The Longitudinal Study of Indigenous Children

Closing the Gap.

Footprints in Time

ACER

Starting School:

A strengths-based approach towards Aboriginal and Torres Strait Islander children

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Starting school: A strengths-based approach towards Aboriginal and Torres Strait Islander children

'Become a leader, be strong and have a sense of herself and know herself, be a contributor not a taker in society, be safe and know that she can always be safe, be like her brothers and sisters (they are really good kids), good education and to love schooling / learning, be respectful.'

'To have good resilience and be proud of their cultural identity; to soldier on even if there's a crisis.'

Primary carers' responses to: **'Every parent wants their child to be healthy and happy as they grow up. What else do you want for <child's name>?'.** Longitudinal Study of Indigenous Children (LSIC, Wave 1)

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Executive Summary

This paper provides an overview of the role of 'resilience' in an Aboriginal and Torres Strait Islander strengths-based early learning context. It does this by reviewing the literature and by conducting an analysis of data collected through the Longitudinal Study of Indigenous Children (LSIC), a study that follows two age groups of Aboriginal and Torres Strait Islander children as they grow up.

The origins of this paper came from a desire to do something more with the rich LSIC data available, and a frustration that the positive elements being captured in the LSIC data are not necessarily being reflected in the rhetoric, policies, programs and approaches that are aimed at supporting Aboriginal and Torres Strait Islander children's transition to formal learning. While the LSIC data appear to be pointing to strong and rich interactions between children and their parents and carers, and to the importance of cultural knowledge and identity as a key factor in the development of resilience, these protective factors are not currently being reflected in testing and checklists being used to measure children's wellbeing and school readiness.

The project team conducted a review of the literature and a further analysis of the LSIC data. The literature review explored concepts of resilience, wellbeing and school readiness for Aboriginal and Torres Strait Islander children. The LSIC analysis was aimed at identifying the factors that predict measures of children's school readiness and those that predict measures of children's social and emotional wellbeing – an indicator of resilience.

The LSIC analyses were performed using a strengths-based approach. That is, a conscious effort was made to interpret the data in terms of the skills or positive features that the LSIC children exhibited. Where possible, the types of indicators used to explore and evaluate the resilience of children reflect the strengths of Aboriginal and Torres Strait Islander cultures and are guided by the findings of the literature review.

Regression models were used to explore children's readiness for school and social and emotional wellbeing. In addition to the factors that usually influence these outcomes (such as age, gender, health and socio-economic status), LSIC data showed that activities and identity play an important role. The key findings are that:

- greater participation in activities such as reading, storytelling or drawing was associated with higher levels of prosocial behaviour; and

- children whose primary carers placed more importance on their Indigenous identity had fewer social, emotional and behavioural difficulties.

Picture this scene.

A three year old Warlpiri boy is picking up tiny ininti seeds from where they have fallen in the red dust of the Central Australian desert. They are almost hidden amongst the leaf litter, or under a strip of bark, or in the shadow of a rock, but he can find them. The orange, red and yellow seeds will later be transformed into necklaces by his Aunties, who are accompanying the children on the walk. One of the women throws something hard at a tree to dislodge the seed pods, which cascade to the ground. The boy prises open the dried up pods and extracts the seeds from within. He places each seed into a plastic cup that is being used as a temporary bead collector. He makes his way around his environment independent of adults and of other children who are on this bush trip.

The boy's fine motor skills are clearly evident. The deft finger movements to grasp the seed and lift it from the ground, to open the pod and free the seed from its casing, the careful placement of the seed in a small receptacle are evidence of his skills. His actions in moving purposefully from seed pod to seed pod and from tiny seed to tiny seed, without close adult supervision, suggests independence, lack of anxiety, easy adaptation to these surroundings, a sense of purpose, confidence, the ability to focus on the task without being distracted by the seed-searching of other children, a determination to locate as many seeds as he can and pleasure in the task. During the morning he is exposed to two languages, Warlpiri and English.

Introduction

This ACER–FaHCSIA project arose from a shared desire to explore the concept of a strengths-based approach to home–school transition for Aboriginal and Torres Strait Islander children. It draws on the rich data collected as part of the Longitudinal Study of Indigenous Children (LSIC) and is situated in the context of current literature. The paper provides an overview of the role of resilience in an Aboriginal and Torres Strait Islander strengths-based early learning context.

The story of the Warlpiri boy presented above is our way of highlighting the learning that Aboriginal and Torres Strait Islander children already have before they come to school. They do not arrive as empty vessels ready to be filled with Western knowledge or as underperforming children. This paper is about the strengths that exist and how these might be harnessed and built on to allow these children to thrive in a mainstream school environment. It is about helping them to learn 'both ways' and confidently participate in and contribute to two worlds.

Much government policy language, and the instruments that test children's performance, are grounded in a deficit, problem-focused model. The language of 'closing the gap', for example, reflects the Council of Australian Government's (COAG) commitment to reducing the difference in performance on a range of indicators between Aboriginal and Torres Strait Islander students and their non-Indigenous peers. It is necessarily a deficit approach in that it focuses on what Aboriginal and Torres Strait Islander children cannot do in comparison with other, non-Indigenous, children.

The Australian Early Development Index (AEDI) similarly focuses on children's vulnerabilities. The aim is to identify what children in their first year of schooling are not doing so well. Teachers complete a checklist identifying development in the five domains of physical health and wellbeing; social competence; emotional maturity; language and cognitive skills (school-based); and communication skills and general knowledge. The 2009 report found that the majority of Australian Indigenous children are developmentally on track on all the AEDI domains, with the exception of the language and cognitive skills (school-based) domain (CCCH 2009).

However, Taylor (2011: 148) notes that the skills which are encouraged in Aboriginal and Torres Strait Islander children from an early age – such as autonomy, sibling and peer solidarity, motor skills, visual–spatial skills, capacity to self-judge and to assess risk – 'rarely appear on ECE checklists or school reports as strengths to be encouraged'. Research shows that 'tests based in non-Indigenous culture can reinforce "gaps" in knowledge and skills, rather than building positive images of Indigenous children as learners' (Dockett et al. 2010).

The shift from a deficit way of thinking about Aboriginal and Torres Strait Islander children to a strengths-based way of thinking is increasingly evident in the literature (Dockett et al. 2010; Colquhoun and Dockery 2012). The aim of this paper is to highlight the kinds of skills,

cultural knowledge and understandings that Aboriginal and Torres Strait Islander children already have when they come to school. In particular, the study highlights the critical importance of resilience in facilitating successful transition to school. The final part of the paper examines some of the ways in which schools might adopt a strengths-based approach to facilitate this transition.

This paper explores several themes relating to the strengths of Aboriginal and Torres Strait Islander children. It does not seek to provide a set of practical steps or tools for teachers. Its aim is rather to stimulate thinking. The paper also identifies further areas for research to strengthen the existing evidence base. Such further research would enable appropriate resources and instruments to be developed to support teachers and schools in adopting a strengths-based approach towards the home-to-school transition of Aboriginal and Torres Strait Islander children.

Project Methodology

The project team reviewed the literature over a three-week period. Search terms included *resilience*, *coping*, *adjustment*, *school readiness*, *wellbeing*, *self-esteem*, c*onfidence* and *childhood development*. We looked for studies with a focus on Aboriginal and Torres Strait Islander children and on other Indigenous children internationally. Other key concepts that were included in our search were *Indigenous culture* or *knowledge*.

The second component of the project involved drawing on the extensive data available from the Longitudinal Study of Indigenous Children (LSIC). LSIC, also known as *Footprints in Time*, is a study that follows two age groups of Aboriginal and Torres Strait Islander children as they grow up. Indigenous researchers have interviewed parents, carers and more recently the children themselves, each year since 2008. Children in the study come from 11 urban, regional and remote sites across Australia. Detailed information about the study design, sampling, measures, key findings and data access are available from the FaHCSIA website: www.fahcsia.gov.au/lsic .

LSIC provided an opportunity to investigate school readiness and resilience within a sample of Indigenous children from across the country, including urban, regional and remote areas, looking at factors associated with positive development for both of these processes.

Literature Review

Strengths-based approaches

A strengths-based approach recognises the resilience of individuals. It focuses on abilities, knowledge and capacities rather than on what people do not know or cannot do. It recognises that the community is a rich source of resources; assumes that people are able to learn, grow, and change; encourages positive expectations of children as learners; and is characterised by collaborative relationships (Scerra 2011; Grant and Cadell 2009; Saint-Jacques et al. 2009; Peters 2010). A strengths-based approach assumes that children are already learners. It focuses on those attributes and resources that may enable adaptive functioning and positive outcomes (Hunter 2012). It views Aboriginal and Torres Strait Islander children as 'able, capable and having agency' (Hutchins et al. 2007: 35) rather than as 'victims' or as being helpless.

Hunter (2012) describes the relationship between resilience theory and strengths-based approaches as that of theory and practice. Resilience is a theory that identifies the importance of protective factors and competencies, and the strengths-based approach is in part the practical application of that theory, although strengths-based practice also encompasses other theories and broader ideas such as empowerment, healing and wellness (Hunter 2012; Dobia and O'Rourke 2011).

What is 'resilience'?

'Resilience' has been defined in a range of different ways but fundamental to most definitions is that children display competent functioning despite exposure to high levels of risk or adversity (Hunter 2012). Resilience can mean different things in different contexts and is a dynamic process rather than a fixed state. A child might be resilient in one situation and not resilient in another. For example, a child might come to school independent, adaptable, and confident but might lose these qualities if exposed to situations that undermine confidence. Resilience is not a personal or individual trait (Vanderbilt-Adriance and Shaw 2008) but a developmental process which requires adaptation to new challenges and vulnerabilities.

Masten and Obradovic (2006: 14) define resilience as 'a broad conceptual umbrella, covering many concepts related to positive patterns of adaptation in the context of adversity'. Most definitions contain the two key elements of *risk* or challenging circumstances and the *capacity to adapt* successfully to these circumstances. Resilience cannot occur without the presence of these two factors – adaptive functioning and exposure to risk or adversity. A well-functioning child who has not faced high levels of adversity would therefore not be considered resilient (Vanderbilt-Adriance and Shaw 2008).

A child is said to be resilient if they have social competence, problem-solving skills, mastery, autonomy and optimism (Sutherland 2009; Hanewald 2011). The young Warlpiri boy collecting seeds is likely to be resilient: he is socially adept, resourceful, independent, and confident in his ability to collect the beads and contribute to the production of the necklaces.

Resilience has been linked to improved learning. Foster (2006) found that building emotional resilience is key to reducing 'disruptive and unacceptable behaviours' and facilitating a better learning environment. Developing resilience early in life is also linked to 'long term occupational and life success' and 'the prevention of substance abuse, violence and suicide' (Fuller 2006: 13).

Growing up strong

Hutchins et al. (2007) refer to the concept of 'growing up children strong', a term used by some Aboriginal and Torres Strait Islander communities to describe the importance of teaching children the Law – rules about their relationships to the land, people, animals and plants. It is the process of providing children with a strong sense of identity, belonging, and competence. It requires children to be strong in culture, resilient and able to succeed within Indigenous and mainstream environments (Hutchins et al. 2007).

Resilience in this context is about being culturally strong and able to participate in two worlds. Being 'culturally strong' means being able to understand and incorporate 'your community's history, standards, beliefs, values, and practices' (Hutchins et al. 2007: 15). Knowing about your own history and culture provides a sense of belonging, connections to the knowledge of ancestors, and articulates cultural ways of being and doing (SNAICC 2005). It also allows a person to move on in life in a positive way, and increases a sense of well-being and inter-connectedness (Brough et al. 2006). All these factors contribute to building a strong sense of self and identity.

The concept of 'growing up children strong' is consistent with the shift in focus in resilience research from a focus on the individual to a consideration of individuals within a broader family and community context (Hunter 2012).

> '[I] enjoy watching her interact because she's very independent and when she's doing things she's got to do it right, she has an obsession for getting and doing things right and if she gets frustrated … and watching her learn and … her facial reactions and [she's] very inquisitive. [She] wants to know what you're doing and very involved with her siblings and knows her place in the family and asserting herself.'
>
> LSIC primary carer's response to '**What do you like doing with <child's name>?**'

Components of resilience

Consistent with the social determinants of health and mental health promotion literature (Hanewald 2011; Dobia and O'Rourke 2011; Zubrick et al. 2005), which focus on those factors and behaviours that can protect and enhance, Hunter (2012) frames resilience around:

- risk factors
- protective factors
- competent functioning.

Risk factors

Risk factors are associated with an increased likelihood that mental health problems and/or psychological distress will develop (Dobia and O'Rourke 2011). From an Aboriginal and Torres Strait Islander social and emotional wellbeing perspective, a complex number of indicators have been identified as risk factors which, in combination, could affect a child's development and or social and emotional wellbeing (Garvey 2008; Paradies et al. 2009; Zubrick et al. 2005; Daly and Smith 2005; CDHAC 2000). These factors have consequences for day-to-day learning and include such things as family disharmony; neglect; poverty; substance abuse; housing; poor nutrition; hearing loss; hospitalisation or death of a close family member; family contact with the justice system; parental/carer educational status; discrimination; state policies.

Despite these multiple and intersecting risk factors for Aboriginal and Torres Strait Islander children, there are also protective factors that contribute to a child's capacity to be resilient in the face of overwhelming intergenerational adversity resulting in chronic stress, loss, grief and trauma.

Protective factors

Protective factors are seen to strengthen positive mental, social and emotional wellbeing and help people to be resilient in times of adversity. There are protective factors associated with individuals, families, schools and communities and there is a connection between the promotion of these factors and positive life adaptation and academic achievement (Fuller 2006; CDHAC 2000). Walker and Shepherd (2008) note the importance of protective factors in fostering early learning and development.

Strengths of Aboriginal and Torres Strait Islander children

Taylor (2011) identifies some of the strengths associated with Aboriginal and Torres Strait Islander children: they are encouraged to be independent from an early age; they have well-developed visual–spatial and motor skills; they have the capacity to self-judge and to take risks. Taylor specifically refers to LSIC, stating that the positive findings from the longitudinal study are not reflected in the media. For example it is not reported that children are deemed by their families to be in very good health; that they eat nutritious food, that they

were read to in the past week by family members and played with. Yet these are potentially protective factors that could facilitate competent functioning.

Priest et al. (2008: 126) identify four key principles that underpin the 'growing up' of strong children in remote Central Australia:

- the Dreaming, the Law
- family, extended family, all family
- the home, the land, the country, this place
- holding everything, keeping everything together.

These principles give children a place in the world but also responsibilities. These Aboriginal children are taught about relationships and their responsibilities to everything in their environment. They are encouraged to be independent and recognise their place in the world.

In addition to the four key principles described above, Priest et al. (2008) also identify several characteristics of child-rearing practices in these remote communities that could arguably be seen as protective factors, conducive to resilience, and laying the foundations for early learning:

- Babies are seen to be 'little adults' with cultural responsibilities.
- Babies and young children are surrounded by family members at play, eating and sleeping.
- There is no concept of individual ownership; objects are freely shared and given away to others who might want them.
- Children learn the importance of relationships from an early age and of compassion for others.
- Children are taught to help and encourage each other, including siblings who might be struggling with a task.

These characteristics are consistent with the findings in the literature which associate resilience with social competence, autonomy, mastery and problem solving.

Storytelling

Storytelling is one of the more commonly cited activities shared by LSIC carers and parents with their children and is often linked explicitly with being culturally strong:

'*His culture has lots of stories to help his spirit stay strong; his strong connection to country and his culture all the stories that [connect] him to his country; Telling a story about her indigenous background, heritage. Share stories and introduce her with original culture.*'

Van Staden and Watson (2007) examined the potential for using Indigenous stories to construct learning in two early childhood settings in South Africa and Western Australia. They found that traditional stories 'allow children to face their own fears and frustrations,

and thus acquire essential life skills'. Winkler (2005: 29) also identifies the importance of sharing stories as a means of fostering strong knowledge, culture and spirit in children.

Swan and Raphael (1995) summarise some of the benefits that come from families providing children with stories of their past to help them gain a sense of self, belonging and a sense of history. They note that such attachment helps the child to:

- achieve full intellectual potential
- attain cultural identity
- sort out perceptions
- know the importance of family
- think logically
- develop a conscience
- become self reliant
- cope with stress and frustration
- handle fear and worry
- develop future relationships.

Other shared activities

Research shows there are many activities that parents undertake with young children that have a positive effect on their development, build social relationships, improve resilience and promote school readiness (Johnson and Howard 2006). Parents can provide such experiences regardless of their educational or occupational levels (Dockett et al. 2010) or socioeconomic and cultural backgrounds (Christian et al. 1998).

In the LSIC project, parents and carers describe a wide variety of activities which they enjoy doing with their children, including:

- doing household tasks together (*helping hang out washing, making beds, cooking, cleaning*)
- drawing, finger painting, craft work, singing songs, dancing, playing musical instruments (*mummy baby time, special clap clap, dancing and singing time, playtime*)
- playing outside games, kicking/throwing a ball, jumping on a trampoline, playing on swings
- shopping, gardening, walking, going to the park, cinema, zoo, beach
- reading (*teaching him words, colours, shapes, showing him books, reading to him at night*)
- looking at birds, feeding chooks, playing with the dog
- watching children's DVDs, television shows
- doing cultural activities (*hunting and gathering bush food, going on cultural holidays, look at Aboriginal rock painting and write down what the storyline is*)
- visiting family and friends, driving in the car.

Johnson and Howard (2006: 11) make the point that it is relationships that build resilience. The activities they describe as promoting a sense of belonging and connectedness are similar to those the LSIC parents and carers engage in with their children: talking and listening; sharing activities; enacting rituals; displaying loyalty; doing things for each other; providing advice; and advocating on behalf of others.

Among the more commonly mentioned shared activities enjoyed by parents and carers are the more intimate moments of cuddling, kissing, hugging, tickling, laughing together, and simply 'hanging out' together.

'Listening to music with him and dancing with him, taking him out into the garden and showing him plants and trees, kicking the ball with him, taking him to the beach, walking.'

'Sitting outside with her watching her discover the world.'

LSIC primary carers' responses to '**What do you like doing with <child's name>?**'

Family support

Family support enables the attributes often associated with resilience to be developed in children. Zubrick et al. (2005) suggest that Aboriginal families respect children's early autonomy, which has enabled many children 'to develop good adaptational and survival skills, to take on personal responsibilities and to act independently' (p. xxiv). Zubrick et al. (2005) and Penman (2004) identify children's place in an extended family system as being a key strength of Aboriginal families. This is consistent with the research undertaken by Guilfoyle et al. (2010: 69) who suggest that the child is seen as 'naturally strong' and 'positioned as equal members of the community'. Rather than being primarily the responsibility of one or two parents, responsibility for the Aboriginal child rests on the broad community.

LSIC parents and carers are consistent in the emphasis they place on playing, meeting, being with and knowing about family.

'Being with families and getting mentoring from them, my older brother and sisters, so he will learn so much going up home.'

'Strong family bonds we have and support that we give each other.'

LSIC primary carers' responses to '**What is it about Aboriginal or Torres Strait Islander culture that will help <child's name> grow up strong?**'

Positive self-identity

'Self-concept' has been defined as self-perceptions drawn largely from an individual's interactions with the environment and other people (Bodkin-Andrews et al. 2010a). It is an important construct 'that is useful for predicting and explaining how an individual may act, in that the positive or negative self-evaluations are a critical motivating source behind the behaviour of an individual in any given situation' (Bodkin-Andrews et al. 2010a: 25). In

achieving this sense of self, 'Indigenous children must be assisted in developing a strong cultural identity, a sense of self-reliance, adequate coping strategies to aid in stress management, higher general self-esteem and self-confidence, the ability to achieve their full potential, and opening future pathways.' (Bodkin-Andrews et al. 2010a: 25).

Achieving a positive sense of identity is an important requisite for developing resilience (Brooker and Woodhead 2008), as is creating a sense of belonging and connectedness and empowering the child so that they have the capacity to 'take control' of events and influence outcomes (Johnson and Howard 2006).

Bodkin-Andrews et al. (2010b: 281) notes the interconnection between strong self-esteem of Aboriginal and Torres Strait Islander people and a stronger sense of 'cultural identity, self-reliance, adaptive coping strategies' and the ability to achieve aspirations. The maintenance of connections to family and community forms the basis of the development of a child's identity as an Indigenous person, their cultural connectedness, and the emergence of their spirituality (SNAICC 2005). LSIC parents and carers describe the importance of children knowing their place in the world as a means of helping create a strong sense of identity.

'To have the knowledge of her identity and ... background because it will make her stronger inside to survive.'

'Knowing who he is, if you don't know where you're from you get into trouble, it makes you centred knowing who you are and feels special.'

LSIC primary carers' responses to '**What is it about Aboriginal or Torres Strait Islander culture that will help <child's name> grow up strong?**'

Strong cultural identity

The literature shows unequivocally that a strong Indigenous identity is a fundamental component of resilience for Aboriginal and Torres Strait Islander peoples (e.g. Dobia and O'Rourke 2011; Larkins 2010; Garvey 2008; SNAICC 2005, 2012; Swan and Raphael 1995).

The critical importance of cultural identity for children is shown consistently in the responses of LSIC parents and carers to the question 'What is it about Aboriginal or Torres Strait Islander culture that will help [your child] grow up strong?:

- *family, identifying and acknowledging Aboriginal history, and being accepted and acknowledged as Aboriginal*
- *spirituality, connection to land and kin, strong family ties, sense of belonging*
- *about nature and the earth*
- *the language and culture for knowledge of ancestors*
- *learning language and other Aboriginal things, storytelling, dancing, cultural things and know where his family has come from*

- *sense of belonging to country, caring for people and country, shared understanding of what it means to have policies of genocide aimed at you, having multiple and alternative histories*
- *everything about culture will help him grow up strong*
- *understanding the effects of his footprints on the world, having a connection to land, having a real understanding of a real community and respecting elders, healthy appreciation for the environment, understanding his place within his family and the community.*

Increasingly, governments are recognising the need to embed this kind of cultural knowledge in schools. In New Zealand, cultural standards have enabled Indigenous history, language and culture to be infused in the curriculum of primary schools, helping to consolidate identity as a Maori and New Zealander which in turn is seen to be fundamental to the cultural and educational wellbeing of children (Tomlins-Jahnke 2008). In Australia, the new national curriculum is seeking to embed Aboriginal and Torres Strait Islander histories and cultures across all areas of the curriculum with a strong focus on country/place, culture and people as a cross-curriculum priority.[1]

Health

Good health is another protective factor. Evidence demonstrates that, regardless of cultural background, healthy young people are better learners, and educated young people live healthier lives (McCuaig and Nelson 2012). From an Aboriginal and Torres Strait Islander perspective health is holistic, encompassing 'spiritual, social, emotional, cultural, physical and mental wellbeing and issues related to land and way of life' (Swan and Raphael 1995: Foreword). The health of Aboriginal and Torres Strait Islander children also needs to be seen holistically in the context of family and community (CHIP 2004).

Low-income and minority parents in a United States study of school readiness (situated within a child, family and community health framework) identified social skills and emotional health as important protective factors for children facing challenging school environments (McAllister et al. 2005). McAllister et al. re-conceptualised school readiness as a 'public health' issue. Social interaction and participation, a sense of community, community cohesion and competence, and a sense of place are all seen as important determinants of community mental well-being (Butterworth 2000) and are protective factors that have positive impacts on resilience.

Hutchins et al. (2007) describe a Canadian First Nations' holistic view of child development which involves respecting and supporting the child's body, mind and spirit: 'This means attention to nutrition, preventive health, socialisation, education, Indigenous language and culture' (18). Hutchins et al. (2007) argue that in order to build resilience in a dominant world, '[I]ndigenous children's identity needs to be based on their unique histories, cultures,

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[1] See Australian Curriculum, Assessment and Reporting Authority (ACARA), cross-curriculum priorities: http://www.acara.edu.au/curriculum/cross_curriculum_priorities.html

languages and traditions' (p. 23). Fuller (2006) suggests that if even one protective factor is present in a child's life, this can help them accumulate more protective factors although Zubrick et al. (2004: 85) caution against an assumption that protective factors can always over-ride the impact of risk factors as resilience can be put under extreme pressure in some circumstances. Still, it seems the more protective factors there are in a child's life, the more likely it is that the child will be resilient (Hanewald 2011).

Competent functioning

Resilience is the capacity to maintain competent functioning in the face of new, challenging or adverse circumstances. Hunter (2012) also calls this 'adaptive functioning' or 'positive outcomes'. She notes that competence was originally conceptualised as the absence of psychopathology but has since included competence in a range of other areas. Competent functioning is neither static nor the same across domains. For example, children might show adaptive functioning at one point in time but not at a different point of time or in one domain but not another.

In summary

The literature review shows the following:

- A strengths-based approach recognises resilience in individuals.
- Resilience means having social competence, autonomy, mastery, problem solving and optimism.
- Some of the protective factors that contribute to a child's capacity to be resilient are:
  - shared activities, including storytelling
  - family support
  - positive self concept
  - strong cultural identity
  - good health.
- Resilience is a developmental process requiring adaptive functioning as new challenges arise. It is not an individual trait or permanent attribute.

Knowing what is right and what is wrong. Staying positive. Knowing his identity and his role as a young Koori man. How special and magical the whole culture is. Storytelling, art, spirituality, the land. Knowing and respecting his Elders. How important that is. And where he comes from: the family tree. It is in his Grandfather's book.

LSIC primary carer's responses to '**What is it about Aboriginal or Torres Strait Islander culture that will help <child's name> grow up strong?**'

LSIC data analysis

This section of the paper examines the data collected as part of the LSIC initiative. This data can inform research on child development based on an initial sample of 1671 Aboriginal and Torres Strait Islander children. Data are collected in areas such as learning, family structure and housing, and culture and community. Further information on the main research questions of the LSIC project, measures, and data collection procedures is available from the Key Summary Report from Wave 2 (www.fahcsia.gov.au/lsic; Department of Families, Housing, Community Services and Indigenous Affairs, 2011).

The analyses in this paper focused on results for the Kindergarten or K cohort of the LSIC sample. These children began their participation with the project in 2008 when they were mostly between the ages of 3½ and 4½ years. The data considered in this report were predominantly from the Wave 3 phase of data collection when the K cohort was between the ages of 5½ and 6½ years. However some Wave 2 data (when children were aged between 4½ and 5½ years) were also investigated.

Given the project team's interest in school readiness and resilience, the analyses were focused on the following two questions:

- What factors predict measures of LSIC children's school readiness?

- What factors predict measures of LSIC children's social and emotional wellbeing, an indicator of resilience?

The analyses were performed using a strengths-based approach. That is, a conscious effort was made to interpret the data in terms of the skills, strengths and knowledge exhibited by children in the study. Furthermore, the types of indicators used to explore and evaluate the children's resilience reflect the strengths of Aboriginal and Torres Strait Islander cultures where possible, and are guided by a health and wellbeing framework, as discussed in the literature review section of the paper.

Measures of school readiness

Renfrew score (Wave 3)

The Renfrew Word Finding Vocabulary Test assesses children's expressive vocabulary by asking them to name pictures of objects. LSIC children's total score on the Renfrew was used in the analyses as a Wave 3 measure of school readiness. Test items include such things as a kangaroo, a crocodile, a helicopter and the moon.

Who Am I? score (Wave 3)

Who am I? is a developmental assessment that requires a child to write their name, copy shapes, write letters, numbers and words in a small booklet. It is a measure of early numeracy and literacy skills as well as being a test of spatial ability. LSIC children's total score for the Wave 3 data collection was used in the analyses as another Wave 3 indicator

of school readiness. *Who am I?* is not language dependent and is therefore suitable for children with limited English.

Measures of social and emotional wellbeing

Strength and Difficulties – Prosocial and difficult behaviour (Wave 3)
Primary carers responded to 25 items from the Strength and Difficulties Questionnaire (SDQ; Goodman, 1997), a measure designed to identify child and adolescent emotional and behavioural difficulties. The SDQ asks about both positive and negative attributes. For the purposes of these analyses, two subscale scores were used as part of the Wave 3 measures. The prosocial subscale score was an indicator of behaviour, such as empathy for others and sharing behaviour, while the difficulties subscale score was an indicator of emotional, conduct and peer problems as well as hyperactivity. Children with higher levels of reported prosocial behaviour and lower levels of reported difficult behaviour would be expected to exhibit higher levels of social and emotional wellbeing and be considered more resilient.

Temperament Sociability/Persistence/Reactivity (Wave 2)
Primary carers were asked to respond to an abridged version of *The Short Temperament Scale for Children* (Sanson et al. 1987), which investigates three aspects of temperament: approach/sociability (how comfortable children are with new people and situations); persistence (the ability to remain focused on an activity or task); and reactivity (the intensity/volatility with which a child reacts to certain events). Subscale scores for each of these aspects were created. These three sets of scores were used as indicators of resilience for Wave 2 as they are often predictors of positive social and emotional wellbeing.[2] Children with higher levels of sociability and persistence and lower levels of reactivity would be expected to demonstrate more social and emotional wellbeing and be regarded as more resilient.

Factors considered in analysis of resilience

Age and gender
LSIC children's age and gender were considered in the analyses performed.

Health measure (Wave 2 and Wave 3)
The primary carer of each LSIC child was asked if their LSIC child was in excellent, very good, good, fair or poor health. This was used as an indicator of global health in the analyses.

Frequency that English was spoken at home (Wave 3)
A variable is available in the LSIC data set that reports how frequently English is spoken in the home (a lot, often, a little, hardly ever and not at all). This variable was derived from questions asked to the primary carer about languages spoken in the home. The variable was included in the analyses given the school readiness measures' emphasis on English.

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[2] See the data user guide release 3.0 at www.fahcsia.gov.au/lsic for more information on how the Temperament subscale scores were derived.

IRISEO (Wave 2 and Wave 3)

The Index of Relative Indigenous Socioeconomic Outcomes (IRISEO) is a measure of socioeconomic status. It was developed by Biddle (2009) via analysis of the 2006 Census data and takes into account factors such as employment, education, income and housing. The Index gives a ranking of socioeconomic status for an area in which an individual resides relative to other Indigenous Australians (that is, not relative to non-Indigenous Australians). Biddle (2009) argued that traditional measures of this construct (e.g. the Socio-Economic Indexes for Areas, SEIFA) have a limited capacity to capture socioeconomic outcomes for Indigenous peoples. For this report, the IRISEO was used as an indicator of each LSIC child's socioeconomic context.

Parent education

Primary carers were asked to report the highest level of education they had received, ranging from never having attended school to a postgraduate degree.

Household size (Wave2 and Wave 3)

Primary carers were asked how many people lived in the household with them and the LSIC children. Given that extended family members are often actively involved in caring for Aboriginal and Torres Strait Islander children and that many children live with their extended families, this variable was included in the analyses investigating predicted indicators of resilience.

Activity participation (Wave 2 and Wave 3)

Primary carers were asked whether a family member had read a book to the child in the previous week and, if so, who did this, and also who, if anyone, had told a story or drawn pictures with the LSIC children. The activity participation variable used in the analyses was a tally of how many instances any of these activities had been reported. Given that the literature review highlights the importance of family support and shared activities, this variable was included.

Importance of Indigenous identity to primary carer (Wave 3)

Primary carers were asked how important being Aboriginal and/or Torres Strait Islander was to them. They were invited to select whether this was the most important thing, important but not the only thing, something they did not know about and wanted to know more about or something they rarely thought about. According to the literature review, a strong Indigenous identity is a fundamental component of resilience for Aboriginal and Torres Strait Islander peoples and therefore this variable was included in the analyses.

Preliminary analyses

Descriptive statistics were calculated for all variables that were included in the analyses. Note that the value of N[3] changes for variables as not all children were asked, administered

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[3] The number of children's responses included in the analyses

or provided answers for every measure. Of the 594 children in the K cohort in Wave 3, 299 were males (50.3 per cent) and 295 were females (49.7 per cent).

Table 1 shows descriptive statistics for the school readiness measures.[4]

Table 1: Descriptive statistics for school readiness measures Wave 3

Test	N	Minimum	Maximum	Mean (standard deviation)
Renfrew	551	0	50	30.36 (9.07)
Who Am I?	541	0	43	31.81 (7.33)

Maximum possible scores for the Renfrew and *Who Am I?* tests are 50 and 44, respectively. The standard deviation values shows there was a large spread of scores for both tests and that no child reached the maximum score for the *Who Am I?*

Table 2 presents descriptive statistics for the Wave 2 and Wave 3 wellbeing measures. For the Wave 2 measures, levels of sociability and reactivity were about the mid-point of the 5-point Likert scale whereas persistence scores were slightly higher. For the Wave 3 measures there was a high level of mean reported prosocial behaviour and relatively lower levels of reported difficult behaviour.

Table 2: Descriptive statistics for social and emotional wellbeing measures

Wave		N	Minimum	Maximum	Mean (standard deviation)
Wave 2	T – Sociability	634	1	6	3.44 (1.40)
	T – Persistence	631	1	6	3.99 (1.22)
	T – Reactivity	634	1	6	3.37 (1.24)
Wave 3	SDQ – Prosocial	594	1	10	8.39 (1.76)
	SDQ – Difficulties	593	0	32	11.43 (5.76)

Note: The SDQ difficulties subscale is based on a total of more items than the prosocial scale which is why the maximums differ.

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[4] Further detail on these measures can be found in the Wave 3 Technical paper produced by ACER (ACER, 2012).

Table 3 presents statistics for the variables activity participation and household size for Wave 2 and Wave 3.

Table 3: Descriptive statistics for activity participation and household size

Wave		N	Minimum	Maximum	Mean (standard deviation)
Wave 2	Activity participation	746	0	3	2.05 (1.09)
	Household size	656	2	16	5.17 (2.08)
Wave 3	Activity participation	746	0	3	1.73 (1.21)
	Household size	594	2	19	5.23 (2.09)

There was little change between Wave 2 and Wave 3 for household numbers across the LSIC sample. There was a slightly higher mean for the activity participation variable (the frequency that a family member had read to, told a story to, or drawn with the LSIC child in the week prior to data collection) for the Wave 2 data.

Table 4 presents the percentage breakdown of the LSIC sample for the IRISEO index for Wave 2 and Wave 3. A higher index level indicates higher socioeconomic outcomes. In both waves, the majority of children fell in the middle levels of socioeconomic status. The LSIC sample is spread across all of the deciles with some clustering around level 6. This is interesting given that 41 per cent of the wave 3 LSIC sample was classified in the lowest SEIFA decile on the relative socio-economic advantage and disadvantage index.

Table 4: Percentage of the LSIC K cohort sample according to IRISEO level

IRISEO Level	Wave 2 Percentage, N = 478	Wave 3 Percentage, N = 594
1	11.4	10.8
2	3.5	4.0
3	4.7	5.4
4	10.4	10.6
5	13.7	10.6
6	29.6	30.0
7	11.6	12.5
8	3.7	3.4
9	9.1	10.3
10	2.3	2.5

Table 5 shows the percentage of children according to the reported level of global health for Wave 2 and Wave 3 data. For both waves of data, over 96 per cent of children were in the excellent, very good or good health categories.

Table 5: Percentage of the LSIC sample according to reported level of health

Reported level of health	Wave 2 Percentage, N = 478	Wave 3 Percentage, N = 530
Excellent	32.0	38.7
Very good	34.6	36.2
Good	30.3	22.6
Fair	2.7	2.2
Poor	0.3	0.3

There were three additional Wave 3 variables – the frequency that English was spoken in the home, the importance of being Indigenous to the primary carer, and parent education level. For the first variable, 85.2 per cent of primary carers reported speaking English a lot, 7 per cent spoke English often, 6.4 per cent spoke English a little, 1.2 per cent spoke English hardly ever and 0.2 per cent of the sample reported speaking English not at all.[5]

For the identity variable, 37.1 per cent of primary carers reported that being Indigenous was the most important thing to them, 43.4 per cent reported that it was important but not the only thing, 12.6 per cent reported it was something that they did not know enough about and wanted to know more, and 6.9 per cent reported that it was something they rarely thought about.

In terms of parent education level, 4.8 per cent of primary carers had a higher education degree (graduate diploma, bachelors or postgraduate degree), 3.4 per cent had a diploma or advanced diploma, 16.9 per cent had a Certificate I–IV qualification, 17.8 per cent had completed Year 12 or had a certificate of completion, 17 per cent had completed Year 11, 25 per cent had completed Year 10, 9.2 per cent had completed Year 9, 5 per cent had completed Year 8 and 0.9 per cent had never attended school.[6]

Both within and between the Wave 2 and Wave 3 data, the N values for each variable varied. This presented a problem for some regression analyses as only cases with complete data for all variables included in each model were included. Skewness and kurtosis statistics revealed that most of the variables to be included in the analyses did not meet the normality assumptions required to complete traditional significance testing.

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[5] Responses for this variable were split into two categories – spoke English in the home a lot and spoke English in the home often, a little, hardly ever or not at all.
[6] Responses for this variable were split into four categories – higher education degree (graduate diploma, bachelors or postgraduate degree), post-secondary qualification (advanced diploma or Certificate I–IV), upper secondary education (completion of Years 10, 11 or 12) and lower secondary or non-completion (completion of Year 8 or 9, or did not attend school).

Categorical regression

Categorical regression (CATREG) was the technique used to analyse the data and address the research questions presented earlier in this section of the report. CATREG allows for regression analyses to be performed with categorical variables without dummy coding. It also includes optimal scaling procedures, which means that scales within variables are recalculated so that they reflect the optimum distances based on the responses given. As the data are re-scaled, it is not necessary for variables to meet assumptions of normality for CATREG, which was of benefit in this instance given the preliminary analyses of skewness and kurtosis statistics. Adjusted r-squared values are provided in the regression tables that follow as a way to measure the fit of the regression models to the LSIC data considered. An adjusted r-squared value indicates the proportion of variance in the dependent variable (DV) that is accounted for by the independent variables (IV) included in the regression model (Tabachnik and Fidell 1996).[7]

Models predicting school readiness variables

Model 1: What predicted performance on the Renfrew vocabulary measure?
The first regression model performed investigated the effects of age, socioeconomic status, parent education level, health, gender, the frequency with which English was spoken in the home, behavioural difficulties and prosocial behaviour on LSIC children's performance on the Renfrew test. The variables included were all from the Wave 3 data collection. Results are presented in Table 6.

Table 6: CATREG regression investigating predictors of performance on the Renfrew

Variables	B	F	Equation	Adj R²
DV: Renfrew			F(19,469) = 9.68	0.25**
IV: Age	.27**	50.02		
IRISEO	.41**	63.44		
Parent education level	.12**	10.23		
Health	.09**	5.04		
Gender	.01	ns		
English frequency	.04	ns		
Prosocial behaviour	.01	ns		
Difficult behaviour	.07	ns		

**p<.01; *p<.05; ns, not significant; DV=dependent variable; IV=independent variable; B=standardised regression coefficient; F=F-statistic for regression coefficient; Equation=regression equation; Adj R²=adjusted r-squared correlation

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[7] **Note:** For all models presented, tolerance values were above 0.7, indicating the absence of multi-colinearity for the regression results.

Significant predictors in the model were age, IRISEO, parent education level and health – older children from higher socioeconomic contexts (according to the IRISEO scale) who were reported as healthier[8] and had primary carers with higher education levels achieved higher scores on the Renfrew test. Interestingly, the frequency with which English was spoken in the home was not a significant predictor.

Model 2: What predicted performance on the Who Am I?
The second indicator of school readiness was children's performance on the *Who Am I?* test. Predictors from Model 1 were also used for this regression model – age, socioeconomic status, parent education level, health, gender, the frequency with which English was spoken in the home, behavioural difficulties and prosocial behaviour – to investigate their effect on performance scores. Results are presented in Table 7.

Table 7: CATREG regression investigating predictors of performance on the Who Am I?

Variables	B	F	Equation	Adj R²
DV: Who Am I?			F(17,462) = 13.71	0.31**
IV: Age	.51**	160.64		
IRISEO	.07	ns		
Parent education level	.08**	7.52		
Health	.09**	5.10		
Gender	.18**	27.93		
English frequency	.12**	6.23		
Prosocial behaviour	.04	ns		
Difficult behaviour	.15**	11.06		

**p<.01; *p<.05; ns, not significant; DV=dependent variable; IV=independent variable; B=standardised regression coefficient; F=F-statistic for regression coefficient; Equation=regression equation; Adj R²=adjusted r-squared correlation

Socioeconomic status, as measured by the IRISEO, did not impact on children's score on the *Who Am I?* as it had for the Renfrew test. Health had a similar effect for both models as did age – older and healthier children scored higher on the *Who Am I?*. Given the developmental nature of this measure and the Renfrew, it is not surprising that age was positively associated with performance. Language and gender were also significant predictors in the model with girls and children who spoke English more frequently at home scoring higher[9]. One of the social and emotional wellbeing measures was also a significant predictor – children with lower levels of difficult behaviour performed at a higher level on the *Who Am I?*.

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[8] Although the coefficient is negative, it is interpreted in this way as lower values were assigned to better health conditions for this variable.
[9] The interpretation of gender for this model is made by considering the direction of the significant coefficient in conjunction with the quantification of male and female made by the CATREG technique. The quantification of the gender variable for each CATREG model is presented in the appendix.

Models predicting social and emotional wellbeing

The next step of the analyses was investigating LSIC children's social and emotional wellbeing as indicators of their tendency towards resilience. The focus was on prosocial and difficult behaviour. As mentioned previously, the prosocial subscale score was an indicator of behaviour, such as empathy for others and sharing behaviour, while the difficulties subscale score was an indicator of emotional, conduct and peer problems as well as hyperactivity.

Model 3: What predicted prosocial behaviour?

Model 3 examined the variables only at the Wave 3 point of measurement, specifically focusing on what factors influenced the amount of prosocial behaviour that LSIC children displayed. The impact of age, socioeconomic status, parent education level, health, gender and difficult behaviour were included as they were for the school readiness models. In addition, the impact of activity participation, household size and the importance of being Indigenous to the primary carer were considered.

Table 8: CATREG regression investigating predictors of prosocial behaviour

Variables	B	F	Equation	Adj R²
DV: Prosocial behaviour			F(14,395) = 6.88	0.17**
IV: Age	.03	ns		
IRISEO	.04	ns		
Parent education level	.05	ns		
Health	.08	ns		
Gender	.03	ns		
Difficult behaviour	.37**	52.76		
Importance of Indigeneity	.08	ns		
Activity participation	.14**	10.26		
Household size	.02	ns		

**p<.01; *p<.05; ns, not significant; DV=dependent variable; IV=independent variable;
B=standardised regression coefficient; F=F-statistic for regression coefficient;
Equation=regression equation; Adj R²=adjusted r-squared correlation

As would be expected, difficult behaviour had a negative association with pro-social behaviour – that is, children who had lower levels of difficult behaviour were more likely to have higher levels of pro-social behaviour. Furthermore, there was a positive effect of the activity participation variable. Therefore, more participation in activities such as reading, storytelling or drawing was associated with higher levels of pro-social behaviour.

Model 4: What predicted difficult behaviour?

Model 4 replicated the relationships tested in Model 3 but examined what variables impacted on reported levels of difficult behaviour. Results are presented in Table 9.

Table 9: CATREG regression investigating predictors of difficult behaviour

Variables	B	F	Equation	Adj R²
DV: Difficult behaviour			F(17,392) = 8.08	0.23**
IV: Age	.03	ns		
IRISEO	.14*	4.18		
Parent education level	.13**	13.66		
Health	.18**	14.44		
Gender	.09*	4.13		
Prosocial behaviour	.35**	64.76		
Importance of Indigeneity	.09*	3.16		
Activity participation	.03	ns		
Household size	.11	ns		

**p<.01; *p<.05; ns, not significant; DV=dependent variable; IV=independent variable; B=standardised regression coefficient; F=F-statistic for regression coefficient; Equation=regression equation; Adj R²=adjusted r-squared correlation

Similar to the finding from Model 3, the prosocial behaviour variable was a significant predictor demonstrating that LSIC children who had higher levels of prosocial behaviour were more likely to have lower levels of difficult behaviour. Higher levels of reported health, and socioeconomic status were also associated with less difficult behaviour,[10] as was being a girl. The most noteworthy finding for this model was the effect of the importance of the Indigeneity variable – children who had primary carers that placed more importance on their Indigenous identity had lower difficulties scores.[11]

Model 5: What Wave 2 variables predicted prosocial behaviour at Wave 3?

The final stage of the analyses capitalised on the longitudinal nature of the LSIC dataset. Model 5 considered the influence of the Wave 2 measures of socioeconomic status, health, temperament (sociability, persistence and reactivity), activity participation and household size, as well as gender on Wave 3 prosocial behaviour.[12] Primary carers were not asked about the importance of their Indigeneity in Wave 2 of data collection. Results are shown in Table 10.

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[10] Note again that the coefficient is interpreted in this way because lower values for this variable were assigned to better health conditions.

[11] Although the coefficient is positive, it is interpreted in this way as lower values were assigned to placing more importance on Indigeneity.

[12] Age was not included as these were longitudinal models. Initial analyses included parent education level. However, while it was a significant predictor in Model 5 and 6, the quantification for the variable in both models was not linear and did not present a meaningful pattern. Thus, the variable was removed from the models.

Table10: CATREG regression investigating Wave 2 predictors of Wave 3 prosocialprosocial behaviour

Variables	B	F	Equation	Adj R²
DV: Prosocial behaviour			F(12,472) = 3.70	0.06**
IV: IRISEO	.14**	6.53		
Health	-.05	ns		
Gender	.07*	3.10		
T-Sociability	.01	ns		
T-Persistence	.10	ns		
T-Reactivity	.13**	8.51		
Activity participation	.10*	4.82		
Household size	.02	ns		

**p<.01; *p<.05; ns, not significant; DV=dependent variable; IV=independent variable; B=standardised regression coefficient; F=F-statistic for regression coefficient; Equation=regression equation; Adj R²=adjusted r-squared correlation

Children with higher socioeconomic status in Wave 2 had higher levels of prosocial behaviour in Wave 3. Furthermore, lower levels of reactivity and higher levels of activity participation (reading, storytelling and drawing) in Wave 2 were associated with higher levels of Wave 3 prosocial behaviour. Gender was also significant for this model with higher prosocial behaviour more likely in girls. However this finding should be interpreted with caution as gender was not significant for Model 3 where only Wave 3 variables were included.

Model 6: What Wave 2 variables predicted difficult behaviour at Wave 3?

Table 11 presents the results of Model 6, which explored the effect of Wave 2 variables on the level of Wave 3 difficult behaviour.

Table11: CATREG regression investigating Wave 2 predictors of Wave 3 difficult behaviour

Variables	B	F	Equation	Adj R²
DV: Difficult behaviour			F(12,469) = 10.43	0.19**
IV: IRISEO	.07	ns		
Health	.08*	2.85		
Gender	.07*	3.53		
T-Sociability	.05	ns		
T-Persistence	.21**	22.56		
T-Reactivity	.31**	54.17		
Activity participation	.07	ns		
Household size	.02	ns		

**p<.01; *p<.05; ns, not significant ; DV=dependent variable; IV=independent variable; B=standardised regression coefficient; F=F-statistic for regression coefficient; Equation=regression equation; Adj R²=adjusted r-squared correlation

The significant effects of health and gender for Model 6 demonstrated that children with higher levels of health and girls had lower levels of difficult behaviour. Higher levels of persistence and lower levels of reactivity were also associated with lower levels of difficult behaviour. The latter finding for reactivity is not surprising given that the concept and measurement of reactive temperament and difficult behaviour are quite similar.

Data discussion

CATREG analyses of the LSIC data revealed several themes. Firstly, while age, health and parental educational level were significant predictors of school readiness, there were differences in the other types of variables that predicted the two measures. For the Renfrew test, it was socioeconomic status, whereas for the *Who Am I?*, it was gender and difficult behaviour. The importance of health for children's academic development was highlighted in both models but the varying emphases on vocabulary for the Renfrew and early literacy/numeracy skills and spatial skills for the *Who Am I?* were associated with different background characteristics for the LSIC sample. Interestingly, the frequency with which English was spoken at home was not a significant predictor for LSIC children's performance on the Renfrew test. Wave 3 was the third instance that LSIC children had completed the Renfrew test and this might explain why children's familiarity with English did not affect performance.[13]

Models 3 and 4 examined the predictors of social and emotional wellbeing. For both models, levels of pro-social and difficult behaviour were associated with one another whereas the more interesting findings were those that revealed specific predictors of each. Higher levels of pro-social behaviour for the LSIC children were also associated with a child having more people reading to them, telling a story and/or drawing with them. On the other hand, lower levels of difficult behaviour were associated with higher socioeconomic status, being healthier, being a girl and having a primary carer who placed more importance on being Indigenous. Models 5 and 6, which used Wave 2 measures to predict Wave 3 measures of social and emotional wellbeing, largely confirmed patterns found in Models 3 and 4. Household size had no significant effect on social and emotional wellbeing for the models tested.

Initially, patterns of resilience within the LSIC sample were examined using a person-centred approach, namely cluster analysis. However, there was not enough variability in responses to create a valid cluster solution. One reason for this finding could be the type of ratings scales used for some variables. Other variables included in the LSIC Wave 3 data set (e.g.

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[13]   See the Wave 3 Technical paper for further comments (ACER 2012).

values that parents would choose to pass to their children) were also considered in preliminary analyses but binary scales for these variables limited the amount of variation possible amongst participants' responses and therefore the ability to identify response patterns. It is suggested that future waves of LSIC incorporate larger Likert scales to capture as much variability as possible.

Another reason for limited variability in the data could be the young age of the children. It is possible that some of the variables investigated were not yet developmentally relevant for the LSIC children. Fortunately, as this is a longitudinal study, there is the potential to examine these relationships again when the children are older. One theme that could be the focus of this future investigation is the importance of Indigeneity. Findings for Model 4 suggested that having a parent or carer with a strong Aboriginal or Torres Strait Islander identity could act as a protective factor against the development of difficult behaviour. As the LSIC sample gets older, it will also be possible to investigate the Indigeneity of the children themselves and how much this concept contributes to social and emotional wellbeing. Given the importance of identity development for Aboriginal and Torres Strait Islander peoples, and for adolescents in general, this would be a valuable relationship to explore.

It should be acknowledged that the adjusted R^2 value for some models, while significant, was also low. Caution should be exercised when interpreting the analyses due to this and also due to the optimal scaling procedures used within CATREG. The rescaling is specific to the variables included in the particular regression models and therefore the way that a variable (e.g. health) is scaled in one model could be slightly different to how it is scaled in another. Generalising between the models should be done with caution. The small adjusted R^2 value for some models can also illuminate an interesting pattern for the LSIC children. This finding suggests that there are other variables that are contributing to children's school readiness and social and emotional wellbeing. The varying contribution of socioeconomic status to the models is of note as this is a background factor that is often a significant contributor to non-Indigenous students' achievement and resilience. Future research should investigate this issue comparing Indigenous and non-Indigenous children more closely via a strengths-based approach. This research could explore whether there are differences in how the socioeconomic context operates to positively influence children's development for Indigenous and non-Indigenous children. As previously mentioned, the relevance of the factors to predict the LSIC children's school readiness and resilience may be a developmental issue also and one that can be investigated in future.

The literature review and analyses of the LSIC data confirm that shared activities, family support, strong cultural identity, good health and positive self-identity are likely to be key protective factors for Aboriginal and Torres Strait Islander children. Furthermore, the free text responses of LSIC parents and carers show the critical importance of family and connections to land and culture in developing children who are resilient. A strengths-based

approach to home–school transition means recognising and building on what Aboriginal and Torres Strait Islander children have already learned and can do when they begin formal learning. The challenge is how best to support schools in adopting such an approach.

Applying a strengths-based approach to the early years

The MCEETYA Taskforce on Indigenous Education (2001: 4) has argued that educators need a better understanding of 'how to build on and encourage Indigenous children to move fluently amongst and between cultures in a way which allows them to reposition their cultures, languages, histories, beliefs and lifestyles and affirm identity'. A strengths-based approach to the early years would facilitate this two ways learning.

For Lopez and Louis (2009: 1), a strengths-based approach to education 'is best understood as a philosophical stance and daily practice that shapes how an individual engages the teaching and learning process'. Such an approach focuses on 'the positive aspects of student effort and achievement, as well as human strengths'.

In the context of Aboriginal and Torres Strait Islander children's transition to formal learning, a strengths-based approach would mean:

- recognising and valuing the presence of the protective factors which contribute to building resilient young Aboriginal and Torres Strait Islander children (shared activities, family support, strong cultural identity, health, positive self-identity)
- supporting teachers in gaining a better understanding of the cultural knowledge their students bring to school – for example, through cross cultural training or mentoring
- acknowledging and honouring cultural identity and diversity and incorporating Aboriginal and Torres Strait Islander standpoints into the curriculum
- recognising the skills and expertise that exist in the community to support Aboriginal and Torres Strait Islander children, and making the school culturally safe and welcoming for parents and carers and community members
- scaffolding activities so that there is a logical and supported progression from an existing skill to a new one. For example, how can the fine motor skills of the 3 year old Warlpiri boy from earlier in our paper be built on in a school setting so that other tasks requiring fine motor skills can be easily managed?
- approaching strengths as dynamic qualities that can be developed over time (Lopez and Louis, 2009) rather than as static elements that receive short-term or intermittent attention
- developing resources and activities that reinforce the knowledge and understandings and skills that already exist in children. For example, SNAICC has developed a set of *Talking Up Our Strengths* cards that can be used by teachers to encourage a strong sense of pride in their Aboriginal and Torres Strait Islander students
- developing appropriate assessments that reflect a strengths-based approach, in which children can experience success, show what they can do, learn from what they

cannot yet do, grow in confidence and look forward to the next challenge that is presented

- having high expectations of Aboriginal and Torres Strait Islander students
- acknowledging and embracing Aboriginal leadership in schools and school communities
- being prepared to use innovative and dynamic school and staffing models in complex social and cultural contexts.

(McCuaig and Nelson 2012; Gorringe et al. 2011; Dockett et al. 2010; Sarra 2008; Carbine et al. 2008.)

Conclusions

A pathological worldview is one that focuses on gaps, absence or what is going wrong rather than on assets, presence and what is working well (Grant and Cadell 2009). Understandings from resilience research are being increasingly applied in child and youth development approaches (Johnson and Howard 2006). Rather than being focused on problems these new approaches are offering more positive strategies.

In an education setting, having an awareness of, and an appreciation for, alternative worldviews towards learning, family, community, wellbeing, the land, is important particularly for those working with diverse population groups. Celebrating diversity in the classroom combined with a strengths-based framework can help teachers in scaffolding individual and communal strengths and knowledge, and the abilities of children to make a successful transition from home learning to formal learning. Exploring themes of resilience within a strengths-based framework may provide opportunities to develop collaborative approaches towards issues in early learning.

A strengths-based approach to school readiness for Aboriginal and Torres Strait Islander children means building on the resilience of these children, their families and communities. It also means developing resources and providing professional learning opportunities to support schools in identifying the knowledge, skills, attributes and experiences that Aboriginal and Torres Strait Islander children bring with them.

Further research

Additional research could compare the findings in this paper against the data collected from future waves of LSIC. In particular, the concept of identity could be explored as the children in the study become older and are able to reflect on what this means to them. Do concepts of identity change as children develop? What are the factors helping to shape positive self-identity as Aboriginal and Torres Strait Islander children move into adolescence? Are there differences between concepts of identity for urban, regional and remote children and adolescents? The variability in LSIC children's outcomes also provides opportunities for identifying and highlighting strengths.

Further research could also be undertaken to show the impact of housing and health on the development of children's resilience and capacity to begin learning in a formal context. Are children who are exposed to multiple caregivers in the form of extended family members more or less likely to show resilience or to develop positive self-identity? How does overcrowding affect the health and capacity to learn of Aboriginal and Torres Strait Islander children? Are there different impacts on children living in remote, regional and urban settings?

Zubrick et al. (2004) point to the need to identify the protective factors known by Aboriginal and Torres Strait Islander people as part of wellbeing knowledge. How is it that so many have been able to survive multiple and intergenerational traumas and disadvantage? What is the source and nature of this resilience? Do Aboriginal and Torres Strait Islander people living in remote, urban, regional areas experience different levels of resilience and protective factors?

More research is needed, too, into how resilience and strengths in Aboriginal and Torres Strait Islander children can be measured. For the AEDI, teachers use a checklist to report children's development in their first year of school against the five domains of physical health and wellbeing; social competence; emotional maturity; language and cognitive skills (school-based); communication skills and general knowledge. The 2009 AEDI report indicates that the majority of Aboriginal and Torres Strait Islander children are developmentally on track on all the AEDI domains, with the exception of the language and cognitive skills (school-based) domain.

LSIC data show parents and carers engaging with their children in a range of ways that have been associated in the literature with fostering resilience and a sense of belonging and connectedness. The literature shows the presence of pre-school strengths and capacities – such as autonomy; sibling and peer solidarity; motor skills; visual–spatial skills; capacity to share; cultural knowledge, first language skills, capacity to assess risk (Priest et al. 2008; Taylor 2011). The challenge for schools is to identify, value, measure and use these strengths as the basis for scaffolding children into the kinds of learning activities that take place in a school setting.

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Appendix

Quantifications for gender in CATREG models

Note the quantifications are only shown for models where gender was a significant predictor of the dependent variable.

Quantification for Model 2

Male	−.97
Female	1.03

Quantification for Model 4

Male	.98
Female	−1.03

Quantification for Model 5

Male	−.95
Female	1.05

Quantification for Model 6

Male	.95
Female	−1.06