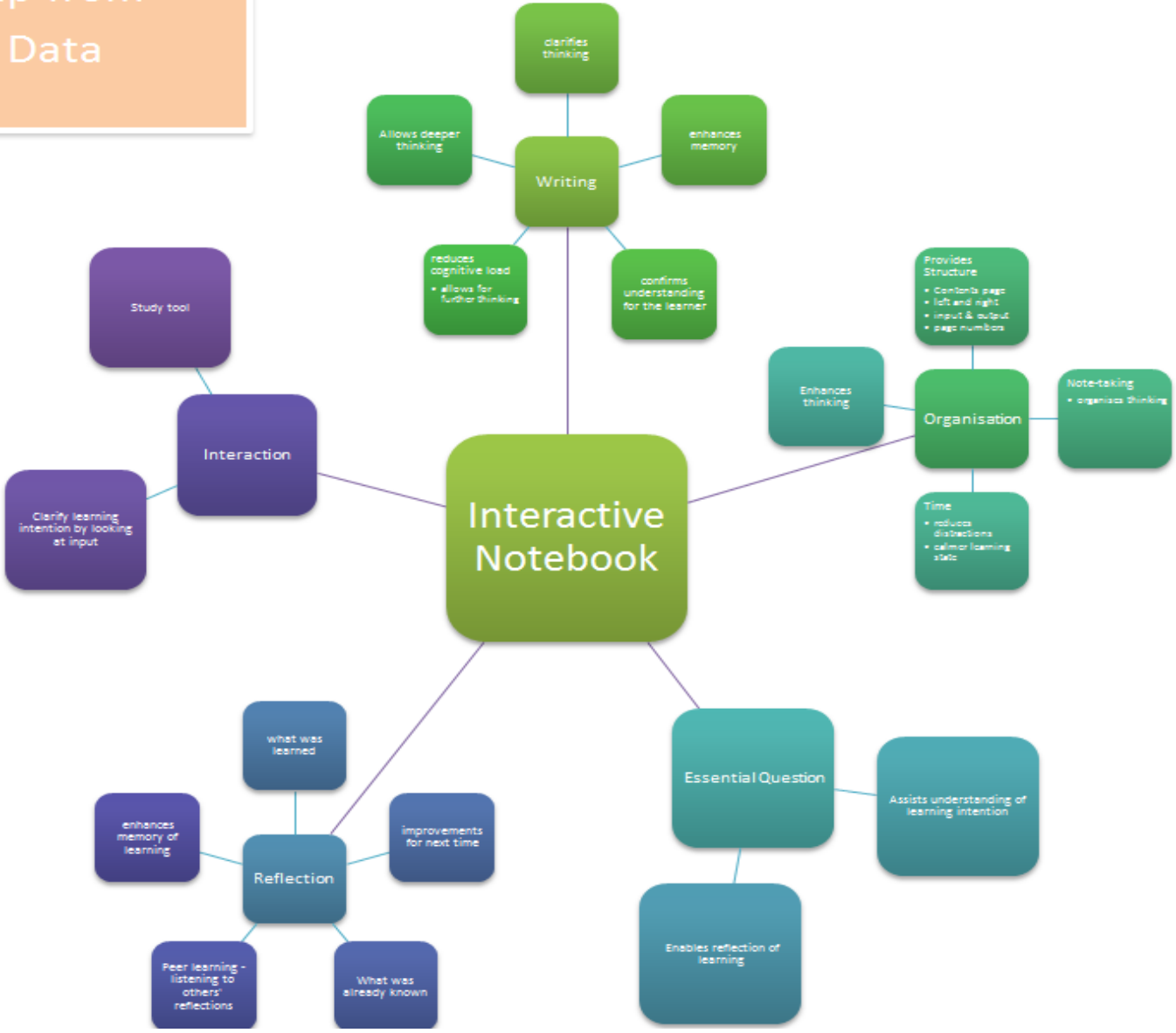


Figure 9: Concept map from interview data

The final data collection method used was a focus group interview. All 19 students that participated in the classroom observations participated in the focus group interview. The researcher provided students with a note-taking scaffold to clarify their thoughts before leading a socratic discussion on the use of Interactive Notebooks in Music (See Appendix H). The inquiry question for the discussion was *"How has the Interactive Notebook impacted your learning in Music?"* with sub questions:

> Question 1: How have you used the Interactive Notebook in music classes?
>
> Question 2: How have particular parts of the Interactive Notebook helped you use the language of music?
>
> Questions 3: How has the Interactive Notebook helped you think about your own learning?

The focus group interview video data failed to upload and was lost. As a data recovery strategy, the researcher compiled notes drawing on memory to aid in the triangulation of data. This data was cross-referenced with the interview and observation data for confirming and non-confirming instances of emerging themes.

Table 5 synthesises connections between the research questions, data collection methods and the emergent themes. These themes will be discussed in detail in the next section.

Table 5

Connections Between Research Questions, Data Sources and Emergent Themes

Research question	Data source	Emergent theme
How does the use of Interactive Notebooks by students in a primary music specialist classroom develop students' music making and responding?	Semi-structured interviews Student Focus Group Video Recordings	Reduction of cognitive load Teacher's direct promotion of self-regulation
How do students use the metacognitive devices of the Interactive Notebook to engage with their learning in Music?	Semi-structured interviews Student Focus Group Video Recordings	Teacher's direct promotion of self-regulation Reduction of cognitive load

Teacher's Direct Promotion of Self-Regulation

Zimmerman (2010) describes a self-regulated learner as one who is proactive about their learning, aware of their strengths and weaknesses and able to use and apply strategies towards reaching their learning goals. Metacognition is an essential component of self-regulated learners, building self-awareness and self-control (Hallam, 2001). In music, expert musicians are shown to possess high levels of metacognitive awareness thus making it important for music teachers to increase metacognitive skills in their students (Benton, 2014).

The Metacognition and Self-Regulated Learning Guidance Report (EEF, 2018) states that students who are effective at self-regulation can engage in metacognitive processes when completing a learning task. The cyclic process of **planning** how to complete a task, **monitoring** progress and **evaluating** overall success builds the capacity of the learner's metacognitive knowledge as well as subject specific skills (EEF, 2018). The report says that metacognition should not just be taught as thinking skills, but rather that metacognitive strategies should be taught within specific content areas to deepen both the subject content knowledge and build strength in the application of metacognitive

skills (EEF, 2018). By teaching students how to use metacognitive skills to monitor their own progress, the students become more autonomous, and can engage in learning tasks independently, without having to wait for teacher direction (Benton, 2014).

The Interactive Notebook was used in this study using a three-part learning cycle, the hook, the input and interaction, and reflection. Thinking processes are activated at each stage in the cycle. The three-part cycle of the Interactive Notebook corresponds with the metacognitive process cycle as demonstrated in Figure 10. Using the Interactive Notebook process should result in new content knowledge and new metacognitive knowledge being created.

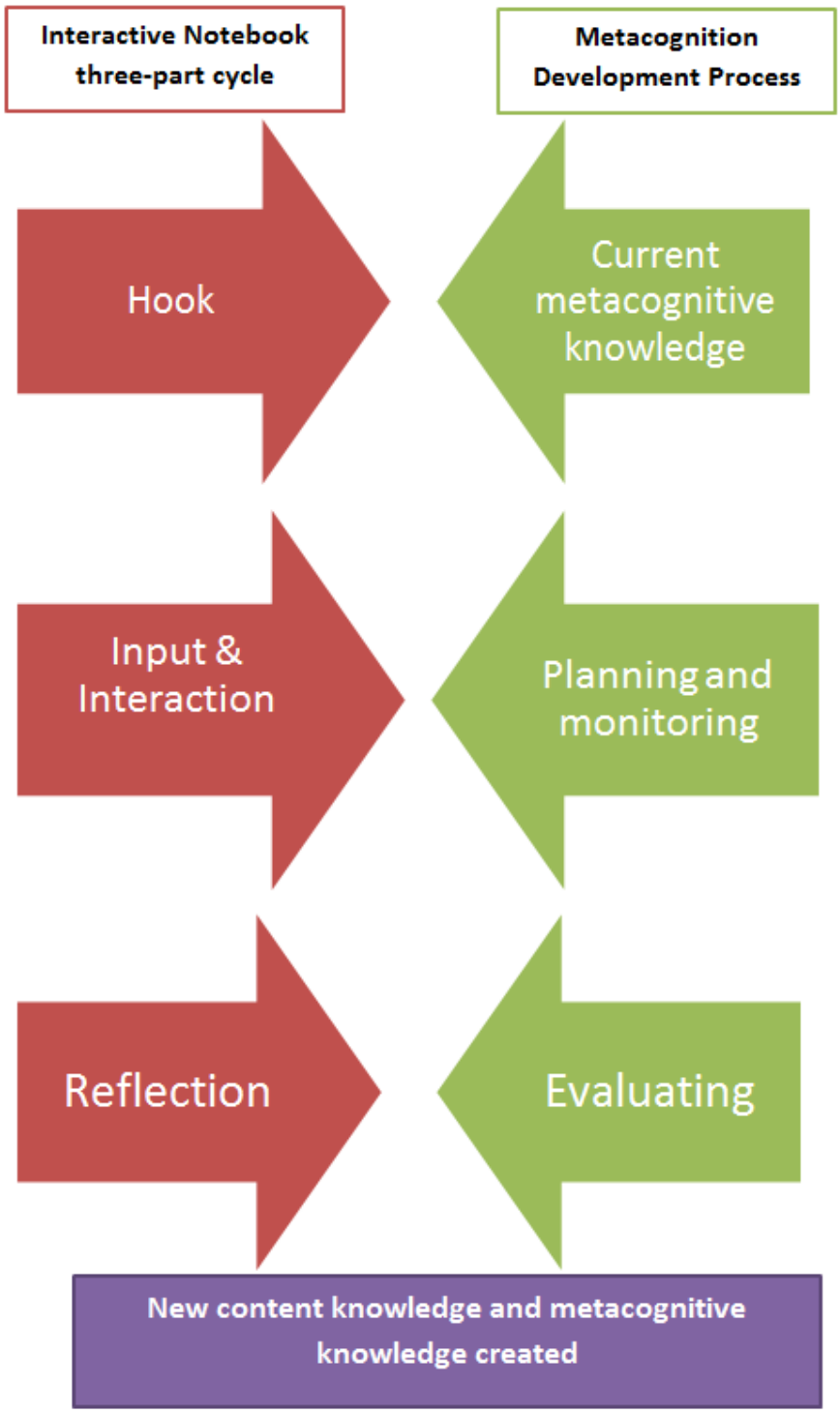


Figure 10: Relationship between the Interactive Notebook three-part cycle and the Metacognition Process

In the Hook section of the lessons observed through video, the teacher can be seen directly promoting self-regulated learning in several instances.

During the first lesson that was videoed, students were setting up their Interactive Notebooks. The teacher activated prior knowledge about the set-up of the Interactive Notebooks, with a focus on how the book can be used to aid learning. When asked to recall what they already knew about Interactive Notebooks, a student stated that a table of contents is included in an Interactive Notebook. The teacher asked the whole class:

> Who can tell me more about the table of contents? What is it and why do we have it? How does it help us?

A student responded:

> we have it so then each time you do something, you can write it down and you have it, so you can be AVID organised.

AVID is "an educational program designed to boost the academic results of students regardless of their background or disadvantage" (AVID Australia, 2016). The teacher then asked:

> and how's that going to help us be more successful at learning?

Another student responded:

> well, whenever you need to like find something to help you for like a test or to do like a one-pager, you look, and you can see what page your stuff is on and you can check that page and write down all the information.

The teacher then went on to discuss the purpose of note-taking, explicitly stating the reasons behind why students should take structured notes.

> If it's all ruled up and nice and neat you can find information fast. Can't you. You've got your keyword or your main idea in the left column and then all the information in the right, you know where to look rather than just looking through the page, especially if we go back and we highlight our notes and we add in extra colour we can find information even quicker.

And:

> Here's some reasons why. Notetaking is an active process. So, if you just take notes and you just copy off the board what I write, and you do nothing with it, do you think you're going to remember?

Students responded with a no. The teacher continued:

> No. But if you are active, you're interacting with your notes, you are highlighting, you are doing something after you take them with the information that's in there, you've got a better chance of remembering what it was I was trying to teach you, especially when you only come here once a week. You've got a whole week before coming back again. If you just take notes and you don't do anything with them, you're not going to remember it are you? If you do get to go and play on an instrument and reflect on it, write a DLIQ about what you did, you might have a better chance of remembering it the next week.

In the input and interacting section of the lessons videoed, the teacher also directly promoted self-regulated learning by explaining why certain strategies are used. In one lesson, students were reading a text on African Music. The teacher gave students a reading prompt to focus their reading. She explained why the prompt was an important strategy:

> Our prompt for reading, because we always need a purpose, we're not reading for no reason. We're reading to learn something particular. (…) So, our purpose for reading is to find out the features of African Music, what are they, and consider how this might be different from other cultures. So, you're going to be looking to make some connections while we're reading.

Students then followed a marking-the-text process where students highlighted key words and underlined supporting detail. The teacher explicitly stated how to do this:

> You need to circle, or if you have a highlighter you can highlight, words that are the names of a place or the name of an instrument. That's all you highlight. Then you underline the most important detail in the paragraph. So that's not going to be every word, it's just if it talks specifically about music or dance or drama in Africa then you're going to underline that.

The teacher continually modelled self-regulation of the strategy by checking what students had circled and underlined and referring back to the criteria:

Teacher: What do you think the most important information about African music is?

Student: Is it there are no different words for music and dance?

Teacher: Yeah, so there are no separate words for music and dance. They go together. The main idea, there's no separate words for music and dance. You should have underlined that.

And:

important information about music or drama. You have to be really critical, you can't be underlining everything.

In this lesson, students can be seen monitoring their own use of the strategies by sharing what they have circled and underlined, but also by asking clarifying questions such as:

Do we need to highlight West Coast of Africa?

What was the underlining for and the circling focus?

What would you underline in that one, Miss Gray?

Another lesson shows the teacher explicitly modelling how to create a multi-layered track in Garageband (a digital music software program) . She models creating the track using think-alouds to demonstrate how to apply previously learned strategies for finding the correct keys on the keyboard, counting in simple-quadruple time, staying in time when adding harmonies and percussion parts and also how to use the features in Garageband. As the students are interacting with the learning task, the video footage shows many occurrences of students asking for help from the teacher and peers or seeking help independently with classroom resources. It also shows several occurrences of students that are off-task and not knowing how to independently access the learning task. These students were not demonstrating self-regulation. Upon viewing this footage, the following lesson's hook was a concept attainment task, where the teacher used air-server to show examples of tracks already created, with both accurate examples and examples with errors. The teacher directly promoted this as a self-regulation strategy for students to apply to their own work:

Teacher: This is called Concept Attainment. Do you know what that means?

Students: No

> Teacher: It's like, when you, do you understand something really, or not. If you can say this is an example of it, this is not an example of it, it means you get the concept. So, I'm going to Airserver (screen mirroring technology) some examples of the task that I've asked you to do {BM strategy removed} and you need to tell me what's good about it, what's not good about it, what can be or needs to be fixed. Then what you're going to do is look at your own work that you did last week and you're going to do the same thing. What's working well with it, what's going to make it better. Okay. And then once you've done that you can continue working on it.

Students were able to identify what was accurate in the tracks and where the errors were. The teacher then modelled how to correct the errors. The interacting part of the lesson that followed showed more students were able to stay on task and use debugging strategies than the previous lesson.

The reflection stage of the lessons was captured in the videos, with students evaluating their learning and also their application of strategies. In one lesson, students completed another marking the text strategy, using the strategy independently. Students then reflected on their application of the strategy and if they were able to apply the correct use of the strategy to identify key information.

Another reflection stage showed students referring back to the learning intention and success criteria. The students that faced challenges all identified their peers as being the ones to help them complete the task successfully:

> So, I was supposed to do like the harmony, the melody, the whatever it's called, harmony 1 harmony 2. I eventually achieved it because (deidentified) helped me.

> I was doing melody and like repeating it and moving it into spot thanks to (deidentified) for teaching me how to do it.

While students were seen using self-regulation strategies, students' understanding of why they would use these strategies was not seen. In the semi-structured interviews, students were able to identify the strategies that the teacher had promoted as being

helpful but were not able to articulate benefits for learning beyond organisation. One student referenced the organisation of the Interactive Notebook as potentially helping learning, but was unsure:

> I involve the Interactive Notebooks as an AVID strategy to organise your work and wonder if that helps me.

One student, when asked if they used any strategies to organise their thinking, responded by identifying the contents page to help organise thinking, stating that this helps by:

> keeping you organised.

Another student responded to the same question, discussing note-taking as being helpful:

> Through [core] notes, they really help me because you've got the word and you've got the definition.

Note-taking was referred to by another student as being a strategy for organising thinking, and when prompted explained:

> So, they help me to think in a way where it makes it more organised, so then I can actually figure it out and stuff like that.

When asked how the Interactive Notebook helps them to learn, most students still only identified that the structure helps them to be more organised.

> It helps me learn how to keep things organised.

> It really organises my book, like it makes it look better, makes me think more.

> It helps me to learn by me being more – a little bit more organised so I can read it and stuff like that.

> It’s like organised so that you know what you’re doing and things, so it’s like you’re organising each thing and you know where all your things are from the contents page.

This base level of understanding about how the Interactive Notebook helps students learn was further reinforced in the Focus Group Interview, with students unable to move beyond discussing organisation as the reason for helping learning.

The semi-structured interviews asked students what they knew about metacognition, and if they ever think about how they learned something. Only one of the seven students interviewed was able to provide a definition of metacognition.

> Thinking about - yeah, thinking and what - it's about your thinking and what you think.

The same student was able to articulate how they learned something:

> I think about - of that question - of what the teacher has asked me.
>
> Like you're showing your growth mindset of how to fix things if you get things wrong and thinking back to that question if you missed any key words or anything in it.

A different student identified that the teacher explains how to learn something but was unable to provide any examples. Another student referred to teacher direction as how they know they’ve learned something:

> I do stop and think about it because like she reminds you a lot and that's good because then it sticks in my brain and I remember it and how I did it.

Other responses included:

> Usually when I sit down and listen to the information and I think about what I've learned when I'm sitting down and writing it.

> If I need to do a summary of something, I think about how I've done that so then I can remember and write it down.
>
> I involve the Interactive Notebooks as an AVID strategy to organise your work and wonder if that helps me.

The second interview question asked students how they knew what the teacher wanted them to learn, and how they knew if they had learned it or not. All of the students stated knowing what the learning intention was because the teacher either told them and/or had it written and visually displayed:

> How the teacher wants you to learn - like how you know is that they tell you. Like, they show it on the whiteboard and they explain it - of what you have to do. They give you good explanations of how to do it and how to write it out or set it out into the - onto the paper.
>
> She usually has like a PowerPoint and essential questions, success criteria and that explains most of it.
>
> Well most of the time we have a PowerPoint or a sheet to go in – of the content of what we are doing, and it's normally got all of the questions and the rest of the things we need to know about that subject while she explains it to us.
>
> She writes it down on the whiteboard or something like that. She writes it down somewhere so that we can see it and know what we're learning.

Four of the students responded to knowing if they had successfully learned what was intended through reflection strategies:

> Because I go back to the essential question bit, that was asked at the beginning of the lesson.
>
> Because we like do reflections at the end of a class – forgot about that – and

we reflect on what we've learned, what we already knew, what we could do better next time.

Well sometimes we would do a reflection or a revision of what we're done so far. Then we would see what other people have done, and what other people haven't done, and what we could learn next time.

Interviewee: DLIQ, maybe.

Facilitator: What does that mean?

Interviewee: Did, Learned, what you found Interesting and a Question that you've had.

Facilitator: Okay, and what does that do?

Interviewee: It lets the teacher know if you've done what you - if you know what you've done and the question, so that she knows what she can teach you, so that she knows what you need to learn.

Facilitator: Does that help you at all?

Interviewee: Yes, because it's kind of like a reminder to see what you've done so that you remember what you've learned that day and so that you can remember.

Discussion of Findings on Teacher-directed Promotion of Self-Regulation

A study by Dignath and Buttner (2018) investigated how teachers promoted self-regulated learning in mathematics in their classes. The study used 12 primary school teachers in nine different schools, and the teachers were videoed teaching mathematics to Year Three students. The study showed that none of the teachers used direct instruction of learning strategies, and if they did promote students' self-regulation, it was mostly to emphasise using cognitive strategies, not metacognitive ones. The study recommended that teachers spend more time explicitly addressing self-regulation in their classrooms. Using the Interactive Notebook's left-side for reflection of music making skills and strategies for learning assisted in developing metacognitive skills (See Appendix L). While this study showed evidence of the teacher using direct instruction of

learning strategies and promoting how they assist learning, the study did not find strong evidence of students being able to verbalise this at a later time.

Benton (2014) states that while adolescent and adult learners possess a higher capacity to use metacognition and self-regulate their own learning, teachers can begin to develop these skills in younger students through structured learning. The three-part cycle of the Interactive Notebook allowed the teacher to provide structured learning and promote metacognitive skills in 11-12 year old (pre-adolescent) students throughout the lessons, however the participants were not always able to understand and articulate how these metacognitive strategies supported their learning. There could be several different interpretations of this finding. As the study was conducted over a limited time period with only one lesson per week, students may need more exposure to the metacognitive devices of the Interactive Notebook to become more fluent in their use, likely leading to improved awareness, understanding and articulation of how the strategies support their learning. A different interpretation could be the teacher may need to be more explicit in discussing how the strategies assist students to become more self-regulated and provide opportunities for students to discuss metacognition as a learning strategy, and explicitly articulate how they are using these strategies as part of the learning activity itself. In doing so, the embedding of metacognitive processes in the subject can be further enhanced.

Looking back on the Observation Tool used to analyse the video recordings, there was a high occurrence of declarative knowledge from the teacher's direct promotion of learning intentions and explicit modelling of the skills required for a task. There was also a high occurrence of students demonstrating an understanding of the learning intention and what they were required to do. Students were also observed successfully completing learning tasks after explicit instruction on how to analyse their own musical work and correct errors. Even though students were using self-regulation and metacognitive skills to complete tasks, they were not yet fluent in being able to articulate how these strategies aided their learning. The Education Endowment Foundation (2018) recommends explicit teaching of metacognitive skills with many opportunities for students to apply these skills through independent practice so that students can develop self-regulation and become more confident over time. As this study was only conducted over a short period of time, continued use of the Interactive Notebooks in music is likely to result in students' developing stronger capacities to discuss what, how and why the strategies they used support their learning.

Reduction of Cognitive Load

Current research that has significant impact on educational practices is cognitive load theory. This theory was developed to inform instructional design, based on human cognitive architecture (Sweller, Ayres & Kalyuga, 2011). Cognitive load theory works on the principles of working memory; the limited amount of information that can be stored for a short time, and long-term memory; the limitless schemas that hold large amounts of information (New South Wales Centre for Education Statistics and Evaluation, 2017). The structures of the Interactive Notebooks and how it informs lesson design has connections to cognitive load theory. These will be discussed under subthemes: Organisation and Writing to Learn.

Organisation

The Interactive Notebook is designed to teach students organisational skills that align with how their brain works, organising and storing information and applying strategies that can be used to independently progress their own learning (Merritt, Neitz & Selby, 2018). Students in this study articulated ways in which the Interactive Notebook helped their organisation of their thinking.

One student stated:

> It will help me organise my thinking by the structure, how I do it.

This student went on to explain 2 column notes as the strategy that helped to organise thinking.

Another student discusses how having organised materials (in this instance referencing her classroom binder) helps to have a clear mind for learning:

> These strategies help me think better by having - because I normally get distracted and frustrated if I have a messy binder or something, because then I don't - I start to not listen if I don’t have just a clean binder.

This was supported by another student's response:

> So, they help me to think in a way where it makes it more organised, so then I can actually figure it out and stuff like that.

In the video observations, a student was able to articulate that the organisational component of the Table of Contents helped their learning by:

> Whenever you need to like find something to help you for like a test or to do like a one-pager, you look, and you can see what page your stuff is on and you can check that page and write down all the information.

When asked what an Interactive Notebook is, several students were able to articulate how the structure of the book organised their thinking. One student explains:

Interviewee:	An Interactive Notebook is an AVID organised book where you can take notes and organise your thinking.
Facilitator:	Organise your thinking, interesting. What do you do with an Interactive Notebook?
Interviewee:	Write down my notes and get my input from the teacher on the right side.
Facilitator:	Yeah.
Interviewee:	Then place my output on the left side.
Facilitator:	Ah, so explain to me, what's output?
Interviewee:	Output - [unclear]…
Facilitator:	It's okay. Take your time.
Interviewee:	Output is the information that you have gotten out of what you have learned.

Another student describes the structure:

Interactive Notebook is a teacher's input and a student's output. So, it's to organise your thinking of your information, your information and your own learning so you can – so you've got information on the right side which is the teacher's input because they give it to you. Then the left side is the output for the students because that's where you put other information or recorded information or in more detail on that side.

Figure 11 shows an example of the input and output page of one learning task.

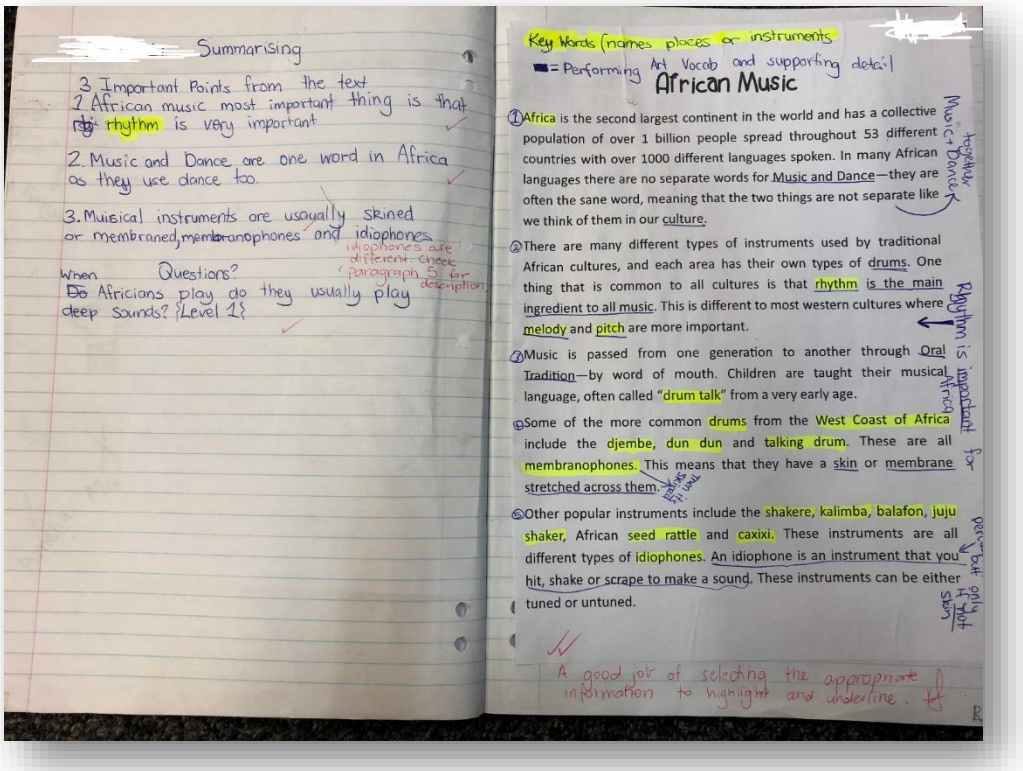


Figure 11. Photo of the structure of an Interactive Notebook

When asked how the Interactive Notebook helps them to learn, 6 of the 7 students interviewed attributed organisation as the benefit to learning.

> It's like organised so that you know what you're doing and things, so it's like you're organising each thing and you know where all your things are from the contents page.

> It really organises my book, like it makes it look better, makes me think more.

The Focus Group Interview supported this viewpoint, with students agreeing that their favourite part of using the Interactive Notebook was that it helped them to be organised.

The students in this study made strong personal connections to the Interactive Notebook helping to keep them organised, which helped them to learn. Being organised has a strong positive impact on educational success (Conley, 2013). An average person is suggested to only be able to hold four chunks of information in their working memory at one time (Cowan, 2001). When students are organised, they are reducing the strain on their working memory, increasing their capacity to take on new information or engage with more challenging learning tasks. The structures of the Interactive Notebook aid in this, reducing the cognitive load for students to be able to interact with their learning more effectively. This suggests that the Interactive Notebook facilitates metacognitive learning through self-awareness; the students think about how they are representing their thinking and what they know, and self-regulation; by organising their ideas in this way, they are learning to have more control of how they are thinking and learning.

Writing to Learn

In a music classroom, time is not available to teach the conventions of writing to students. However, writing is still a powerful tool for students to process learning and build metacognition (Merritt, Neitz & Selby, 2018). The Interactive Notebook was used to increase writing in music to aid learning and build music responding skills (See Appendix M). The seven students that participated in the semi-structured interviews made repeated references to reflective writing and how it helped them to learn.

A common theme that emerged was that writing helped students to clarify their thinking. When asked what strategies help them to learn, one student stated the output page in the Interactive Notebook helps them as they:

> need to write down what you've done and what you're doing.

Another student describes writing as helping because:

> When I write like all the definitions and the words it makes me think about them. Because the Interactive Notebook, especially, because that's like, because we get the information, we read it and then we write it down, so it's kind of double.

Students also identified that writing something down helped to reduce their cognitive load, allowing them to think more deeply on the topic. One student stated that by putting it down on paper, it helped as:

> Then that information's out, and then I can keep on thinking of more things.

This was supported by another student's statement:

> I think it makes me write more which I think is good because it makes me put more information down, so I can get a deeper understanding of it.

Writing something down also aided retention of information. One student discusses using reflective writing as a strategy to think about how a task was completed:

> I think about how I've done that so then I can remember and write it down.

In the focus group interview, several students stated that they used their notes from their Interactive Notebook to review their learning which helped them to remember the information and be able to use it for another learning task.

Several students expressed knowing if they had learned something by being able to write it.

> If we write it down or something like that, then we'll remember it and know that we've learned it.

> I know that I've learned about it when I've paid attention to it and I've written it down.

I know by listening, writing it down most times, and thinking about it.

In the focus group interview, one student asked the group what they saw as a weakness with the Interactive Notebook and what they did not like about it. The general agreement of the students was that they did not like having to write so much. While this demonstrates that many students are reluctant writers, six of the seven students that were interviewed mentioned at least once that writing helps them to learn by organising their thinking, to get information out so that they could think of more things, or to remember information.

Reflective writing can be seen as a tool for creating schemas, transferring knowledge into long-term memory and freeing working memory space for the learner (Paas & Ayres, 2014; Stencel, 2014). The students in this study attributed writing to helping them think more deeply about the content, clarify how they learned something and assist in remembering information. This aligns with cognitive load theory, where information is considered transient unless it is written down (Sweller et al., 2011). While writing is not typically seen as a regular instructional method in a primary music classroom, the writing components of the Interactive Notebook have shown to have a positive effect on students' learning in this study.

Connecting Self-Regulation and Cognitive Load Theory

In recent years, researchers have begun to analyse connections between student self-regulation and cognitive load theory. There is a debate about whether the core values of each theory are oppositional or complementary. A reason for combining the theories is based on their commonalities in self-directed learning, and that focusing on cue-monitoring skills in both cognitive and conceptual knowledge development will improve instructional design (De Bruin & Van Merrienboër, 2017). An argument against this is that cognitive load theory is largely concerned with domain-specific information that is explicitly acquired through direct teaching, while self-regulation is mostly acquired automatically over time and cannot be taught (Sweller & Paas, 2017). The argument presented is that there have been limited demonstrations of self-regulation skills being transferred beyond the context within which they were taught, thus limiting the findings of previous studies (Sweller & Paas, 2017). Seufert (2018) presents an argument that when students are using self-regulation, they are automatically adding to their current cognitive load. While there are mixed views on whether these theories can or even

should be combined, teachers can directly promote the reduction of cognitive load as a self-regulation strategy by using the devices of the Interactive Notebook, as has been shown in the present study.

Self-regulated learners are those that take ownership of their own behaviours and learning environments to improve their learning outcomes (Svinicki, 2010). Students in this study were able to identify that the organisation of the Interactive Notebook, and the writing to learn strategies used within the learning cycle helped them to deepen their learning experiences by freeing up working memory space for further thoughts to emerge. When asked if they would want to continue using an Interactive Notebook, six of the seven students responded that they would, citing reasons such as:

> Yes, because it really helps me in music, and it helps me to, again, organise my stuff.

> Yes, I would because it keeps me very organised and it makes class easier to learn.

> I think it makes me write more which I think is good because it makes me put more information down, so I can get a deeper understanding of it.

Students were asked if they could now use an Interactive Notebook independently. Six of the seven students responded positively, however only one of these students was confident. The other five students said they would likely need assistance and guidance to use it accurately.

The Interactive Notebook has the capacity to reduce cognitive load for students. Through direct promotion of cognitive load theory, teachers could build this understanding for students, so that they can be better able to connect with and articulate how the Interactive Notebook aids their learning. This would increase the students' awareness of why continuing to use the Interactive Notebook as a learning tool can be beneficial for their learning, consequently enhancing the development of self-regulation through its use.

Summary

In chapter four, the data collected was analysed, and key findings discussed. Data from semi structured interviews, observations of video recorded using self-tracking video technology, and researcher notes from a focus group interview were analysed and triangulated to form two main themes: Teacher's direct promotion of self-regulation and Reduction of cognitive load, discussed under two sub-themes Organisation and Writing to Learn. In Chapter Five, the conclusions will be discussed and implications to future practice and research will be presented.

Chapter Five: Conclusions and Recommendations

Introduction

This chapter summarises the conclusions made from the key findings in relation to the research questions and aligns to relevant literature. The chapter will then present incidental findings that are relevant to the aim of this study. Limitations of the study will be discussed and then implications for future practice and research presented.

The aim of this study was to investigate whether the Interactive Notebook was an effective pedagogical tool for primary music education, with a particular focus on how generalist trained teachers could deliver a rigorous, authentic music curriculum that would engage all students. The study was directed by the following two research questions.

1. How does the use of Interactive Notebooks by students in a primary music specialist classroom develop students' music making and responding?
2. How do students use the metacognitive devices of the Interactive Notebook to engage with their learning in Music?

The study was driven by current Australian educational policy documents stating the significance of all students receiving an authentic music education due to the strong evidence linking quality music education to a range of positive social-emotional and academic developmental outcomes (ACARA, 2016; SCSA, 2014; Victoria State Government Education and Training, 2018).

Conclusion One: The Interactive Notebook as a pedagogical device improved students' music making and responding abilities.

The Interactive Notebook is more than just a workbook for students to collate their learning. The pedagogy used in the lesson design guided the way students engaged in the learning process using the Interactive Notebook. The three-part learning cycle of the Interactive Notebook used in this study, represents a pedagogy that incorporates both explicit instruction and gradual release to student independence with a new skill or concept. This process includes several of the components identified as High Impact Teaching Strategies [HITS] that have been proven to increase student learning of any

concept or skill (State of Victoria, Department of Education and Training, 2017). The Interactive Notebook three-part cycle embodied the HITS of:

- setting lesson goals with clear learning intentions and success criteria
- creating a strong lesson structure with organisation routines that maximise learning time
- incorporating explicit teaching time to show students what to do and how to do it
- providing multiple exposure to new knowledge and skills through the revision of input activities and production of output activities
- developing metacognitive strategies through the teaching of the learning cycle of input and output, planning of learning tasks and reflection activities

All the students that were interviewed in the study attributed knowing what they were supposed to learn to the teacher's direct promotion of the learning intention and explanation of success criteria in the first phase of the learning cycle. The explicit teaching of skills followed with guided and independent practice made up the second phase. In the final phase, student reflections on their learning noted through the video observations showed that they both knew what they were supposed to be learning during their lessons, were able to evaluate how they went and what assistance they needed. Studies cited in the literature review (Helmer, 2014; Lowe & Belcher, 2012) support this direct instruction approach to music education, where teacher modelling followed by guided practice with targeted feedback showed significant positive impacts on students' musical literacies development.

This approach is contradictory to research around informal learning in music, which is currently trending in the United Kingdom and internationally. This informal approach, places the learner at the centre, stating that learning may be incidental or even accidental (Green, 2008). The approach in Green's research was designed to engage teenagers in music education and consider cultural preferences. While some music programs successfully utilise this approach, the learner centred approach of this pedagogy ignores sequential instruction of skills, breadth of exposure to musical styles and genres and development and understanding of standard musical notation (D'Amore & Smith, 2016). While the approach described by Green may have benefits in engaging reluctant students and developing contemporary musicians, it ignores the curriculum that will allow students to advance to higher levels in music education, where theoretical and practical musicianship is required. To fully reach their potential in music, students need to

participate in sustained, sequential programs that develop, formalise and refine their aural and physical skills (Lowe & Belcher, 2012), thus reinforcing the importance of both theoretical and practical elements in music learning.

The use of writing to learn strategies contributed to improving students' music making and responding abilities. Students used writing within the Interactive Notebook to take notes on musical knowledge and concepts, summarise key information from texts, compare music from different cultures and reflect on what was learned and how they learned it. Learning through writing helps students to learn as they build and explore knowledge, interpret and process learning without being evaluated on formal writing conventions (McKinney, Glazebrook, Sanders and Shapiro, 2018).

Klein (2000) presents an overview of historical research that shows writing contributes to learning and conducted his own study with primary aged children on writing to learn in Science. The study showed only 15 out of 70 students produced a more complex explanation of a scientific phenomenon during writing. Klein's conclusions stated that for primary aged students to use writing to deepen understanding, specific instructional strategies are required due to the cognitive load placed on them due to their limited writing strategies. This study shows that the strategies of text-reviewing (being able to interact with written and visual texts) and forward-searching from an experience (in this case, musical experiences) enabled students to be able to produce writing within the musical content area, in line with Klein's (2000) assertion.

Conclusion Two: Direct instruction of metacognitive strategies by the teacher was needed for students to fully engage with the benefits of the Interactive Notebook

When planning how to teach self-regulation, teachers must consider *what* they are teaching, *whom* they are teaching, *how* they will teach it and *how to promote student transference* to new contexts (Hofer, Yu & Pintrich, 1998). Studies cited in the literature review showed a positive correlation between metacognition and expert musicians, and that it is a music educator's role to provide feedback that moves students along the continuum of novice to expert musician through the instruction of metacognitive skills (Benton, 2014; Callender et al., 2016; Davis, 2000; Hallam, 2001; Larkin, 2010). Metacognition is an important component of self-regulation and it is recommended that

educators teach metacognitive strategies within specific subject areas (EEF, 2018; Hallam, 2001).

The findings from this study showed that the three-part learning cycle of the Interactive Notebook aligned with the development of metacognition in students and had the potential to develop both content knowledge and metacognitive knowledge. Students were able to engage with authentic music activities when the teacher provided explicit modelling of the knowledge and skills required. The reflective devices within the Interactive Notebook demonstrated students knew what they were supposed to be learning and evaluated both how they were going and the strategies that helped them to achieve it. Observations made through the videoing of lessons showed that while some of the time students were independently accessing self- regulation strategies, other times they were off-task and did not use the notes within their Interactive Notebook or access teacher or peer help when they were unsure how to proceed. Once the teacher provided further support on how to use debugging strategies, students were able to proceed with the task. Knowing that self-regulated learners can set, monitor and evaluate their own learning goals (Svinicki, 2010), in this study this only happened with teacher guidance and explicit instruction. This could be attributed to limited exposure to self-regulation direct instruction that primary aged students may have experienced.

One of the benefits of the Interactive Notebook is the purposeful selection of and interaction with information specific to learning goals to aid in the transfer of learning into long term memory (Stencel, 2014). The teacher used explicit instruction of multiple instructional strategies to show students how the devices of the Interactive Notebook could help them to learn, such as showing them how to organise their learning within their books, select key information from texts or use reflection strategies to evaluate their learning or how they learned. Students demonstrated applying some of these strategies in the video observations and were able to articulate an understanding of how some of these strategies were beneficial to their learning but were not fluent in recognising and discussing all of the devices within the Interactive Notebook. Dignath and Buttner's study (2018) showed that teacher's direct instruction of learning strategies was minimal and recommended more time is spent on promoting the metacognitive skills of learning strategies. The present study supports this view. Even though there was evidence of direct teacher instruction, further teacher direction and opportunities for students to practice is needed for these skills to develop. Increasing exposure of metacognitive skills through teacher's direct instruction of strategies and providing further practice could result in students' increased ability to use these strategies.

Nicol and Macfarlane-Dick (2005) state that students will become better self-regulators when they are empowered to take control of the feedback process for themselves, and that teachers can show them how to do this with clear learning goals and success criteria, embedding reflection during learning activities, and providing opportunities for students to discuss their learning with peers or the teacher. This is echoed in the Metacognition and Self-Regulated Learning Guidance Report (EEF, 2018), where a cycle of planning, monitoring and evaluating is promoted as the means to build the capacity of the learner to self-regulate within specific learning areas. The Interactive Notebook learning cycle allowed these practices to happen. As evidenced in the interviews, the students were not able to articulate a deep understanding of metacognition or of many of the strategies that were used. It becomes the teacher's role to continue to provide instruction and support on metacognitive skills so that students can become proficient users of them.

Conclusion Three: Using self-tracking video technology improved teacher practice through reflection-on-action

The action research method was applied in this study in order to evaluate the effectiveness of using the Interactive Notebook in the teacher-as-researcher's music classroom. As part of the action research process, observations were made through self-tracking video technology. While there were some technical difficulties with some of the recording and uploading, the ability to view her own practice and the real-time events of the classroom from an objective point of view resulted in modifications to the learning program to improve student performance and understanding in music.

Video reflections allowed the teacher-as-researcher to view students who were not on task and unable to engage with the learning task. This meant that a direct intervention could be applied during the following lesson to re-teach the skill and a strategy given to improve student understanding. As the qualitative data was analysed, the teacher-as-researcher could view the footage for emergent themes and consider how these were impacting student learning. The video was also able to be reviewed through a different lens to consider alternative themes and foci, enabling triangulation of data.

The literature review noted that generalist trained primary teachers are frequently employed as music teachers and often lack confidence, perceiving themselves as

inadequate to deliver the complex music curriculum that is required (Alter et al., 2009; De Vries, 2013; De Vries, 2015). The use of the Observation Schedule to view the video footage allowed a focused view of what was happening in the classroom, which supported an objective analysis of teaching practice (Hollingsworth & Clarke, 2017). With the focus of looking at the types of metacognition that was occurring in the classroom, the teacher-as-researcher was less judgemental about herself and could objectively analyse what was occurring. This resulted in changes being made to future lessons that resulted in improved student engagement and achievement.

Limitations of this study

The researcher acknowledges that this study was conducted with a small group of students (n=19) and one teacher in one context, during one school term. The thick description of the study and subsequent results allows for reproduction of the study in other contexts where results could possibly be transferred (Anney, 2014). The action research nature of this study potentially limits the results, however other teachers may benefit from this study by understanding implications around metacognition, and the use of the Interactive Notebook in their own classrooms, in music and other learning areas. These implications are discussed in the next section.

Recommendations

The findings in this study have shown that the Interactive Notebook is an effective pedagogical tool for delivering authentic music lessons to primary school students. The three-part learning cycle successfully embedded High Impact Teaching Strategies (State of Victoria, Department of Education and Training, 2017), and encouraged writing to learn and metacognitive strategies. Teachers using the Interactive Notebook will need to provide explicit instruction on the metacognitive devices of the tool for students to develop an understanding of these. by By using the processes of Interactive Notebook learning cycle generalist trained primary teachers teaching music could gain confidence in delivering quality theoretical and practical components of the music curriculum.

While this study specifically investigated using the Interactive Notebook in the primary school music classroom, results from the study could potentially be transferred to other learning areas, both in primary school and high school contexts. The structure and devices of the Interactive Notebook encourage organisation of learning through materials

and thought processes, reducing cognitive load and enabling deeper access to curriculum content. The direct promotion of metacognition is encouraged through the use of the Interactive Notebook. This should be explicitly taught in all learning areas to build self-regulated learners who can transfer these skills into different contexts (EEF, 2018).

Implications for future research

While this study shows a connection between the Interactive Notebook and self-regulation, further research needs to be conducted to show to what extent this tool builds self-regulated learning over time, and if transference between learning areas occurs. Studies into the age-related developmental process behind using the Interactive Notebook could also be beneficial for encouraging the development of explicit teaching of self-regulation in younger students.

The use of video-tracking technology was a beneficial data collection method in this study. The loss of the video footage of the Focus Group Interview was a technical error that resulted in potential data being missed. Future researchers could prevent this occurring by using more than one device at a time.

Summary

This study aimed to investigate how using the Interactive Notebook as a pedagogical tool in a primary music classroom impacted students' music making and responding and developed their metacognitive skills. The findings from the study concluded that using the Interactive Notebook improved students' music making and responding abilities by embodying High Impact Teaching Strategies using explicit instruction and gradual release to student independence with a new skill or concept. The Interactive Notebook three-part learning cycle also incorporated clear learning intentions with success criteria, a strong organisational structure and learning routines that maximised working memory space and provided multiple exposure to new content knowledge and skill acquisition. Metacognitive strategies were evident in the learning cycle; however, students needed the teacher's direct instruction on how and why to engage with these to maximise the benefits to their learning.

References

Alter, F., Hays, T. & O'Hara, R. (2009). The challenges of implementing primary arts education: what our teachers say. *Australasian Journal of Early Childhood*, *34*(4), 22-30. Retrieved from http://search.informit.com.au.ezproxy.ecu.edu.au/documentSummary;dn=201001610;res=IELAPA

Anney, V. N. (2014). Ensuring the quality of the findings of qualitative research: Looking at trustworthiness criteria. *Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS)*, *5*(2), 272-281.

Australia, & Boomer, G. (1985). *Action, education and the arts : An illustrated edition of the report of the Task Force on Education and the Arts to the Minister for Education and Youth Affairs.* Canberra: Australian Government Pub. Service.

Australian Curriculum, Assessment and Reporting Authority [ACARA]. (2016). *The Australian Curriculum. The Arts.* Retrieved from http://www.australiancurriculum.edu.au/the-arts/introduction

AVID (2012). *The write path 1 science.* Teacher guide. San Diego, CA: AVID Center.

AVID Australia. (2016). *What is AVID?* Retrieved from https://avidaustralia.edu.au/what-is-avid/

Bell, J. (2010). *Doing your research project. A guide for first-time researchers in education, health and social science* (5th ed.). Berkshire, England: Open University Press.

Benton, C. (2014). *Thinking about thinking : Metacognition for music learning*. New York: Rowman & Littlefield Education.

Berliner, D. (2002). Comment: Educational Research: The Hardest Science of All. *Educational Researcher, 31*(8), 18-20. Retrieved from: http://www.jstor.org/stable/3594389

Biesta, G. (2015). On the two cultures of educational research, and how we move ahead: Reconsidering the ontology, axiology and praxeology of education. *European Educational Research Journal. 14*(1), 11-22.

Bowman, M. (1994). *Using video in research*. Scottish Council for Research in Education. Retrieved from http://www.sfu.ca/media-lab/cmns362/Spotlight45.pdf

Brundage, S. (2015). The art of possibility: Part One: making sense of talent in music teaching and learning. *American Music Teacher*, *64*(5), 12+. Retrieved from http://go.galegroup.com.ezproxy.ecu.edu.au/ps/i.do?p=AONE&u=cowan&id=GALE|A409067917&v=2.1&it=r&sid=summon&userGroup=cowan&authCount=1

Callender, A., Franco-watkins, A., & Roberts, A. (2016). Improving metacognition in the classroom through instruction, training, and feedback. *Metacognition and Learning, 11*(2), 215-235. doi:10.1007/s11409-015-9142-6

Chesbro, R. (2006). *Using interactive notebooks for inquiry-based science. NSTA WebNews Digest.* Retrieved from http://www.nsta.org/publications/news/story.aspx?id=51882

Conley, D. (2013). *Getting ready for college, careers, and the common core : What every educator needs to know*. Hoboken: Wiley.

Cowan, N. (2001). The magical number 4 in short-term memory: a reconsideration of mental storage capacity. *Behavioural and brain sciences, 24*(1).

Crawford, A., Saul, W., Mathews, S. R. and MaKinster J.G. (2005). *Teaching and Learning Strategies for the Thinking Classroom.* International Debate Education Association. Retrieved from https://ebookcentral.proquest.com/lib/ECU/detail.action?docID=3308247.

Creswell, J. (2006). *Research Design Qualitative, Quantitative and Mixed Method Approaches 3rd Ed.* Thousand Oaks, California: Sage Publishing.

D'Amore, A., & Smith, G. D. (2016). Aspiring to music making as leisure through the musical futures classroom. *The Oxford handbook of music making and leisure*, 61-80.

Daniels, H. (2004). Activity theory, discourse and Bernstein. *Educational Review*, *56*(2), 121-132.

Davis, J. H. (2000). Metacognition and multiplicity: the arts as models and agents. *Educational Psychology Review 12*(3), 339-359. doi:10.1023/A:1009022123211

Davis, D. (2008). *First we see: The national review of visual education*. Retrieved from http://www.australiacouncil.gov.au/news/media-centre/media-releases/national-review-of-visual-education-released/

De Bruin, A., & Van Merriënboer, J. (2017). Bridging cognitive load and self-regulated learning research: A complementary approach to contemporary issues in educational research. *Learning and Instruction, 51*, 1-9. doi:10.1016/j.learninstruc.2017.06.001

De Vries, P. (2013). Melinda: De facto primary school music teacher. *Victorian Journal of Music Education,* 3. Retrieved from http://go.galegroup.com.ezproxy.ecu.edu.au/ps/i.do?id=GALE%7CA368957760&sid=summon&v=2.1&u=cowan&it=r&p=AONE&sw=w&asid=9fca8f4dbc7c34a1ad2a480753426f32

De Vries, P. A. (2015). Music without a music specialist: A primary school story. *International Journal of Music Education, 33*(2), 210-221. doi:10.1177/02557614135158183

Dignath, C., & Buttner, G. (2018). Teachers' direct and indirect promotion of self-regulated learning in primary and secondary school mathematics classes – insights from video-based classroom observations and teacher interviews. *Metacognition and Learning, 13*(2), 127-157. Doi:10.1007/s11406-018-9181-x

Dinham, J. (2017). *Delivering authentic arts education in the primary school.* Australia: Cengage Learning Australia.

Education Endowment Foundation. (2018). *Metacognition and self-regulated learning. Guidance report.* Retrieved from https://educationendowmentfoundation.org.uk/tools/guidance-reports/metacognition-and-self-regulated-learning/

Efron, S. E., & Ravid, R. (2013). *Action research in education: A practical guide*. Retrieved from https://ebookcentral.proquest.com

Eggen, P., & Kauchak, D. (2010). *Educational psychology windows on classrooms* (8th ed.). New Jersey: Pearson Education.

Engeström, Y. (2001). Expansive learning at work: Toward an activity theoretical reconceptualization. *Journal of education and work*, *14*(1), 133-156.

Flick, U. (2018). *An introduction to qualitative research*. Sage Publications Limited.

Gerrity, K. W., Hourigan, R. M., & Horton, P. W. (2013). Conditions that facilitate music learning among students with special needs: A mixed-methods inquiry. *Journal of Research in Music Education, 61*(2), 144-159. doi: 10.1177/0022429413485428

Gray, J. (2016). *RES6101 Research preparation: The reading guide*. Perth, Australia: Edith Cowan University.

Green, L. (2008). *Music, informal learning and the school : A new classroom pedagogy* (Ashgate popular and folk music series). Aldershot: Ashgate.

Green, S., & Hale, C. (2011). Fostering a Lifelong Love of Music: Instruction and Assessment Practices that Make a Difference. *Music Educators Journal, 98*(1), 45-50. Retrieved from http://www.jstor.org/stable/23012640

Hallam, S. (2010). The power of music: Its impact on the intellectual, social and personal development of children and young people. *International Journal of Music Education, 28*(3), 269-289. doi:10.1177/0255761410370658

Hansen, D. & Imse, L.A. (2016). Student-centred classrooms. Past initiatives, future practices. *Music Educators Journal.* doi: 10.1177/0027432116671785

Hashim, N. H., & Jones, M.L. (2007). *Activity theory: a framework for qualitative analysis.* Retrieved from http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1434&context=commpapers&sei-redir=1&referer=http%3A%2F%2Fwww.bing.com%2Fsearch%

Hattie, J. (2009). *Visible learning : A synthesis of over 800 meta-analyses relating to achievement*. London: Routledge.

Hay, D. B. & Kinchin, I. M. (2006). Using concept maps to reveal conceptual typologies. *Education & Training* (48)*2/3.* 127-142.

Helmer, V. (2014). Attention, intention, and retention: How cognitive science can inform music instruction. *Canadian Winds: The Journal of the Canadian Band Association, 12*(2), 26-28. Retrieved from http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1539666172?accountid=10675.

Hofer, B., Yu, S., and Pintrich, P. (1998). *Teaching college students to be self-regulated learners.* In Schunk, D., & Zimmerman, B. (1998). *Self-regulated learning: From teaching to self-reflective practice*. New York: Guilford Press.

Hogenes, M., van Oers, B., Diekstra, R. F. W., & Sklad, M. (2015). The effects of music composition as a classroom activity on engagement in music education and academic and music achievement: A quasi-experimental study. *International Journal of Music Education, 34*(1), 32-48. doi:10.1177/0255761415584296

Hollingsworth, H., & Clarke, D. (2017). Video as a tool for focusing teacher self-reflection: supporting and provoking teacher learning. *Journal of Mathematics Teacher Education*, *20*(5), 457-475.

Kemmis, S., McTaggart, R., & Deakin University. School of Education. Open Campus Program. (1988). *The action research planner* (3rd ed.). Waurn Ponds, Vic.: Deakin University.

Klein, P. D. (2000). Elementary students' strategies for writing-to-learn in science. *Cognition and Instruction*, *18*(3), 317-348.

Larkin, S. (2010). *Metacognition in young children*. London: Routledge.

Lowe, G., & Belcher, S. (2012). Direct instruction and music literacy: One approach to augmenting the diminishing? *Australian Journal of Music Education,* (1), 3-13. Retrieved from http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1346070766?accountid=10675

Lowe, G., & Lummis, G. (2013). ACARA and the generalist push: What does it mean for music education from a teacher-training perspective?. In *Redefining the musical landscape: Inspired learning and innovation in music education-XIX National Conference Proceedings* (p. 125). Australian Society for Music Education.

Mays, N., & Pope, C. (2000). Assessing quality in qualitative research. *Bmj*, *320*(7226), 50-52.

McAteer, M. (2013). *Bera/sage Research Methods in Education: Action research in education*. London, : SAGE Publications Ltd doi: 10.4135/9781473913967

McKinney, C., Glazebrook, B., Sanders, J. and Shaprio, D. (2018). *AVID writing for disciplinary literacy. A schoolwide approach.* San Diego, CA: AVID Center

Merritt, T., Neitz, S., & Selby, R. (2018). *AVID bridges to success: a schoolwide approach.* San Diego, CA: AVID Center.

Ministerial Council on Education, Employment, Training and Youth Affairs [MCEETYA]. (2008). Melbourne declaration on educational goals for young Australians*.* Retrieved from http://www.mceecdya.edu.au/verve/_resources/National_Declaration_on_the_Educational_Goals_for_Young_Australians.pdf

National Health and Medical Research Council (Australia), Australian Research Council, & Australian Vice-Chancellors' Committee. (2007). *National statement on ethical conduct in human research*. Canberra: National Health and Medical Research Council.

New South Wales. Centre for Education Statistics and Evaluation. (2017). *Cognitive load theory: Research that teachers really need to understand*. Sydney NSW: New South Wales. Centre for Education Statistics and Evaluation.

Nicol, D., and Macfarlane-Dick, D. (2005). Formative assessment and self-regulated learning: a model and seven principles of good feedback practice. *Studies in Higher Education, 31*(2).

Paas, F., & Ayres, P. (2014). Cognitive load theory: A broader view on the role of memory in learning and education. *Educational Psychology Review, 26*(2), 191-195. doi:10.1007/s10648-014-9263-5

Pascoe, R., Leong, S., MacCallum, J., Marsh, K., Smith, B. and Church, T. (2005). National review of school music education. Perth: Centre for Learning Change and Development: Murdoch University. Retrieved from http://researchrepository.murdoch.edu.au/9459/1/music_review_reportFINAL.pdf

Pope, C., Ziebland, S., & Mays, N. (2000). *Analysing qualitative data*. Bmj, *320(7227),* 114-116.

Ritchart, R., Church, M. & Morrison, K. (2011). *Making thinking visible. How to promote engagement, understanding and independence for all learners*. San Francisco, CA: Jossey-Bass.

Russell-Bowie, D. (2007). Creating harmony in practice and pedagogy across the primary curriculum through an innovative arts project. *Journal of artistic and creative education, 1*(1). Retrieved from *http://www.edfac.unimelb.edu.au/ace/jace/issues/vol1num1/pdf/6RussellBowie.pdf*

Russell-Bowie, D. (2009). *MMADD about the arts!: An introduction to primary arts education.* Australia: Pearson Education.

Russell-Bowie, D. (2010). Cross-National Comparisons of Background and Confidence in Visual Arts and Music Education of Pre-Service Primary Teachers. *Australian Journal of Teacher Education*, *35*(4), 65-78.

Sagor, R. (2000). *Guiding school improvement with action research: Ascd*. Retrieved from https://ebookcentral.proquest.com

Schlaug, G., Norton, A., Overy, K., & Winner, E. (2005). Effects of Music Training on the Child's Brain and Cognitive Development. *Annals Of The New York Academy Of Sciences*, *1060*(1), 219-230. doi:10.1196/annals.1360.015

Schön, Donald. (1983). The Reflective Practitioner. New York: Basic Books

School Curriculum and Standards Authority, Government of Western Australia [SCSA] (2014). Kindergarten to Year 10: Music. Retrieved from http://k10outline.scsa.wa.edu.au/home/p-10-curriculum/curriculum-browser/the-arts/music2

Schraw, G., & Dennison, R. S. (1994). Assessing metacognitive awareness. *Contemporary educational psychology*, *19*(4), 460-475.

Scripp, L. (2013). Thinking beyond the myths and misconceptions of talent: Creating music education policy that advances music's essential contribution to twenty-first-century teaching and learning. *Arts Education Policy Review, 114*(2), 54-102. Retrieved from http://www.tandfonline.com.ezproxy.ecu.edu.au/loi/vaep20

Scott, S. (2006). A constructivist view of music education: Perspectives for deep learning. *General Music Today (Online), 19*(2), 17-21. Retrieved from http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1484149?accountid=10675

Scott, S. (2007). Multiple perspectives for inquiry-based music education. *The Canadian Music Educator, 49*(2), 35-38. Retrieved from http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/231203662?accountid=10675

Seufert, T. (2018). The interplay between self-regulation in learning and cognitive load. *Educational Research Review. 48,* 116-129. Retrieved from https://doi.org/10.1016/j.edurev.2018.03.004

Shulman, L. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher, 15*(2), 4-14.

State of Victoria Department of Education and Training. (2017). *High impact teaching strategies. Excellence in teaching and learning.* East Melbourne, Victoria: Department of Education and Training Melbourne. Retrieved from https://www.education.vic.gov.au/school/teachers/teachingresources/practice/improve/Pages/hits.aspx

Stencel, J. (1998). An interactive lecture notebook--twelve ways to improve students' grades: Drawing students' attention to what they need to know in lecture. *Journal of College Science Teaching, 27*(5), 343-345.

Svinicki, M. (2010). Student learning: From teacher-directed to self-regulation. *New Directions for Teaching and Learning, 2010*(123), 73-83. doi:10.1002/tl.411

Sweller, J., Ayres, P., & Kalyuga, S. (2011). *Cognitive load theory*. Retrieved from https://ebookcentral.proquest.com

Sweller, J. & Paas, F., (2017). Should self-regulated learning be integrated with cognitive load theory? A commentary. *Learning and Instruction. 51.* 85-89. Retrieved from https://doi.org/10.1016/j.learninstruc.2017.05.005

Temmerman, N. (2008). Arts/music learning and the development of learners' life-long creative capacity. *Australian Journal of Music Education*, (1), 38+. Retrieved from http://go.galegroup.com.ezproxy.ecu.edu.au/ps/i.do?id=GALE%7CA208748149&sid=summon&v=2.1&u=cowan&it=r&p=AONE&sw=w&asid=d157ce62aac2147ef50f6eccc8001b0f

Thompson, S. (2012). *Sampling* (3rd ed.) [3rd ed.]. Hoboken, N.J.: John Wiley & Sons. doi:10.1002/9781118162934

Victoria State Government Education and Training. (2018). Quality music education framework. Retrieved from Qhttps://www.education.vic.gov.au/school/teachers/teachingresources/discipline/arts/Pages/QMEF.aspx

Vygotsky, L. (1978). Interaction between learning and development. In M. Gauvain & M. Cole (Eds.). *Readings on the development of children* (2nd ed., pp. 79-91). New York: W. H. Freeman and Company.

Waldman, C., & Crippen, K. J. (2009). Integrating interactive notebooks. *The Science Teacher, 76*(1), 51-55. Retrieved from http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/214628919?accountid=10675

Woolfolk, A & Margetts, K. (2013). Educational psychology (3rd Ed). French Forest, NSW: Pearson Australia

Yin, R.K. (2015). *Qualitative research from start to finish.* New York: Gilford Publications.

Young, J. (2003). Science interactive notebooks in the classroom. *Science Scope, 26*(4). 44-47. Retrieved from https://eric.ed.gov/?q=interactive+notebooks&pr=on&id=EJ663472

Zimmerman, B. J. (2010). Becoming a self-regulated learner: an overview. *Theory into Practice. 41*(2).

Zohrabi, M. (2013). Mixed Method Research: Instruments, Validity, Reliability and Reporting Findings. *Theory & practice in language studies*, *3*(2).

Appendix A: Information Letter for the Principal and Consent Form

Kristie Gray
Edith Cowan University
School of Education
2 Bradford Street
Mount Lawley
WA 6050
Phone: [redacted]
Email:
kristieg@our.ecu.edu.au

INFORMATION LETTER FOR THE PRINCIPAL

Investigating the use of Interactive Notebooks as tools to promote inquiry-based pedagogy in a Primary Music Specialist Classroom.

Dear Mrs McDonald

In addition to being a teacher at Makybe Rise Primary School, I am also a Master of Education by Research student from Edith Cowan University. I am seeking your permission to invite one class of students to participate in school- based research investigating using Interactive Notebooks as tools to promote inquiry-based pedagogy in my primary music specialist classroom. The reason for this research project is to investigate whether the Interactive Notebook is an effective tool for deepening both the music making and responding outcomes for students, as well as increase opportunities for metacognitive discussions amongst students. Research indicates that direct instruction and inquiry learning are both effective teaching pedagogies for primary music. This project investigates how the Interactive Notebook combines both pedagogies to promote high quality learning outcomes for students.

What does the project look like?
I intend to invite Room 17 students to participate in the study. Students will attend Performing Arts lessons as timetabled in their normal weekly schedule. Lessons will involve using the Interactive Notebook as part of the normal learning program.

The lessons will be recorded weekly for one term (Term 3, 2018) using a self-tracking video technology. This will allow me to capture teacher-student conversations during music lessons and analyse these for depth of discourse around musical works and competency with using the language of music. Classroom activity will be recorded weekly for the hour-lesson. Non-participating students will complete all classroom activities but will be seated away from the camera. The video footage will be uploaded to SWIVL where it will be analysed and coded using the Observation Schedule. Once uploaded, the footage will be deleted from the recording device.

Semi structured interviews will be used in the study to investigate participants feelings and thoughts on using the Interactive Notebook. The interviewer will use probing questions regarding the use of the interactive notebook as a metacognitive tool. Participants will be randomly selected for individual interviews in a face-to-face setting halfway through the research period. The ten minute interviews will occur at the school during school hours and be conducted by Louise Reich, the school's Student Services Co-ordinator. This will allow the participants to speak freely without any perceived teacher judgement. Interview data will be taped and transcribed by an independent transcriber who will sign a confidentiality agreement. The transcriber will remove all identifying information. Transcripts will be shown to participants by Louise Reich, before being given to me. Once transcribed, the audio tapes will be deleted. Only some students will be required to do an interview. Louise Reich will randomly select these students and I will not know who they are.

Two instances will be planned and conducted where students will participate in a researcher-led focus group, and hold a socratic discussion regarding using the Interactive Notebooks and how they believe it impacts their experience in Music. These group discussions will be video recorded using the self tracking devices. The first recorded discussion will take place early in the study (Week 3), and the second recording towards the end of the study (Week 9). As these sessions will occur outside of normal lesson time, only students with consent will participate. The video from these sessions will be uploaded to SWIVL and annotated using the Observation Schedule.

A summary of the research findings will be made available to Makybe Rise Primary School and the Department of Education and all participating families upon request. This summary report will be available on Term 4, 2018.

What does participation involve?
Students participating in this research will be invited to:

- Participate in a 10 minute semi-structured interview with Louise Reich to discuss the use of the Interactive Notebook in their music lessons and how they perceive it impacts their learning. Interviews will be audio recorded. The interviews will be conducted on school grounds during school hours.
- Be filmed using self-tracking video technology during weekly music lessons for one term for the purposes of the researcher analyzing the footage for instances of the Interactive Notebook facilitating discussions of music concepts and skill development. One clip per week will be uploaded to SWIVL where selected clips will be annotated and analysed.
- Participate in researcher-led focus groups to reflect on their work within the Interactive Notebooks and the ways in which it impacted their learning. These sessions will also be filmed, uploaded and annotated.

During the filming the students in the class will work to complete tasks aligned with the Western Australian Curriculum. This will be part of the normal work they do in class.

I will keep the schools involvement in the administration of the research procedures to a minimum. However, it will be necessary for the school to send home with students the information letters and consent forms for students and their parents.

Safeguards regarding videoing students and sharing videos with other research participants
Protocols and principles developed by the Edith Cowan Institute for Educational Research in collaboration with the Department of Education will be followed to ensure that video is used in this research project in a secure, responsible, respectful and confidential manner. In particular the following procedures will be in place:

- I will be responsible for filming and the secure storage of all video footage on my password protected work iPad.

- A self-tracking video device fitted onto the iPad will be used to record short video clips that will be uploaded on the same day to a password protected secure cloud based network, the SWIVL portal. Once uploaded, the video will be deleted from the iPad. The SWIVL portal is a secure cloud based location for use with the SWIVL recording device.

- The camera will be positioned behind students to minimise the recording of students' faces. The focus of the video is to capture in-the-moment data of instances where students are engaging with the Interactive Notebook to deepen understandings of the Music Curriculum outcomes. The video will track the teacher's voice and movements and pick up student responses. As the video is being used in normal classroom situations, some of the students' images may be included in the video.

- I will be aware of which students have parental consent and will attempt to film only those students. I will control when the device is operating or not and will advise students when filming is taking place. Students who do not have parental consent will be placed in a corner of the classroom that will not be easily recorded during the lesson. Instances where students who do not have permission accidently appear on video footage will mean I will delete this footage and it will not be used for research purposes.

- As well as sharing the short clips of my practice with you, I will share selected clips with my Supervisor, Mrs Kuki Singh, as well as Louise Reich who will be an independent reviewer, ensuring objective analysis of the data. Louise Reich will sign a Confidentiality Guarantee. Clips will be shared over the SWIVL portal

- In the event of any video clips being used for professional learning, the video clips will be viewed by you to ensure the video shows the school and all students in a positive light. These clips may be used for Professional Learning for teachers at Makybe Rise Primary School and other AVID schools in Australia.

There will be no disruption of the normal classroom routines during the filming, as the students will continue to work to complete tasks aligned with the West Australian Curriculum.

Voluntary participation and right to withdraw
Students, with their own and their parent's consent, will be invited to participate in the research. Participation in this research project is voluntary and there will be no consequences relating to any decision by an individual or the school regarding participation, other than those described in this letter. Decisions made will not affect the relationship with the research team or Makybe Rise PS. Participants will have the right to withdraw from the project at any stage. If they withdraw from the project no further data will be collected, however data that has already been collated will remain part of the research project.

What will happen to the information collected and is privacy and confidentiality assured?
The identity of participants and the school will not be disclosed at any time, except in circumstances that require reporting under the Department of Education Child Protection policy, or where the research team is legally required to disclose that information. Participant privacy, and the confidentiality of information disclosed by participants, is assured at all other times. Should any incidents occur in the video recorded lessons that might cause embarrassment to the teacher, students or school these will be erased from the video tapes by request of the Principal with the exception of incidents that are likely to be the subject of disciplinary or legal action.

All data collected will be anonymous. The names of the participants will not be recorded. All information will be strictly confidential. Information that identifies anyone will be removed from the data collected. The data will be stored for a minimum period of 5 years, after which it will be destroyed. This will be achieved by using Edith Cowan University's secure system for research data disposal.

The findings of the research will be used to strengthen the quality of teaching in the school's music program, as well inform the use of Interactive Notebooks as a tool for learning in other learning areas. The findings will be used for professional publications. The participants will be given access to reports written about the project and findings will be shared with the participating students and parents upon request.

The data will be used only for this project, and will not be used in any extended or future research without first obtaining explicit written consent from participants.

Has the research been approved?
The research has been approved by the Office of Research Edith Cowan University Project 9300, and has met the policy requirements of the Department of Education as indicated in the attached letter.

Who do I contact if I wish to discuss the project further?

If you would like to discuss any aspect of this study with a member of the research team, please contact me on [redacted]. If you have any concerns or complaints about the research project and wish to talk to an independent person, you may contact:

Research Ethics Officer
Edith Cowan University
270 Joondalup Drive
JOONDALUP WA 6027
Phone: (08) 6304 2170
Email: research.ethics@ecu.edu.au

OR

Kuki Singh, Supervisor
[redacted]
C/- Edith Cowan University

How do I indicate my willingness for the school to be involved?
If you have had all questions about the project answered to your satisfaction, and are willing for the school to participate, please complete the **Consent Form** on the following page.

This information letter is for you to keep.
Thank you for your participation

Kind Regards
Kristie Gray
Makybe Rise Primary School

Kristie Gray
Edith Cowan University
School of Education
2 Bradford Street
Mount Lawley
WA 6050
Phone: [redacted]
Email:
kristieg@our.ecu.edu.au

CONSENT DOCUMENT
THE PRINCIPAL

Investigating the use of Interactive Notebooks as tools to promote inquiry-based pedagogy in a Primary Music Specialist Classroom.

- I have read this document and understand the aims, procedures, and risks of this project, as described within it.
- For any questions I may have had, I have taken up the invitation to ask those questions, and I am satisfied with the answers I received.
- I am willing for this *school* to become involved in the research project, as described.
- I understand that participation in the project is entirely voluntarily.
- I understand that the *school* is free to withdraw its participation at any time, without affecting the relationship with the research team or Edith Cowan University
- I understand that I am free to withdraw from further participation at any time, without explanation or penalty but that data already collected will remain part of the project.
- I give permission for the research finding from this study to be reported at academic conferences, published in reports and journal articles, provided that the participants and school are not identified.
- I understand that the school*]* will be provided with a copy of the findings from this research upon its completion.
- I understand that some video clips may be selected for use in professional learning for teachers and school administrators. Aseparate consent form will be signed after I have viewed the clips intended for professional learning purposes.

……
Name of the school

……
Name of the Principal

……
Signature

……
Date

Appendix B: Information Letter for the Parents and Consent Form

Kristie Gray
Edith Cowan University
School of Education
2 Bradford Street
Mount Lawley
WA 6050
Phone: [redacted]
Email:
kristieg@our.ecu.edu.au

INFORMATION LETTER FOR PARENTS

Investigating the use of Interactive Notebooks as tools to promote inquiry-based pedagogy in a Primary Music Specialist Classroom.

Dear Parents

In addition to being the Performing Arts teacher at Makybe Rise Primary School, I am also a Master of Education by Research student from Edith Cowan University, under the supervision of Dr Kuki Singh. I am inviting the students in Room 17 to participate in a study of how Interactive Notebooks are used to promote learning in a primary music program.

The reason for this research project is to investigate whether the Interactive Notebook is an effective tool for deepening both the music making and responding outcomes for students, as well as increase opportunities for students to discuss what they are learning and how they are learning it. Research indicates that direct instruction and inquiry learning are both effective ways to teach primary school music. This project investigates how the Interactive Notebook combines both methods to promote high quality learning outcomes for students.

What does the project look like?
Students will attend Performing Arts lessons as timetabled in their normal weekly schedule. Lessons will involve using the Interactive Notebook as part of the normal learning program.

The lessons will be video recorded weekly for one term (Term 3, 2018) using a self-tracking video technology. . This is done using a device that fits onto an iPad to make some video clips of student/teacher interactions. This will allow me to capture teacher-student conversations during music lessons and analyse these for how students are developing their music skills and understandings. The purpose of the recordings are to capture real-time footage of how the Interactive Notebooks impact student learning.

Non-participating students will complete all classroom activities but will be seated away from the camera.

The video footage will be uploaded to SWIVL, a password protected secure network, where it will be analysed. Once uploaded, the footage will be deleted from the recording device.

Semi structured interviews will be used in the study to investigate participants feelings and thoughts on using the Interactive Notebook. The ten minute interviews will occur at the school during school hours and be conducted by Louise Reich, the school's Student Services Co-ordinator. This will allow the students to speak freely without any perceived teacher judgement. Interview data will be taped and transcribed by an independent transcriber who will sign a confidentiality agreement. The transcriber will remove all identifying information to protect the identity of the student. Transcripts will be shown to participants by Louise Reich, before being given to me. Once transcribed, the audio tapes will be deleted. Only some students will be required to do an interview. Louise Reich will randomly select these students and I will not know who they are.

Students will also be involved in a socratic discussion with me, where they will talk about using the Interactive Notebooks and how they think it impacts their learning of Music. A socratic discussion is an open-ended reflective discussion on a given topic – in this case the Interactive Notebooks used for Music lessons. These group discussions will be video recorded using the self tracking devices. The first recorded discussion will take place early in the study (Week 3), and the second recording towards the end of the study (Week 9). As these sessions will occur outside of normal lesson time, only students with consent will participate. The video from these sessions will also be uploaded to the secure portal and deleted from the recording device.

Mrs Louise Reich and my University Supervisor, Mrs Kuki Singh, will be asked to view the annotated video footage to ensure results are not biased during the analysis stage of the research project.

What does participation involve?

- Agreeing to be filmed as part of weekly Performing Arts lessons for one term and in the Socratic Discussions. Students will be informed when filming is occurring.
- Participating in a 10 minute interview with Louise Reich

During the filming the students in the class will work to complete tasks aligned with the Western Australian Curriculum. This will be part of the normal work they do in class.

The following measures will be in place to protect the rights of the participating students:

- The camera will be placed at the back of the room to ensure limited disturbance throughout the lesson and to minimise the occurrence of capturing the students' faces. It is likely that students' faces could be captured, due to movement in the room.
- All identifying information will be removed from interview transcripts and in summary reports and publications.
- Any student who does not consent to participate in the research will remain in the classroom and participate in regular classroom activities, but will be seated in a position where he/she will be out of range of the self-tracking video capture system, and will not be included in any footage. Should any students who do not consent to participate incidentally end up on video footage, this footage will be deleted and not used for the research project.
- Those students who do not consent to participate will not be disadvantaged in any way, nor will any marking or grading reflect their choice to not participate.

Some exemplar video clips may be selected for use in professional learning for teachers or for use in educational contexts to demonstrate best practice. Before they are used in this way, separate written authorisation for the use of each specific clip will be obtained from the school principal, Mrs Steph McDonald.

Voluntary participation and right to withdraw

Students, with their own and their parent's consent, will be invited to participate in the research. Participation in this research project is voluntary and there will be no consequences relating to any decision by an individual or the school regarding participation, other than those described in this letter. Decisions made will not affect the relationship with the research team or Makybe Rise PS. Participants will have the right to withdraw from the project at any stage. If they withdraw from the project no further data will be collected, however data that has already been collated will remain part of the research project. A decision to not participate or to withdraw from the study will not have any impact on students' grades or their relationship with me as their teacher.

What will happen to the information collected and is privacy and confidentiality assured?

The identity of participants and the school will not be disclosed at any time, except in circumstances that require reporting under the Department of Education Child Protection policy, or where the research team is legally required to disclose that information. Participant privacy, and the confidentiality of information disclosed by participants, is assured at all other times. Should any incidents occur in the video recorded lessons that might cause embarrassment to the teacher, students or school these will be erased from the video tapes by the researchers with the exception of incidents that are likely to be the subject of disciplinary or legal action.

All data collected will be anonymous. The names of the participants will not be recorded. All information will be strictly confidential. Information that identifies anyone will be removed from the data collected.
The findings of the research will be used to strengthen the quality of teaching in the school's music program, as well inform the use of Interactive Notebooks as a tool for learning in other learning areas. The findings will be used for professional publications. A summary report will be written and you can request a copy of this report.

The data will be used only for this project, and will not be used in any extended or future research without first obtaining explicit written consent from participants.

Has the research been approved?
The research has been approved by the Office of Research Edith Cowan University Project 9300, and has met the policy requirements of the Department of Education.

Who do I contact if I wish to discuss the project further?
If you would like to discuss any aspect of this study, please contact me. If you have any concerns about the research project and wish to talk to an independent person, you may contact: Research Ethics Officer Edith Cowan University 270 Joondalup Drive JOONDALUP WA 6027 Phone: (08) 6304 2170 Email: research.ethics@ecu.edu.au

How do I indicate my willingness for my child to be involved?
If you have had all questions about the project answered to your satisfaction, and are willing for your child to participate, please complete the **Consent Form** on the following page. Your child has also been given a letter and consent form to complete to indicate their willingness to participate.
This information letter is for you to keep.
Thank you for your participation

Kind Regards
Kristie Gray
Performing Arts Teacher
Makybe Rise Primary School

Edith Cowan University
School of Education
2 Bradford Street
Mount Lawley
WA 6050
Phone:
Email:
kristieg@our.ecu.edu.au

Consent Form for Parents – Child Participation

RESEARCH PROJECT:
Investigating the use of Interactive Notebooks as tools to promote inquiry-based pedagogy in a Primary Music Specialist Classroom.

- I have read and understood the information letter about the project, or have had it explained to me in language I understand.
- I have taken up the invitation to ask any questions I may have had and am satisfied with the answers I received.
- I understand that participation in the project is entirely voluntarily.
- I am willing for my child to become involved in the project, as described.
- I have discussed with my child what it means to participate in this project. He/she has explicitly indicated a willingness to take part, as indicated by his/her completion of the child consent form.
- I understand that both my child and I are free to withdraw that participation at any time without affecting the family's relationship with my child's teacher or my child's school.
- I understand that data collected up to the point of my child's withdrawal from the study may still be used in the research study.
- I give permission for selected video clips including my child to be used in professional learning for teachers at the school and in other educational contexts, provided they are first approved by the Principal of my child's school.
- I further give permission for my child's contribution to be used in academic publications, provided that my child or the school is not identified in any way.
- I understand that I can request a summary of findings after the research has been completed.

Name of Child (printed): _____

Name of Parent/Carer (printed): _____

Signature of Parent: _____ Date: / /

Appendix C: Information Letter for the Student and Consent Form

Kristie Gray
Edith Cowan University
School of Education
2 Bradford Street
Mount Lawley
WA 6050
Phone: [redacted]
Email:
kristieg@our.ecu.edu.au

INFORMATION LETTER FOR STUDENTS

Dear Students

My name is Miss Gray and as well as being your Performing Arts Teacher, I am also from Edith Cowan University. I would like to invite you to take part in a research project that I am doing. It is about how using Interactive Notebooks helps students to learn in Music.

I am asking for your help with the project because I would like to see if the Interactive Notebook helps you to understand more about Music and be able to talk and write about Music better. I will be asking students in Room 17 at Makybe Rise Primary School in Western Australia to become involved.

What would I be asked to do?
If you agree to take part, you would be asked to

- Give a 10 minute interview by yourself with Mrs Reich to talk about how you use the Interactive Notebook in music and how you think it helps you to learn. The interview will be audio recorded. Only some students will be interviewed and Mrs Reich will randomly choose these students. I will not know who is interviewed. The interviews will be transcribed by a professional person and all your identifiable information will be removed.
- Be videoed during music classes so that I can look back to see when and how students are using the Interactive Notebooks.
- Participate in a Socratic Seminar with your classmates and me to reflect on your work in the Interactive Notebooks and the ways in which it helped your learning. These sessions will also be filmed.

Do I have to take part?
No. You are completely free to say yes or no. I will respect your decision whichever choice you make. If you say no, it will not affect your relationship with me or your grades in Music.

What if I wanted to change my mind?
If you say no, but then change your mind and want to take part, please let your teacher know.

You can stop at any time, even if you have said yes. Just let your teacher or mum (or dad, or the person who looks after you) know, and they will tell me.

If you do stop, I won't collect any more information from you about using the Interactive Notebook. Information that I have already collected from you will remain part of the research project. If you do change your mind, it will not affect your grades or your relationship with me.

What if I say something during the project that I don't want anyone else to know?
I may have to tell someone like your teacher if you tell me that you have been hurt by someone lately. But for all other things you tell me, I won't repeat them to anyone else.

What will you do with the information I give you?

I collect what each student has given to the project, and then I will write a report on what I find out. When I do this, I won't write or tell anyone your name, or the names of any other students or your school.

I may select some video clips to show other teachers how the Interactive Notebooks can be used in music lessons. Before I do this, Mrs McDonald will check them to make sure they only include students whose parents have agreed they can be videoed and show everyone in a positive light.

How do I get involved?
You have already talked with your mum or dad, or the person who looks after you, about what it means to take part in the project. Now you get to say for yourself.

If you **do** want to be a part of the project, please read the next page and write your name in the space provided.

This letter is for you to keep.

Kind Regards
Miss Kristie Gray

Edith Cowan University
School of Education
2 Bradford Street
Mount Lawley
WA 6050
Phone:
Email:
kristieg@our.ecu.edu.au

Consent Form Students
RESEARCH PROJECT: INTERACTIVE NOTEBOOKS IN PRIMARY MUSIC

- I know that I don't have to be involved in this project, but I would like to be.
- I know that I will be filmed and asked to answer questions as part of the project.
- I know that I can choose not to continue in this project at any time, if I do want.
- I understand that I need to write my name in the space below, before I can be a part of the project.
- I agree to be filmed during weekly music lessons
- My parents have explained the project to me, and I understand that this project is about using a notebook in music lessons and finding out how it helps students learn.
- I agree to participating in a Socratic discussion with my class about how I think the interactive notebook has influenced my learning, and my responses being filmed.
- I agree to being asked questions by Mrs Reich about my experience of using the Interactive Notebook, and my responses being recorded.
- I agree to video clips I am in being used to show other teachers how Interactive Journals can help students learn in music lessons, as long as they are approved by Mrs McDonald.
- I have taken up the invitation to ask any questions I may have had and am satisfied with the answers I received.

Your name: _____ Today's Date: / /

Appendix D: Information Letter for Independent Interviewer and Confidentiality Agreement

Kristie Gray
Edith Cowan University
School of Education
2 Bradford Street
Mount Lawley
WA 6050
Phone: [redacted]
Email:
kristieg@our.ecu.edu.au

INFORMATION LETTER

Investigating the use of Interactive Notebooks as tools to promote inquiry-based pedagogy in a Primary Music Specialist Classroom.

Dear Mrs Reich

In addition to being a teacher at Makybe Rise Primary School, I am also a Master of Education by Research student from Edith Cowan University. I am inviting one class of Year Six students at our school to participate in school- based research investigating using Interactive Notebooks as tools to promote inquiry-based pedagogy in my primary music specialist classroom. The reason for this research project is to investigate whether the Interactive Notebook is an effective tool for deepening both the music making and responding outcomes for students, as well as increase opportunities for metacognitive discussions amongst students. Research indicates that direct instruction and inquiry learning are both effective teaching pedagogies for primary music. This project investigates how the Interactive Notebook combines both pedagogies to promote high quality learning outcomes for students.

I am seeking your assistance with the project in two ways; as an independent interviewer and as a reviewer. Your involvement would include:

- Randomly selecting students to be interviewed from a sampling group that I will provide to you.
- Conducting eight 10 minute semi-structured interviews with these students to discuss the use of the Interactive Notebook in their music lessons and how they perceive it impacts their learning. Questions will be provided. Interviews will be audio recorded. The interviews will be conducted on school grounds during school hours.
- Delivering the audio tapes to a transcriber and receiving the transcriptions once completed.
- Confirming the transcriber has removed all identifiable information for each student.
- Showing the transcriptions to the selected students to confirm they are satisfied with what is written before handing to me.
- Reviewing selected video footage and confirming annotations and emerging themes are accurate and free from bias.

Privacy and confidentiality assurance
The identity of participants and the school should not be disclosed at any time, except in circumstances that require reporting under the Department of Education Child Protection policy, or where the research team is legally required to disclose that information. Participant privacy, and the confidentiality of information disclosed by participants, is assured at all other times. Should any incidents occur in the audio taped interviews that might cause embarrassment to the teacher, students or school these will be erased from the audio tapes by you at the request of the principal with the exception of incidents that are likely to be the subject of disciplinary or legal action.

All data collected will be anonymous. The names of the participants will not be recorded. All information will be strictly confidential. Information that identifies anyone will be removed from the data collected. The data will be stored for a minimum period of 5 years, after which it will be destroyed. This will be achieved by using Edith Cowan University's secure system for research data disposal.

The findings of the research will be used to strengthen the quality of teaching in the school's music program, as well inform the use of Interactive Notebooks as a tool for learning in other learning areas. The findings will be used for professional publications. The participants will be given access to reports written about the project and findings will be shared with the participating students and parents upon request.

The data will be used only for this project, and will not be used in any extended or future research without first obtaining explicit written consent from participants.

Has the research been approved?
The research has been approved by the Office of Research Edith Cowan University Project 9300, and has met the policy requirements of the Department of Education as indicated in the attached letter.

Who do I contact if I wish to discuss the project further?

If you would like to discuss any aspect of this study with a member of the research team, please contact me on [redacted]. If you have any concerns or complaints about the research project and wish to talk to an independent person, you may contact:

Research Ethics Officer
Edith Cowan University
270 Joondalup Drive
JOONDALUP WA 6027
Phone: (08) 6304 2170
Email: research.ethics@ecu.edu.au

OR

Kuki Singh, Supervisor
[redacted]
C/- Edith Cowan University

How do I indicate my willingness for the school to be involved?
If you have had all questions about the project answered to your satisfaction, and are willing to participate, please complete the **Consent Form** on the following page.
This information letter is for you to keep.
Thank you for your participation
Kind Regards
Kristie Gray
Makybe Rise Primary School

Kristie Gray
Edith Cowan University
School of Education
2 Bradford Street
Mount Lawley
WA 6050
Phone: [redacted]
Email: kristieg@our.ecu.edu.au

Guarantee of Confidentiality

Investigating the use of Interactive Notebooks as tools to promote inquiry-based pedagogy in a Primary Music Specialist Classroom.

I declare that I will not reveal any details of the video material I shall be reviewing for the research project being conducted by Kristie Gray who is undertaking this project for the purposes of a Master's degree.

I recognise that to do so would be in breach of participant confidentiality, and of ethical guidelines for research.

Further, I will ensure that while data or other materials related to the research project are in my care, they will be kept in a secure location until they can be returned, and will not be accessible to others entering my work place.

Name:

Name of school :

Postal Address:

Phone number:

Signature: _____Date:

Researcher:

Appendix E: Confidentiality Agreement for Transcriber

Kristie Gray
Edith Cowan University
School of Education
2 Bradford Street
Mount Lawley
WA 6050
Phone: [redacted]
Email: kristieg@our.ecu.edu.au

Guarantee of Confidentiality

Investigating the use of Interactive Notebooks as tools to promote inquiry-based pedagogy in a Primary Music Specialist Classroom.

I declare that I will not reveal any details of the audio material I shall be transcribing for the research project being conducted by Kristie Gray who is undertaking this project for the purposes of a Master's degree.

I recognise that to do so would be in breach of participant confidentiality, and of ethical guidelines for research.

Further, I will ensure that while data or other materials related to the research project are in my care, they will be kept in a secure location until they can be returned, and will not be accessible to others entering my work place.

Name:

Name of company:

Postal Address:

Phone number:

Signature: _____Date:

Researcher:

Appendix F: Interview Questions and Guidelines

Please ask first question and then let student answer before asking additional question prompts. As this is a semi-structured interview, you are able to ask additional clarifying questions as needed.

Before first question, please record this introductory statement and answer:

*Hello, I am *** and I am conducting this interview with you as part of **** study on how Interactive Notebooks work in primary school music lessons. This should only take 10 minutes. *** won't know which students have been interviewed as she will receive a typed version of the interview only with all names and genders removed. This recording will be deleted after it has been typed up. Do you agree to participate in this interview?*

7. Can you explain to me what metacognition is?
   Do you ever think about how you have learned something?

8. How do you know what the teacher wants you to learn?
   How do you know if you have learned this or not?

9. What are your strengths as a learner in music? Weaknesses?
   Are there things you can do to help yourself learn better in music?

10. What are some strategies you know of that help you to organise your thinking?
    In what way do these strategies help you to think?

11. What do you do when you find work difficult?
    What else could you do if you find work difficult?

12. What is an Interactive Notebook?
    How does it help you to learn?

    Would you be able to use one on your own without teacher guidance now?

    Would you want to continue using an Interactive Notebook? Why or why not?

Appendix G: Observation Schedule

Observation Schedule Date:		
Observation type	**What could this look/sound like**	**Observed behaviour (Notes from the researcher)**
Knowledge about Cognition		
1a. Declarative Knowledge	Understanding learning intention and success criteria The required vocabulary is used Understanding the skills required	
1b. Procedural Knowledge	Using strategies to complete a process or task Knowing how to use a strategy Applying a strategy	
1c. Conditional Knowledge	Selecting from a range of strategies to apply to a particular task Understanding *why* to use a particular strategy	
Regulation of Cognition		
2a. Planning	Student plans learning tasks, sets goals and organises resources prior to completing task	
2b. Information Management Strategies	Skills and strategy sequences used to process information are effective e.g. organising, elaborating, summarising, selective focusing	
2c. Comprehension Monitoring	Self-assessment of learning throughout learning task Self-monitoring of goals Self-assessment of strategies being used	
2d. Debugging Strategies	Strategies to correct comprehension and performance Asking for help, changing strategies, re-reading	
2e. Evaluation	Students analyse their performance and strategy effectiveness after learning.	

Appendix H: Focus Group Interview Note Taking Structure

Interactive Notebook Socratic Discussion

EQ: How has the Interactive Notebook impacted your learning in Music?

Questions	**Information**
How have you used the Interactive Notebook in music classes?	
How have particular parts of the Interactive Notebook helped you use the language of music?	
How has the Interactive Notebook helped you think about your own learning?	

Appendix I: Focus Group Interview Questions

Students will participate in an academic discussion regarding using the Interactive Notebooks and how they believe it impacts their experience in Music. The discussion will be guided by the following questions, with further probing questions being used as the discussion progresses.

Essential Question: How has the Interactive Notebook impacted your learning of Music?

Question 1: How have you used the Interactive Notebook in music classes?
Question 2: How have particular parts of the Interactive Notebook helped you use the language of music?
Questions 3: How has the Interactive Notebook helped you think about your own learning?

Appendix J: Sample of Observation schedule with coding

Term 3 Week 3		
Observation type	**What could this look/sound like**	**Observed behaviour** **(Notes from the researcher)**
Knowledge about Cognition		
1a. Declarative Knowledge	Understanding learning intention and success criteria The required vocabulary is used Understanding the skills required	Teacher: We're starting our work on African Music. Today we are learning what the features of African Music are. We need to know this because next week we are going to play some African music with instruments and the week after that, you're going to play the same song, you're going to create it on Garageband. So we need to be able to understand (…) you need to know what the cultural features are so that you can use them when you're playing on the instruments and you can use them on Garageband. So today our success criteria is quite simple. We are doing most of the work as a whole class. We're going to do this together and unpack this together. I can name and identify instruments used in African Music I can describe the cultural features of Performing Arts in African Music.
1b. Procedural Knowledge	Using strategies to complete a process or task	• Setting up INB for the lesson. Teacher: This is the text that we're going to work with today. We're going to do this all together so that we can all find out

	Knowing how to use a strategy Applying a strategy	important points. So I want you to glue it on R1. Why would this go on the right side? Student: The right side is the teachers side (inaudible) Teacher: yeah, so this is the information I want you to learn so it goes on the right. We're going to mark it and interact with it and then you're going to do some work on the left. Student: It's because it's the imprint that you're giving us. Teacher: Yep, so it's the input. This is going to help you answer the essential question today. • Reading Prompt Teacher: Our prompt for reading, coz we always needs a purpose, we're not reading for no reason. We're reading to learn something particular. (…) So our purpose for reading is to find out the features of African Music, what are they, and consider how this might be different from other cultures. So you're going to be looking to make some connections while we're reading. • Numbering the Paragraphs Teacher models this and students chant the first 3 weeks of each paragraph. • Marking the text Teacher: while he is reading, you need to circle, or if you have a highlighter you can highlight, words that are the names of a place or the name of an instrument. That's all you highlight. Then you underline the most important detail in the

		paragraph. So that's not going to be every word, it's just if it talks specifically about music or dance or drama in Africa then you're going to underline that. Student: what do we circle? Teacher: Who can help (deidentified)? We circle names of..? Students: places or instruments. Student reads aloud paragraph. Teacher: put your hand up if you can tell me what you circled? Student: Africa Teacher: Africa, good. (…) Did anyone circle anything else? Student: World Teacher: World is not really the name of…well kind of. Student: One billion Teacher: One billion is not the name of a place or an instrument Student: but its important. Teacher: So important information about music or drama. You have to be really critical, you can't be underlining everything. Teacher: so what do you think the most important information in that paragraph is about African music? Student: (inaudible) Teacher: What do you think the most important information about African music is?

		Student: Is it "there are no different words for music and dance?" Teacher: Yeah, so there are no separate words for music and dance. They go together. The main idea, there's no separate words for music and dance. You should have underlined that. No separate words for music and dance. We think of them has two different things but they don't. Can I have a volunteer for the second paragraph? We're doing exactly the same thing. Student reads paragraph. Teacher: So what did you circle? Student: I circled drums Teacher: drums, coz it's the name of an instrument. And you could have circled African because it's the name of the place. What did you underline? What's the most important idea? There might be two things that you might take from this paragraph. Student: Rhythm is the main ingredient to all music. Teacher: Yes, (unidentified) that is actually almost the most important point in the whole text. Make sure you underline that. Rhythm is the main ingredient to all music. Student: what about melody and pitch? Teacher: So read what it says about melody and pitch. It doesn't say melody and pitch are important to Africa, it says melody and pitch are important to Western cultures, like Australia. We're a Western Culture. We think melody and pitch, so like when you think of songs on the radio, unless you're a percussionist, a

		drummer, you might be paying attention to the rhythm. But really we're paying attention to the words and the tunes. But for them, its rhythm, the words and the tune aren't as important as the rhythm. Remember the drumming incursion we had a couple of years ago? That was all about the rhythm. Student reads third paragraph. Teacher: Was there anything you circled there? Student: drum Teacher: drum. It's probably the only word you circled but what's important to underline? Student: I circled mouth because that's a singing instrument. Teacher: it is, but its not talking about your mouth as a singing instrument in this context. What's the most important point? Student: that drum talk is taught at an early age. Teacher: yeah they teach children from a really early age how to do this drum talk. How to communicate by playing drums. Its part of their language development. And they teach them by word of mouth. So parents teach their kids, grandparents teach their grandchildren. So if they were to go to school, they would do that a lot more than we do music. Student: Can I change to Africa? Teacher: You would like to do that would you? Students: Yes

		Student reads paragraph 4 Teacher: So you would circle West Coast of Africa because that's a specific place. You would circle djembe, dun dun, talking drum. And what's important in this paragraph, really they're talking about the names of the drums, the types of drums. And like (unidentified) told us before, they have they use the animal skin as the membrane on top of the drums. Student: what was the underlining for and the circling focus? Teacher: The circling's names of places or instruments. Underling the main ideas, important points about performing arts. Student: what would you underline in that one, Miss Gray? Teacher: I would underline, coz you've already circled the names of the drums, I would underline "membranophones" and "skin or membrane stretched across it" Student: Do we need to highlight West Coast of Africa? Teacher: Yes, because that's a place. Student reads last paragraph Teacher: We talk about instruments that you hit, shake or scrape as percussion instruments but they are also classes as idiophones. So there's lots of things you would have circled then, all those instruments. If you look on the board, here's what some of them look like. (teacher shows each instrument) Student: how it said, tuned or untuned, is that true that (inaudible)

		Teacher: Harry just asked because a guitar is tuned, is it an idiophone. An idiophone is something you hit, shake or scrape but a guitar we strum or pluck. A guitar is a stringed instrument. Teacher: now that you've gone through this, we've talked about the main ideas, we're going to use the left side. What is the purpose of the left side of your Interactive Notebook. Student: Is it for us to write down notes or important information? Teacher: Yeah, its for you to show what you've learned. Okay? This is how we're going to do it. You've already written summarising as your heading, You're going to write these questions and answer them. So I want you to write the important points. What are the three most important ideas about music. So it's not about how many countries, how many languages, it's about music. Then a summary of the text and then any questions you have.

Term 3 Week 4		
Observation type	**What could this look/sound like**	**Observed behaviour** **(Notes from the researcher)**
Knowledge about Cognition		
1a. Declarative Knowledge	Understanding learning intention and success criteria The required vocabulary is used Understanding the skills required	Teacher: This week your job is to recreate it digitally using Garageband. Can I have you all read the success criteria Students: I can record parts of an African Chant. I can layer parts to create a digital African Chant. I can create a recording that builds texture and stays in time. Teacher: What I am mostly marking you on, with your Garageband recording is how many layers you can create. And are they effective? Are they in time? I'm going to show you how to do that now. You have two weeks to get this done. It's going to take you awhile because you have to use the instruments on here. You have to know where the notes are. Banuwa has proper notes as well as percussion parts. So you can't just know the beats, you have to know the right notes to add the different layers. I'm going to show you how to get started. I know lots of you know how to use Garageband but just to make sure it's done properly.

1b. Procedural Knowledge	Using strategies to complete a process or task Knowing how to use a strategy Applying a strategy	Teacher models step by step how to create Banuwa in Garageband. ***Worked Example*** Teacher: Have I taught you my Chopsticks and Forks strategy? Do you know it? Do you want to explain it? Student: so you see the two, that's chopsticks. And you see the three, that's forks. Teacher: Yep. So see the pattern on the black keys? Chopsticks, forks, chopsticks forks. It keeps going. At the start of the chopsticks, the white key underneath it is a C because chopsticks starts with C. And at the fork, the white key underneath it is an… Students: F Teacher: F, because fork starts with F. if you remember that, you can work the rest out. Because its CDEFGA then its B. Once you get to G it starts again at A. If you wanted to line the iPad up on your book and mark the spaces you can make a little key to help you with the notes, that's fine. Teacher continues to model using think alouds how to complete the task. Teacher: Here's your instructions. You need to glue this, this is your how to do it step by step instructions. That needs to go on what page? Students: the right page Teacher: why would it go on the right side?

		Student: Coz students always right. Student: Coz it's the teacher's input Teacher: It's the teacher's input, this is what I want you to learn today – how to create a layered track on Garageband. On the left, this is Banuwa that we did, on the left side. If you don't know what to play, this is what you play. Add each track. Now I want you to annotate this. I want you to write as you do each one. Tick it, yes I've done it, or write what instrument you used or anything else you're doing to make your track unique, record it on here. Okay? So this is your interacting with this.
2d. Debugging Strategies	Strategies to correct comprehension and performance Asking for help, changing strategies, re-reading	Student work on Banuwa clip shows many occurrences of students asking for help from teacher and peers or seeking help independently with classroom resources. It also shows several occurrences of students off-task and not knowing how to independently access the learning task.

Appendix K: Coding Categories for Qualitative Analysis - Semi-Structured Interviews

Qn No.	Code	Student Responses
1	Metacognition	It's about your thinking and what you think; how to fix things if you get things wrong we didn't really have time for the metacognition.
1	Knowing how you've learned	I think about - of that question - of what the teacher has asked me. thinking back to that question if you missed any key words or anything in it. usually when I sit down and listen to the information and I think about what I've learned when I'm sitting down and writing it. If I need to do a summary of something, I think about how I've done that so then I can remember and write it down. I involve the interactive notebooks as an avid strategy to organise your work and wonder if that helps me.
1	Teacher impact	Miss Gray teaches it really nicely. Like she's like really nice and smooth when she does it, in a way. Because it's hard to explain because she's not like really pressurised, she's just relaxed kind of. I do stop and think about it because like she reminds you a lot and that's good because then it sticks in my brain and I remember it and how I did it.

2		The teacher gives you some ideas and they give - they explain what you have to do.
3		Miss Grey could maybe explain a little bit more of it, to make sure it's really clear, and then we have more information about it, so then we might be able to improve our perspective and accomplish it.
1	Organisation	I involve the interactive notebooks as an avid strategy to organise your work and wonder if that helps me.
4	Organising Thinking	Keeping a clean binder. Keeping my binder organised and having all my stationary that I need and not having to go ask Interviewee: Using my interactive notebook. Facilitator: Yeah. Interviewee: Using the contents page in it. Facilitator: Okay. Explain how you would use your interactive notebook. Interviewee: I'd write everything down in it, then record everything into my contents page. Interviewee: Through [core] notes, they really help me because you've got the word and you've got the definition. Then we've got Interactive Notebook, like I said before, because the right side is the teacher's input where Ms Gray gives us the information and the left side is where we write all our notes and what we've learned. Interviewee: Strategies that I usually use is - in my book organising? Facilitator: Any strategies you know of that will help you to organise your thinking.

		Interviewee:	So organise my thinking. In my book I usually write it like it will help me organise my thinking by the structure, how I do it.
		Facilitator:	So how do you structure it in your book?
		Interviewee:	I usually do two column notes or that kind of thing.
		Facilitator:	Anything else?
		Interviewee:	I don't know what it's called.
		Facilitator:	It's okay. Take your time. Is it a strategy you use in your book or is it a strategy in your mind?
		Interviewee:	My book.
		Facilitator:	Okay. So two column notes.
		Interviewee:	I use note-taking sometimes, when [unclear] is played.
		Interviewee:	Strategies to organise my thinking. Well most of the time in music specifically, nothing really else, I put it down on paper because I'm not the best with that's a treble clef, that's that.
		Facilitator:	Any other strategies? Anything you can do in class to help you organise your thoughts?
		Interviewee:	Can maybe explain them out, and then that information's out, and then I can keep on thinking of more things.
		Probably doing the -	I forgot what it's called, but it's where you rule up both sides and one side is for the teacher's input and everything. The other side is where

		you need to write down what you've done and what you're doing.
4	Understanding Organisation as a strategy	By keeping - these strategies help me think better by having - because I normally get distracted and frustrated if I have a messy binder or something, because then I don't - I start to not listen if I don't have just a clean binder to [sort on]. Like, to get all my books out and knowing that I have all my books there and I take - so, I can take them out and just start my work on them. They make me, when I write like all the definitions and the words it makes me think about them because like we're actually writing them, we're not just talking about them. Because the Interactive Notebook, especially, because that's like, because we get the information, we read it and then we write it down, so it's kind of double In what way do they help me think? So they help me to think in a way where it makes it more organised, so then I can actually figure it out and stuff like that. Well they give me time to think of more things to answer the question too. Then it just gives me time to put it out there. They help you with - so if you forget what the teacher's taught you, you can look at the teacher side, which is what their input is, and you can just use that to help you learn the things.

2	Understanding Learning Intention	How the teacher wants you to learn - like how you know is that they tell you. Like, they show it on the whiteboard and they explain it - of what you have to do. They give you good explanations of how to do it and how to write it out or set it out into the - onto the paper. She usually has like a PowerPoint and essential questions, success criterias and that explains most of it but she just reads them out. She lets us read them out as well. Well most of the time we have a PowerPoint or a sheet to go in - of the content of what we are doing, and it's normally got all of the questions and the rest of the things we need to know about that subject while she explains it to us. She writes it down on the whiteboard or something like that. She writes it down somewhere so that we can see it and know what we're learning.
	Knowing if you've learned	Because I go back to the essential question bit, that was asked at the beginning of the lesson. Because we like do reflections at the end of a class - forgot about that - and we reflect on what we've learned, what we already knew, what we could do better next time. I know by listening, writing it down most times, and thinking about it. I know that I've learned about it when I've paid attention to it and I've written it down and when she - when I've already got it there in front of me.

		Well sometimes we would do a reflection or a revision of what we're done so far. Then we would see what other people have done, and what other people haven't done, and what we could learn next time, and we haven't…
		She gives us work kind of things, so if we learn something, then we can - if we write it down or something like that, then we'll remember it and know that we've learned it.
		Interviewee: DLIQ, maybe.
		Facilitator: What does that mean?
		Interviewee: Did, Learned, what you found Interesting and a Question that you've had.
		Facilitator: Okay, and what does that do?
		Interviewee: It lets the teacher know if you've done what you - if you know what you've done and the question, so that she knows what she can teach you, so that she knows what you need to learn.
		Facilitator: Does that help you at all?
		Interviewee: Yes, because it's kind of like a reminder to see what you've done so that you remember what you've learned that day and so that you can remember.
		Interviewee: By watching and listening.
		Facilitator: By watching and listening? Listening to who?
		Interviewee: Whoever is talking to us.
		Facilitator: Okay, and what do they tell you?

		Interviewee:	What to learn.
		Facilitator:	Great. How do you know you've learned it?
		Interviewee:	[unclear]
		Facilitator:	They walk over and say so? Awesome.
3	Identifying Strengths	My strengths are probably the one pager, probably, or the interactive notebooks.	
		Interviewee:	I don't really have any strength.
		Facilitator:	Nothing you're good at in music?
		Interviewee:	No.
		Facilitator:	Have a good think. What do you think…
		Interviewee:	I can take notes.
		Interviewee:	Well I play a musical instrument so if it comes to that instrument I know it, but also I feel as though with the notes as well, with that I have clear understanding because I know what most of them are. Like yeah, I just, like…
		Facilitator:	Anything else you do in music that you feel like it's a strength of yours?
		Interviewee:	I think the Interactive Notebook, I think I'm quite good at that because that makes a clear understanding for me.
		Interviewee:	My strength as a learner in music is usually note-taking and reading the information.

		Facilitator: Great. Anything else that you've got strength in or that you're really good at in music? Interviewee: Obviously playing music and reading the music sheets, as in the music notes. Well a lot of my family has liked to do different types of music, so I know quite a bit about it. I think my strength in music would be recognising the different kinds of notes because I used to play the clarinet, and recognising what that note is, and if that's a F flat. Interviewee: I'm good at - I think I'm pretty good at listening to the teacher and knowing what I'm doing, because I understand what the music things are, what we're supposed to be doing. Facilitator: What do you mean by that? Tell me a bit more. You said music things, you know what they are. What does that mean? Interviewee: Whatever we're learning in music. I'm good at, for example, on Garage Band where we make music songs and everything, I think I'm pretty good at making the different sounds and recording them and everything. Playing instruments.
3	INB	Because what you do is you have a text and you put it on one side of the page, because you rule up both. That is the teacher's side and the student's side. The student's side, you rule up your own

			interactive notebook and you put the question up the top or the learning intention. Then you write about the text - about what's in the text and what's the story and the base of it. The teacher's side is where you put the text and it's already written out for you - it's given to you from the teacher.
6		An interactive notebook is in a book that's on two pages. You have the teacher's side and the student's side. On the teacher's side - the teacher's side is that - the teacher gives you a text or something like that. You glue it in onto the teacher's side and you rule up, kind of like a one-pager, on the student's side. You write the title and the date and then you add - then you read the text. You read - then you get - you highlight the text of what the important parts are. Like, what are the important parts of the text. You write it down onto the - into it and you - onto the text and it - yeah.	
		Interviewee:	An interactive notebook is an AVID organised book where you can take notes and organise your thinking.
		Facilitator:	Organise your thinking, interesting. What do you do with an interactive notebook?
		Interviewee:	Write down my notes and get my input from the teacher on the right side.
		Facilitator:	Yeah.
		Interviewee:	Then place my output on the left side.
		Facilitator:	Ah, so explain to me, what's output?

		Interviewee:	Output - [unclear]…
		Facilitator:	It's okay. Take your time.
		Interviewee:	Output is the information that you have gotten out of what you have learned.
		Interactive Notebook	is a teacher's input and a student's output. So it's to organise your thinking of your information, your information and your own learning so you can - so you've got information on the right side which is the teacher's input because they give it to you. Then the left side is the output for the students because that's where you put other information or recorded information or in more detail on that side.
		Interviewee:	An interactive notebook is to help organise your book, but also it has a contents page, and numbered on each page and L and R.
		Facilitator:	What do L and R stand for, do you know?
		Interviewee:	Left and right, and then the numbers. It has other types of ways you rule your book up. Like two column notes or just normal.
		Facilitator:	Okay. Can you tell me a bit more about that?
		Interviewee:	Like a bit more about how it's set up?
		Facilitator:	Yes.
		Interviewee:	I'm not too sure.

		It's a strategy where in your book you'll have on the right page, the teacher's side, where it's the input of - it's where they give us a maths sheet or the success criteria of the learning intention. Then on the left side is the student side, is where we would do our work. If we were to make something out of our mind, of the question, then we would put it on the left side, that's what we've done. An interactive notebook is sort of like - it's where you - I'm pretty sure it's where you rule up both sides of the book and there's also a contents page at the start of the book so that you can write down what you've learned so you know what page to go to, and then for the two page thing, one - the left side is the student side for what they're doing and the right side is the teacher side, for their input.
6	Understanding how INB helps you to learn	How it helps me to learn is that if you ever lose the text, you've - but you've already written it down. You've got all the information there and you can flip back to it if you ever do the lesson again or if you're just going back in that session. You can always flip back to the page and you can read it over again or if you're having a test maybe, or if you're struggling with homework. You can do that. It helps me learn how to keep things organised.

		It really organises my book, like it makes it look better, makes me think more. It helps - interactive notebook helps me to learn in many ways. It helps me to learn - I don't know how to explain it. It helps me to learn by me being more - a little bit more organised so I can read it and stuff like that. It puts things out and I like my things to be very organised. So I like to have it out on the page, and then go over it again, and it gives you time to go over it and then go back and see if you can prove your answers. It's like organised so that you know what you're doing and things, so it's like you're organising each thing and you know where all your things are from the contents page.
6	Independent use of INB	I think I might be able to if I know - if there's like the text on a board or something, or you're making your own story up or something. Then, I probably would know how to do it. Yes Yeah, probably.

		Interviewee: Yes and no, because - yes because I've learned several times about it and it really helps me with the organising and stuff like that, and no, because if I didn't have Miss Gray or my teacher's help for it, I would maybe get it a little bit messed up. Facilitator: In what way? What do you mean? Interviewee: A little - things might not be in the right places and a little bit more helpful for being organised. Interviewee: Maybe. Yes and no. Facilitator: Can you tell me a bit more about that? Interviewee: I like the interactive notebook, and I'm just getting to learn it, because [I left] in Year 4 and 5. But I think I've got most of it. Facilitator: Which bits are tricky? Interviewee: The parts when you would - sometimes I don't know what goes on, what side, but most of the time I do, but sometimes I don't. Yeah, I think so
6	Student opinion on using INB again	Yes, I would because it keeps me very organised and it makes class easier to learn. I've got all the information there in case I lose it if we get another one. Interviewee: Not really. Facilitator: Why is that?

		Interviewee:	No, I would.
		Facilitator:	You would?
		Interviewee:	Yeah.
		Facilitator:	Okay, why would you like to continue using it?
		Interviewee:	Because it keeps me more organised on the interactive notebook.
		Facilitator:	So, sorry, what keeps you more organised?
		Interviewee:	It keeps - the interactive notebooks help me keep more organised than a non-interactive notebook.
		Facilitator:	Than a non-interactive notebook. Great. Any other reasons why you like the interactive notebook?
		Interviewee:	Because I get to use the contents page, which you don't usually use in other books.
		Interviewee:	Yeah because, like I said, it's really organised and like I'm kind of an OCD person so if something's not perfect I change it, like even just the slightest mistake in my writing.
		Facilitator:	Great, any other reasons?
		Interviewee:	It, I think it makes me write more which I think is good because it makes me put more information down so I can get a deeper understanding of it.
			Yes, because it really helps me in music, and it helps me to, again, organise my stuff.

		Interviewee: Yes. Facilitator: Why's that? Interviewee: Because it's an avid tool which I can use, and it helps me be an organised student. Yeah, because it's very organised and it's easier to learn things with.
3	Identifying weaknesses	My weaknesses in music are probably the instruments because it's a bit hard to play with all the letters or the notes. Like, A, D and E, and [unclear] on a guitar. It's kind of hard to play it because there's not really any of - like a button or something to play it with so you know which one is which. Interviewee: Music [itself]. Facilitator: So, what do you mean by that? Interviewee: I'm not good at instruments or rhythm or anything. Facilitator: Instruments or? Interviewee: Rhythm. I reckon probably just sitting next to appropriate people.

		Interviewee: Something I can improve in music is the structure, how I write it. Facilitator: Can you tell me a bit more about that? Interviewee: Like when I usually write stuff, I just write it like all over the page, and what I mean by improving the writing is like more music-like, music words. Probably drawing a lot of the notes and recognising different types of music, and musical instruments. Interviewee: Probably that I can't do everything exactly right and it kind of gets a little annoying and I can't do the exact sound that I want to when I'm trying to do something. Facilitator: Can you expand on that a bit more, tell me a bit more about that? Interviewee: For example, on Garage Band, if you're trying to make a sound on, say, for example, for the triangle, you have to do it, but you have to do it exactly right for it to sound right with the rest of the music. Facilitator: Anything else that you think are your weaknesses or you need to improve on in music? Interviewee: Maybe listening a little more.
3	Strategies to help self learn better	Having - like showing more of a growth mindset and listening a little bit more and not getting distracted by things around in the room, maybe.

		Definitely not get distracted, that's a big thing. But usually I get on task but I think I could pull it back together a bit more. I try to learn more of the music notes. Interviewee: Maybe spend a little more time at home practising, that kind of stuff. Facilitator: What about when you are actually in music, is there anything you think you can do to help you learn better? Interviewee: Miss Grey could maybe explain a little bit more of it, to make sure it's really clear, and then we have more information about it, so then we might be able to improve our perspective and accomplish it. Interviewee: Maybe not sit near my friends or anything when we're allowed to sit wherever we want, or sit near people that don't pay attention, so that - and sit somewhere else so that I can concentrate on what I need to do so I get a good grade. Facilitator: Anything else? Interviewee: Just listen more.

Appendix L: Three student samples of using a metacognitive strategy when learning a music making skill in the Interactive Notebook

Reflection

What Worked Well....

- I made sure everything was on time and adjusted the Dynamics of each instrument so they blended in well.
- In the improvised part I used a woodwind instrument because that is whats used in Chinese music.

Would Be Better If....

- I made sure the gong was more on time
- I played one of the piano harmony notes softer.

L5

The Chinese Song

	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Gong (4)																				
Triangle (5)																				
Melody 1 (1)	C	G	A	F	C	G	A	F	C	G	A	F	C	G	A	F	C	G	A	F
Melody 2 (2)	G	D	F	C	G	D	F	C	G	D	F	C	G	D	F	C	G	D	F	C
Melody 3 (3) (Flute)	D		D		D		D		D		D		D		D		D		D	
Improvised part (6)																				

Features	Details
Pentatonic scales	• Musical scale with 5 notes • 4 and 7 not played • F Major p. scale • F G A C D EF.
Drone	• One note played continuously.

RS

[redacted] Reflection

1. The parts that I played today were the Xylophone for melody 3 and I sang harmony 2

2. Playing Banuwa as a whole class felt exciting and fun because I enjoyed playing of the instrument and collaborating with others.

3. The things I learned in music today are what the songs Banuwa (a african music), is, the lyrics for Banuwa (ba-nu-wa, ba-nu-wa + ba-nu-wa x3 then Ne-ni-a-la-no x4), what instruments to use and what are harmonys, melody, and the meaning of the song.

4. Something that helped me learn today was that I made sure I put my AVID pencil case in the box, so I am AVID organised. At Music I made sure I show attentive listening and so I can do Banuwa all together!

It is great to collaborate → we get to learn from each other.

:)

Banuwa

Melody, Harmony 1 & Harmony 2 Lyrics:

Ba-nu-wa, ba-nu-wa, Ba-nu-way-o x 2

Harmony 3 Lyrics:

Ne-ni-a-la-no x 4

Melody — EE E FF F | EE DC

Harmony 1 — GG G AA A | GGFE

Harmony 2 — CC C CC C | CC BC

Harmony 3 — CC AGC | CC AGC

Bass Line — C C F F | G G C C

Shakers

Easy Shaker

Claps

WWW:

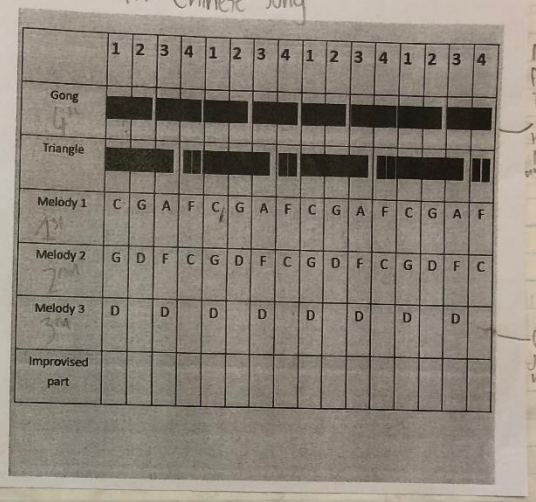
What worked well was syncing the Melody parts, and playing them overlayed.
I also thought my timing worked well in the end with the gong.

EBI:

It would be even better if the microphone on the triangle had picked up more of the triangle than the whooshing of the wind.
I think mine could also work better by playing the triangle a bit more gentle and far away from the microphone on the iPad.

L7

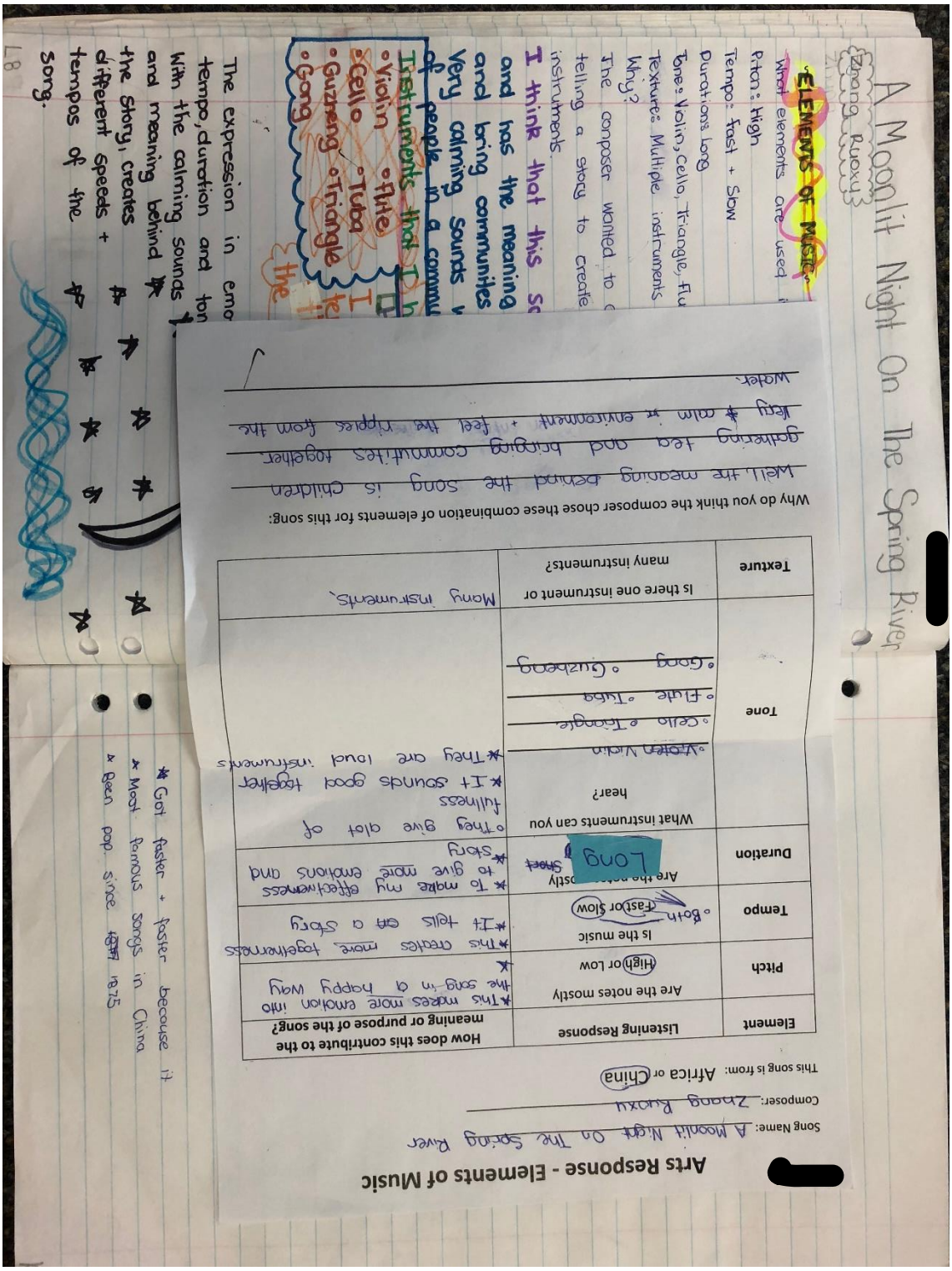
The Chinese Song



Feature	Details
· Pentatonic Scale	· Has 5 notes, a normal scale has 8 · Notes 4 and 7 aren't played. A musical scale used in Chinese Music. · F Major Pentatonic Scale. · F G A B♭ C D E♭ F ✓
· Drone	· Continuously played a note/chord throughout most/all of a Musical piece/component. ✓

R7

Appendix M: Two student samples of music responding with the Interactive Notebook



Comparing chinese and Africa music

Comparing African and Chinese Music

African music
- counts Rhythm as the most important part of a song.
- Drums
  - Djembe
- Membranophones
  - Dun Dun
  - talking Drum

Both
- use loud instruments
- cultural/ traditional
- idiophone inclusion

Chinese music
- over 100 different types of instruments.
- idiophones
  Percussion
- chordophones
  Strings
- aerophones
  air

Chinese Music

	Features
Paragraph 1	• There are over 100 different Chinese instruments
Paragraph 2	• The Gong, chinese cymbals and Chinese Bells are all idiophones. • These instruments vary in size.
Paragraph 3	• The erhu, yueqin and guzheng are all chordophones. • These instruments all have strings.
Paragraph 4	• The huusi is an aerophone instrument. This means it requires air to make a sound. • A drone is a continuous sound that is played.
Paragraph 5	• China has several different drums • The drums are used with rhythmic moves in festivals and cultural celebrations.