



Self-concept of Indigenous and non-Indigenous Australian students: Competence and affect components and relations to achievement[☆]



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ABSTRACT

Previous research on differences and similarities in self-concept of Indigenous and non-Indigenous Australian students did not consider the possible differentiation between competence and affect components. As a result, it is unknown whether previously found differences between Indigenous and non-Indigenous students' self-concepts are the result of their beliefs about their abilities or their feelings about specific domains. Thus, the present study aims to examine and compare the structure, the mean levels, and the relations to achievement measures of Indigenous and non-Indigenous Australian students' self-concepts in academic and non-academic domains when taking the competence–affect separation into account. Self-concepts in math, English, school, physical ability, and art were measured with 1809 secondary school students including 343 Indigenous students. For Indigenous and non-Indigenous students, confirmatory factor analyses demonstrated that all self-concept facets measured could be separated into competence and affect components although the correlations between competence and affect components were high, particularly for art and physical ability self-concepts. Non-Indigenous students demonstrated higher levels of school competence, English competence, English affect, and math competence self-concepts. Indigenous students displayed higher levels of physical ability competence self-concept while no group differences could be found for school affect, math affect, physical ability affect, and art competence and art affect self-concepts. Invariance tests revealed an invariant factor structure and invariant relations between the multiple self-concept facets and achievement factors across Indigenous and non-Indigenous students. Hence, the present study adds to our understanding of the similarities and differences regarding Indigenous and non-Indigenous Australian students' self-concepts.

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Indigenous Australians are one of the oldest surviving and diverse Indigenous cultures in the world (Bodkin-Andrews & Carlson, 2013; Butler, 2000). However, Indigenous Australians have also been recognised as one of the most disadvantaged Indigenous groups in the world today, across a wide variety of quality of life indicators including socio-economic status, physical and mental health, and education (Andersen & Walter, 2010; Cooke, Mitrou, Lawrence, Guimond, & Beavon, 2007) and are the most disadvantaged group in Australia on a diverse range of socio-economic indicators (Craven & Bodkin-Andrews, 2011; Craven & Parbury, 2013; Gray & Partington, 2012). The disadvantage of Indigenous Australians particularly manifests itself with regard to educational inequities and “These educational inequities are of grave

concern, particularly given that they are pervasive, extending across pre-school through high school” (Craven & Parbury, 2013, p. 370; also see De Bortoli & Thomson, 2010; Purdie & Buckley, 2010). Indigenous Australians are disadvantaged in their access to all levels of education and in cognitive educational outcomes such as academic achievement and engagement (Bodkin-Andrews, Dillon, & Craven, 2010; Bodkin-Andrews, Rourke, & Craven, 2010; Craven & Bodkin-Andrews, 2011; Lillemyr, Søbstad, Marder, & Flowerday, 2010; Trudgett, 2013; Yeung, Craven, & Ali, 2013). For example, Indigenous Australian students have been found to be significantly lower in reading, mathematical, and science literacy measures in the Australian report on the 2009 Program for International Student Assessment (PISA) data (Thomson, De Bortoli, Nicholas, Hillman, & Buckley, 2010) when compared to their non-Indigenous counterparts. Over three waves of PISA (2000, 2003, 2006) results, Australia was ranked above the Organisation for Economic Co-operation and Development (OECD) average, however Indigenous Australian students' results were consistently below the OECD average for reading, mathematical, and science literacy (De Bortoli & Thomson, 2010). Furthermore, across the three time frames, there was no improvement in Indigenous students' performance.

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Some researchers have suggested that a reason why Indigenous Australian students fall short in their academic achievement compared to their non-Indigenous counterparts might be their low levels of academic self-concept (Craven & Marsh, 2008). Academic self-concept has been found to positively impact upon academic achievement (Craven & Marsh, 2008; Marsh & Craven, 2005, 2006; Marsh, & O'Mara, 2008) as well as on other educational outcomes such as coursework selection (Marsh & Yeung, 1997), academic interest (Marsh, Trautwein, Lüdtke, Köller, & Baumert, 2005), and academic aspirations (Nagengast & Marsh, 2012). There is a long and expanding base of international literature providing strong evidence of the cross-cultural validity of academic self-concept (e.g., Marsh & Hau, 2004). However, research exploring the academic self-concept of students from minority groups such as Indigenous Australians has been more limited (Craven & Marsh, 2004; Twenge & Crocker, 2002). In consequence, the self-perceptions of Indigenous Australian students have been noted as an area in need of more research (New South Wales Aboriginal Education Consultative Group Incorporated and New South Wales Department of Education and Training, 2004). With these calls in mind, the primary purpose of the present study, conducted in the Australian state of New South Wales (NSW), is to contribute to extending our understanding of the structure and nature of Indigenous Australian students' self-concepts in comparison to their non-Indigenous peers. More specifically, the present study aims to advance previous research on the academic self-concepts of Indigenous and non-Indigenous students (Bodkin-Andrews, Ha, Craven, & Yeung, 2010; Craven & Marsh, 2004, 2005) by taking the competence-affect differentiation into account (Arens, Yeung, Craven, & Hasselhorn, 2011). Furthering our knowledge about Indigenous Australian students' self-concept might help to identify constructs that could facilitate Indigenous Australians' well-being and educational outcomes including academic accomplishments (Tsey et al., 2007).

1. The construct of self-concept

By providing an empirically testable model of self-concept, the multidimensional and hierarchical self-concept model proposed by Shavelson, Hubner, and Stanton (1976) marked the beginning of sophisticated self-concept research. In this model, self-concept was assumed to be a hierarchical and multidimensional organised construct with general self-concept located at the apex of the self-concept hierarchy which then differentiates into a global academic self-concept facet and a global non-academic self-concept facet. Global academic self-concept was assumed to comprise the self-concepts related to various school subjects. Global non-academic self-concept was supposed to encompass physical, social, and emotional self-concepts each of which were further differentiated into more specific self-concept facets (e.g., physical ability and physical appearance self-concepts as subcomponents of physical self-concept). Extensive research on this model – mostly based on the Self-Description Questionnaire (SDQ) instruments explicitly designed to empirically validate the instrument (Byrne, 1996; Marsh, 2007) – demonstrated large support for the multidimensional structure of self-concept implying that self-concept consists of multiple academic and non-academic facets (e.g., Craven & Marsh, 2008; Marsh, & O'Mara, 2008). Support for the hierarchy of self-concept was, however, weaker in favour of a strong multidimensional structure. Within the academic domain, students' verbal and math self-concepts have been found to constitute distinct facets (e.g., Marsh, 1986b, 1990a,c) making it inadequate to integrate them into a global academic self-concept. The different facets of non-academic self-concept have also found to be distinct from each other. For instance, physical appearance and physical ability self-concepts could not be integrated into a global physical self-concept (Marsh, Relich, & Smith, 1983) but should rather be treated as separate constructs. Thus, modern self-concept research underscores the strong domain specificity and multidimensionality of self-concept.

It has only been recently that these advances in self-concept research and theory have been applied to Indigenous Australian students

(Bodkin-Andrews, Ha, et al., 2010; Bodkin-Andrews, Rourke, et al., 2010; Craven & Marsh, 2004, 2005; Lillemyr et al., 2010; Pedersen & Walker, 2000; Purdie, 2005; Yeung et al., 2013). In this context, Indigenous and non-Indigenous students have often been found to differ in their mean levels of self-concept. Given the multidimensional nature of self-concept, differences between Indigenous and non-Indigenous students might vary according to the specific self-concept domain under scrutiny. Indigenous students have been found to display significantly lower levels of academic self-concept including math, verbal, and general school self-concepts (Bodkin-Andrews, Ha, et al., 2010; Craven & Marsh, 2004, 2005; Purdie, 2005; Yeung et al., 2013). Indigenous students compared to non-Indigenous students have also been found to hold lower honesty, emotional stability, opposite and same sex peer self-concepts (Bodkin-Andrews, Ha, et al., 2010; Craven & Marsh, 2004, 2005; Purdie, 2005). However, Indigenous students compared to non-Indigenous students have displayed higher art, physical appearance, and physical ability self-concepts (Craven & Marsh, 2004, 2005). Inconsistent findings have been found for general self-esteem with some studies indicating higher levels for Indigenous students (Craven & Marsh, 2004, 2005) while other studies (Bodkin-Andrews, Ha, et al., 2010) reported significantly lower levels. Ambiguous results have also been found for parent-relations self-concept as Bodkin-Andrews, Ha, et al. (2010) demonstrated lower levels for Indigenous students whereas Craven and Marsh (2004, 2005) did not find any significant differences between Indigenous and non-Indigenous students.

2. The competence-affect separation of self-concept

Previous research on Indigenous Australian students' self-concept has considered the multidimensionality of self-concept including the domain specificity of academic self-concept, distinguishing between verbal and math self-concepts (Marsh, 1986b, 1990a,c). However, existing research on Indigenous students' self-concept has not yet addressed the separation between competence and affect components found for academic self-concept facets (Arens et al., 2011; Marsh, Craven, & Debus, 1999). Specifically, research on the structure of academic self-concept has extended its domain specificity (i.e., the distinctiveness of math and verbal self-concepts; Marsh, 1986b, 1990a) to the differentiation between competence and affect components (Arens et al., 2011; Marsh et al., 1999). This refinement of the academic self-concept structure emerged from the observation that the SDQ instruments use both competence-related and affect-related items for assessing academic self-concept facets. Originally these two sets of items (i.e., competence-related items and affect-related items) were combined into unified scales for students' domain-specific academic self-concepts. However, this approach has somewhat countered related theories which clearly differentiate between competence and affect self-perceptions. For instance, the expectancy-value theory (see for example Wigfield & Eccles, 2000) assumes that self-perceptions of competence including expectancies for success and task value beliefs constitute separate although related constructs of students' motivation. Reanalyses with the SDQ I as the preadolescent version of the SDQs demonstrated that the competence-related and affect-related items addressing domain-specific academic self-concept facets (e.g., math, verbal) indeed form separate factors (e.g., math affect, math competence, verbal affect, verbal competence; Arens et al., 2011; Marsh et al., 1999). These findings provided support for the competence-affect separation of academic self-concept in the context of within-network studies which explore the internal structure of self-concept by means of exploratory and confirmatory factor analyses (Byrne, 1984). Additional evidence has also come from between-network studies showing that the competence and affect components of academic self-concept display differential relations to outcome criteria. Arens et al. (2011) found that the competence component was more highly related to achievement within and between math and verbal domains than the affect component. For example, the competence component of math self-concept

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