Ms Julia E Morris
j.morris@ecu.edu.au

DIAGNOSTICALLY ASSESSING WESTERN AUSTRALIAN YEAR 11 STUDENTS' ENGAGEMENT WITH THEORY IN VISUAL ARTS

Ms Julia E Morris
Dr Geoffrey W Lummis
A/Prof Graeme Lock
Edith Cowan University, Perth

Abstract

Visual arts theory is fundamental to facilitating visual literacy, or students' ability to decode and construct imagery. Visual literacy skills support students' participation in contemporary society. This doctoral study uses a mixed methods approach to investigate students' engagement in visual arts theory, as increased engagement may facilitate visual literacy skills. A diagnostic instrument was created to measure year 11 students' prior learning in theory, as well as their cognitive and psychological engagement. Interviews with year 11 students, visual arts teachers, and some principals or school representatives, facilitated the development of the instrument and contextualised the findings. Phase One findings suggest measuring students' engagement facilitates the diagnosis of key issues and knowledge gaps affecting students' engagement in visual arts learning.

Introduction

In 2014, society is visual, multimodal and digital, encompassing images that are more prevalent, self-referential and require intertextual understandings for interpretation (Arnheim, 1969; Duncum, 2010; Giddens, 1991; Jenkins, 2004; Strinati, 1995). Information is now distributed on a range of digital platforms (e.g., smartphones, tablets) in addition to traditional technologies (e.g., print media) (Freedman, 2010; Pangrazio, 2014). These technologies can be accessed any time of the day and present multimodal information, integrating text with symbols, images, audio and video media (Duncum, 2010, 2012; Efland, 2005; Fetherston, 2008). For students, responding to multimedia forms requires visual literacy, defined as the deconstruction, making of meaning from, and determining personal response to imagery, in addition to constructing new imagery (Avgerinou & Pettersson, 2011; Flood, 2004). Visual literacy allows students to develop reflexivity, to be critical of multimodal information (Duncum, 2012; Giddens, 1991); they learn the shared understandings of their life-world developed in their adolescent years, such as past and present cultural values through imagery (Dewey, 1906; Habermas, 1988; Heidegger, 1996). These values may include global understandings about gender, ethnicity, power, representation and ideology (Duncum, 2010; Freedman, Heijnen, Kallio-Tavin, Karpati, & Papp, 2013).

Responding, as described in The Arts curriculum (ACARA, 2014), develops students' visual literacy and critical thinking skills. *Responding* or *art interpretation* (the Western Australian curriculum content area) is discussed in this paper under the definition of theory (i.e., visual arts work that is not practically based). For year 11 students in Western Australia (WA), *responding* in visual arts is emphasised in schoolwork and examination (Curriculum Council, 2008). Therefore, diagnostically assessing students' past learning in responding (pre-year 11), as well as identifying their current engagement, is important because students' learning in theory has direct implications for assessment.

This research seeks to develop a diagnostic instrument to assess students' past and present engagement in visual arts theory, which may support students' learning in school-based responding tasks, while additionally developing multimodal visual literacy (Avgerinou & Pettersson, 2011; Flood, 2004; Pangrazio, 2014). This paper reports on Phase One of the project, conducted in Perth schools with an ICSEA (Index of Community Socio-Educational Advantage) value above 1100 (ACARA, 2012). The ongoing research is repeating Phase One, testing the instrument in schools with a lower ICSEA value to ensure generalisability.

Diagnostically assessing student engagement with theory in visual arts.
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Literature

Responding as essential to visual arts and visual literacy

The WA curriculum, Visual Arts Course of Study (VACoS) was introduced for years 10-12 between 2005 and 2009 (Stephens, 2006), and emphasises theory through the weighting of *art interpretation* as 40-60% of a student's assessment (Curriculum Council, 2008). In the Australian Curriculum (not taught in WA in 2014), the weighting of the *responding* outcome in visual arts is similar, as one of two outcomes (ACARA, 2014). Content for WA *art interpretation* includes analysis, personal response and contextual knowledge (Curriculum Council, 2008) building students' visual literacy by exploring cultural and social implications of visual arts beyond the analysis of style and conventions (Atkins, 2002; Efland, 2004, 2005; Knochel, 2013; Virilio, 2010).

Visually literate students can decode and encode imagery to construct meaning (Flood, 2004), giving them a distinct cultural advantage. Firstly, social practices are influenced by means of exosomatic evolution through human technology (Lummis, 1986; Popper, 1972). Importantly, digital forms have changed how the visual arts are communicated and interpreted, increasing our virtual social communication through digital-visual platforms (Atkins, 2002; Duncum, 2012; Freedman, 2010; Freedman et al., 2013).

Secondly, digital and traditional images in contemporary society are symbolic and metaphorical, requiring new literacies for interpretation (Atkins, 2002; Duncum, 2012; Freedman, 2010; Knochel, 2013). The literacies students gather through responding support discursive and non-discursive modes of knowledge (De Lima, 2002; Langer, 1942; Lummis, 1986). Both modes of knowledge are important to responding. Discursive modes include linguistic structures, or understanding through the logic of syntax to communicate meaning (De Lima, 2002; Langer, 1942; Lummis, 1986). Visual arts students use both written and verbal language in constructing meaning through multimodal visual arts. Non-discursive modes include aesthetic and symbolic modes of communication (De Lima, 2002; Duncum, 2012; Knochel, 2013; Langer, 1942; Lummis, 1986) that students must understand to create personal interpretations of artworks linked to their life-world. This life-world enrichment expands the ontological parameters of the students as they negotiate ever-increasing symbolic and cultural complexity (Habermas, 1999; Heidegger, 1996; Lummis, 2001).

Thirdly, social values are promoted through images being a reflection of culture (Duncum, 2012; Efland, 2004; Flood, 2004; Levy, 2006). Knowledge of the manipulative aspects of images may protect students against propaganda, and afford them power to contribute to cultural dialogue (Freedman, 2003, 2010). Reduced visual literacy diminishes participation in one's life-world, as they are unable to interpret meaning from cultural dialogue (Habermas, 1988; Virilio, 2010). Lastly, visual literacy may have interdisciplinary benefits. Avgerinou and Pettersson (2011) state, "learners are most able to build connections between verbal and visual representations when text and illustrations are actively held in memory at the same time" (p. 11) and subsequently images may result in better learning within other subject areas both in and beyond the secondary school context (Arnheim, 1969; Eisner, 2002). For visual arts teachers to facilitate students' development of visual literacy it is important they have an accurate diagnosis of students' skills and knowledge so they may target gaps in students' visual literacy (Flood, 2004; Kemp & Scaife, 2012).

Year 11 student development

Students enter secondary school with diverse learning styles, engaging multiple intelligences or preferences of learning (Gardner, 1999, 2006). Students often engage visual arts courses into senior school because, by implication, they have higher visual-spatial or kinaesthetic intelligences (Gardner, 1999, 2006). However, these students also require strong linguistic, intrapersonal and interpersonal intelligences, as WA students are assessed on written personal interpretations of artworks (Curriculum Council, 2008). Students may also experience levels of vertical décalage, where they operate at an abstract level for some subjects, but still have concrete understandings for others (Piaget, 1950). In the context of a secondary visual arts classroom, vertical décalage could mean having a student who

excels at making visual art, perhaps a result of exposure to the arts from a young age; but who requires careful scaffolding for language literacy in order to meet the expected level of complexity for year 11 VACoS. In respect to multiple intelligence theory (Gardner, 1999, 2006) and Popper's notion of exosomatic evolution (1972), the year 11 students' visual development encompasses a multimodal or polysensory dimension (Freedman et al., 2013; Lummis, 1986).

Neuroscience supports cognitive development theories, and justifies their inclusion in teaching and learning practice (Nicholls, 2011; Patel, 2003; Slotnick, 2012; Slotnick, Thompson, & Kosslyn, 2012; Willis, 2008). Neuroplasticity is the brain's ability to strengthen frequently used neural pathways and 'prune' limited pathways, improving the brain's capacity (Anselme, 2012; Willis, 2008). Ongoing responding in visual arts strengthens and creates new neural pathways, automatising visual literacy skills. Willis (2008) also states "appealing to a variety of learning styles when we review important instructional information could provide repeated stimulation to multiple neural networks" (p. 426), supporting the integration of Gardner's multiple intelligences and assisting visual literacy for diverse learners. Neuroscience has also substantiated links between engagement strategies in the art room and the brain; for example, activities that are based on students' interests and encourage creative problem solving are often linked to increased levels of dopamine and pleasure (Anselme, 2012; Willis, 2008). Therefore, studying visual arts may lead to better knowledge retention through positive emotional responses and enhanced neural connections (Jomori et al., 2013; Willis, 2006). To prepare students for visual arts assessments and examinations, teachers require an understanding of students' skills and knowledge in theory so they may build stronger neural connections (i.e., between cultural context and visual arts practice) supporting students' participation in assessment tasks.

Student engagement theories

Student engagement has diverse definitions and is challenging to measure (Fredricks, Blumenfeld, & Paris, 2004; Harris, 2011; Martin, 2007; Yonezawa, Jones, & Joselowsky, 2009). For this study, cognitive engagement is defined as: intrinsic motivation, setting targets, knowledge and skill mastery, metacognition and student autonomy (Appleton, Christenson, & Furlong, 2008; Fredricks et al., 2004; Furlong & Christenson, 2008; Harris, 2011; Martin, 2007). Psychological engagement includes student enjoyment, interest in learning, positive relationships and self-efficacy (Appleton, Christenson, & Furlong, 2008; Fredricks et al., 2004; Furlong & Christenson, 2008; Harris, 2011; Martin, 2007). Measuring student engagement is important in determining the extent of learning facilitation in visual arts theory.

Intrinsic motivation and goals are enhanced when students' desire to learn is not motivated by external reward; for example, through learning supported by tasks relevant to a student's life-world. In visual arts, drawing on popular culture simulates real-life experiences; for example, responding to the 2009 M.C. Escher style Volkswagen billboards in which print advertising appropriated a famous artwork. Visual arts skills and knowledge mastery are linked to technical knowledge, such as Dow's elements and principles (1899). Such knowledge helps students discover that artworks are purposefully created; for example, the recognition of red and yellow colours in Aboriginal cave art is linked to ochre and its reservation for use in traditional rituals (Finlay, 2004). Metacognition is "the act of monitoring cognitive performance, which serves as input to self-regulation of cognitive behaviours" (Wiley & Jee, 2011, p. 6) and may occur through the integration of analysis with historical-contextual understandings. Lastly, autonomy is linked to the internalisation of processes into self-identity (Ryan & Deci, 2000); for example, students responding to artists in their personal practice, and using practical artwork to explore self-identity.

Enjoyment is the affective neurological response (Anselme, 2012; Appleton, Christenson, Kim, & Reschly, 2006) linked to students' past positive home or primary/middle school arts experiences. Personal interest includes perceptions of visual arts linked to one's future and exposure to the multimodal life-world (Appleton et al., 2006). Therefore, limited responding effects a student's understanding of his or her life-world; for example, by interpreting Yamatji artist Norma MacDonald's works, "about painful issues of removal and loss" (Croft, 2001, p. 90) students may gain an enhanced

understanding of more recent Aboriginal artworks about identity. Positive relationships between student and peers or teachers, include students as active participants in their learning within a supportive environment (Appleton et al., 2008; Gray & Hackling, 2009; Ryan & Deci, 2000); for example, when discussing sensitive issues in visual arts, students need to feel safe in order to reconstruct their life-world linked to artworks. Finally, self-efficacy is evident in students' proactive problem solving and belief they are performing to their highest ability (Martin, 2007). Self-efficacy is strengthened through feelings of success as communicated through peers and teachers.

Student engagement is also linked to higher retention rates and academic performance (Appleton et al., 2008; Gray & Hackling, 2009). Another outcome is self-determination theory (SDT), or the acquisition of autonomy, internalised skills and knowledge that are integrated into self-identity (Ryan & Deci, 2000). However, students can only internalise information if they feel related to the group discourse (Ryan & Deci, 2000). Subsequently, if students feel culturally connected they can integrate learnt skills and knowledge into their own identity; for example, they may identify themselves as an adolescent in multicultural Australia. Without automatisation of visual literacy through responding tasks, students cannot fully engage in their life-world, which is essential if they wish to become communicative leaders in the multimodal world (Habermas, 1988; Virilio, 2010).

Diagnostic assessment

Diagnostic assessment is used to evaluate prior learning, although a consensus definition is still emerging (Kemp & Scaife, 2012; Scaife & Wellington, 2010). It may be the basis for determining students' learning needs before the teacher engages a new topic, or to provide ongoing feedback to teachers about students' learning so they may adjust teaching strategies (Kemp & Scaife, 2012). Therefore, assessing students' skills and knowledge in responding assists the teacher in building positive relationships into visual literacy learning. In addition to teacher directed assessment, students may reflect on diagnostic assessments to identify gaps in their knowledge, prompting further study (Kemp & Scaife, 2012); for example, students may use an assessment art history timeline to identify periods of time they are unfamiliar with.

Currently, many diagnostic tools used standardised testing to measure student engagement and prior knowledge; however, these tools are not often subject-specific (Appleton et al., 2006; Briggs, Alonzo, Schwab, & Wilson, 2006). Therefore, subject discipline teachers may be challenged by the lack of flexibility of standardised tests to determine gaps in knowledge that require explicit teaching (Briggs et al., 2006). In visual arts, gaps may include particular artists, movements or contextual knowledge that impact on students' engagement in their life-world; for example, limited knowledge of environmental art may impact on students' interpretation of local Perth artist Calvin Chee's recycled artforms. In secondary schools, not providing teachers with easy-to-interpret information relevant to their subject area and students' needs may prevent effective instruction, as visual arts teachers often have large volumes of students (Briggs et al., 2006). Subsequently, there is a need to develop subject-specific diagnostic instruments to assist teachers in understanding gaps in their students' visual skills and knowledge.

Methods

The doctoral research followed an explanatory mixed methods approach, in which qualitative data explain initial findings from quantitative data (Creswell, 2005; Ivankova, Creswell, & Stick, 2006; Punch, 2009). A mixed methods approach enhances the ability to generalise using frequencies and trends from quantitative data, creating breadth of results; while the qualitative data generate narratives responding to the complexity of the research (Creswell, 2005; Ivankova et al., 2006). Additionally, qualitative data were used to triangulate the validity of the quantitative instrument.

The research investigated four main questions:
1. How effectively can students' cognitive and psychological engagement in visual arts theory be measured?

2. To what extent are year 11 students engaging with visual arts theory?
    a. To what extent are they engaging on a cognitive level?
    b. To what extent are they engaging on a psychological level?
    c. Do they engage with images based on ACARA's cross-curriculum priorities – fusion with Indigenous art (e.g., Lin Onus' artworks), Asian art (e.g., Kozyndan paintings) and art about sustainability (e.g., Richard Woldendorp photographs)?
3. What value do visual arts teachers place on theory and what approaches are they engaging to teach visual arts theory?
    a. How are the visual arts teachers' approaches to theory supported by their heads of learning area and/or principals?
4. How can teaching and learning in visual arts theory education be modified to improve the engagement of year 11 students?

The quantitative methods employed a post-positivist paradigm, in which measurement of student engagement recognised the complexity of the life-world (Cohen, Manion, & Morrison, 2011). The questionnaire data produced generalisations about year 11 students' engagement within the sample. The qualitative research was positioned within an interpretivist-constructivist paradigm (Denzin & Lincoln, 2000) as students' engagement in visual arts theory was understood in conversation with the students and others involved in their learning (Janesick, 2000).

The research was conducted in two phases, with Phase One being conducted in schools that offered the Stage 2 VACoS program in year 11 and had an ICSEA value of above 1100. The mixed methods approach involved the administration of an online questionnaire and semi-structured interviews conducted with students, the visual arts teacher, the head of the arts, and the principal (or representative) of the school. In Phase One, seven schools participated, representing all education sectors (2 Department of Education schools, 3 Independent schools and 2 Catholic Education Office schools). Phase Two of the research is ongoing, in which the research is being repeated in schools with an ICSEA value of 900-1100. The findings of Phase One suggested the students from schools with a high ICSEA had privileged experiences in the visual arts and was the catalyst for the ongoing Phase Two data collection. Subsequently, this paper focuses on the Phase One findings.

Before beginning Phase One data collection, the questionnaire and interview scripts were piloted. A total of 34 year 11 students completed the questionnaire and gave feedback on the new instrument. A Cronbach's alpha test run on the data showed cognitive engagement subscale had a high reliability, Cronbach's $\alpha= 0.93$. The psychological engagement subscale also had a high reliability, Cronbach's $\alpha= 0.88$. Criterion and content validity were established using other research studies to inform the latent traits of both cognitive and psychological engagement, triangulated through discussion with visual arts teachers, and a review of student engagement and visual arts theory literature.

The questionnaire was administered online (Qualtrics) to the year 11 Stage 2 students at six schools (n=85). The questionnaire contained 69 items across five sections:
- Demographic information
- Personal interest in Visual Arts
- Primary school Visual Arts
- Middle school Visual Arts
- Year 11 Stage 2 Visual Arts

The last section (year 11 Stage 2 Visual Arts) comprised Likert scales rating students' cognitive and psychological engagement across nine traits of engagement (five measuring cognitive engagement and four measuring psychological). All other sections contained nominal items that provided a context for the ordinal data generated in the last section. The students took approximately 20 minutes to complete the questionnaire.

Semi-structured interviews were conducted with year 11 Stage 2 visual arts students, stage 2 visual arts teachers, the head of the arts and principals. All interviews were audio-recorded, transcribed and

coded for significant themes. One student from six of the seven schools (n=6) participated in the interviews. The student interviews lasted approximately 25 minutes and explored students' perceptions of visual arts theory in the home and at school. Interviews were also conducted with one teacher from each school (n=7) lasting approximately 40 minutes. These interviews determined teachers' personal perceptions of theory and visual arts, as well as their approach to teaching visual arts theory to their year 11 students. The teacher interviews were also used to triangulate student responses. Shorter interviews (between five and ten minutes) were conducted with four principals and four heads of the arts, representing all sectors. The principal and head of the arts interviews were conducted to determine the role of the visual arts in the broader school culture and to examine if these aligned with teacher and student perceptions.

Findings

Several significant themes arose from both the questionnaire and interviews. The findings presented students' responding engagement in visual arts across both home and school contexts. As such, student findings are presented according to the home, school (prior to year 11) and year 11 contexts. Findings from visual arts teachers, head of the arts and principals are subsequently presented to contextualise these data.

Students and the home context

The engagement of visual arts in the home context was positive for the Phase One sample. Questionnaire data showed most of the year 11 students (79%) practiced visual arts outside of school time and had families who engaged in visual arts-based activities (57%). Additionally, 51% of the students' families owned original artworks, with one student saying: *"[at home] there are heaps of nails in the walls because my mum and… my parents and my brother, we just like living with art … our house is filled with art. We have like, sort of, carved sculptures going up the stairs and things, which is a bit random … just a whole bunch of cultural items"* (Elizabeth, July, 2013).

Interview data suggested students, although practising visual arts outside of school, placed little value on their own artwork: *"I draw but I wouldn't really call that studio practice … Probably nothing worth looking [at]"* (Ben, July, 2013). Students saw visual arts practice as a hobby and some stated they worked on school-based artworks at home and considered this personal art practice. Students also spoke of overseas travel as having a significant impact on their perception of responding to artworks and art history.

Students and the school (prior to year 11) context

The students indicated their responding practices in visual arts across the primary and middle (years 7-10) school contexts. The majority of students (69%) had a visual arts specialist teacher in primary school and this may have affected their personal interest, mastery and enjoyment of practical and responding tasks. All the students, regardless of having a specialist or generalist primary teacher, listed the visual arts activities they experienced in primary school. Making artworks was the key visual arts experience for students (92%); verbal arts discussion was the highest ranked responding activity (55%), followed by gallery visits (35%) and reading about visual arts (27%).

Almost half of the students (49%) reported experiencing a balance of art making and responding in middle school, with 47% stating they mostly participated in art making and only 2% indicating they experienced most responding tasks in middle school visual arts. However, the interviewed students suggested theory was not important: *"in previous years … not as important, because it's not a [senior school] course … art history wasn't as important"* (Elizabeth, July, 2013). A higher percentage of students (45%) visited art exhibitions with their middle school visual arts class when compared to primary school data. Students also indicated the art history topics (by geographical location) they had studied during middle school visual arts; responding that European visual arts (49%) and Ancient cultures (26%) dominated the history discussed. When analysing artworks, students reported their

teachers emphasised the technical construction of the artwork (elements like colour and line) and links between artworks and the students' own art practices.

Students and the year 11 context

By year 11 students are mostly interested in contemporary and postmodern artworks (57%) but still enjoyed practical art making over responding to art. Students demonstrated higher cognitive engagement with visual arts responding and lower psychological engagement; that is, there is not a strong sense of belonging, positive relationships or active participation in their visual arts learning.
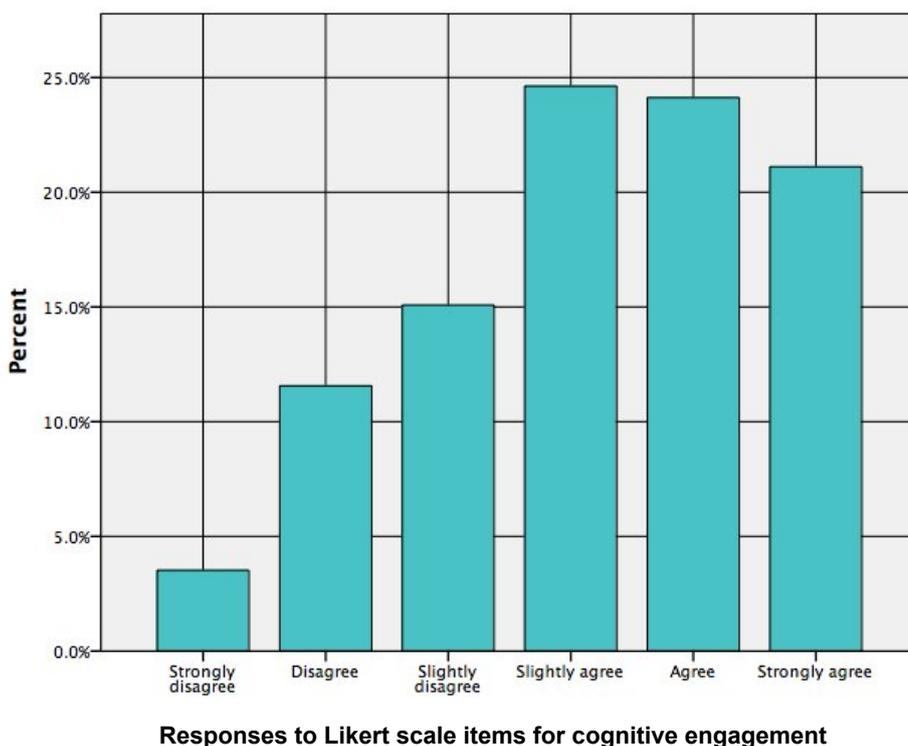

Responses to Likert scale items for cognitive engagement

Figure 1. Percentage of student responses per category for cognitive engagement items

Figure 1 shows the percentage of responses to each category for the combined cognitive engagement items. The responses to cognitive engagement items were generally positive and this reflected the interview data. Students were academically driven and wanted to perform well in visual arts theory, which increased their intrinsic motivation and goal setting (although goals were rarely explicitly set). Autonomy was not often evident in the interview data; with students commenting teachers maintain control over theory tasks. Additionally, students expressed fear of having control as they *"don't know where to start"* (Adrian, June, 2013), particularly when negotiating visual arts-related information on the Internet. This fear may also be emphasised by the subjective nature of visual arts theory; for example, constructing an interpretive argument about the meaning of the artwork in context, to then be evaluated by their teacher or an external marker who uses their subjectivity to judge the students' analyses. In discussing visual analysis, one student said: *"it's much more difficult to talk about the contextual information. It's easy to talk about the work on it's own … it's hard to be given an image you don't know and talk about its context"* (Cy, July, 2013). Interviewed students also expressed anxiety in their skills and knowledge to produce cohesive arguments and feared the impact of subjective assessment on their academic grades: "*it's not a determined grade like maths or something, where you know you are right or you're wrong. So you can't predict it*" (Adrian, June, 2013).

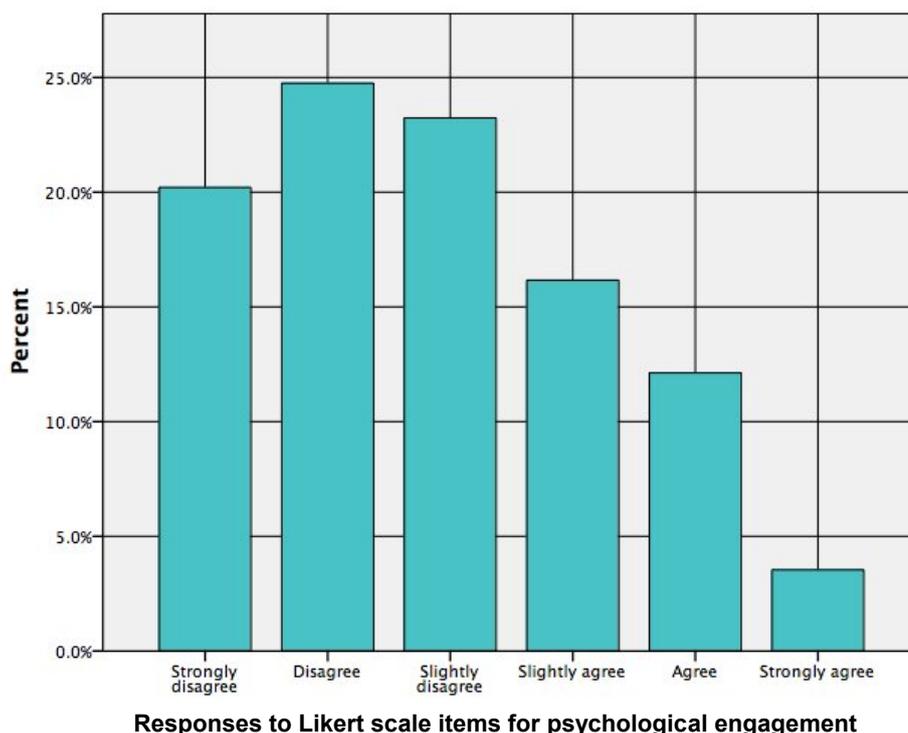**Responses to Likert scale items for psychological engagement**

Figure 2. Percentage of student responses per category for psychological engagement items

Figure 2 presents the percentage of responses (by category) for the psychological engagement items. This graph shows students feel low levels of psychological engagement, the opposite response of the high engagement for cognitive items. Interview data reflected this trend; however, students noted they had a high personal interest in visual arts - but, *"the art theory can sometimes be, it's a bit like English Lit"* (Adrian, June, 2013). In engaging visual arts beyond the school context, students discussed a preference to view visual arts, as opposed to engaging with arts texts (e.g., reading about art or viewing art documentaries). However, students struggled to see relevance of visual arts theory to their futures, which may be explained by the students not seeing a strong connection to visual arts in their future careers or lives beyond visual arts as a hobby. Furthermore, students did not like communicating about their own art and this may be resultant of the low psychological engagement indicators (belonging, relationships and active participation in learning).

Anxiety was a common theme in both communicating about their art and discussing examinations. Examination anxiety (which impacted on psychological engagement) had repercussions for mastery of skills and knowledge; one student noted, *"I don't particularly love it [responding to art], but I understand why it's important and especially because your exam, for the large part, is only art theory"* (Elizabeth, July, 2013). Without the skills and knowledge taught in visual arts responding tasks, students would be severely disadvantaged in the examinations for the Stage 2 course.

Visual Arts teachers

While students suggested responding to visual arts were balanced alongside art marking in middle school, most visual arts teachers discussed practical tasks as the priority for middle school students, with limited responding tasks. Even within the WA year 11 Stage 2 VACoS, teachers noted a number of challenges to engaging art responding: time, knowledge of theory, technology, lack of curriculum structure and students' perceptions of theory's importance (or lack thereof) to visual arts.

The interviewed teachers emphasised limitations in students' cognitive engagement with art responding. They believed students lacked engagement with key concepts (e.g., artwork engaging social commentaries) and intrinsic motivation or autonomy due to students' perceived irrelevance of

visual arts theory to own lives. Furthermore, teachers felt students had limited skills and knowledge, such as elements and principles, knowledge of history, and using evidence to support judgements about artwork; attributing these to limited responding in middle school. Students also commented that theoretical lessons were generally teacher led, implying students could not be autonomous: "*[our teacher] brings in some photos and we talk about them. We analyse the work together ... He asks us lots of questions*" (Cy, July, 2013).

While most teachers spoke predominantly about cognitive engagement they also emphasised the disinterested atmosphere that accompanies art responding lessons. The second trait of psychological engagement discussed was relatedness (as part of personal interest) or students' inability to connect visual arts theory to their own lives. Teachers also discussed the examination focus of year 11 visual arts theory and the anxiety this places on their students; and additionally discussed the importance of academic rigour for visual art through theory and written examination.

Heads of the arts and principals

Both heads of the arts and principals discussed similar challenges in art responding as the visual arts teachers and believed students were attracted to visual arts for the practical aspect as opposed to the theory-based tasks. Instead, the visual arts act as an *"outlet from mundaneness of normal subjects"* (Diego-Principal, July, 2013). Principals noted students as more balanced, as exploration through visual arts *"gives them an avenue to express their emotions, be innovative"* (Clifford-Principal, July, 2013). In addition to these benefits, both principals and heads of the arts emphasised the importance of studying theory in broadening students' perspectives of the world. They also suggested the links between theory and practice in visual art: *"it holds value for the students personally to understand why they are doing things, and for them to be able to justify, explain and discuss their own work as well"* (Florence-Head of Arts, June, 2013). However, they also noted challenges to theory; for example, academic competition between subject areas, the balance of time given to visual arts theory and practice – as determined by examination focus and VACoS requirements, and the lack of interest from students who prefer to make art.

Discussion

The WA year 11 students who participated in the research showed a privileged arts upbringing. Approximately half of the students had artworks at home and/or engaged in visual arts activities with their families. The students also noted travelling as a significant event influencing their engagement with responding to art beyond the school context. Of the students participating in an interview, few discussed practical art making with their family. Students did practice visual arts outside of the school context but it was generally a personal practice not shared with family members. Furthermore, this arts practice was deemed to be a 'hobby' or 'homework' based on their school art making. When discussing their personal art making, students did not discuss using art responding to shape their practice; which is the final step in visual literacy – reconstructing meaning from visual arts to create new artworks (Avgerinou & Pettersson, 2011; Flood, 2004). If responding is not linked to the construction of new imagery, responding and making visual arts are isolated as opposed to being an integrated task.

Students had experienced visual arts at school from primary through to year 10. In primary school, most students experienced making artworks with half of the students noting some verbal discussion accompanying the making experience. Approximately a third of the students had also been to exhibitions or read about artworks in primary school, suggesting responding tasks were introduced to the students at a pre-adolescent age. In middle school (years 7-10), students reported an increase in responding tasks; however, the interviewed students suggested practical art making was still paramount to responding tasks. Again, the isolation of art making and responding showed that decoding and encoding visual imagery is disconnected and this connection is integral to acquire visual literacy, according to Flood's (2004) definition. Almost half of the students went to art galleries as part of visual arts responding activities, suggesting interacting with art in the community was an important

part of their learning. European and Ancient cultures dominated the topics taught in middle school responding classes, suggesting a Western privilege in terms of responding content. The year 11 students interviewed often discussed a limited knowledge of artwork beyond 'classical' or 'modernist' periods.

In year 11, student data showed cognitive engagement was much higher than psychological engagement. Interviewed students discussed the mastery of skills and knowledge based on middle school years and suggested they had learnt the expectations of responding task types (e.g., critical analysis and artist investigations) by rote from practising similar tasks repeatedly across years 10 and 11. While this knowledge increased their cognitive engagement, neuroscience suggests repeating task types reduces novelty and does not stimulate the brain to release dopamine based on new affective experiences (Anselme, 2012; Willis, 2006, 2008). Students were generally motivated by a desire to achieve academically; however, still relied on the teachers' breadth of art history knowledge and showed little autonomy in beginning tasks independently without confirmation of the teacher. Teachers also discussed students' need to become more autonomous; however, teachers were generally hesitant in suggesting any more than concrete or superficial cognitive engagement by their students in responding tasks.

Students' hesitation in being autonomous likely reflects their limited psychological engagement in visual arts responding. Students showed anxiety in communicating about visual arts, and particularly their own artwork, with teachers and peers. Interviewed students discussed teacher-led lessons in an effort to prompt student interaction. Responding in visual arts was equated to the Stage 2 VACoS examination, as opposed to having relevance beyond the school (or university entrance) context. Similar to personal arts practice, the link between art making and responding to art was not often evident among students interviewed and visual arts teachers echoed this sentiment.

The discussion of Phase One students' engagement in theory emphasised the need for a diagnostic instrument to assist teachers in identifying gaps in skills and knowledge as well as the disconnect between making and responding for some visual arts students. Students, generally, did not have closely linked discursive and non-discursive knowledge that is important to support their understandings of culture and history (Eisner, 2002; Freedman, 2010; Freedman et al., 2013; Langer, 1942; Lummis, 1986). The interviewed teachers also emphasised students' cognitive engagement with visual arts and engaged in limited discussion on psychological aspects beyond reference to superficial behaviour. Therefore, an instrument that includes a balance of both psychological and cognitive items may provide a holistic view of the students' engagement (Appleton et al., 2006). It is anticipated that supporting psychological engagement, such as building self-efficacy, could also be key to developing stronger cognitive understandings and academic performance in visual arts theory (Appleton et al., 2008; Gray & Hackling, 2009; Ryan & Deci, 2000).

The promotion of *The Arts* within middle-upper class society is well documented through the French Salon and Royal British Academy, as the collection of 'high' art represented cultural superiority and distinguished the upper class from the working class (Efland, 1985; Macdonald, 2005; Reid, McCallum, & Dobbins, 1998). Discussion with principals and heads of the arts from the sample schools suggests this historical belief is implicitly linked to their philosophies – that developing creativity is *"important for leadership"* (Diego-Principal, July, 2013). However, these participants also discussed a number of challenges, including the competition between subject areas marginalising visual arts as other subject areas were more 'academic' and equated with university pathways and students' preference to make, as opposed to respond, to visual arts. Through a clearly communicated rationale for visual literacy, and the links between making and responding to art, it is possible that students would gain a deeper appreciation of theory in the visual arts. Changing students' psychological engagement in theory may change the perception of theory at a broader school cultural context, where theory is seen as important to visual literacy (Atkins, 2002; Duncum, 2012; Efland, 2004; Freedman, 2010) as opposed to a vehicle for university entrance and academic rigour (Lummis, 1986; Macdonald, 2005; McGaw, 1984).

The discussion of the Phase One findings can only be generalised to populations with the same characteristics as those schools in the sample. The Phase One schools had high ICSEA values (above 1100) and "research shows a clear relationship between the socioeconomic backgrounds of students and their school performance" (Gonski, 2011, p. 34). Subsequently, the sample characteristics may influence the high cognitive engagement evidenced from the questionnaire data and explain the anxiety expressed by interviewed students based on pressure to perform well academically and achieve university entrance (Bradley & Corwyn, 2002).

Conclusion

The privileged visual arts experiences of the students may be an indication of the high ICSEA sample, suggesting the students come from an advantageous background (ACARA, 2012). Subsequently, the Phase Two data may present a different understanding of students' cognitive and psychological engagement in year 11 visual arts theory. The combination of Phase One and Phase Two data will present a more balanced view, generalised across a larger sample, of responding in the WA VACoS curriculum and ensure the diagnostic instrument is valid and reliable across the generalised population.

However, the findings from Phase One suggest students require psychological support in responding tasks, including building enjoyment, interest, relationships and self-efficacy (Appleton, Christenson, & Furlong, 2008; Fredricks et al., 2004; Furlong & Christenson, 2008; Harris, 2011; Martin, 2007). Students did not see the relevance of visual arts responding tasks to their everyday lives and visual literacy is compromised through not practising these skills (Dewey, 1906; Efland, 2002; Eisner, 2002). Furthermore, building a negative association through limited enjoyment and interest in responding could result in a negative feedback loop, in which students may avoid participating in responding tasks (Ryan & Deci, 2000; Martin, 2007). Additionally, students need to build self-efficacy to actively engage in problem-solving and challenging responding tasks, which in turn builds a sense of mastery and has positive effects for both cognitive and psychological engagement (Fredricks, et al., 2004; Martin, 2007; Willis, 2008).

The diagnostic instrument may be able to provide teachers with an indication of students' past experiences and diagnose potential barriers to engaging students in visual arts responding tasks, as demonstrated by the Phase One findings. With this knowledge, teachers could potentially adjust their programs to ensure students receive timely support to develop visual literacy skills. The development of visual literacy is crucial to students' participation in the life-world both within and beyond the school context (Avgerinou & Pettersson, 2011; Habermas, 1988; Flood, 2004; Freedman et al., 2013). The ongoing doctoral research being conducted in lower ICSEA schools will assist in the refinement of the instrument to diagnose gaps in students' engagement and the development of visual literacy.

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