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Information Paper: Measuring Learning in Australia: Concepts and Directions in Early Childhood Learning

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PREFACE

In recent years, governments and researchers in Australia have recognised the importance of the early years of a child's life to later learning and development. This information paper, *Measuring Learning in Australia: Concepts and Directions in Early Childhood Learning*, presents a set of measures which supports the need for better quality and availability of statistics on early childhood learning.

The paper has been developed by the National Education and Training Statistics Unit (NETSU) within the Australian Bureau of Statistics (ABS). The strategic impetus and guidance for the project has come from the Unit's Management Board which comprises the former Department of Education, Science and Training (DEST), all state and territory departments of education and training and the ABS.

In developing the information paper, the Unit has consulted with a range of stakeholders including Australian Government and state and territory government agencies, other organisations and researchers. Stakeholders have given generously of their time and their contribution to this work is gratefully acknowledged. The ABS and the NETSU Management Board are encouraging wide debate on the issues raised in this paper within the education sector and across the broader community.

This paper is the fourth in the *Measuring Learning in Australia* series, the first three being *A Framework for Education and Training Statistics* (cat. no. 4213.0), *Plan to Improve the Quality, Coverage and Use of Education and Training Statistics* (cat. no. 4231.0), and the *Dictionary of Standards for Education and Training Statistics* (cat. no. 4232.0.55.001).

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CHAPTER 1 INTRODUCTION

INTRODUCTION

This information paper reports on a project undertaken by the ABS with the aim of improving the collection and reporting of data on early childhood learning. The project is an initiative of the National Education and Training Statistics Unit (NETSU), which is funded by state, territory and Australian Government education and training departments and the ABS. The project, which has been guided by the NETSU's Management Board, also involved consultations with other key stakeholders. The project assesses existing measures of early childhood learning and proposes a range of further measures, together with data development activities, which could improve the quality and availability of data related to early childhood learning.

The project's aim is to identify and further develop quality, consistent national measures of early childhood learning. More specifically, the findings of the project will feed into ongoing developments in a number of key areas, namely:

- to propose a set of high quality, consistent national measures on early childhood learning that can be used by a range of government agencies and other organisations to assess existing programs and inform policy development
- to undertake collaborative work aimed at developing and/or modifying indicators from existing data sources used for national reporting purposes, and
- to identify possibilities for developing new data sources and measures which will fill current data gaps.

References to agencies generally reflect those responsible for collections and programs at the time of publication. Please note that since this time, agency names and website addresses may have changed.

WHAT THIS PUBLICATION COVERS

Chapter 1 sets out the content of the paper, why the project was undertaken, what we aim to achieve, and definitions of key terms and frameworks used in the project.

Chapter 2 contains a review of current research that has been undertaken in Australia and other countries, and the implications of this research.

Chapter 3 contains a summary of information needs placed in the context of *Measuring Learning in Australia - A Framework for Education and Training Statistics* (cat. no. 4213.0) in order to identify the areas where better measures of early childhood learning are required. Data requirements are based on consultations with key stakeholders who were asked to comment and prioritise their needs in the light of known policy and research within their respective fields of expertise and knowledge.

Chapter 4 reviews and assesses currently available indicators in the field of early childhood learning from published sources.

Chapter 5 proposes a set of key measures taking into account stakeholder information needs, assessment of the quality of existing indicators and consideration of data gaps. Future data developments, further work and proposed dissemination of measures are also discussed.

BACKGROUND

There is ongoing interest in early childhood learning in international, national and state/territory organisations and forums.

The Thematic Review of Early Childhood Education and Care Policy was launched by the Organisation for Economic Co-operation and Development's (OECD) Education Committee in March 1998 (OECD 2001). Impetus for this work grew out of the study *Lifelong Learning for All* (Tuijnman 1996), in which improving access to and quality of early childhood education and care (ECEC) was identified as a major priority and a central foundation of lifelong learning. Australia, through the then Department of Education, Science and Training (DEST) and the then Department of Families, Community Services and Indigenous Affairs (FaCSIA), participated in two comparative ECEC reviews, published by the OECD as *Starting Strong* (OECD 2001) and *Starting Strong II* (OECD 2006).

The Council of Australian Governments (COAG), as part of its National Reform Agenda, identifies the improvement of childhood development outcomes in the first five years of a child's life, up to and including school entry, as a key area of reform (COAG 2006, 2007). In support of this initiative, COAG is considering a range of measures to monitor and assess progress.

AGE SCOPE

There are no clear or agreed age boundaries which define the period referred to as 'early childhood'. Whilst there are differing views on the age scope issue, many sectors of the policy and research community consider the period from birth to eight years to incorporate a stage of life that is identified with distinct social, emotional and intellectual characteristics. On this basis, children in this age range are often considered as constituting the primary age group for early childhood policy and program development.

The research literature, together with the majority of stakeholders involved in the consultation process, support the view that the 0-8 years cohort can be disaggregated into three specific age groups:

- 0-2 years
- 3-5 years
- 6-8 years.

There are acknowledged data gaps with respect to children aged 0-2 years, particularly in relation to assessing the quality of early learning environments during what is a critical period of brain development. Furthermore, there is potential to collect additional information on the 3-5 years age group, given the scope to observe and assess early learning participation and experiences, and the transition from prior-to-school environments to full-time schooling. There is growing interest in children aged 6-8 years given the importance attached to assessing school transitions and the fact that many eight year olds participate in literacy and numeracy testing that provides an objective assessment of their skill levels relative to agreed benchmarks.

THE INDIGENOUS POPULATION

The Indigenous population is a key subgroup of interest in terms of national measurement of early childhood learning. This reflects a more general recognition of the need to improve educational outcomes for Indigenous people. Since the introduction in 1990 of the National Aboriginal and Torres Strait Islander Education Policy, Australian Government and state/territory government programs and policies have sought to increase access to education and raise the participation rates and outcomes achieved by Indigenous Australians to match those of the broader community (DEST 2004).

The Australian Government delivers a range of payments and programs that are aimed at improving Indigenous early childhood outcomes. These include mobile child care and support programs, health support and Indigenous playgroups. The Indigenous Education Strategic Initiatives Program (IESIP) provides supplementary funding to more than 200 preschools in both the government and non-government sectors to support the preschool education of Indigenous children. Providers in receipt of funding report against outcomes in a range of priority areas including literacy and numeracy, enrolments, attendance and retention, and the employment and professional development of staff.

The Indigenous Generational Reform (IGR) working group was established by COAG to develop a long-term, national plan to address Indigenous disadvantage. It was tasked with identifying and presenting ways to facilitate COAG's aim of 'closing the gap between Indigenous people and other Australians over a generation and resolved that the initial priority for joint action should be on ensuring that young Indigenous children get a good start in life' (COAG 2007). COAG acknowledges the importance of high quality and integrated ECEC services encompassing the period from prenatal up to and including the transition to the first years of school.

The Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) addressed a range of matters relating to Indigenous education in the report *Australian Directions in Indigenous Education 2005-2008* (MCEETYA 2006). The report identifies universal access to high quality early childhood education services for Indigenous children aged 0-5 years as an essential precondition for the smooth transition to schooling and successful participation in primary school education. The report includes a commitment to progress towards this goal by providing all Indigenous children with access to two years of high quality early childhood education prior to entering their first year of formal schooling.

MCEETYA is currently developing a range of school performance indicators relevant to Indigenous children and youth, reflecting the importance it attributes to improving Indigenous education opportunities and outcomes.

INFORMATION NEEDS AND MEASURES

The need to develop better statistics on early childhood learning has been identified as a strategic priority in two Information Development Plans produced by the ABS.

Measuring Learning in Australia - Plan to Improve the Quality, Coverage and Use of Education and Training Statistics (cat. no. 4231.0), published in 2004, incorporates an agreement by key stakeholders to undertake the statistical work required to support policy, planning and accountability. It identifies strategic priorities to improve early childhood education statistics, and seeks to address:

- the extent to which early childhood education brings about a lasting boost to later education and life outcomes
- national and international requirements for reporting comparisons, and
- the complexity associated with measuring outcomes given the interplay between educational activity and child care in long day care centres and other settings.

In 2006, the ABS published *Improving Statistics on Children and Youth - An Information Development Plan, Australia* (cat. no. 4907.0), with the aim of guiding and influencing both ABS and non-ABS statistical activity in the field of children and youth statistics. This Information Development Plan has the development and improvement of data related to the outcomes of early years learning as one of its priorities. It acknowledges that while statistical data needs have been addressed through a wide range of sources and initiatives, recent changes in policy focus and direction have led to the need for:

- improved data on early childhood learning, participation in early childhood education programs and links to children's development and outcomes
- data on the supply of, and demand for, early childhood services
- data on parents' role in children's early learning and development, and
- data on children's attendance and participation in different types of learning activities, including pre-primary and primary school.

Major government reporting of measures on aspects of children's learning and development include the following:

- MCEETYA has responsibility for producing a range of annual key performance measures with the aim of driving school improvement and enhancing outcomes for students in the priority areas of: literacy, numeracy, science, civics and citizenship education; information and communication technology, vocational education and training in schools; and participation and attainment. Indicators are reported in the publication *National Report on Schooling in Australia* (2000). Some of the priority areas and indicators are relevant to early childhood.
- The Productivity Commission produces the annual *Report on Government Services* (ROGS) on behalf of the Steering Committee for the Review of Government Service Provision (SCRGSP), which supports the work of COAG and the ministerial councils by providing data at both national and jurisdictional level to monitor policies and programs in both the children's services and education fields.

The report *Overcoming Indigenous Disadvantage* (SCRGSP 2003, 2005, 2007a) is a biennial report of key indicators of Indigenous disadvantage of relevance to governments and Indigenous stakeholders. The indicator framework identifies a number of key measures relating to early childhood transitions and school engagement.

INFORMATION NEEDS AND MEASURES *continued*

A Picture of Australia's Children (AIHW 2005) presents biennial statistical indicators on the health, development and well-being of Australia's children aged 0-14 years, which includes some education data.

- DEST, in its *National Report to Parliament on Indigenous Education and Training* (DEST, 2006b), tracks progress in Indigenous education and training in four priority areas relating to Indigenous outcomes: literacy and numeracy, enrolments, attendance and retention. One focus of the report is the Indigenous preschool sector. A range of measures on children and children's services are also reported in other annual reports and publications such as *Australia's Welfare* (AIHW, 2007).

National data development activities relating to early childhood learning, including the ABS Early Childhood Data Mapping pilot project and Childhood Education and Care Survey, are outlined in Chapter 5. Broader initiatives affecting current and upcoming data development activities on children are described in *Improving Statistics on Children and Youth - An Information Development Plan Australia, 2006* (cat. no. 4907.0).

CONCEPTUALISING LEARNING FOR THE YOUNG

Two frameworks inform the concepts used in this paper, and define the parameters for what could be considered national measures for learning. These are the:

- *Framework for Education and Training Statistics* (cat. no. 4213.0), published by the ABS in 2003, and
- *Classification of Learning Activities - Manual,* published by the European Commission in 2006.

The *Framework for Education and Training Statistics* assists in defining the boundaries around aspects of learning based on their characteristics. The framework is utilised elsewhere in this paper to organise and structure the various information needs relating to the framework into a series of essential elements. For more detailed information on the framework, refer to Appendix 1.

The European Commission has produced the *Classification of Learning Activities* (EC 2005, 2006), a framework which supports a broader understanding of the scope of learning activities. The classification incorporates a 3-way delineation between types of learning activities - formal, non-formal and informal learning - which is largely consistent with the ABS' *Framework for Education and Training Statistics*. While the *Classification of Learning Activities* has primarily been developed to classify forms of adult learning, it is has relevance in the context of lifelong learning and is therefore applicable to the activities associated with early childhood learning.

In the two frameworks, the fundamental criteria which distinguish learning from non-learning activities are:

- activities are intentional (they have a predetermined purpose as opposed to being random or incidental)
- activities are organised in some way, either by the learners themselves or by others, and typically involve the transfer of knowledge, messages, ideas and/or strategies.

CONCEPTUALISING LEARNING FOR THE YOUNG *continued*

The formality of a learning activity is underpinned by the following aspects:

- *Institutionalisation* - whether or not the activities take place via an institution/organisation that structures, funds and/or conducts the learning process and may also set the content, methods, timing and admission requirements
- *Structure* - whether or not the activities have a designated course content (such as a curriculum)
- *Delivery* - whether or not the activities are taught (there is a student/teacher relationship, or body/agency through which the course content is provided or delivered)
- *Evaluation* - whether or not the activities are assessed, accredited or monitored in some way.

Three levels of formality can be defined using the above criteria. Formal learning is structured learning delivered by institutions and organisations. It is taught, and there is an evaluation of achievement which can, on successful completion, lead to a recognised qualification. Non-formal learning also refers to structured, taught learning. It may be institutional, but differs from formal learning in that it need not lead to a formal education qualification. Informal learning refers to largely unstructured, non-institutionalised learning activities that may occur in the family and in daily life.

Based on the abovementioned criteria, formal learning in the early years takes place on the basis that institutions fund, organise and set the content for a program of activities. However, the extent to which settings specifically deliver a formal learning program varies. In Australia, there is no formal mechanism for assessing children's progress in a preschool program before they enter full-time schooling. The concept of 'evaluation' as outlined above, is therefore less applicable in this context than in other areas of learning, although there may be monitoring of children's activities with a view to recommending their suitability for school enrolment.

In addition, with respect to very young children, it is difficult to define specific activities in which there is an intention to learn as it is often the parent or provider who is seeking to engage a child in learning. Including early learning activities as 'in-scope' in terms of the above frameworks is therefore linked to identifying what activities most enhance or limit opportunities for age-appropriate child development.

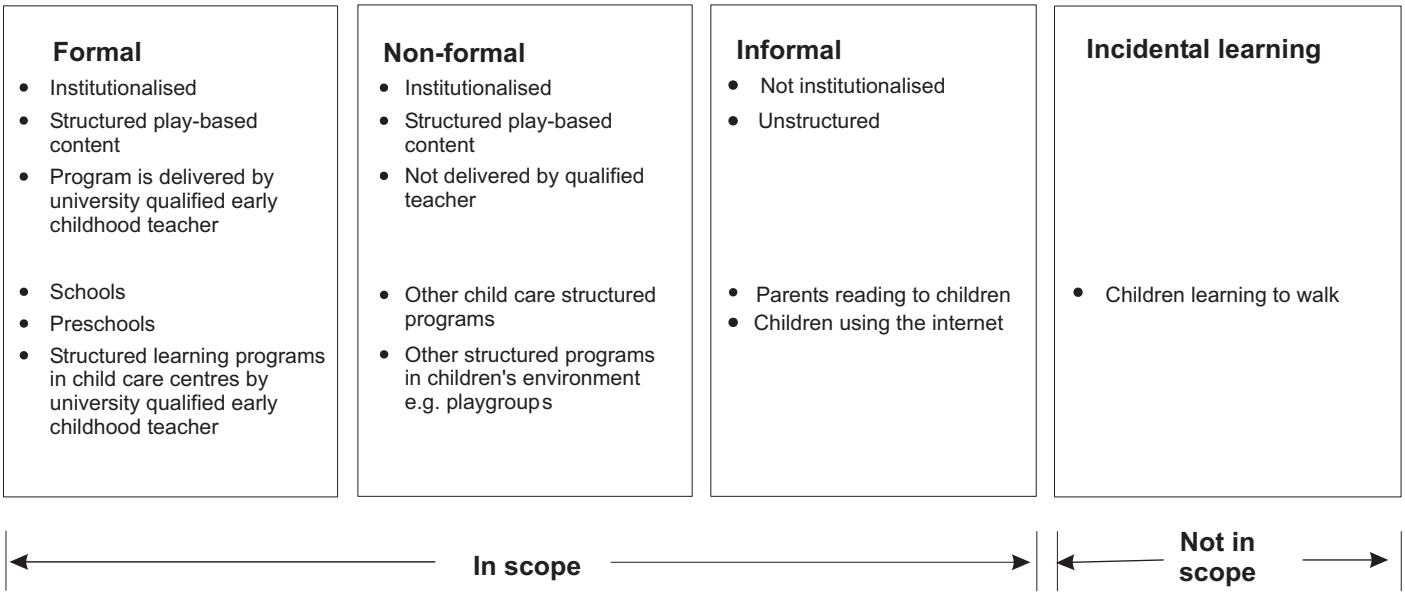
It is clear that in measuring early childhood learning, some additional considerations are required. The following definitions have been modified to reflect the nature of learning activities in the early childhood context. *Formal early childhood learning* is structured play-based learning in institutions and organisations, delivered by university qualified early childhood teachers, and is applicable to children aged 3 years and over. *Non-formal early childhood learning* refers to structured, play-based learning, but differs from formal learning in that it is not delivered by someone with a university qualification in the early childhood field. It is applicable to children from birth onwards. *Informal early childhood learning* is also applicable to children from birth onwards and refers to largely unstructured, non-institutionalised learning activities that may occur in the family and in daily life. Activities are excluded from scope for data collection purposes, if there is no specific intention for the child to learn, or take place incidentally in the course of a child's development (e.g. learning to walk).

CONCEPTUALISING LEARNING FOR THE YOUNG *continued*

Both preschool and child care settings can provide formal learning programs, in the sense that they are institutionalised and structured. In the early childhood context, this includes play-based learning. This does not discount the fact that there is a broad range of experiences offered to children across preschool and child care settings, and that learning programs may or may not be delivered by someone with appropriate education qualifications. The concept of 'evaluation' as a criterion for defining formality must be more loosely applied here than in other areas of learning. Children are assessed through observation and interaction with the teacher prior to school, though teachers may also evaluate the progress of children and offer comments to parents regarding progression on to further learning. As there is no agreed and consistent assessment and evaluation process which operates in the context of early childhood learning, the distinction between formal and non-formal learning is that formal programs should involve teachers with university level qualifications in an early childhood field. This definition is based on the Australian Government's approach towards quality delivery of education and care in Australia.

The following diagram illustrates how some common examples relating to children's activities may be conceived within the three-way model of formal, non-formal and informal learning, as well as outlining activities that could be considered to be out of scope.

TYPES OF LEARNING IN THE EARLY CHILDHOOD CONTEXT



COMPILING MEASURES ON EARLY CHILDHOOD LEARNING

Work on this project has focused on two key areas:

- currently-reported early childhood learning indicators are assessed in terms of their fitness-for-purpose, quality and sources, and
- based on stakeholder information needs in the field of early childhood education, and the quality of existing indicators that may potentially meet these needs, a list of key additional measures is proposed. It is intended that the measures will be suitable for comparable reporting across states and territories and over time.

After a period of consultation, further work may be directed towards developing and producing the measures (see Chapter 5 for more detail). As not all of the proposed measures are currently reported, or can be produced from existing sources, the measures would be released progressively.

INTRODUCTION

The aim of this chapter is to provide an overview of research undertaken in recent years which has the potential to inform the policy, practice and experience of early childhood learning in Australia and overseas. In so doing, this chapter draws attention to the major emerging themes and theoretical positions which are useful in understanding key information needs in this area. A summary of the information needs arising out of the review of the literature and stakeholder consultations follows in Chapter 3.

RESEARCH ON EARLY CHILDHOOD LEARNING

In recent years, policy in early childhood learning has been influenced by research in neuroscience, developmental psychology and health. 'Brain-based' research (Lindsey 1998; McCain & Mustard 1999; Shonkoff & Phillips 2000) draws attention to the brain's receptivity in babies and very young children, with links to later learning outcomes, in areas including:

- cognitive ability and intelligence (Peisner-Feinberg et al. 2001)
- socio-emotional health (Siegel & Hartzell 2003)
- language, literacy and numeracy development (Hoff & Naigles 2002; Doig et al. 2002; Raban & Ure 1999)
- motor skills (Siegel & Hartzell 2003)
- adaptive skills (Mustard 2005), and
- psycho-social and moral development (Shonkoff & Phillips 2000).

Influential recent research into short and longer-term effects on learning and development has been conducted by James Heckman. Heckman suggests that experiences during the early years influence brain activity to a greater extent than experiences in later life, because the early years represent a 'developmental window' during which alteration of brain patterning is much more likely to occur (Cunha et al. 2005). He asserts that interventions in the early years to remediate skill formation are better-placed than interventions later in life (Heckman 2006a, 2006b). Heckman cites several studies, mostly longitudinal in nature, which underpin his theoretical position. These studies focus on the outcomes of, and the benefits of investing in, early years learning programs for children.

EARLY LEARNING ENVIRONMENTS

The environments a child experiences early in life may affect short and longer term outcomes. Most research has focused on more immediate outcomes such as the smooth transition to formal schooling, and early literacy and numeracy development (Meyers et al. 2004). Longer-term outcomes are less researched because of the multiplicity of variables which could be causally associated, although some research points to the longer term effects of brain patterning on academic achievement, adolescent behaviour, adult literacy and social outcomes (Fleer 2000; Machin 2006; Masse & Barnett 2002).

There is debate as to which factors have the most impact on brain development. Among those commonly mentioned are: the types of learning settings; parental input; the age of the child; and/or time spent in formal and informal settings (Fleer 2000). In addition, other research suggests that a child's brain patterning appears to be enhanced by positive social interaction, modelling and support from parents and carers (Heckman 2006b). Positive, supportive environments enhance brain patterning while negative environments may have adverse or detrimental effects (Melhuish 2003).

EARLY LEARNING ENVIRONMENTS *continued*

Studies conducted in the United States provide the earliest and most influential examples of cost-benefit analyses supporting formal intervention programs in the early years. While some of the US-based projects have been criticised due to their relatively small samples and some methodological issues, their findings have been replicated by similar research projects conducted in the United Kingdom, other parts of Europe and New Zealand (see summary below for some examples of research undertaken). These studies have helped to clarify issues relating to the quality of programs and their effects on learning, and the relationship between family characteristics and children's developmental outcomes. Some projects have also drawn a link between intensive early intervention programs and the prevention of adverse effects on learning (Shonkoff & Phillips 2000; OECD 2006).

While Australia has mainly relied on overseas research to support policy and practice, in 2002, the then Department of Family and Community Services initiated the Longitudinal Survey of Australian Children, which will provide longitudinal data on children, their families and social environment. It has the potential to identify risk factors related to learning as well as social and emotional development, physical and mental health (Gray & Sanson 2005).

Summary of Research

This section summarises a range of indicative research, examining the role of ECEC on later development.

HIGH/SCOPE PERRY PRE-SCHOOL STUDY (SCHWEINHART 2005)

USA

The High/Scope Perry study examined the effects of high-quality preschool education on children living in poverty. Run from 1962, a sample of 123 African-American 3-4 year olds was randomly assigned to either a high-quality preschool program, or no preschool program. Data were collected on the children annually from ages 3-11, then again at 14, 15, 19, 27, and 40. The study looked at 40 elements including education, economic performance, family relationships and health and found that those children who had access to a high quality preschool education generally performed better than those without.

NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT STUDY (NICHD EARLY CHILD CARE RESEARCH NETWORK & DUNCAN 2003)

USA

The National Institute of Child Health and Human Development (NICHD) ran a comprehensive longitudinal *Study of Early Child Care* (SECC) to explore the relationship between quality child care experiences and characteristics and children's developmental outcomes. Started in 1991, with 1,364 children and spread over ten locations in the United States, the study followed over 1,000 of the children to the age of 15. Researchers assessed children's social, emotional, intellectual, language, behavioural and physical development using observation, interviews, questionnaires, and testing, and found that children with quality child care experiences are more likely to be more advanced in all areas of development.

Summary of Research continued

COST, QUALITY AND CHILD OUTCOMES STUDY (PEISNER-FEINBERG ET AL. 2000)

USA

This research began in 1992-93 as a comprehensive examination of the costs and quality of early childhood care and education in four states to provide information about the operation of child care markets and the levels of child care quality. Detailed information about the operating costs, structural characteristics, and quality of classroom activities and interactions was gathered from 401 child care centres, representing a wide variety of early childhood programs, both for-profit and not-for-profit.

ABECEDARIAN EARLY CHILDHOOD INTERVENTION PROJECT (CAMPBELL ET AL. 2002)

USA

The Abecedarian Early Childhood Intervention Project, like the High/Scope Perry project, focused on early childhood education for children from low socio-economic backgrounds. It differed from that study in that the programs began at infancy, while for other studies the preschool programs begin at ages three or four. Children in the Abecedarian study had individualised programs that focus on social, emotional, and cognitive areas of development which have a particular emphasis on language development. Children were re-assessed at ages 12, 15, and 21 years, and were found to be achieving high levels of emotional, intellectual and social development.

CHICAGO CHILD-PARENT CENTRE PROGRAM (REYNOLDS 1999)

USA

Based on the Chicago Longitudinal Study of 1,539 mostly African-American children facing social-environmental disadvantages, the Chicago Child-Parent Centre Program followed children who did and did not attend preschool. Conducted in the 1980s, data were collected on an annual basis. At the age of 14 years, 1,164 of the original children remained in the study. Outcomes of children attending preschool showed an increase in educational and social behaviour in adolescent years.

EFFECTIVE PROVISION OF PRE-SCHOOL EDUCATION (SYLVA ET AL. 2003)

UK

The Effective Provision of Pre-school Education (EPPE) project, which ran from 1997 - 2003, and from 2003 - 2008 is now run as the Effective Provision of Pre-School and Primary Education. It assesses the longitudinal attainment and development of 3 - 7 year olds, including over 3,000 3 - 4 year olds. The children attended a range of settings including: local authority day nursery, integrated centres, playgroups, private day nurseries, maintained nursery schools and maintained nursery classes. A sample of children with no or minimal preschool experience was also included. As well as studying the effects of early childhood education on a child's development, the study examined the impact of a child's background demographic and geographic experiences on their intellectual and social/behavioural development.

Summary of Research continued

ANDERSSON STUDY (ANDERSSON 1992)

Sweden

In the Andersson study, 128 children were assessed at the age of one year and again at eight and 13 years. The study found that the earlier a child enters day-care the higher their socio-emotional and cognitive competence is at a later age. This study contends that certain family characteristics, such as type of family, family's socio-economic status, and mother's educational attainment influence the time of entry into day care, and it is these family factors that most contribute to a child's development.

'TWELVE YEARS OLD AND COMPETENT' SURVEY (WYLIE ET AL. 2004)

New Zealand

The Competent Children/Learners longitudinal study began by drawing a population of approximately 300 five year olds from the Wellington area. This cohort was not determined by stratified sampling (which would have taken into account regional and socio-economic differences) but by involvement in early childhood education. The children are followed up at age six and every two years thereafter. The effect of a child's early childhood education is measured by the assessment of competencies, such as social skills, perseverance and individual responsibility.

GROWING UP IN AUSTRALIA - THE LONGITUDINAL STUDY OF AUSTRALIAN CHILDREN (GRAY & SANSON 2005)

Australia

This study aims to gather a rounded picture of a child's development by following 10,090 children divided into two age cohorts of 6-12 months, and four years six months to five years. It not only examines the child's attributes, but also attributes of the child's family, school and broader community, and seeks to pinpoint the indicators that lead to disadvantageous pathways.

TRANSITION TO SCHOOLING

The transition to full-time schooling is increasingly recognised as one of the key transitions that an individual will make in the early period of life, and the two years before school have been recognised as a critical time for children to begin making an adjustment to the primary school environment (Whitehurst & Lonigan 1998; COAG 2005). Children who enter school with a good grounding in terms of physical, emotional and social well-being, as well as language and cognitive skills, are equipped to take advantage of the learning opportunities offered in the school environment (Waldfogel 2007). In contrast, children who do not have a smooth transition may have gaps in their knowledge that may limit their ability to understand and build on concepts as they progress through their schooling.

Effective transitions to schooling are usually examined by measuring how well children are able to meet requirements placed on them at the point of school entry. The best known school transition instrument is the Early Development Index (EDI) developed and used in Canada (Watson & Moore 2002). The EDI reflects children's cumulative developmental processes up to the point of school entry (over the period when a child is aged 0-5 years). This tool has been adapted and implemented in Australia, and is known as the Australian Early Development Index (AEDI) (Centre for Community Child Health et. al. 2005; Brinkman et al. 2006).

TRANSITION TO SCHOOLING *continued*

The results from the AEDI enable communitities to assess how children are developing by the time they reach school age. It provides a basis for reviewing the services, supports and environments that influence children in their first five years of life. It also provides data for schools and communities to look ahead to supports that need to be developed to enhance children's capacity to be successful once they reach school.

QUALITY OF PROGRAMS

An important dimension to measure in ECEC is the 'quality' of the program and the effect such quality has on children's outcomes. While definitions of quality vary, some of the more important aspects of quality that have been cited include the duration/intensity of attendance, the content of teacher/child interactions, the size of the learning group, and the qualification level of staff (Boocock 1995; Centre for Community and Child Health 2000; NICHD 1996; Smith et al. 2000; Russell 1985). Standards for some of these criteria are embodied in the accreditation standards administered by agencies such as the National Childcare Accreditation Council (NCAC) (www.ncac.gov.au). Regulations and licensing standards operating at state/territory level have a similar function for preschool providers.

A number of studies indicate that regardless of the setting in which the child is located, an important indicator of quality of learning programs relates to the skills and qualifications of the teacher (DEST 2006a; Siraj-Blatchford 2004). Studies suggest that qualifications in a field of study aligned to early childhood education equip staff to better understand a child's developmental needs, making it more likely they will seek to channel children into stimulating and rich learning activities, as well identifying their early developmental needs (DEST 2006a; Farquar 1999; Scarr et al. 1994).

ECEC SERVICES IN AUSTRALIA

In Australia, early childhood education and care grew out of two distinct movements. In the late 19th century, Kindergarten Unions, which were established to provide free education to young children, co-existed with the Day Nursery movement, which had as its primary aim to provide support for working mothers (Brennan 1998; Fleer & Udy 2002). These essentially independent services persist to the present time.

The Australian Government's primary role in child care is to assist parents with the cost through the Child Care Benefit (CCB) and the Child Care Tax Rebate (CCTR). It also provides some operational funding to support services and administers the quality assurance system. State and territory governments are responsible for licensing and regulating child care and provide some direct funding. Families can claim CCB and the CCTR for care delivered by approved Long Day Care (LDC), Family Day Care (FDC), Outside School Hours Care, Vacation Care, In-Home Care and Occasional Care services. These services are provided through a combination of private business, community and some state and local government investment.

ECEC SERVICES IN AUSTRALIA *continued*

CCB is a payment made to families to help with the cost of approved child care or registered child care. Low income families using approved services receive the highest rate of CCB. Most families choose to receive CCB entitlement as fee reduction from child care service providers. In addition to CCB, the CCTR covers a proportion of the family's out-of-pocket expenses for approved child care where the parents meet the work, training, study test. In the case of LDC and FDC, the CCB is payable if the centre is accredited by the NCAC (Press 2006). The Australian Government also provides targeted programs to Indigenous families, those with low incomes and those with special needs children.

LDC services are generally provided during working hours, most commonly 8 am - 6 pm each week day for at least 48 weeks of the year. Services are available to families with children aged 0-12 years (although take-up of services is mainly limited to children below school age) (Elliott 2006). FDC provides flexible care to non-school and school age children, including all-day, overnight, part-time, casual, before and after school, and holiday care.

Preschools are referred to as 'kindergartens' in five states and territories and are largely community based in three states (NSW, Victoria and Queensland). They operate under the authority of departments of education, and are conducted on a sessional basis of between 10 and 12 hours per week (Elliott 2006). Preschools aim to provide early educational activities specifically to help children prepare for school.

Preschool programs may be delivered through government, non-government (school), for-profit, community preschools and child care providers. In some states and territories, particularly where there is not a sufficient number of state-funded places, some families access preschool delivered by approved child care services. Some families also choose to use preschool offered in a child care setting as it better supports their workforce participation. Eligible families using approved child care are able to claim CCB and CCTR to offset the cost. Even after receiving these subsidies, however, the cost to families is often higher than if their children attend state-based or community preschools. While primary responsibility for funding preschools rests with state and territory governments, preschool workers are able to seek registered care status from the Australian Government. This allows working families to claim the minimum rate of CCB for the hours their children attend state-based or community preschools. In Victoria, child care services are funded to provide a preschool program in the year before children are eligible to attend school. In NSW the state government legislates for early childhood teachers to determine a preschool program in child care centres with more than 29 children (Press 2006; Elliott 2006).

There is shared jurisdictional responsibility for the accreditation and regulation of child care and preschool services (OECD 2006; DEST 2006a; Press 2006).

ECEC SERVICES IN AUSTRALIA *continued*

Accreditation systems are administered by the NCAC which is funded by the Australian Government. The NCAC is a Ministerially appointed body responsible for the implementation and administration of approved Quality Assurance systems for LDC services, FDC services and outside school hours care (see 'National Childcare Accreditation Council' entry at www.facsia.gov.au). The NCAC bases its assessment on information collected from staff, families and an assessment process. The Child Care Accreditation System is proposed to be reviewed by the new Australian Government.

Regulation of both preschool and child care services is the responsibility of state and territory governments. Regulations cover issues such as the ratio of children to staff; the qualifications of staff and training requirements; health, safety and welfare issues; and curricula and programming. Regulations differ in terms of both the extent of coverage of these issues, and their application to child care and preschool services.

ECEC WORKFORCE

The historical delineation between early childhood care and the early childhood education in Australia has resulted in different employment standards and requirements across the different types of providers.

The qualification levels of staff, as well as the number of qualified staff required to operate an institution, vary according to the regulatory requirements of each state and territory. Early childhood teaching staff employed in preschools generally have higher qualifications, with teachers having university degrees in early childhood. A greater proportion of staff inLDC services, on the other hand, have lower level qualifications or no qualifications. Child care services generally employ a much smaller proportion of qualified staff than preschools, with regulations specifying, in some cases, that only one staff member (e.g. the director of the service) need have an appropriate qualification (DEST 2006a; Elliott 2006). It should be noted however, that not all staff in LDC settings are responsible for delivering education programs, and may have a range of other roles, such as administration or food preparation.

There are approximately 50 state and federal industrial awards covering staff working in preschools and child care centres, and salary and employment conditions may vary depending on the type of institution in which staff are employed (Press & Hayes 2000).

Preschool teachers are required to be trained for between three and four years in early childhood education. Awards covering preschool teachers specify lower salary scales for less qualified teachers, and allow limited progression and job choice for those staff who do not have a higher education qualification. Preschool staff include preschool aides and assistants, who may not have a qualification (DEST 2006a).

INTEGRATION OF SERVICES

Over the last five years, both federal and state/territory agencies and organisations have focused on integrating the regulation of services covering both preschool and child care. For example, the South Australian Curriculum Standards and Accountability framework aims to reflect the learning and development of children from birth through to Year 12. Similarly, the recent formation of the Victorian Department of Education and Early Childhood Development acknowledges a holistic approach to children's care, learning and development, encouraging integration and consistency on issues such as curriculum frameworks, transition between programs and family support.

INTEGRATION OF SERVICES *continued*

From the perspective of data collection, the integration of child care and education services provides some challenges. Most current administrative and survey collections reflect the history and division of services provided for children, rather than the integrated approach that has recently emerged.

PARENTAL INVOLVEMENT

Parents directly and indirectly influence the learning activities their children undertake, and assist them to develop skills including resilience, persistence and coping strategies as they approach learning challenges (Cunha et al. 2005). Research suggests that parental involvement in their children's formal and informal learning has at least a moderate positive effect on a child's cognitive development (Olmsted & Montie 2001). Parents' active engagement in reading with their children not only impacts on their children's emergent literacy, but also on social and other aspects of development (Siraj-Blatchford et al. 2002; High et al. 2000; OECD 2006). Other factors including parenting skills and parents' level of educational attainment are also strongly associated with academic competence in younger and older children (Zubrick et al. 1997). While much research has focused on the quality of child care, parental care has been shown in some studies to be superior to any quality of childcare (Buckingham 2007).

UNIVERSAL AND TARGETED APPROACHES

Bronfenbrenner's 'ecological system' has been used to show that the family, school, neighbourhood and the broader environment provide causal pathways within which variables affecting children constantly interact. The mix of resources and services available to families and children has consequences for the matrix of work, attachment, care and support in which families and children operate (Zubrick et al. 2000).

Internationally, the OECD's thematic reviews of ECEC policy *Starting Strong* (OECD 2001) and *Starting Strong II* (OECD 2006) advocate universal, publicly-funded access to ECEC for all children from the age of three years until the commencement of school as one of the most important elements in moving countries towards the provision of positive developmental outcomes for children and equitable access for families. Similarly the European Union (EU) has set an objective towards universal provision such that by 2010, member countries will provide subsidised full-day places for a third of children aged 0-3 years, and for over 90% of all children from 3-6 years (OECD 2006).

NON-PARTICIPATION AND ACCESS TO ECEC

Most, if not all, states and territories in Australia make provision for children to be attending preschool or a preschool program at least one year before formal schooling. Current research indicates, however, that a percentage of children do not participate in formal programs. There is difficulty in estimating the size of the non-participant group, as most collections only have point-in-time (snapshot) estimates of attendance at preschools, and school starting ages vary (Elliott 2006).

While Australia has a relatively high preschool participation rate in the year before full-time school, it is likely that many of the children who are not attending are from disadvantaged groups. Research shows that these children benefit most from an early childhood education. For this reason policy strategies to improve access aim to target children from Indigenous or linguistically diverse backgrounds and families with low incomes (Elliott 2006).

CHAPTER 3 INFORMATION NEEDS

INTRODUCTION

The process for identifying information needs on early childhood learning has involved reviewing literature from published and unpublished sources, and conducting a series of consultations with a number of government agencies and other organisations. This chapter outlines the process of review and consultation and lists the key information needs identified by users through these processes.

STAKEHOLDER CONSULTATIONS

The key information needs identified in the literature review formed the basis for consultation with stakeholders and other agencies that have an interest in early childhood issues.

The objectives of the consultation and submission process were to enable interested parties to:

- provide a better understanding of identified information needs in the early childhood education area
- highlight additional data needs, particularly those unable to be addressed through existing data sources
- prioritise information needs, and
- provide feedback on how data should be disaggregated.

The agencies who either participated in face-to-face consultations or provided written submissions were:

(former) Department of Education, Science and Training
(former) Department of Families, Community Services and Indigenous Affairs
Australian Institute of Health and Welfare
(former) Department of Employment and Workplace Relations
(former) Department of Immigration and Multicultural Affairs
Australian Council for Education Research
Australian Institute of Family Studies
Productivity Commission
ACT Department of Education and Training
Independent Schools Council of Australia
National Catholic Education Commission
New South Wales Commission for Children and Youth
Queensland Department of Education and Training
Queensland Department of Education and Children's Services
Queensland Department of Health
(former) Victorian Department of Education and Training
Victorian Department of Human Services
Victorian Department of Premier & Cabinet
Victorian Department of Treasury and Finance
South Australian Department of Education and Children's Services
South Australian Department of Health.

CONSULTATION OUTCOMES

Information needs are summarised below according to the elements of the *Framework for Education and Training Statistics* (cat. no. 4213.0) together with the overall priority ratings given by stakeholders.

INFORMATION NEEDS

- *Participants*: those who are undertaking learning activities
- *Non-participants*: those who are not undertaking learning activities
- *Providers*: organisations, and in some cases individuals, that deliver learning activities
- *Resources*: the financial, human and physical resources which are necessary for learning to occur
- *Activities*: learning activities, activities of education institutions, as well as the activities of non-participants
- *Outputs and outcomes*: the results and/or effects of learning activities
- *Context*: the wider environment within which decisions are made about learning activities.

For more detailed information on the framework, refer to Chapter 1 and Appendix 1. Current research issues arising from the literature review are summarised in Chapter 2.

Participants

HIGH TO VERY HIGH PRIORITY

A number of key information requirements relating to participation of children in early childhood education were identified. The information needs in this area are seen by most stakeholders to constitute some of the highest priority data needs for early childhood learning. Data requirements included:

- participation in preschool
- differentiation between child care settings in which preschool programs are offered or not offered
- patterns of participation (sessional/part-time/full-time attendance; hours per week)
- duration of attendance (length of time in learning programs)
- history/patterns of attendance in the year prior to school commencement
- the distinction between enrolment and attendance in preschool or school, particularly for Indigenous children
- participation in playgroups (particularly for those aged 0-2), and
- programs relating to learning difficulties.

Identified information needs of highest priority in relation to parental involvement in children's learning included:

- parenting style/quality of communication
- balancing work and family issues
- literature and literacy practices in the household
- parental contact hours with child and quality of involvement in child's learning
- parental choice in relation to early childhood learning settings.

Socio-demographic characteristics of participants in early childhood learning programs that were of highest priority included:

- sex
- age
- Indigenous status
- disability
- health/mental health status
- cultural background and languages other than English spoken at home.

Participants continued

HIGH TO VERY HIGH PRIORITY *continued*

Demographic and socio-economic characteristics of parents were of high priority. These included:

- level and field of education
- employment/occupation
- hours worked
- income/socio-economic status
- health/mental health status
- disability
- family type/structure.

Non-participants

VERY HIGH PRIORITY

The details relating to non-participants of highest priority included:

- number and proportion of non-participants across ECEC settings (including child care)
- access issues (costs, location, attitudes, availability of non-standard hours)
- reasons for non-participation in structured settings (principally long day care and preschool, but also other forms of child care as well as playgroups).

The need for improved information on the characteristics of non-participants in early childhood learning programs and their parents were similar to those for participants (see above) and were rated very high priority by stakeholders.

Providers

MEDIUM TO HIGH PRIORITY

Information needs in this area included:

- types of provider (government, non-government (school), for-profit, community preschools, child care and/or Indigenous)
- quality of programs (whether a learning program is offered, the number and qualifications of staff in each setting, staff to child ratio, accreditation status of the institution)
- availability of places and number of enrolments in rural areas
- accreditation status of child care providers
- availability of, and demand for, places at child care settings and preschools.

Stakeholders identified the need for information on the number and geographic location of providers. In particular, interest has been expressed in having access to information that enables stakeholders to differentiate between types of providers by location. Ideally, any mapping of providers would differentiate between preschools and other organisations such as child care centres. This information gap illustrates the need for a coordinated approach to the collection of data with appropriate coverage of all early childhood education providers. This perspective was strongly articulated during the consultations.

Financial resources

MEDIUM TO HIGH PRIORITY

Stakeholders identified the need for information on:

- sources of Australian Government and state/territory funding on formal provision of early childhood learning
- costs and affordability of child care and preschool to families, including subsidies
- cost of early intervention to families, and government expenditure on early intervention
- private for profit providers and the number of non-government schools that have established early childhood facilities, in order to track the expansion of provision by these providers.

It was stressed that the data should identify, without duplication, the different types of early childhood education providers and the funding sources, fees and costs associated with each type of provider.

Human resources

VERY HIGH PRIORITY

Items of interest related to staffing included:

- recruitment difficulties and skills shortages
- staff retention/turnover and remuneration
- child to staff ratios
- children's access to qualified staff (particularly those with early childhood higher education qualifications)
- career destinations of graduates with early childhood qualifications
- professional development
- conditions of employment for child care workers.

The socio-economic characteristics of staff that were of highest priority to stakeholders included:

- level and field of educational qualifications
- sex
- age
- Indigenous status
- length of work experience.

Physical resources

LOW PRIORITY

No information needs were reported for this category in the literature review. However, some stakeholders supported the collection of information related to:

- Information, Communication and Technology infrastructure in schools and preschools
- physical infrastructure (quality learning environments which encourage play based learning)
- disability access
- issues associated with the co-location of facilities e.g. a preschool and primary school located on the one site.

Characteristics of learning activities

LOW TO MEDIUM PRIORITY

Stakeholders considered this area to be of relatively low priority. The information needs cited in relation to the characteristics of learning activities included:

- types of learning programs (literacy/numeracy programs, special education, inclusion of Indigenous studies and other cultural studies)
- program appropriateness
- feedback to parents
- level of use and proficiency in information and communications technology.

Outputs and Outcomes

HIGH TO VERY HIGH PRIORITY

The information needs of most interest included:

- cognitive, social and psychological developmental outcomes of formal/informal learning programs
- smooth transition to school
- school and prior to school literacy and numeracy performance
- impact of early intervention programs.

Context

MEDIUM TO HIGH PRIORITY

Contextual factors of highest priority included:

- health issues (nutrition, birth weight, level of physical activity, weight, fitness)
- health issues of particular relevance to Indigenous children (hearing, dental hygiene and eyesight)
- mental health of parents and children
- disability
- social isolation.

The area of early intervention was rated highly by stakeholders although it was noted that such information generally relates to a small number of children in the population at any given point in time. Key information needs sought by stakeholders included:

- types of early intervention programs and prevalence of use
- access to and availability of early intervention programs
- parental awareness of early intervention programs.

SUB-POPULATIONS

The main populations about which stakeholders required data (in order of priority) were:

- Participants and non-participants
  - Indigenous children
  - children from low socio-economic backgrounds, including those whose parents have relatively low educational attainment and/or low literacy levels
  - children living in remote regions and communities
  - children with disabilities, and/or with mental health conditions, or from families in which either parent has a disability or mental health condition
  - children whose parents are not Australian-born and/or are from language backgrounds other than English.
- Providers
  - provider types - long day care, preschool, school.

CHAPTER 4 CURRENT INDICATORS

INTRODUCTION

This chapter assesses selected indicators that are currently reported nationally or internationally that are within the scope of early childhood learning. The chapter's purpose is neither to present all the available indicators on early childhood learning nor to present a list of ideal indicators. It does, however draw attention to the incomplete statistical picture afforded by the current set of indicators on early childhood learning in regard to the set of data requirements outlined in the previous chapter.

Indicators are statistical constructs which serve to inform policy and debate across the community. Selecting indicators that reflect clearly articulated societal goals and values involves a degree of subjectivity. The selection process involves considering the aims of current funding programs and the intent of government policies and strategies. It may also involve consideration of views articulated by users of statistical data.

In this paper, indicators have been assessed in terms of their relevance to the information needs outlined in earlier chapters, and how these needs may be more effectively met.

COMPILING INDICATORS

Indicators in this chapter fall under five elements of the *Framework for Education and Training Statistics* (cat. no. 4213.0).

- *Measures of participation and non-participation* assess the involvement of children in learning activities.
- *Measures of providers* assess the demand for services and types of service provision.
- *Measures of financial resources* measure public and private expenditure on preschool education and other learning.
- *Measures of human resources* measure people who deliver or support the delivery of education and learning activities.
- *Measures of outputs/outcomes* focus on the achievements or skills that children have gained through their participation in learning activities.

The value of an indicator is assessed in part by its capacity to monitor trends over time. Factors that are important in determining what constitutes a high-value indicator that reflects a particular social idea or concept include whether the measure is:

- available as a regular time series
- valid and meaningful
- sensitive to the underlying phenomenon
- summary in nature
- easily disaggregated
- intelligible and easily interpreted, and
- relatable, where appropriate, to other indicators.

COMPILING INDICATORS *continued*

In this chapter, the quality of reported indicators has been evaluated using the ABS data quality framework (originally found in Brackstone 1999). It includes an assessment of fitness-for-purpose based on the following six criteria:

- relevance
- accuracy
- timeliness
- accessibility
- interpretability
- coherence.

More information on these criteria are given in Appendix 2.

INDIGENOUS INDICATORS

The consultation process indicated that data on Indigenous early childhood learning is of potentially high priority for users so Indigenous measures are also assessed in this chapter according to the criteria outlined above.

SOURCES

The indicators reviewed in this chapter are reported in the following:

- *Education at a Glance*, OECD
- *National Report on Schooling in Australia*, MCEETYA
- *Overcoming Indigenous Disadvantage*, SCRGSP
- *Picture of Australia's Children*, AIHW
- *Report on Government Services*, SCRGSP
- *OECD Family Database*, OECD
- *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples*, ABS and AIHW

The indicators are sourced from the following collections:

Collections

ABS COLLECTIONS

- Australian Census of Population and Housing
- Child Care Survey
- Estimated Resident Population
- Experimental Estimates of the Aboriginal and Torres Strait Islander Population
- Government Finance Statistics.

OTHER COLLECTIONS

- FaCSIA Australian Government Census of Child Care Services (AGCCCS)
- DEST National Preschool Census (NPC)
- State, territory and Australian Government administrative data
- Year 3 National Literacy and Numeracy Benchmarks (MCEETYA)

DEFINITIONS

It is important to note that the abovementioned data collections are not underpinned by standard definitions of preschool and child care. The definitions used for each collection affect the data presented, as they may be reflecting different concepts. The definitions of preschool and child care adopted by the *Report on Government Services* and the ABS Child Care Survey are outlined below. Where there are other differences in definitions, they are outlined in the assessment for each indicator in this chapter.

Report on Government Services

In the presentation of indicators reported in the SCRGSP, *Report on Government Services*, unless otherwise stated, preschool is defined as: 'Services usually provided by a qualified teacher on a sessional basis in dedicated preschools. Such services may also be provided in long day care centres and other settings. The services are primarily aimed at children in the year before they commence full time schooling, although younger children may also attend in all jurisdictions except Victoria'.

Child care is considered to be any Australian Government or state and territory government supported child care service provided to children 12 years or younger. Unless otherwise stated, child care does not include services that do not receive state, territory or Australian government funding.

Child Care Survey

Where data are sourced from the ABS Child Care Survey (CCS), preschool is defined as: 'Educational and developmental programs for children in the year (or in some jurisdictions, two years) before they begin full-time primary education'.

Formal child care is defined as: 'Regulated care away from the respondent's home'. The main types of formal care are before and/or after school care, long day care, family day care and occasional care. Since 2005, preschool has been excluded from the definition of formal care.

PRESENTED DATA

In all cases, the representations of data within the indicator descriptions set out in this chapter seek to reflect the original intentions of the indicators. In some cases, indicators were originally presented in graphical form and data were obtained from supporting tables. Supporting tables were also used to assist in the representation of these indicators. This was done in order to ensure that all the published indicators adhered to criteria set out in the data quality framework.

The presented indicators sourced from the *RoGS* that are published in this chapter will be updated in future publications. These changes and future improvements in how indicators are presented may address a number of the issues outlined in this report.

ASSESSED MEASURES

MEASURES OF PARTICIPATION AND NON-PARTICIPATION

All Australian Children

1. Proportion of 4 year olds attending preschool immediately before school(a)
2. Proportion of 0–5 year olds using children's services(a)
3. Proportion of 4 year olds participating in preschool and long day care(b)
4. Enrolment rates of 4 year olds and under in educational institutions(c)
5. Enrolment rates of children under six in child care and early education, by individual year of age(d)
6. Education enrolment rates by age and level of education(c)
7. Preschool expectancy rates for children aged 3–5 years(d)
8. Proportion of children aged 0–11 years who required (additional) formal child care (including preschool)(a)

Indigenous Children

9. Proportion of Indigenous 4 year olds participating in preschool(b)
10. Proportion of Indigenous preschool enrolments(a)
11. Proportion of Indigenous children enrolled in preschool(e)
12. Proportion of Indigenous children enrolled in school(e)

MEASURES OF PROVIDERS

All Australian Children

13. Proportion of State and Territory licensed and/or registered children's services, by management type(a)

MEASURES OF FINANCIAL RESOURCES

All Australian Children

14. Proportion of public and private expenditure on educational institutions(c)
15. Total government real expenditure on children's services(a)
16. Total government real expenditure on children's services per child aged 0–12 years(a)
17. Public expenditure on child care and early education services, as a percentage of GDP(d)
18. Public and private expenditure on pre-primary education as a percentage of GDP(c)
19. Public expenditure on child care and preschool, per child(d)
20. Weekly parental preschool expenditure per child(a)

MEASURES OF HUMAN RESOURCES

All Australian Children

21. Proportion of paid staff with formal qualifications employed by state and territory preschool services(a)
22. Proportion of paid staff with a formal qualification or experience employed by Australian Government approved child care services(a)
23. Child-to-staff ratios in formal child care services and preschool(d)

MEASURES OF OUTPUTS/OUTCOMES

All Australian Children

24. Proportion of year 3 students reaching national literacy and numeracy benchmarks of all year 3 students(f)

Indigenous Children

25. Proportion of Indigenous Year 3 students reaching national literacy and numeracy benchmarks of all Year 3 students(b)(e)(f)(g)

(a) Report on Government Services, SCRGSP
(b) A Picture of Australia's Children, AIHW
(c) Education At A Glance, OECD
(d) OECD Family Database, OECD
(e) Overcoming Indigenous Disadvantage, SCRGSP
(f) National Report on Schooling in Australia, MCEETYA
(g) The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples, ABS, AIHW

MEASURES OF PARTICIPATION AND NON-PARTICIPATION

All Australian Children

1. PROPORTION OF 4 YEAR OLDS ATTENDING PRESCHOOL IMMEDIATELY BEFORE SCHOOL

Collection source

State and territory administration data; Estimated Resident Population, ABS

Definition

The proportion of children attending state and territory government funded and/or provided preschool services in the year before the commencement of full-time schooling.

Derivation/Calculation

The number of 4 year olds attending preschool as determined by state and territory administrative data. The proportion is determined against the denominator of 4 year olds taken from the estimated resident population (ERP) as at June in the year of reporting.

Data for indicator 1

PROPORTION OF 4 YEAR OLDS ATTENDING PRESCHOOL IMMEDIATELY BEFORE SCHOOL

	YEAR				
States and territories	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*
	%	%	%	%	%
NSW	64.6	60.4	59.6	58.1	59.8
Vic.	96.4	97.8	96.4	96.4	95.2
Qld	98.3	98.3	98.0	97.1	102.3
SA	93.7	93.3	94.9	92.8	95.4
WA	70.5	71.9	96.2	100.2	104.7
Tas.	102.2	90.7	99.1	101.8	101.4
NT	83.9	87.8	84.5	82.3	81.4
ACT	88.3	83.6	85.6	80.5	84.1
Aust.	83.1	81.8	84.0	83.4	85.7

Current reporting

This indicator is currently reported in:

- *Report on Government Services*, SCRGSP (reported as 'Children in the population who attended state and territory government funded and/or provided preschool services immediately before the commencement of full time schooling')

Assessment

- The indicator refers only to 4 year olds, which is the age at which most children attend preschool. Though the proportion of 3 and 5 year olds attending preschool is smaller than for 4 year olds, many 3 and 5 year olds attend preschool. Excluding 3 and 5 year olds means that the indicator does not strictly include the entire population of children attending preschool prior to commencing schooling, although some information on the attendance of younger children is available in the ROGS.
- Data do not cover private preschools.

All Australian Children continued

Assessment continued

- Data for Estimated Resident Population are six months out of sequence with the administrative data. This, combined with double counting which can occur as children move in and out of the preschool system during the year, can lead to an overestimation of enrolment rates being reported in some states and territories. In some cases these estimates exceed 100%.
- Data for NSW are not comparable with those of other states following changes in the methodology used to collect child care data.
- WA data for 2001-02 and 2002-03 exclude the non-government sector. The inclusion of the non-government sector in WA in 2003-04 leads to an increase in the attendance rate for that year. From 2002-03, pre-year 1 students in non-compulsory schooling are excluded.
- Victorian data include some funded preschool services conducted in centre-based long day care centres and independent schools.
- Data for SA exclude children in non-government preschools. For SA, data include 4 and 5 year olds.

Please refer to the source summaries in Appendix 2 for more information on the quality of ERP, and state, territory and Australian Government administration data sources.

2. PROPORTION OF 0-5 YEAR OLDS USING CHILDREN'S SERVICES

Collection source

Australian Government Census of Child Care Services, FaCSIA; Estimated Resident Population, ABS; State and territory administrative data

Definition

The proportion of 0-5 year olds attending Australian, state and territory government funded and/or provided child care.

Derivation/Calculation

The number of 0-5 year olds attending Australian Government approved child care services as determined by the AGCCCS, as well as the number of 0-5 year olds attending state and territory government funded and/or approved child care services as determined by state and territory administrative data. The proportion is determined against the denominator of 0-5 year olds taken from the ERP.

All Australian Children continued

Data for indicator 2

PROPORTION OF 0-5 YEAR OLDS USING CHILDREN'S SERVICES

	YEAR				
States and territories	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*
	%	%	%	%	%
NSW	49.1	48.5	48.9	50.1	52.0
Vic.	27.7	27.6	26.8	27.9	29.1
Qld	40.5	40.2	39.4	40.8	42.8
SA	31.5	31.0	31.1	32.6	35.5
WA	23.7	23.3	24.5	25.2	26.6
Tas.	35.5	35.3	33.4	34.3	37.6
NT	20.6	22.7	22.5	22.0	24.3
ACT	42.7	41.8	38.0	39.4	41.9
Aust.	37.6	37.3	37.1	38.3	40.1

Current reporting

This indicator is currently reported in:

- *Report on Government Services*, SCRGSP, (reported as 'Proportion of children using Australian, state and territory government funded and/or provided child care' for children 0-12 years. However data are disaggregated for children 0-5 years)

Assessment

There is an issue related to the consistency of the data used to calculate this indicator. Data on attendance in Australian Government approved child care are taken from the AGCCCS biennially, while data on attendance in state and territory government approved child care are collected annually. The denominator is taken from the ERP as at 30 June at the end of each reporting year. AGCCCS data are considered 'preliminary' in the year they are provided, and the following year are considered 'final'. For example, in 2001-02 AGCCCS 2002 preliminary data are used, while in 2002-03, AGCCCS 2002 'final' data are used.

- Different data collection methods and the exclusion of certain services funded by some jurisdictions reduce the comparability of the data across jurisdictions.
- There may be some double counting of children in instances where a child attends more than one child care service.
- Data for NSW are not comparable with those of other states following the changes in the methodology used to collect child care data in that state.

Please refer to the source summaries in Appendix 2 for more information on the quality of the AGCCCS, state, territory and Australian Government administrative data, and the ERP as data sources.

All Australian Children continued

3. PROPORTION OF 4 YEAR OLDS PARTICIPATING IN PRESCHOOL AND LONG DAY CARE

Collection source

Child Care Survey, ABS

Definition

The proportion of children aged 4 years participating in preschool and long day care.

Derivation/Calculation

The number of 4 year olds attending preschool and long day care as a proportion of all 4 year olds, as determined by the CCS.

Data for indicator 3

PROPORTION OF 4 YEAR OLDS PARTICIPATING IN PRESCHOOL AND LONG DAY CARE

	YEAR			
	1993 (June)	*1996 (March)*	*1999 (June)*	*2002 (June)*
Provider	%	%	%	%
Preschool	56.6	45.9	49.2	59.0
Long day care	11.8	14.0	21.7	25.1

Current reporting

This indicator is currently reported in:

- *A Picture of Australia's Children*, AIHW (reported as 'Preschool and long day care participation among 4 year old children')

Assessment

The indicator refers only to 4 year olds, which is the age at which most children attend preschool. Though the proportion of 3 and 5 year olds attending preschool is smaller than for 4 year olds, many 3 and 5 year olds attend preschool. Excluding 3 and 5 year olds means that the indicator does not strictly include the entire population of children attending preschool prior to commencing schooling.

- As children attending long day care may also be attending preschool, data as presented are not additive.
- It is also noted that the term preschool encompasses a number of learning environments apart from state-based preschools and may include some but not all formal learning programs in long day care centres.
- Data in the CCS are collected from either parent in the family and all the data items are subject to respondent perceptions, as well as the accuracy of recall of the responding parent. In practice, this leads to variation in responses related to the types of organisations and learning programs in which children are participating.
- The CCS excludes respondents living in very remote areas of Australia.

All Australian Children continued

Assessment continued

- As data for the CCS are estimates from a sample survey, there are higher standard errors in the smaller states and territories. This affects the usefulness of the CCS for estimation at state/territory level.

Please refer to the source summaries in Appendix 2 for more information on the quality of the CCS as a data source.

4. ENROLMENT RATES OF 4 YEAR OLDS AND UNDER IN EDUCATIONAL INSTITUTIONS

Collection source

Data supplied by DEST to the OECD, with data sourced from:

National Preschool Census, DEST; National Schools Statistics Collection, ABS; Queensland administrative data; Estimated Resident Population, ABS.

Definition

The enrolment of 4 year olds and under in public and private institutions, either full time or part time, as a percentage of all 3 and 4 year olds.

Derivation/Calculation

The enrolment rates of 4 year olds and under are taken from the NPC, the National Schools Statistics Collection (NSSC) and Queensland administrative data. The proportion is determined against a denominator of 4 year olds taken from the ERP as at 30 June in the year of reporting.

Data for indicator 4

ENROLMENT RATES OF 4 YEAR OLDS AND UNDER IN EDUCATIONAL INSTITUTIONS

	YEAR				
	2001	*2002*	*2003*	*2004*	*2005*
Country	%	%	%	%	%
Australia	38.1	35.9	41.8	42.4	41.6
Canada	20.8	na	na	na	na
Netherlands	48.9	48.8	36.4	36.6	37.1
New Zealand	85.9	86.8	88.1	88.7	90.5
Sweden	73.1	75.5	81.1	85.1	86.5
OECD Mean	63.1	67.8	69.8	66.3	68.5

na not available

Current reporting

This indicator is currently reported in:

- *Education at a Glance*, OECD, (reported in the table 'Enrolment rates, by age' as '4 and under as a percentage of the population of 3-to-4-year-olds')

All Australian Children continued

Assessment

Data for this indicator are presented from 2001 to 2005 to allow for time series comparison.

- There are conceptual inadequacies associated with presenting the rate of enrolment of all children aged 4 years and under as a percentage of 3-4 year olds, as these are two different populations.
- An educational institution is defined as an entity that provides instructional services to individuals or education-related services to individuals and other educational institutions. It is assumed for this indicator that the term educational institution refers only to providers that are aligned with the International Standard Classification of Education (ISCED) level 0 or ISCED level 1, which therefore excludes counting of attendance at Long Day Care centres.
- The NPC collects age data for all preschool programs except part-time pre-year 1 programs in Queensland schools. Data with age-breakdowns have been extracted from the Queensland Non-Government Supplementary Census and the Queensland Data for General Recurrent Grant Purposes.
- Counts in the NPC are affected by state/territory differences in definitions, programs and data collection processes.
- Data for NSW are not comparable with those of other states following changes in the methodology used to collect child care data in that state.

Please refer to the source summaries in Appendix 2 for more information on the quality of the NSSC, the NPC, state, territory and Australian Government administrative data and the ERP as data sources.

5. ENROLMENT RATES OF CHILDREN UNDER SIX IN CHILD CARE AND EARLY EDUCATION, BY INDIVIDUAL YEAR OF AGE

Collection source

Education and child care data compiled by the OECD, with data sourced from:

Child Care Survey, ABS, for 0-2 year olds

National Preschool Census, DEST; Queensland administrative data; Estimated Resident Population, ABS for 3-5 year olds.

Definition

Enrolment rates presented for 0-2 year olds relate to formal child care arrangements (including centre-based child care, family day care and other paid care in the home). Enrolment rates presented for 3-5 year olds relate to those enrolled in preschool for this age group.

Derivation/Calculation

The enrolment of children aged 0-2 years as a proportion of all 0-2 year olds as estimated in the CCS, and the participation of children aged 3-5 years as a proportion of all 3-5 year olds taken from the ERP as of June in the year of reporting.

All Australian Children continued

Data for indicator 5

ENROLMENT OF CHILDREN UNDER SIX IN CHILD CARE AND EARLY EDUCATION, BY INDIVIDUAL YEAR OF AGE

2003-04

	Child care	*Preschool*			*Child care and preschool services*
	Under 3 years	*3 years*	*4 years*	*5 years*	*3 to 5 years*
Country	%	%	%	%	%
Australia	29.0	55.0	64.6	90.9	71.5
Canada	19.0	na	—	na	na
Netherlands	29.5	32.3	74.0	98.4	70.2
New Zealand	32.1	82.1	95.1	100.0	92.7
Sweden	39.5	82.5	87.7	89.7	86.6

— nil or rounded to zero (including null cells)
na not available

Current reporting

This indicator is currently reported in:

- Family Database, OECD, www.oecd.org/els/social/family/database (reported in the table 'Participation rates in day-care and pre-school for children under six'.)

Assessment

Data for this indicator are presented by individual year of age for a range of OECD countries.

- Enrolment rates for 3-5 year-olds are sourced from the UNESCO-UIS/OECD/EUROSTAT (UOE) Education data collection for ISCED level 0. This category includes education providers classified as pre-primary institutions and mostly excludes enrolments at Long Day Care centres.
- Data are presented for a variety of years across countries and are taken from both survey and administrative sources for the enrolment rates of children aged 3-5 years.
- The hours offered by child care and preschool institutions vary across countries. For example, children may participate for 6 hours per day for 5 days a week, or for 3 hours per day for only 1 or 2 days per week.
- The CCS collects the concept of attendance in the last week rather than enrolments.
- Data in the CCS are collected from either parent in the family and all the data items are subject to respondent perceptions, as well as the accuracy of recall of the responding parent. In practice, this leads to variation in responses related to the types of organisations and learning programs in which children are participating and as a result, this may not reflect actual participation.
- As data for the CCS are estimates from a sample survey, there are higher standard errors in the smaller states and territories. This affects the usefulness of the CCS for estimation at state/territory level.
- The CCS excludes respondents living in very remote areas of Australia.

All Australian Children continued

Assessment continued

Please refer to the source summaries in Appendix 2 for more information on the quality of the CCS, NPC, state and territory administrative data and ERP as data sources.

6. EDUCATION ENROLMENT RATES BY AGE AND LEVEL OF EDUCATION

Collection source

Data supplied by DEST to the OECD, with data sourced from:

National Preschool Census, DEST; National Schools Statistics Collection, ABS; Queensland administrative data; Estimated Resident Population, ABS.

Definition

The enrolment rates of 3, 4, 5, 6, 7 and 8 year olds in pre-primary and primary education.

Derivation/Calculation

The pre-primary enrolment rates of 3, 4, and 5 year olds are taken from the NPC and Queensland administrative data, whilst the primary enrolment rates of 5, 6, 7, and 8 year olds are taken from the NSSC. The proportion is determined against a denominator for each individual age group taken from the ERP as at 30 June in the year of reporting.

Data for indicator 6

EDUCATION ENROLMENT RATES BY AGE AND LEVEL

	2003					
	3 years	*4 years*	*5 years*	*6 years*	*7 years*	*8 years*
Enrolment	%	%	%	%	%	%
Pre-primary	19.5	62.3	18.1	—	—	—
Primary	—	1.6	73.0	99.4	98.9	99.2

— nil or rounded to zero (including null cells)

Current reporting

This indicator is currently reported in:

- *Education at a Glance*, OECD (presented as 'Net enrolment rates by age and level of education')

Assessment

As data for this indicator were only included in the 2005 *Education at a Glance* publication, no time series are available.

- 'Pre-primary' is defined as ISCED level 0, which for Australia mostly does not include children enrolled in preschool programs in Long Day Care centres.
- Primary is defined as ISCED level 1, and is considered the beginning of systematic studies in reading, writing and mathematics.

All Australian Children continued

Assessment continued

- The NPC collects age data for all preschool programs except part-time Pre-year 1 programs in Queensland schools. Therefore, data with age breakdowns have been extracted from the Queensland Non-Government Supplementary Census and the Queensland Data for General Recurrent Grant Purposes.
- State and territory level data are not presented.

Please refer to the source summaries in Appendix 2 for more information on the quality of the NSSC, the NPC, state, territory and Australian Government administrative data and the ERP as data sources.

7. PRESCHOOL EXPECTANCY RATES FOR CHILDREN AGED 3-5 YEARS

Collection source

Education data compiled by the OECD, with data sourced from:

National Preschool Census, DEST; Queensland administrative data; Estimated Resident Population, ABS.

Definition

Expectancy rates represent the average duration of time spent in preschool by a child aged 3-5 years.

Derivation/Calculation

Expectancy rates are taken by adding the net enrolment proportion for each single year of age between 3 and 5 years and dividing it by the population aged 3-5 years.

Data for indicator 7

PRESCHOOL EXPECTANCY RATES FOR CHILDREN AGED 3-5 YEARS

	2004
	Expected years in preschool
Country	years
Australia	1.8
Netherlands	1.7
New Zealand	2.8
Sweden	2.6

Current reporting

This indicator is currently reported in:

- Family Database, OECD, www.oecd.org/els/social/family/database (Reported in the table 'Participation rates in day-care and pre-school for children under six' as 'Expected years of education for 3 to 5 year olds'.)

All Australian Children continued

Assessment

Data for this indicator present expectancy rates for children aged 3-5 years, which is the key age group participating in formal early childhood education.

- Expectancy rates are calculated from enrolment rates. They are sourced from the UOE Education data collection at ISCED level 0 which for Australia, does not include children enrolled in preschool programs in Long Day Care centres.
- The hours offered by preschool institutions vary across countries. For example, children may participate for 6 hours per day for 5 days a week, or for 3 hours per day for only 1 or 2 days per week.
- Comparisons across countries are affected by the variation in the age at which children commence regular participation in preschool and the length of time they spend in programs before entering school. In some countries, most 3 year olds and some 4 year olds are not in such programs. Expectancy rates also do not take account of the hours per day children are participating in programs, and holiday periods are not excluded.

Please refer to the source summaries in Appendix 2 for more information on the quality of the CCS, NPC, state and territory administrative data and as data sources.

8. PROPORTION OF CHILDREN AGED 0-11 YEARS WHO REQUIRED (ADDITIONAL) FORMAL CHILD CARE (INCLUDING PRESCHOOL)

Collection source

Child Care Survey, ABS

Definition

The proportion of children aged 0-11 years requiring (additional) formal child care in the 4 weeks prior to the survey date. The indicator includes children who had not used formal care in the reference week, for whom formal care was required, as well as children who had used formal care in the reference week and for whom additional care was required.

Derivation/Calculation

The number of children aged 0-11 years whose parents stated that (additional) child care services were required, as a proportion of 0-11 year olds in the CCS.

All Australian Children continued

Data for indicator 8

CHILDREN AGED 0-11 YEARS WHO REQUIRED (ADDITIONAL) FORMAL CHILD CARE (INC. PRESCHOOL)

	YEAR	
	2002	*2005*
States and territories	%	%
NSW	5.5	5.8
Vic.	5.3	5.7
Qld	6.3	6.0
SA	5.1	6.4
WA	4.2	5.5
Tas.	4.6	7.6
NT	7.6	5.4
ACT	6.1	9.9
Aust.	5.5	5.9

Current reporting

This indicator is currently reported in:

- *Report on Government Services,* SCRGSP(reported as 'Proportion of children aged under 12 years for whom additional formal child care was required')

Assessment

This indicator estimates the need for additional child care and preschool services. Given that the indicator includes children aged 9-11 years, its age range is broader than the 0-8 years cohort which defines early years learning in the context of this project.

- If children usually attended a child care or preschool institution, but did not attend in the reference week (e.g. due to sickness or holidays) they would not be included in the estimates.
- National and state/territory level data need to be interpreted with care because the over- and under-supply of child care places can be specific to particular geographic locations, including small and remote communities.
- Data in the CCS are collected from either parent in the family and all the data items are subject to respondent perceptions, as well as the accuracy of recall of the responding parent. In practice, this leads to variation in responses related to the types of organisations and learning programs in which children are participating.
- The CCS excludes respondents living in very remote areas of Australia.
- As data for the CCS are estimates from a sample survey, there are higher standard errors in the smaller states and territories. This affects the usefulness of the CCS for estimation at state/territory level.

Please refer to the source summaries in Appendix 2 for more information on the quality of the CCS as a data source.

Indigenous Children

9. PROPORTION OF INDIGENOUS 4 YEAR OLDS PARTICIPATING IN PRESCHOOL

Collection source

Australian Census of Population and Housing, ABS

Definition

The proportion of Indigenous 4 year olds participating in preschool across remoteness areas.

Derivation/Calculation

The proportion of 4 years olds attending preschool, by Indigenous status. The remoteness area is derived through the geolocation of the household as determined by the Australian Standard Geographical Classification (ASGC) which is based on the Accessibility Remoteness Index for Australia (ARIA). Remoteness areas are detailed under the ASGC through the Remoteness Classification.

Data for indicator 9

PROPORTION OF INDIGENOUS 4 YEAR OLDS PARTICIPATING IN PRESCHOOL

	2001		
Remoteness area	*Indigenous Aust. children* %	*Other Aust. children* %	*Total* %
Major cities	49.4	58.2	57.7
Inner regional	46.4	54.5	53.9
Outer regional	47.5	53.8	53.0
Remote	47.1	58.8	56.6
Very remote	36.0	51.8	42.6
Australia	45.9	56.9	56.1

Current reporting

This indicator is currently reported in:

- *A Picture of Australia's Children*, AIHW, (reported as 'Preschool participation rate for children aged 4 years, by Indigenous status and across remoteness areas, 2001')

Assessment

The indicator refers only to 4 year olds, which is the age at which most children attend preschool. Though the proportion of 3 and 5 year olds attending preschool is smaller than for 4 year olds, many 3 and 5 year olds attend preschool. Excluding 3 and 5 year olds means that the indicator does not strictly include the entire population of children attending preschool prior to commencing schooling.

- The indicator, which is based on data collected in 2001, is published in *A Picture of Australia's Children, 2005.* This indicator needs to be treated with care due to the time lag in the release of the data.

Indigenous Children continued

Assessment continued

- Data in the Census are self reported and all the data items are subject to respondent perceptions, as well as the level of recall and knowledge of the respondent completing the census form. There is also variation in the quality of responses in the census because respondents may interpret the term preschool differently in different states/territories.
- Because the Census is enumerated in August, a larger proportion of children attending preschool would have turned 5 years old than is recorded in other collections.

Please refer to the source summaries in Appendix 2 for more information on the quality of the Census as a data source.

10. PROPORTION OF INDIGENOUS PRESCHOOL ENROLMENTS

Collection source

State and territory administrative data; Experimental Estimates of the Aboriginal and Torres Strait Islander Population, ABS.

Definition

The number of Indigenous children aged 3-5 years attending state and territory funded or approved preschools, as a proportion of all children attending preschool.

Derivation/Calculation

The number of Indigenous children aged 3-5 years attending state and territory funded or approved preschools, as a proportion of all children attending preschool, both of which are taken from state and territory administrative data. This is compared with the number of Indigenous children aged 3-5 years as a proportion of all 3-5 year olds, as determined by the Aboriginal and Torres Strait Islander Experimental Estimates, low series.

Data for indicator 10

PROPORTION OF INDIGENOUS PRESCHOOL ENROLMENTS

	INDIGENOUS CHILDREN (2005-06)	
States and territories	*In preschool* %	*In the community* %
NSW	3.1	4.2
Vic.	0.9	1.1
Qld	6.1	6.6
SA	5.7	3.6
WA	9.6	6.7
Tas.	5.5	6.9
NT	42.5	41.8
ACT	3.4	2.7
Aust.	4.9	4.7

Indigenous Children continued

Current reporting

This indicator is currently reported in:

- *Report on Government Services*, SCRGSP (reported as 'Proportion of preschool enrolments from Indigenous backgrounds' in the table 'Proportion of children (aged 3-5 years) from special needs groups attending state and territory funded or provided preschools' - data disaggregated for Indigenous children)

Assessment

- This indicator previously covered the 0-12 year age cohort, rather than 3-5 year olds. The previously published indicator, based on the 0-12 year cohort, has a time series dating back to 1998-99. The new indicator based on the 3-5 year old population, is only available for 2005-06, though it is expected the indicator will be published annually and form part of an ongoing time series.
- The change in age range, from the 0-12 year cohort to 3-5 year olds, affects data on Tasmania and Northern Territory, where children outside the 3-5 year old population attend preschool. For example, in the Northern Territory, younger children may attend under certain circumstances with appropriate approval, and younger Indigenous children may attend from 3 years of age if accompanied by an adult. In Tasmania, the enrolment of children who are not of pre-kindergarten age is only permitted under limited circumstances (such as for gifted children or children previously enrolled in another state or territory who now reside in Tasmania).
- The use of the Aboriginal and Torres Strait Islander Experimental Estimates, low series, as denominator for this indicator is problematic in some states and territories as there is evidence of higher unexplained intercensal growth in the Indigenous population in the younger age groups.

Please refer to the source summaries in Appendix 2 for more information on the quality of state, territory and Australian Government administrative data and the ERP as data sources.

11. PROPORTION OF INDIGENOUS CHILDREN ENROLLED IN PRESCHOOL

Collection source

National Preschool Census, DEST; Experimental Estimates of the Aboriginal and Torres Strait Islander Population, ABS

Definition

The number of Indigenous children aged 3, 4, and 5 years enrolled in preschool, expressed as a proportion of all Indigenous children aged 3, 4, and 5 years.

Derivation/Calculation

The number of Indigenous children aged 3, 4, and 5 years enrolled in preschool as determined by the NPC. The proportion is determined against the number of Indigenous children aged 3, 4 or 5 years taken from the Aboriginal and Torres Strait Islander Experimental Estimates, low series.

Indigenous Children continued

Data for indicator 11

PROPORTION OF INDIGENOUS CHILDREN ENROLLED IN PRESCHOOL

	2002			2003			2005		
States and territories	*3 years* %	*4 years* %	*5 years* %	*3 years* %	*4 years* %	*5 years* %	*3 years* %	*4 years* %	*5 years* %
NSW	24.7	39.1	9.4	25.8	39.1	10.0	26.1	41.2	10.6
Vic.	3.5	44.4	25.0	1.6	54.5	29.2	5.8	41.9	30.6
Qld	7.1	12.0	6.1	7.9	11.8	6.5	6.3	11.3	3.8
SA	62.0	88.4	5.4	71.6	88.4	5.7	63.3	91.3	5.3
WA	17.9	85.9	5.9	1.4	99.7	3.1	13.8	93.0	4.1
Tas.	—	27.6	30.2	—	36.2	4.0	—	36.9	47.2
NT	22.0	74.5	15.9	26.1	68.2	19.6	25.7	70.3	16.1
ACT	4.4	36.8	41.1	2.8	22.3	42.7	38.5	66.7	19.2
Aust.	18.1	44.4	10.4	17.2	46.9	11.3	18.6	46.2	10.5

— nil or rounded to zero (including null cells)

Current reporting

This indicator is currently reported in:

- *Overcoming Indigenous Disadvantage*, SCRGSP, (reported as 'Participation rates in preschool for Indigenous and non-Indigenous children')

Assessment

The preschool participation rate for this indicator measures enrolments. It does not provide any indication on attendance patterns.

- As there is a one year gap between enrolment data and population data, caution is required when using this indicator.
- Enrolment numbers and participation rates are affected by a number of factors when disaggregated by age. Three year old enrolment numbers are affected by preschool entrance requirements and availability of preschool places. The proportion of enrolments of 5 year olds is determined by primary school starting ages in the relevant jurisdictions.
- A small number of 2 year olds are counted in the 3 year old category and are not separately disaggregated. Similarly, a small number of 6 year olds may be in the 5 year old category.
- The use of the Aboriginal and Torres Strait Islander Experimental Estimates, low series, for the denominator of these indicators is problematic in some states and territories as there is evidence of higher unexplained intercensal growth in the Indigenous population across the younger age groups.
- Data are not presented for 2004.
- Counts in the NPC are affected by state/territory differences in definitions, programs and data collection processes.

Please refer to the source summaries in Appendix 2 for more information on the quality of the NPC and ERP as data sources.

Indigenous Children continued

12. PROPORTION OF INDIGENOUS CHILDREN ENROLLED IN SCHOOL

Collection source

National Schools Statistics Collection, ABS; Experimental Estimates of the Aboriginal and Torres Strait Islander Population, ABS

Definition

The number of Indigenous children aged 5, 6, 7, and 8 years enrolled in school, expressed as a proportion of all Indigenous children aged 5, 6, 7, and 8 years.

Derivation/Calculation

The number of Indigenous 5, 6, 7, and 8 year olds enrolled in school according to the NSSC. The proportion is determined against the number of Indigenous children aged 5, 6, 7, and 8 years taken from the Aboriginal and Torres Strait Islander Experimental Estimates, low series.

Data for indicator 12

PROPORTION OF INDIGENOUS CHILDREN ENROLLED IN SCHOOL

	YEAR			
	2002	*2003*	*2005*	*2006*
Indigenous Status	%	%	%	%
Indigenous				
5 years	64.1	69.2	73.1	75.0
6 years	88.9	92.6	99.4	103.7
7 years	93.1	92.8	102.9	103.7
8 years	90.6	93.0	99.7	105.2
Non-Indigenous				
5 years	72.2	73.0	72.2	72.2
6 years	97.2	99.7	100.7	100.4
7 years	99.9	99.2	100.9	101.1
8 years	99.7	99.5	99.8	101.2

Current reporting

This indicator is currently reported in:

- *Overcoming Indigenous Disadvantage*, SCRGSP, (reported as 'School participation rates for Australian full time students')

Assessment

- Age of compulsory schooling differs across jurisdictions and this difference may affect the school participation rate of 5 year olds. For example a low 5 year old school participation rate may indicate poor participation in school, or that many 5 year olds are still participating in preschool.
- The Indigenous population is based on the Aboriginal and Torres Strait Islander Experimental Estimates, but there are no comparable data for the non-Indigenous population. The non-Indigenous population is derived by subtracting Indigenous population projections from total population projections and should be used with care.

Indigenous Children continued

Assessment continued

- The use of the Aboriginal and Torres Strait Islander Experimental Estimates, low series, for the denominator of these indicators is problematic in some states and territories as there is evidence of high unexplained intercensal growth in the Indigenous population in the younger age groups. Reporting individual year of age introduces additional variability to the indicators and some proportions in later years exceed 100%.
- Data are not presented for 2004.

Please refer to the source summaries in Appendix 2 for more information on the quality of the NSSC and ERP as data sources.

MEASURES OF PROVIDERS

All Australian Children

13. PROPORTION OF STATE AND TERRITORY LICENSED AND/OR REGISTERED CHILDREN'S SERVICES, BY MANAGEMENT TYPE

Collection source

State and territory administrative data sources

Definition

The proportion of state and territory licensed and/or registered child care and preschool services, by type of provider - community-managed, private, or government-managed.

Derivation/Calculation

The number of community-managed, private, or government-managed child care or preschool services as a proportion of all child care or preschool services as determined by each state and territory.

Data for indicator 13

STATE AND TERRITORY LICENSED AND/OR REGISTERED CHILDREN'S SERVICES, By management type

	2001-02	*2002-03*	*2003-04*	*2004-05*	*2005-06*
	%	%	%	%	%
NSW					
Child care					
Community managed	34.9	34.6	33.1	31.7	30.5
Private	61.3	61.9	63.5	65.0	66.4
Government managed	3.8	3.6	3.4	3.2	3.1
Pre-school					
Community managed	90.3	90.3	90.0	90.1	89.8
Private	9.7	9.7	10.0	9.9	10.2
Government managed	—	na	na	na	na
VIC.					
Child care					
Community managed	95.8	95.9	39.2	38.9	37.6
Private	0.9	0.5	45.9	46.2	48.2
Government managed	3.3	3.6	14.9	14.9	14.2
Pre-school					
Community managed	63.8	63.4	74.5	73.9	74.9
Private	21.7	21.8	8.4	8.2	7.9
Government managed	14.5	14.8	17.2	17.9	17.1
QLD					
Child care					
Community managed	36.5	32.4	26.0	26.1	35.9
Private	63.5	67.6	70.5	70.6	60.7
Government managed	na	na	3.5	3.3	3.4
Pre-school					
Community managed	24.0	23.5	22.9	23.1	23.2
Private	17.9	19.7	21.8	21.6	22.2
Government managed	58.1	56.8	55.3	55.3	54.6
SA					
Child care					
Community managed	42.6	41.6	40.3	39.7	40.2
Private	30.6	31.8	33.7	34.5	34.9
Government managed	26.9	26.6	26.0	25.9	24.9
Pre-school					
Community managed	4.8	4.7	4.7	4.7	4.9
Private	—	—	—	—	—
Government managed	95.2	95.3	95.3	95.3	95.1
WA					
Child care					
Community managed	60.3	60.3	25.1	18.2	20.0
Private	33.9	33.7	70.9	80.0	76.2
Government managed	5.8	6.0	4.0	1.9	3.8
Pre-school					
Community managed	9.4	—	—	—	—
Private	—	—	—	—	—
Government managed	90.6	100.0	100.0	100.0	100.0
TAS.					
Child care					
Community managed	54.9	60.7	58.8	55.3	51.3
Private	19.7	18.5	18.4	20.5	24.2
Government managed	25.4	20.7	22.8	24.2	24.5
Pre-school					
Community managed	—	—	—	—	—
Private	22.0	22.7	22.7	24.2	26.1
Government managed	78.0	77.3	77.3	75.8	73.9

— nil or rounded to zero (including null cells)

na not available

STATE AND TERRITORY LICENSED AND/OR REGISTERED CHILDREN'S SERVICES, By management type *continued*

	2001-02	*2002-03*	*2003-04*	*2004-05*	*2005-06*
	%	%	%	%	%
NT					
Child care					
Community managed	100.0	78.3	77.4	73.8	73.8
Private	—	21.7	22.6	26.2	26.2
Government managed	—	—	—	—	—
Pre-school					
Community managed	—	5.2	4.3	—	2.7
Private	—	—	—	—	—
Government managed	100.0	94.8	95.7	100.0	97.3
ACT					
Child care					
Community managed	84.4	84.3	84.2	82.6	84.1
Private	15.6	15.7	15.8	17.4	15.9
Government managed	—	—	—	—	—
Pre-school					
Community managed	8.0	8.0	8.0	8.0	9.1
Private	—	—	—	—	—
Government managed	92.0	92.0	92.0	92.0	90.9

— nil or rounded to zero (including null cells)

All Australian Children continued

Current reporting

This indicator is currently reported in:

- *Report on Government Services*, SCRGSP (reported as 'Proportion of State and Territory licensed and/or registered children's services, by management type')

Assessment

The data on management type need to be interpreted with care because the collection and definitions of administrative data vary across jurisdictions, particularly for child care services.

- 'Community-managed' services include not-for-profit services provided or managed by parents, churches or co-operatives. The term 'private' indicates a for-profit service provided or managed by a company, private individual or non-government school.
- Care needs to be taken when interpretating data comparing jurisdictions. All government-managed preschools in Victoria are run by local government agencies. In the Northern Territory, preschool services are provided by the Department of Education directly, but a range of management functions are devolved to school councils and parent management committees. In Tasmania, preschools include funded non-government schools.
- Child care services refer to all service types for children aged 0-12 years.
- Data for NSW exclude a number of private preschools, and data for WA exclude a number of Indigenous preschools. For this reason, data in these states need to be interpreted with care.

Please refer to the source summaries in Appendix 2 for more information on the quality of state, territory and Australian Government administrative data as a data source.

MEASURES OF FINANCIAL RESOURCES

All Australian Children

14. PROPORTION OF PUBLIC AND PRIVATE EXPENDITURE ON EDUCATIONAL INSTITUTIONS

Collection source

Data supplied by DEST to the OECD, with data sourced from:

Government Finance Statistics, ABS; DEST administrative data; Child Care Survey, ABS

Definition

This indicator represents the relative proportion of public and private expenditure on pre-primary educational institutions for children 3 years and older. The 'private' category is split into 'household expenditure', 'other private entities expenditure' and 'all private sources'.

Derivation/Calculation

Public expenditure is sourced from a combination of Government Finance Statistics (GFS) and DEST administrative data. Household expenditure is sourced from the CCS. The source for expenditure by other private entities has not been ascertained.

Data for indicator 14

PROPORTION OF PUBLIC AND PRIVATE EXPENDITURE ON EDUCATIONAL INSTITUTIONS

	YEAR		
	2001	*2002*	*2003*
Type of expenditure	%	%	%
Public expenditure	68.9	70.5	71.7
Private expenditure			
Household expenditure	30.3	29.1	27.8
Expenditure of other private entities	0.7	0.4	0.6
Total private expenditure	31.1	29.5	28.3
Total	100.0	100.0	100.0

Current reporting

This indicator is currently reported in:

- *Education at a Glance*, OECD (reported as 'Percentage, by level of education' in the table 'Relative proportions of public and private expenditure on education institutions')

Assessment

- Household expenditure is sourced from the CCS, which is collected and published every three years, while expenditures from other sources are collected annually. As the CCS is only collected at a three-yearly interval, household expenditure is not updated on an annual basis as for other components, and the proportion of household expenditure decreases in the period between the three-yearly updates relative to other forms of expenditure.

All Australian Children continued

Assessment continued

Please refer to the source summaries in Appendix 2 for more information on the quality of GFS, DEST administrative data and the CCS.

15. TOTAL GOVERNMENT REAL EXPENDITURE ON CHILDREN'S SERVICES

Collection source

State and territory administrative data; FaCSIA administrative data

Definition

Total government expenditure on children's services

Derivation/Calculation

Data represent the amount, in thousands of dollars, spent by state and territory governments (on child care and preschool services) and the Australian Government (on child care services).

Data for indicator 15

TOTAL GOVERNMENT REAL EXPENDITURE ON CHILDREN'S SERVICES

	YEAR				
	2001-02	*2002-03*	*2003-04*	*2004-05*	*2005-06*
	$m	$m	$m	$m	$m
Aust. government	1 910.5	1 890.5	1 934.1	1 974.9	2 020.2
States and territories					
NSW	128.2	131.0	125.2	122.4	128.0
Vic.	109.5	109.9	119.8	121.9	126.3
Qld	131.4	136.7	156.8	167.9	187.2
SA	124.2	121.9	122.2	87.3	85.3
WA	63.5	73.2	64.1	58.2	61.7
Tas.	23.6	24.1	24.4	23.6	22.2
NT	20.3	24.4	25.7	25.8	25.4
ACT	20.2	19.5	23.8	21.5	23.3
All states and territories	621.0	640.8	662.0	628.5	659.4
All government	***2 531.5***	***2 531.3***	***2 596.1***	***2 603.4***	***2 679.5***

Current reporting

This indicator is currently reported in:

- *Report on Government Services,* SCRGSP (reported as 'Total government real expenditure on children's services ($'000)')

Assessment

- Data for 2001-02 to 2005-06 include families receiving CCB for formal care services. Data for 2001-02 and 2002-03 also include families receiving Child Care Assistance and the Child Care Rebate for formal care and preschool services, but not for informal care.

All Australian Children continued

Assessment continued

- Some state totals do not equal the sum of the individual state and territory amounts because a component of the expenditure is derived from the Australian Government and cannot be disaggregated.
- Data on child care services do not differentiate between service types or ages. The coverage of child care spending thus includes services for all children aged 0-12 years including vacation care and before/after school care.
- Data are in constant dollars

Please refer to the source summaries in Appendix 2 for more information on the quality of state, territory and Australian Government administrative data.

16. TOTAL GOVERNMENT REAL EXPENDITURE ON CHILDREN'S SERVICES PER CHILD AGED 0-12 YEARS

Collection source

FaCSIA administrative data; State and territory administrative data; Estimated Resident Population, ABS

Definition

The measurement refers to expenditure on children's services for the age group 0-12 years, against the denominator of children aged 0-12 years. Australian Government expenditure reported for this indicator is provided for child care services, whereas state and territory government expenditure covers both child care and preschool services.

Derivation/Calculation

The amount, in dollars, spent by state and territory governments and the Australian government on children's services, divided by the number of children aged 0-12 years in Australia.

Data for indicator 16

TOTAL GOVERNMENT REAL EXPENDITURE ON CHILDREN'S SERVICES PER CHILD AGED 0-12 YEARS

	YEAR				
	2001-02	*2002-03*	*2003-04*	*2004-05*	*2005-06*
States and territories	$	$	$	$	$
NSW	592.3	594.8	597.0	607.6	630.9
Vic.	612.2	597.6	611.4	627.9	641.1
Qld	1 031.3	1 031.2	1 049.7	1 080.5	1 103.7
SA	1 045.4	1 083.7	1 087.7	960.9	982.7
WA	629.1	646.8	638.3	630.5	650.7
Tas.	749.7	751.1	768.9	831.8	821.1
NT	1 104.5	1 144.3	1 361.9	1 377.2	1 422.7
ACT	892.5	880.9	968.5	864.5	920.1
Aust.	735.0	737.8	758.8	758.6	780.0

All Australian Children continued

Current reporting

This indicator is currently reported in:

Report on Government Services, Productivity Commission (Reported as 'Total government real expenditure on children's services per child aged 0-12')

Assessment

This indicator represents all government expenditure on children's services and is regarded as a proxy indicator of efficiency.

- Data for 2001-02 to 2005-06 include families receiving Child Care Benefit for formal care services. Data for 2001-02 and 2002-03 also include families receiving Child Care Assistance and the Child Care Rebate for formal care and preschool services, but not for informal care.
- Data on state and territory government expenditure are subject to inconsistencies and changes in collection method, making data difficult to compare across jurisdictions and over time.
- Some Australian totals do not equal the sum of the individual state and territory amounts because a component of expenditure belongs to the Australian Government and cannot be disaggregated.
- Data are in constant dollars.

Please refer to the source summaries in Appendix 2 for more information on the quality of state and territory administrative data, FaCSIA administrative data and ERP.

17. PUBLIC EXPENDITURE ON CHILD CARE AND EARLY EDUCATION SERVICES, AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT (GDP)

Collection source

Education and child care data compiled by the OECD from the Social Expenditure and Education databases, OECD, Government Finance Statistics, ABS, and administrative data, DEST

Definition

This indicator represents the amount of public financial support (including cash, in-kind support and concessions provided through the taxation system) for families with children aged 0-2 years in formal child care, as well as public expenditure on pre-primary education for children aged 3-5 years.

Derivation/Calculation

Public expenditure on child care for families with children aged 0-2 years, and public expenditure on pre-primary education for children aged 3-5 years, each as a proportion of Gross Domestic Product.

All Australian Children continued

Data for indicator 17

PUBLIC EXPENDITURE ON CHILD CARE AND EARLY EDUCATION SERVICES, AS A PERCENTAGE OF GDP

	2003		
	Child care	*Pre-primary education*	*Total*
Country	%	%	%
Australia	0.2	0.2	0.4
Netherlands	0.2	0.4	0.5
New Zealand	0.2	0.2	0.3
Sweden	0.8	0.5	1.3
OECD average	0.3	0.4	0.7

Current reporting

This indicator is currently reported in:

- OECD Family Database, OECD (www.oecd.org/els/social/family/database) (Reported in the table 'Public expenditure on childcare and early education services, per cent of GDP')

Assessment

This indicator presents data for public expenditure on child care services for children aged 0-3 years, and public expenditure on preschool services for children aged 3-5 years.

- Data for this indicator are taken jointly from the OECD Education and Social Expenditure data collections. The OECD Education collection adopts definitions of education consistent with ISCED Level 0 which, for Australia, relate to preschool but not child care settings.
- Comparison of spending on children of particular ages relies on definitions of services relevant to each age group. For Australia and some other countries, this is somewhat imprecise, as expenditure covers the range of children's services for all children aged 0-12 years.
- Because pre-primary and primary expenditures are not disaggregated in the Education database, expenditure for pre-primary education is calculated based on enrolment data.

Please refer to the source summaries in Appendix 2 for more information on the quality of GFS and Australian Government administrative data as data sources.

18. PUBLIC AND PRIVATE EXPENDITURE ON PRE-PRIMARY EDUCATION AS A PERCENTAGE OF GDP

Collection source

Data supplied by DEST to the OECD, with data sourced from:

Government Finance Statistics, ABS; DEST administrative data; Child Care Survey, ABS

All Australian Children continued

Definition

This indicator represents the amount of public and private expenditure on pre-primary education for children 3 years and over as a proportion of Gross Domestic Product.

Derivation/Calculation

Public expenditure is sourced from a combination of GFS and DEST administrative data. Private household expenditure is sourced from the CCS. The source for expenditure by other private entities has not been ascertained.

Data for indicator 18

PUBLIC AND PRIVATE EXPENDITURE ON PRE-PRIMARY EDUCATION AS A PERCENTAGE OF GDP

	2003		
	2001	*2002*	*2003*
Country	%	%	%
Australia	0.1	0.1	0.1
Canada	0.2	na	na
Netherlands	0.4	0.4	0.4
New Zealand	0.2	0.3	0.3
Sweden	0.5	0.5	0.5
OECD mean	0.4	0.5	0.5

na not available

Current reporting

This indicator is currently reported in:

- *Education at a Glance*, OECD (Reported in the table 'Expenditure on educational institutions as a percentage of GDP, by level of education (from public and private sources)')

Assessment

This indicator is reported against an expenditure framework which presents data for publicly and privately funded education institutions, and the public subsidies to the private sector for a range of institutions. Its indicators are arranged to present what is spent on education and at what levels.

- The OECD adopts definitions of education consistent with ISCED level 0. Under these definitions data should be collected about all children that attend education programs. However, in Australia, expenditure relating to preschool programs in child care settings is excluded.
- Household expenditure is sourced from the CCS, which is collected and published every three years, while expenditures from other sources are collected annually. As the CCS is only collected at a three yearly interval, household expenditure is not updated on an annual basis as for other components.

Please refer to the source summaries in Appendix 2 for more information on the quality of GFS, DEST administrative data and the CCS as data sources.

All Australian Children continued

19. PUBLIC EXPENDITURE ON CHILD CARE AND PRESCHOOL, PER CHILD

Collection source

Education and child care data compiled by the OECD from the Social Expenditure and Education databases, OECD; Government Finance Statistics, ABS; DEST administrative data; National Preschool Census, DEST; Queensland administrative data

Definition

Public spending on child care support per child relates to expenditure on child care divided by the number of children aged 0-3 years, while spending on pre-primary education per child is public spending on educational institutions divided by the number of children enrolled in these programs.

Derivation/Calculation

Public expenditure on centre-based child care divided by the number of children aged 0-3 years, and public expenditure on pre-primary education for children aged 3-5 years, divided by the number of enrolments in pre-primary education.

Data for indicator 19

PUBLIC EXPENDITURE ON CHILD CARE AND PRESCHOOL PER CHILD

	2003	
	Pre-primary education	*Child care support*
	$US	$US
Country		
Australia	na	874
Netherlands	5 497	2 025
New Zealand	4 325	672
Sweden	4 091	5 530

na not available

Current reporting

This indicator is currently reported in:

- OECD Family Database, OECD (www.oecd.org/els/social/family/database) (Reported in the table 'Public expenditure on childcare and pre-school, per child')

Assessment

This indicator presents data on public expenditure on centre-based child care services per child for those aged 0-2 years, and public expenditure per child enrolled in preschool services for children aged 3-5 years.

- Data for this indicator are taken jointly from the OECD Social Expenditure and Education data collections respectively. The OECD Education collection adopts definitions of education consistent with ISCED Level 0 which, for Australia, relate to preschool but not child care settings.

All Australian Children continued

Assessment continued

- Comparison of spending on children of particular ages relies on definitions of services relevant to each age group. For Australia and some other countries, this is somewhat imprecise, as expenditure covers the range of children's services for all children 0-12 years.
- Public expenditure on child care per child is typically lower in countries where informal care services predominate for children aged 0-3 years, such as in Australia.
- Public expenditure on preschool per child is not reported for Australia because it is not possible to differentiate between private and public preschool enrolments at this time.

Please refer to the source summaries in Appendix 2 for more information on the quality of GFS, Australian Government administrative data, the NPC and state/territory administrative data as data sources.

20. WEEKLY PARENTAL PRESCHOOL EXPENDITURE PER CHILD

Collection source

Child Care Survey, ABS

Definition

The median and mean weekly cost of preschool for a child, after subsidies. Median and mean costs are calculated for all children attending preschool, including those for whom weekly cost was reported as 'no cost'.

Derivation/Calculation

The weekly cost of preschool, after subsidies, divided by the number of children attending preschool, as determined by the CCS.

All Australian Children continued

Data for indicator 20

WEEKLY PARENTAL PRESCHOOL EXPENDITURE PER CHILD

	YEAR	
	2002	*2005*
	$/week	$/week
NSW		
Mean	39.0	49.2
Median	30.0	40.0
Vic.		
Mean	16.0	22.3
Median	12.0	16.0
Qld		
Mean	14.0	23.1
Median	1.0	3.0
SA		
Mean	9.0	10.1
Median	3.0	5.0
WA		
Mean	9.0	7.9
Median	1.0	2.0
Tas.		
Mean	5.0	15.6
Median	1.0	1.0
NT		
Mean	—	3.9
Median	—	5.0
ACT		
Mean	19.0	39.6
Median	4.0	5.0
Aust.		
Mean	21.0	28.6
Median	13.0	17.0

— nil or rounded to zero (including null cells)

Current reporting

This indicator is currently reported in:

- *Report on Government Services,* SCRGSP (Reported as 'Children who attended preschool, median weekly cost per child (after subsidies)')

Assessment

- There may be differences between jurisdictions in the number of hours and sessions attended by children each week and as such results need to be interpreted with care.

All Australian Children continued

Assessment continued

- Preschool services are provided by a mix of providers (community, private and government). Differences in charging practices, including fees, may be due to commercial or cost recovery decisions made by individual providers. Fee variation can also occur as a result of charges for additional services such as meals and materials. Fees may reflect the higher costs associated with establishing and operating an institution in major cities. Some jurisdictions provide targeted fee relief that lowers fees for some children.
- In Victoria and NSW, a fee subsidy is paid directly to providers to reduce fees paid by eligible families such as those holding approved concession cards or meeting specified income thresholds.
- The CCS data is not indexed to take account of price changes.
- Data in the CCS are collected from either parent in the family and all the data items are subject to respondent perceptions, as well as the accuracy of recall of the responding parent. In practice, this leads to variation in responses related to the types of organisations and learning programs in which children are participating.
- The CCS excludes respondents living in very remote areas of Australia.
- As data for the CCS are estimates from a sample survey, there are generally high standard errors in the smaller states and territories. This affects the usefulness of the CCS for estimation at state/territory level. For example, the estimates for 2005 in South Australia, Tasmania, ACT and NT have high relative standard errors and data should be used with caution.

Please refer to the source summaries in Appendix 2 for more information on the quality of the CCS as a data source.

MEASURES OF HUMAN RESOURCES

All Australian Children

21. PROPORTION OF PAID STAFF WITH FORMAL QUALIFICATIONS EMPLOYED BY STATE AND TERRITORY PRESCHOOL SERVICES

Collection source

State and territory administrative data.

Definition

The indicator is defined as the proportion of paid primary contact staff employed by state and territory funded and/or managed preschools, who have gained a formal qualification.

Derivation/Calculation

The number of paid primary contact staff employed by state and territory funded and/or managed preschools who have gained a formal qualification, as a proportion of total paid primary contact staff, as determined by state and territory administrative data.

All Australian Children continued

Data for indicator 21

PAID STAFF WITH RELEVANT FORMAL QUALIFICATIONS EMPLOYED BY PRESCHOOL SERVICES

	YEAR				
States and territories	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*
	%	%	%	%	%
NSW	56.3	56.4	56.9	56.7	56.9
Vic.	48.7	46.9	46.4	45.6	46.6
Qld	64.0	60.1	59.0	58.7	60.5
SA	63.2	61.3	59.3	59.7	57.5
WA	50.0	50.0	50.0	50.0	50.0
Tas.	na	na	na	na	na
NT	na	57.8	68.6	52.2	56.0
ACT	51.8	50.7	50.7	51.5	58.2
Aust.	55.5	55.0	54.1	53.6	54.3

na not available

Current reporting

This indicator is currently reported in:

- *Report on Government Services*, SCRGSP (reported as 'Paid primary contact staff with a relevant formal qualification employed by State and Territory funded and/or managed preschools')

Assessment

The collection of administrative data varies across jurisdictions.

- Relevant formal qualifications include any early childhood-related teaching degree (three or four years), a diploma or degree in child care (three years or more), or a child care certificate or associate diploma (two years). Formal qualifications may include qualifications in the fields of primary teaching, other teaching, nursing (including mothercraft nursing), psychology and social work. Some jurisdictions do not recognise one year certificates.
- There may be double counting of staff in instances where individuals work in more than one centre.
- In WA, all preschool teachers must have a formal qualification and the data assume that every teacher has an aide. Qualifications of aides are unknown and are therefore reported as nil. Hence, WA reports that 50% of the staff have a relevant qualification.
- Data for Tasmania, and for some years in the Northern Territory, are not available.
- Paid staff are defined as staff who currently work at the service on a full or part-time basis and receive payment.

Please refer to the source summaries in Appendix 2 for more information on the quality of state and territory government administrative data as a data source.

All Australian Children continued

22. PROPORTION OF PAID STAFF WITH A FORMAL QUALIFICATION OR EXPERIENCE EMPLOYED BY AUSTRALIAN GOVERNMENT APPROVED CHILD CARE SERVICES

Collection source

Australian Government Census of Child Care Services, FaCSIA

Definition

The indicator is defined as the proportion of paid primary contact staff employed by Australian Government approved child care services, who have gained a formal qualification, or three or more years of relevant work experience.

Derivation/Calculation

The number of paid primary contact staff employed by Australian Government approved child care services who have gained a formal qualification, or three or more years of relevant work experience, as a proportion of all paid primary contact staff employed by Australian Government approved child care services.

Data for indicator 22

PAID PRIMARY CONTACT STAFF EMPLOYED BY GOVERNMENT APPROVED CHILD CARE SERVICES

	2002			2004			2006		
	Formal qualification	*Relevant experience 3 or more years*	*Formal qualification and relevant experience*	*Formal qualification*	*Relevant experience 3 or more years*	*Formal qualification and relevant experience*	*Formal qualification*	*Relevant experience 3 or more years*	*Formal qualification and relevant experience*
	%	%	%	%	%	%	%	%	%
NSW	53.2	20.5	73.7	56.5	18.7	75.2	61.8	15.6	77.4
Vic.	53.4	16.5	69.9	55.2	15.8	71.0	57.0	14.3	71.3
Qld	53.1	12.7	65.8	58.1	8.5	66.6	58.0	9.7	67.7
SA	40.7	21.4	62.1	43.8	19.8	63.6	51.8	19.4	71.2
WA	47.4	17.4	64.8	51.3	18.7	70.0	57.4	10.8	68.2
Tas.	54.4	19.3	73.7	55.4	17.7	73.1	63.3	12.8	76.1
NT	38.4	17.1	55.5	46.1	15.0	61.1	50.1	13.1	63.2
ACT	43.1	15.1	58.2	40.4	16.4	56.8	46.7	14.3	61.0
Aust.	51.3	17.3	68.6	54.6	15.4	70.0	58.1	13.6	71.7

Current reporting

This indicator is currently reported in:

- *Report on Government Services*, SCRGSP (reported as 'Paid primary contact staff employed by Australian Government approved child care services, by qualification')

Assessment

- Relevant formal qualifications include an early childhood-related teaching degree (three or four years), a diploma or degree in child care (three years or more), a child care certificate or associate diploma (two years), and a one year basic child care certificate. Formal qualifications may include qualifications in the fields of primary teaching, other teaching, nursing (including mothercraft nursing), psychology and social work.

All Australian Children continued

Assessment continued

- There may be double counting of staff, where staff work in more than one centre.
- In 2006, numbers are based on preliminary data and there may be changes to the final data.
- The definition of 'paid primary contact' staff has changed to bring the AGCCCS in line with the Children's Services National Minimum Data Set. Until 2004, staff included those who had no contact role with children, as well as primary contact staff. Data in 2006 include both primary and other contact staff.
- The AGCCCS may not be available after 2006 as a source for these data.

Please refer to the source summaries in Appendix 2 for more information on the quality of the AGCCCS as a data source.

23. CHILD-TO-STAFF RATIOS IN FORMAL CHILD CARE SERVICES AND PRESCHOOL

Collection source

Australian child care data compiled by the OECD from *Starting Strong II*, 2006

Definition

Staff ratios for child care services relate to child care workers in licensed long day care centres. Staff ratios in preschools relate to full-time equivalent teachers only and all contact staff including teachers and teaching assistants.

Derivation/Calculation

The average number of children aged 0-3 years per child care worker in licensed centre-based child care, the number of children aged 3-5 years per full-time equivalent teacher in preschools and the number of children aged 3-5 years per full-time equivalent contact staff member in preschools.

Data for indicator 23

CHILD-TO-STAFF RATIOS IN FORMAL CHILD CARE SERVICES AND PRESCHOOL

	2004
Country	*%*
Australia	7.5
Canada	7.0
Netherlands	5.0
New Zealand	5.5
Sweden	5.5

Current reporting

This indicator is currently reported in:

- Family Database, OECD, www.oecd.org/els/social/family/database (Reported in the charts 'Child-to-staff ratios in formal day-care services, average for 0-3 year olds' and 'Child-to-staff ratios in pre-schools')

All Australian Children continued

Assessment

While only a single aspect of quality, child to staff ratios give an indication of the frequency of contact between teachers/carers and children. This indicator refers to the average ratio for children aged 0-3 years and 3-5 years, mostly based on regulations for each reporting country.

- While taking account of the integrated nature of preschool and child care in relation to the provision of early childhood learning programs, there is variation in the types of programs delivered across preschool and child care service types.
- Data on child to staff ratios for child care services are averaged across age groups. While data vary by state and territory, they are only reported as a national average.
- The child to staff ratios for child care services refer only to licensed providers.
- Data on child to staff ratios for preschool services are not reported for Australia because no data on either full-time equivalent students or teaching staff are currently available.

MEASURES OF OUTPUTS/OUTCOMES

All Australian Children

24. PROPORTION OF YEAR 3 STUDENTS REACHING LITERACY AND NUMERACY BENCHMARKS OF ALL YEAR 3 STUDENTS

Collection source

Year 3 National Literacy and Numeracy benchmarks, MCEETYA

Definition

The proportion of year 3 students who achieve the reading, writing and numeracy benchmarks.

Derivation/Calculation

The number of students achieving the year 3 benchmarks for reading, writing and numeracy as a proportion of all year 3 students who undertake the testing.

All Australian Children continued

Data for indicator 24

YEAR 3 STUDENTS REACHING LITERACY AND NUMERACY BENCHMARKS (A)

	YEAR				
	2001	*2002*	*2003*	*2004*	*2005*
	%	%	%	%	%
READING					
Males					
Score	(a)88.4	90.6	90.8	91.5	91.2
Confidence interval	2.6	2.2	2.0	1.8	1.9
Females					
Score	92.3	94.1	94.3	94.6	94.4
Confidence interval	1.9	1.5	1.4	1.2	1.3
Total					
Score	90.3	92.3	92.4	93.0	92.7
Confidence interval	2.0	1.7	1.7	1.5	1.6
WRITING					
Males					
Score	86.4	91.8	89.9	90.9	90.7
Confidence interval	3.0	1.8	2.0	1.8	2.0
Females					
Score	92.7	95.5	94.7	95.0	95.1
Confidence interval	1.9	1.1	1.2	1.2	1.3
Total					
Score	89.5	93.6	92.2	92.9	92.8
Confidence interval	2.3	1.2	1.5	1.5	1.6
NUMERACY					
Males					
Score	93.7	92.5	93.8	93.3	93.5
Confidence interval	1.3	1.4	1.1	1.2	1.1
Females					
Score	94.3	93.1	94.7	94.1	94.7
Confidence interval	1.3	1.5	1.2	1.3	1.1
Total					
Score	93.9	92.8	94.2	93.7	94.1
Confidence interval	1.2	1.3	1.1	1.2	1.1

(a) Percentages reported in this table include 95% confidence intervals. For example, 'a score of 80%, with a confidence interval of 2.7%' means that there is a 95% chance that the true percentage lies between 77.3% and 82.7%.

All Australian Children continued

Current reporting

This indicator is currently reported in:

- *National Report on Schooling in Australia*, MCEETYA, (reported in three tables as 'Percentage of year 3 students achieving the reading benchmark', 'Percentage of year 3 students achieving the writing benchmark' and 'Percentage of year 3 students reaching the numeracy benchmark')
- *A Picture of Australia's Children*, AIHW (reported as 'Students in years 3 and 5 meeting national reading, writing and numeracy benchmarks, 1999-2001')
- *Report on Government Services*, SCRGSP (reported as per MCEETYA publication)

Assessment

In 2005, participants involved in the national literacy and numeracy tests in year 3 were aged between 6 and 11 years, although most children were aged 7 or 8 years.

- While benchmark testing is intended to collect data on all students in year 3, some students may be exempted from the testing by state and territory authorities. For example, exemptions may be given to children with disabilities or impairments, or children who speak a language other than English. Exemptions account for less than 3% of the year 3 schooling population throughout Australia.
- Reporting of exempt students is included in the calculation of benchmark results whereas students absent or withdrawn are not included in the benchmark calculations.
- National testing will be implemented from 2008. This initiative may cause comparability issues when comparing results with those prior to national testing.

Please refer to the source summaries in Appendix 2 for more information on the quality of the Literacy and Numeracy Benchmarks as a data source.

Indigenous Children

25. PROPORTION OF YEAR 3 INDIGENOUS STUDENTS REACHING LITERACY AND NUMERACY BENCHMARKS OF ALL INDIGENOUS YEAR 3 STUDENTS

Collection source

Year 3 National Literacy and Numeracy benchmarks, MCEETYA

Definition

The proportion of year 3 Indigenous students who achieve the reading, writing and numeracy benchmarks.

Derivation/Calculation

The number of Indigenous students achieving the year 3 benchmarks for reading, writing and numeracy as a proportion of all Indigenous year 3 students who undertake the testing.

Indigenous Children continued

Data for indicator 25

INDIGENOUS YEAR 3 STUDENTS REACHING LITERACY AND NUMERACY BENCHMARKS (A)

	YEAR				
	2001	*2002*	*2003*	*2004*	*2005*
	%	%	%	%	%
Reading					
Score	(a) 72.0	76.7	78.8	82.9	78.0
Confidence interval	4.8	4.1	6.9	3.6	4.3
Writing					
Score	67.8	77.1	75.2	76.8	76.8
Confidence interval	4.9	3.5	4.1	4.3	4.7
Numeracy					
Score	80.2	77.6	80.5	79.2	80.4
Confidence interval	3.9	3.6	3.7	4.1	3.8

(a) Percentages reported in this table include 95% confidence intervals. For example, 'a score of 80%, with a confidence interval of 2.7%' means that there is a 95% chance that the true percentage lies between 77.3% and 82.7%.

Current reporting

This indicator is currently reported in:

- *National Report on Schooling*, MCEETYA, (reported in three tables as 'Percentage of year 3 students achieving the reading benchmark', 'Percentage of year 3 students achieving the writing benchmark' and 'Percentage of year 3 students reaching the numeracy benchmark')
- *A Picture of Australia's Children*, AIHW (reported as 'Students in Years 3 and 5 meeting national reading, writing and numeracy benchmarks, by Indigenous status, 1999-2001')
- *Overcoming Indigenous Disadvantage,* SCRGSP, (reported in three tables as 'Proportion of Year 3 students who achieved the reading benchmark', 'Proportion of Year 3 students who achieved the numeracy benchmark' and 'Proportion of Year 3 students who achieved the writing benchmark')
- *Report on Government Services*, SCRGSP (reported as per MCEETYA publication)
- *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples*, ABS and AIHW (reported as 'Year 3 and Year 5 Students, proportion achieving benchmarks')

Assessment

In 2005, participants involved in the national literacy and numeracy tests in year 3 were aged between 6 and 11 years, although most children were aged 7 or 8 years.

- While benchmark testing is intended to collect data on all students in year 3, some students may be exempted from the testing by state and territory authorities. For example, exemptions may be given to children with disabilities or impairments, or children who speak a language other than English. Exemptions account for less than 3% of the year 3 schooling population throughout Australia.

Indigenous Children continued

Assessment continued

- Reporting of exempt students is included in the calculation of benchmark results whereas students absent or withdrawn are not included in the benchmark calculations.
- National testing will be implemented from 2008. This initiative may cause comparability issues when comparing results with those prior to national testing.
- Care needs to be taken in interpreting the national benchmark data for Indigenous children because differences in achievement may be the result of measurement error. Broad confidence intervals are associated with all three of the Indigenous benchmarks for reading, writing and numeracy, and so movements from year to year may not reflect any real variation in student performance.

Please refer to the source summaries in Appendix 2 for more information on the quality of the Literacy and Numeracy Benchmarks as a data source.

SUMMARY

The review of indicators in this chapter has drawn attention to the incomplete picture afforded by the set of indicators on early childhood learning which are currently reported. While all the indicators make some contribution in a reporting context, in total they do not give a picture of all aspects of early childhood learning at an international, national or state/territory level. The measures suggested in chapter 5 seek to redress this balance to some extent.

While some issues affecting the quality of currently reported indicators relate to how such indicators are reported, other issues relate to the quality and/or availability of the sources from which they are derived. In relation to administrative collections, there are variations in scope and definitions used, and they collect diverse information. No single administrative or provider-based collection, or combination of collections, is able to provide accurate, regular measures of the number and proportion of children who attend, or do not attend, ECEC programs. There is also no dataset which counts all ECEC providers, or how they are resourced in human or financial terms.

Information from surveys, on the other hand, can be very rich and often provides representative information about the entire population, but is limited by sample size and sample error. Inaccuracies may also occur because of misreporting by respondents or interviewers, or errors in coding or processing data. In addition, surveys usually only provide information for a specific reference period or, in the case of longitudinal surveys, there may be non-response errors due to sample loss.

CHAPTER 5 PROPOSED MEASURES

INTRODUCTION

This chapter presents a list of possible measures which could form part of a suite of early childhood learning information across the elements of the ABS education and training framework. In addition to the current measures described in the previous chapter, new measures are proposed which draw on existing as well as upcoming sources.

Proposals for new measures are partly dependent on planned data developments affecting key administrative and survey collections, and these developments are also briefly discussed in this chapter. The publication *Data Gaps in Early Childhood: Identifying and bringing together available information* (cat. no 4105.0.55.001) presents more detailed strategies for developing administrative and survey collections.

MEASUREMENT ISSUES

The framework and the results of user consultation provide the means of identifying major information needs and data gaps. The ABS data quality framework (originally found in Brackstone 1999) has been used to assess the quality of potential sources and the measures that could be derived from them. In addition, the following factors have been considered:

- The measures facilitate national and international comparisons and may already be used in this role. This requirement for nationally comparable data puts limits on the conditions of data availability produced by individual states and territories in the absence of overall collection standards.
- The measures are able to be produced and reproduced on a regular basis, annually if possible or at a frequency of no less than three yearly (four to six yearly for Indigenous measures).
- Although contextual measures may include a potentially limitless number of factors influencing the learning environment, the suggested measures include those which were identified as high priority data needs by the user community consulted in the preparation of this paper (see chapter 3).

It is also recognised that the content of existing collections may alter with the changing needs of governments. For example, the AGCCCS may not be conducted again in its current form. The Australian Government is investigating data collection mechanisms to provide these data in the future, which may impact on the data for key measures in this area.

MEASURES PRESENTED IN THIS CHAPTER

Key measures presented here include:

- measures from available sources which are not currently reported and
- measures from sources expected to be available within the next four to five years.

The measures are listed in the table at the end of this chapter under each framework element. The suggested data source is given for each proposed measure along with the frequency of reporting and possible timing for release. A brief outline of actions which may lead to better measurement, and issues that may affect the production of key measures, such as their availability into the future, are also included under the heading of 'Notes'.

MEASURES PRESENTED IN THIS CHAPTER *continued*

The measures do not attempt to cover all the information needs presented in Chapter 3. At this stage, measures requiring data development activities that are not well advanced (six years or more into the future in terms of development) are not included. Data development activities are explored in more detail in the upcoming publication *Data Gaps in Early Childhood: Identifying and bringing together available information* (cat. no 4105.0.55.001).

Key measures in most cases include the minimum list of cross-classifying characteristics by which they could be disaggregated. More work is needed to consider additional disaggregations that could be reported. Unless otherwise stated, and subject to further assessment of data quality and availability, each measure may be reported by:

- state/territory
- individual year of age

and, where appropriate, by:

- service types, including preschool, long day care, occasional care, family day care, in home care, before/after school care and vacation care (as relevant for the measures in question), and
- management types, including government, non-government (school), for-profit, community-based and Indigenous.

Given the importance that COAG and MCEETYA place on outcomes for Indigenous children, key measures are also presented, where possible, by Indigenous status. Key measures for Indigenous children are presented separately as the sources and detail for these measures are different from those for all Australian children. Currently, data from most sources do not support disaggregations for Indigenous and non-Indigenous sub-populations although measures for these distinct groups would be considered ideal.

The measures are not definitive and serve as a basis for further discussion among policy-makers and the community. Therefore, with the publication of this information paper, it is expected that a period of consultation will further refine and provide debate on the proposals for key measures. Supporting background tables may be provided to complement and support the key measures with additional information as needed.

Ideal measures for highest priority areas

In terms of the framework, the highest priority areas which are also the most problematic to report high quality information on children aged 0-8 years are:

- participation and non-participation (formal and non-formal learning)
- providers
- financial resources
- human resources.

There are considerable gaps between what could be reported in the near future from available data, and what could be regarded as ideal across each of these priority areas. Measures that could be considered 'ideal' are listed below to give readers an idea of what might be attainable in the longer term. This is followed by a discussion of some of the issues underpinning the difficulties in reporting these measures.

These measures are taken from the data needs identified by key users.

Ideal measures for highest priority areas continued

PARTICIPATION AND NON-PARTICIPATION

Measures of participation in *formal* and *non-formal learning* would ideally include the following:

- participation rates of children aged 3-5 years in formal learning programs (delivered by a teacher with a bachelor degree or higher in an early childhood field) prior to school entry
- participation rates of children aged 0-5 years in non-formal learning programs (all other learning programs delivered in an institutionalised setting) prior to school entry
- participation rates of children aged 0-8 years in child care, preschool and school
- attendance rates of children aged 3-8 years in formal learning programs
- formal learning program expectancy rates for children aged 3-5 years[1]
- duration of formal and non-formal learning programs for children aged 3-5 years prior to school entry
- proportion of school students in pre-year 1 who have attended a formal learning program (for a determined duration) prior to pre-year 1
- proportion of school students in pre-year 1 who have attended a non-formal learning program (for a determined duration) prior to pre-year 1.

Measures of *non-participation* would be the corollary of the above, but would also include data on:

- unmet need for formal and non-formal learning programs and/or barriers to participation.

More measures are currently available regarding children's participation in formal learning than for any other element of the framework. However, several issues affect the quality of these measures. There is a range of administrative data covering aspects of early childhood which theoretically give complete coverage across states and territories. However, measuring participation of 0-8 year olds through these sources remains problematic because of a variety of factors including:

- the multiple institutions and organisations that provide some form of ECEC program, causing sample coverage and duplication issues
- different definitions of what constitutes a 'learning program' and limited data standards governing data collections
- different ages and times of the year children make transitions into child care, preschool and school
- different times of year in which data are collected and presented
- the number of programs/services in which a child may participate, leading to double-counting of participants
- the population count which constitutes the denominator for each measure
- the days and hours that programs are in session
- the use of enrolment as a proxy for participation and the difficulty of developing measures of attendance.

Ideal measures for highest priority areas continued

PARTICIPATION AND NON-PARTICIPATION *continued*

Most, if not all, states and territories make provision for children to be attending preschool or some form of learning program in the year prior to the commencement of children's full-time schooling. While a proportion of children do not participate in these programs, currently there is difficulty in estimating the size of this group, as most collections only have point-in-time (snapshot) estimates of enrolment at preschools and child care centres, and the transition of five year olds to school is usually not captured.

It is important to differentiate between programs in which there is a university qualified early childhood teacher, and other more generalised programs. In this regard, survey collections are less able to differentiate between programs offered by appropropriately qualified staff and other programs, because survey respondents are unlikely to make accurate judgements about the qualifications of staff and other characteristics of the organisations their children attend. With administrative collections, while some information on the provision of 'preschool programs' within a setting may be collected, there is limited information on which children are receiving such programs. Into the future, definitions and data collection need to promote consistency and comparability, particularly in areas such as the qualification level and field of staff.

Measures of participation and non-participation are proposed in the table at the end of this chapter which go some way towards addressing the above issues in the shorter term using a variety of sources.

PROVIDERS

Measures of *providers* would ideally include:

- number and proportion of providers of formal learning programs (delivered by a teacher with a bachelor degree or higher in an early childhood teaching field) for children aged 3-5 years
- number and proportion of providers of non-formal learning programs (all other programs delivered in an institutionalised setting) for children aged 0-5 years
- number of providers of child care and preschool for children aged 0-5 years
- number of providers of child care, preschool and school for children aged 0-8 years
- number of children aged 0-8 years that each provider can service
- number and proportion of providers of formal and non-formal learning programs for children aged 0-5 years, by small area and remoteness area
- number and proportion of child care, preschool and school providers for children aged 0-8 years by small area and remoteness area.

Reliable information on providers and their capacity is particularly important because the coverage of providers implicitly dictates the parameters around which measures in other areas are built. As such, measures of providers should aim to:

- allow information to be comprehensive and integrated, utilising information collected as part of existing collections if possible
- have an emphasis on the educational wellbeing of children and the delivery of early learning programs within both education and care settings, and
- enable complete coverage of the population of providers, both across and within sectors.

Ideal measures for highest priority areas continued

PROVIDERS *continued*

At present, there is no single dataset that gives the number, type and location of early childhood providers without undercounting or duplication.

FINANCIAL RESOURCES

Consistent financial information on early education and care services allows accurate measurement of the economic contribution of governments and individuals to this area, and the relative priority it is assigned in the Australian economy.

Measures of *financial resources* would ideally include:

- total and public expenditure on formal learning programs (delivered by a qualified early childhood teacher) in all services (children aged 3-8 years) - in current and constant prices
- total and public expenditure on non-formal learning programs (all other programs delivered in an institutionalised setting) in all services (children aged 0-5 years) - in current and constant prices
- total and public expenditure on formal learning programs in all services (children aged 3-8 years) as a percentage of GDP
- total and public expenditure on non-formal learning programs in all services (children aged 0-5 years) as a percentage of GDP
- share of total and public expenditure on education which is spent on formal learning programs in all services (children aged 3-5 years)
- total and public expenditure on formal learning programs in all services per child aged 3-8 years
- total expenditure on formal and non-formal learning services by sources and uses of funds
- average parent/household expenditure per week on preschool services
- average parent/household expenditure per week on child care services for children aged 0-5 years.

There are several scoping problems which need to be addressed before detailed consideration can be given to reporting ideal financial measures. The first is to consider how to report activities which are covered under different service types but which incorporate children of varying ages within the range of 0-12 years. The second is to draw a clear distinction between learning activities which take place in settings such as child care centres and expenditure on other activities which take place in those centres. There are also issues in the collection and reporting of individual level expenditures, and a lack of consistency of reporting of expenditure by private and community providers of both preschool and child care. For these reasons, ideal measures on total expenditure on the provision of formal and non-formal learning programs, as well as measures of expenditure per child and sources of funding, cannot be adequately reported at this stage.

HUMAN RESOURCES

Measures of *human resources* would ideally include:

- proportion of contact staff in services for children aged 0-5 years with a bachelor degree or higher in an early childhood teaching field, by role of staff

Ideal measures for highest priority areas continued

HUMAN RESOURCES *continued*

- proportion of contact staff in services for children aged 0-5 years with a bachelor degree or higher, by role of staff
- proportion of contact staff in services for children aged 0-5 years with a certificate or advanced diploma/diploma, by role of staff
- proportion of contact staff in services for children aged 0-5 years, with no qualification, by role of staff[1]
- full-time equivalent child to staff ratios in school, preschool and long day care, children aged 0-8 years
- Indigenous staff responsible for Indigenous children aged 0-5 years, as a proportion of all staff, by role of staff
- number of commencements and completions of students training in the field of early childhood, in vocational education and training (VET) and higher education institutions.

Key aspects of quality early childhood learning programs and outcomes for children relate to the level and field of qualifications and working conditions of staff. There is also an issue of variability in the jurisdictions and sectors responsible for the preschool and child care industries for those staff delivering a learning program to children.

One of the main issues affecting the quality of data on human resources, relates to qualification levels. Even though the preschool and child care industries reflect very different requirements in regard to education qualifications, it would be considered important to present a consistent classification of qualifications across these industries.

PLANNED DATA DEVELOPMENTS

Looking ahead, data availability and quality issues will be partially addressed through the development of three national surveys:

- Childhood Education and Care Survey
- Growing Up in Australia: Longitudinal Study of Australian Children
- National Aboriginal and Torres Strait Islander Social Survey.

These surveys are each discussed below.

The proposed measures in this chapter also take into account that at some time in the future, data collection from administrative sources may be enhanced through the development and maintenance of a core set of data definitions such as those in the Children's Services National Minimum Data Set (CS NMDS) (AIHW, 2007). One option in this regard is to have a more comprehensive collection of information on early childhood education providers, staff and students. Such a collection would better reflect the complexity associated with measuring the participation of young children in ECEC activities.

Childhood Education and Care Survey

In recognition of the need for better data on early childhood learning, in June 2008, the ABS will conduct the Childhood Education and Care Survey (CEaCS) incorporating a redevelopment of the Child Care Survey and new content covering early childhood learning. The CEaCS will seek to provide data every three years on formal, non-formal and informal learning activities for children aged 0-8 years, as well as their socio-demographic characteristics and those of their parents.

Childhood Education and Care Survey continued

In terms of formal and non-formal learning, the CEaCS will explore participation, patterns and barriers to learning in school, preschool and long day care settings. It will build on the information previously collected in the Child Care Survey on these aspects.

The CEaCS will be conducted as a supplementary survey to the ABS Monthly Population Survey. The scope of the child care component of the survey is children aged 0-12 years. For the early years learning component, children aged 0-8 years will be in scope of the survey.

Growing Up in Australia: Longitudinal Study of Australian Children

Most existing datasets do not allow causal pathways and outcomes to be analysed. Growing Up in Australia - The Longitudinal Study of Australian Children (LSAC) will provide the potential for such analysis. It will identify the key factors influencing children's outcomes over their developmental life course in the early years. A range of age appropriate developmental outcomes are being measured, including physical/mental health, social and developmental, academic and risk behaviours. The study will run over nine years and is part of the FaCSIA *Stronger Families and Communities Strategy*. The Australian Institute of Family Studies (AIFS) is acting as the lead agency for a consortium of research organisations undertaking analysis of the survey.

Data are being collected from two cohorts every two years. The first cohort of children aged less than twelve months in 2003/4 will be followed until they reach six to seven years of age, and the second cohort of children aged four years in 2003/4 will be followed until they reach ten or eleven years of age. Respondents include the child (when of an appropriate age) and their parents, carers and teachers.

LSAC is the largest and most comprehensive of all surveys on early childhood. Its content covers broad information requirements, although it still has some gaps. Its longitudinal nature allows for extensive analysis of pathways leading to different outcomes and thus, collection of evidence to assist in determining policy interventions.

Sample attrition across waves may impact on data representativeness and, therefore, suitability for cross-sectional analysis. As a sample survey, analysis of small population groups or small areas is limited. At this stage there will be no new cohorts recruited to the study, which limits ongoing analysis and its suitability for the reporting of key measures.

National Aboriginal and Torres Strait Islander Social Survey

The 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) is part of an established program of Indigenous statistics produced by the ABS to provide a picture of the social wellbeing of Aboriginal and Torres Strait Islander people. The 2008 NATSISS is the third in a series of Indigenous social surveys which commenced with the 1994 National Aboriginal and Torres Strait Islander Survey, and was followed by the 2002 NATSISS. The broader ABS Indigenous statistics program also includes the National Aboriginal and Torres Strait Islander Health Survey (NATSIHS). The NATSISS and NATSIHS are both run on a six-yearly basis. The two surveys have some topics in common and for these, analysis of change over time is possible on a three-yearly basis.

For the first time in 2008, the NATSISS will include data on the characteristics of children aged 0-15 years in the survey sample, and content will be designed to close some known data gaps. Proposed data items include those under the broad headings of:

- child care (covering both formal and informal care), and
- education (covering school and preschool participation).

FURTHER WORK

Further work by the ABS in conjunction with other agencies includes the Early Childhood Data Mapping pilot project, which commenced in late 2006. This project aims to improve the evidence base for early childhood policy development through better use of existing data currently held by government agencies. It involves identification of gaps in data needed to answer selected policy questions. The impetus for the Data Mapping project arose from a workshop on Population Wellbeing Data Gaps held in June 2006. The workshop recognised that substantial amounts of data are available from existing sources, and examined possible ways of meeting these gaps through better access to existing information or the creation of new information from existing data sources (e.g. through data linking or other analysis and research).

It is expected that the primary initial output from the Data Mapping project will be an information paper entitled *Data Gaps in Early Childhood: Identifying and bringing together available information* (cat. no 4105.0.55.001), due to be released in 2008. The current information paper should be read in conjunction with the aforementioned publication in order to gain more detailed information on strategies to develop administrative and survey collections.

PROPOSED DISSEMINATION OF MEASURES

Beyond a period of consultation, the proposed measures in this chapter may be produced and released experimentally. New measures may be incorporated as new sources are developed. It is suggested that the new measures be released electronically on the ABS website which would also provide an opportunity to update the measures regularly. Links could be provided for measures from non-ABS sources. It is acknowledged that progress in this area will require the cooperation of a range of agencies in order to make full use of existing and potential data sources.

MEASURES OF PARTICIPATION AND NON-PARTICIPATION

ALL AUSTRALIAN CHILDREN	MAIN SOURCE
Formal and non-formal learning	
Proportion of school students in pre-year 1 who have participated in preschool for a determined period prior to school Frequency: 3 yearly from 2008 pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change or be replaced by administrative data if available in the future.	CEaCS
Proportion of children attending primary school, by year level Frequency: Annual from 2008 Notes: MCEETYA-endorsed measure.	MCEETYA
Mean hours per week usually attended child care services, children aged 0-5 years, by service type[1] Frequency: 2002 and 3 yearly thereafter, pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change or be replaced by administrative data if available in the future.	CEaCS
Mean hours per week usually attended preschool, children aged 3-5 years Frequency: 2002 and 3 yearly thereafter, pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change or be replaced by administrative data if available in the future.	CEaCS
Mean duration of attendance of pre-year 1 students at preschool Frequency: 3 yearly from 2008, pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change.	CEaCS

1 Includes long day care centres, occasional care centres, family day care

INDIGENOUS CHILDREN	MAIN SOURCE
Formal and non-formal learning	
Preschool expectancy rates[1] for Indigenous children aged 3-5 years Frequency: Annual from 2006 Notes: In this measure, learning programs in child care centres are excluded from scope. Measure may be replaced by other measures as new data become available.	NPC
Proportion of Indigenous school students in pre-year 1 who have attended preschool for a determined period prior to school Frequency: 6 yearly from 2008, pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change. Source may be replaced by other data if available in the future.	NATSISS
Proportion of Indigenous children attending primary school, by year level Frequency: Annual from 2008 Notes: MCEETYA-endorsed measure.	MCEETYA
Mean hours per week attended child care services, Indigenous children aged 0-5 years, by service type[2] Frequency: Source and frequency beyond 2006 to be determined Notes: For 2006 it is possible to source this measure from the AGCCCS. The scope of the AGCCCS covers Australian Government funded services only. There is variability in information on hours attended according to service type. Beyond 2006, the AGCCCS may not be conducted again in its current form. Data collection mechanisms to supplement these data are to be investigated.	Source to be determined
Mean hours per week enrolled at preschool, Indigenous children aged 3-5 years, by individual year of age Frequency: Annual from 2001 Notes: Some definitional and scoping issues affect the NPC. Source may be supplemented by other administrative data for scope exclusions.	NPC

1 Expectancy rates represent the average duration of time that 3 year old children can expect to enrol in preschool before they enter school (to a maximum period of 3 years).

2 Includes long day care centres, occasional care centres, family day care, before/after school care, vacation care

ALL AUSTRALIAN CHILDREN	MAIN SOURCE
Informal learning	
Proportion of children aged 3-5 and 6-8 years who read, listen to stories, or are read to, on a daily basis, by selected characteristics[1] Frequency: 3 yearly from 2008 pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change.	CEaCS
Proportion of children aged 0-2, 3-5 and 6-8 years who engage in reading, listen to stories, or read with a parent/are read to by a parent on a daily basis, by selected characteristics[1] Frequency: 3 yearly from 2008 pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change.	CEaCS
Proportion of children aged 0-2, 3-5 and 6-8 years who engaged in selected informal learning activities[2] in last week, by selected characteristics[1] Frequency: 3 yearly from 2008 pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change.	CEaCS

1 Includes number of books in home, educational attainment of mother/lone parent or guardian, literacy practices of selected parent/lone parent or guardian; income quintile; main language spoken at home; employment status of parent/s; family type

2 Includes read from a book; listened to a story, or were read to from a book; used computers; used TV, video or DVD; did homework or home reader; played sport, outdoor games or board games; played/learned musical instrument, art or other creative activity; attended playgroup (0-2 years only)

INDIGENOUS CHILDREN	MAIN SOURCE
Informal learning	
Proportion of Indigenous children aged 3-5 and 6-8 years who read, listen to stories or are read to on a daily basis, by selected characteristics[1] Frequency: 6 yearly from 2008, pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change.	NATSISS
Proportion of Indigenous children aged 0-2, 3-5 and 6-8 years who engage in reading, listen to stories, or read with a parent/are read to by a parent on a daily basis, by selected characteristics[1] Frequency: 6 yearly from 2008, pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change.	NATSISS
Number of books in the home, by Indigenous status of interviewed parent Frequency: 6 yearly from 2008, pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change.	NATSISS
ALL AUSTRALIAN CHILDREN	MAIN SOURCE
Non-participation *Note: Corollaries of all the above-listed indicators on formal, non-formal and informal learning are considered also to be indicators of non-participation, and are not listed twice.*	
Number of 3-5 year olds whose parents have been unable to gain placement on application to preschool or long day care for current year, children aged 3-5 years Frequency: 3 yearly from 2008, pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change.	CEaCS
Unsuccessful preschool and long day care applicants[2] as a proportion of all children aged 3-5 years in preschool and long day care Frequency: 3 yearly from 2008 , pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change.	CEaCS

1 Includes number of books in home, educational attainment of mother/lone parent or guardian, literacy practices of selected parent/lone parent or guardian; income quintile; main language spoken at home; employment status of parent/s; family type

2 Children aged 3-5 years whose parents have been unable to gain placement for current year on application

INDIGENOUS CHILDREN	MAIN SOURCE
Non-participation	
Note: Corollaries of all the above-listed indicators on formal, non-formal and informal learning are considered also to be indicators of non-participation, and are not listed twice.	
Number of 3-5 year olds in Indigenous households whose parents have been unable to gain placement on application to preschool for current year, children aged 3-5 years Frequency: 6 yearly from 2008, pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change.	NATSISS
Unsuccessful preschool applicants[1] as a proportion of all children aged 3-5 years in preschool Frequency: 6 yearly from 2008, pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change.	NATSISS
Proportion of preschools in which Indigenous children are waiting for a position in current year's program Frequency: Annual from 2001 Notes: Some definitional and scoping issues affect the NPC. This is likely to be the only source collecting data on this measure in the future.	NPC

1 Children aged 3-5 years whose parents have been unable to gain placement for current year on application

MEASURES OF PROVIDERS

ALL AUSTRALIAN CHILDREN	MAIN SOURCE
Number of Australian Government approved child care providers, by service type[1] Frequency: Source and frequency beyond 2006 to be determined Notes: From 2002 - 2006 it is possible to source this measure from the AGCCCS. The current scope of the AGCCCS covers Australian Government funded services only. Beyond 2006, the AGCCCS may not be conducted again in its current form. Data collection mechanisms to supplement these data are to be investigated.	Source to be determined
Proportion of Australian Government approved child care centres containing contact staff with a bachelor degree or higher in an early childhood teaching field, by management type[2] Frequency: Source and frequency beyond 2006 to be determined Notes: For 2006 it is possible to source this measure from the AGCCCS. The current scope of the AGCCCS covers Australian Government funded services only. The proportion of services with contact staff with a bachelor degree in an early childhood teaching field does not necessarily equal the proportion of children receiving programs from such teachers. Beyond 2006, the AGCCCS may not be conducted again in its current form. Data collection mechanisms to supplement these data are to be investigated.	Source to be determined
Number of preschools, by management type[3] Frequency: Annual from 2001 Notes: Some definitional and scoping issues affect the NPC. Source may be supplemented by other administrative data for scope exclusions.	NPC

1 Includes long day care centres, occasional care centres, multi-functional Aboriginal children's services
2 Includes community managed, government managed, non-government school managed, private - for profit, other
3 Includes government and non-government preschools

INDIGENOUS CHILDREN	MAIN SOURCE
Number of Indigenous preschools[1], by management type[2] Frequency: Annual from 2001 Notes: Some definitional and scoping issues affect the NPC. Source may be supplemented by other administrative data for scope exclusions.	NPC
Indigenous preschools[1] as a proportion of all preschools, by management type[2] Frequency: Annual from 2001 Notes: Some definitional and scoping issues affect the NPC. Source may be supplemented by other administrative data for scope exclusions.	NPC
Number of child care providers with at least one Indigenous enrolment, by service type[3] Frequency: Source and frequency beyond 2006 to be determined Notes: From 2002 - 2006 it is possible to source this measure from the AGCCCS. The scope of the AGCCCS covers Australian Government funded services only. Beyond 2006, the AGCCCS may not be conducted again in its current form. Data collection mechanisms to supplement these data are to be investigated.	Source to be determined
Number of child care centres with at least one Indigenous enrolment containing contact staff with a bachelor degree or higher in an early childhood teaching field, by service type[3] Frequency: Source and frequency beyond 2006 to be determined. Notes: For 2006 it is possible to source this measure from the AGCCCS. The scope of the AGCCCS covers Australian Government funded services only. Beyond 2006, the AGCCCS may not be conducted again in its current form. Data collection mechanisms to supplement these data are to be investigated.	Source to be determined

1 Preschools with at least one Indigenous child enrolled in the reference month
2 Includes government and non-government preschools
3 Includes long day care centres, occasional care centres, multi-functional Aboriginal children's services

MEASURES OF FINANCIAL RESOURCES

ALL AUSTRALIAN CHILDREN	MAIN SOURCE
Weekly parental expenditure on child care services per child, after subsidies, by service type[1] Frequency: Source and frequency to be determined	Source to be determined
Proportion of families receiving Child Care Benefit, by selected characteristics[2] Frequency: Source and frequency to be determined Notes: Options for collection and reporting of this measure are still being investigated.	Source to be determined
Proportion of families receiving Child Care Tax Rebate, by selected characteristics[2] Frequency: Source and frequency to be determined Notes: Options for collection and reporting of this measure are still being investigated.	Source to be determined

MEASURES OF HUMAN RESOURCES

ALL AUSTRALIAN CHILDREN	MAIN SOURCE
Proportion of paid primary contact staff with a bachelor degree or higher in an early childhood teaching field employed by Australian Government approved child care services, by service type[3] and management type[4] Frequency: Source and frequency beyond 2006 to be determined Notes: For 2006 it is possible to source this measure from the AGCCCS. The scope of the AGCCCS covers Australian Government funded services only. Beyond 2006, the AGCCCS may not be conducted again in its current form. Data collection mechanisms to supplement these data are to be investigated.	Source to be determined
Proportion of paid primary contact staff qualified in a children's services related field, employed by Australian Government approved child care services, by service type[3], management type[4] and level of education Frequency: Source and frequency beyond 2006 to be determined Notes: For 2006 it is possible to source this measure from the AGCCCS. The scope of the AGCCCS covers Australian Government funded services only. In the AGCCCS, level of education is only collected for qualifications in children's services related fields. Beyond 2006, the AGCCCS may not be conducted again in its current form. Data collection mechanisms to supplement these data are to be investigated.	Source to be determined

1 Includes long day care centres, occasional care centres, family day care, multi-functional Aboriginal children's services, in home care services
2 Categories still to be determined
3 Includes child care centres, family day care, multi-functional Aboriginal children's services, in home care services
4 Includes community managed, government managed, non-government school managed, private - for profit, other

ALL AUSTRALIAN CHILDREN	MAIN SOURCE
Proportion of contact staff with a bachelor degree or higher in an early childhood teaching field employed in preschool services, by management type[1] Frequency: Annual, pending progress on data developments in this area Notes: ABS is seeking to develop an administrative data collection on early childhood participants and staff, which should allow for this measure to be collected. Options for collection of such data are still being investigated.	ABS future collection sourced from state/territory administrative data
Proportion of contact staff qualified in a children's services related field, employed in preschool services, by management type[1] and level of education Frequency: Annual, pending progress on data developments in this area Notes: ABS is seeking to develop an administrative data collection on early childhood participants and staff, which should allow for this measure to be collected. Options for collection of such data are still being investigated.	ABS future collection sourced from state/territory administrative data
Proportion of contact staff employed in preschool services, by management type[1] and level of education Frequency: Annual, pending progress on data developments in this area Notes: ABS is seeking to develop an administrative data collection on early childhood participants and staff, which should allow for this measure to be collected. Options for collection of such data are still being investigated.	ABS future collection sourced from state/territory administrative data
Child to staff ratios in preschool Frequency: Annual from 2010, pending progress on data developments Notes: ABS is seeking to develop an administrative data collection on early childhood participants and staff, which should allow for this measure to be collected. The calculation of child to staff ratios relies on the availability of information on the full-time equivalence of both children's and staff hours. Options for collection of such data are still being investigated.	ABS future collection sourced from state/territory administrative data
Number of commencements and completions of higher education students in the field of early childhood, by level of education Frequency: Annual from 2001	DEST HE student collection
Number of completions of vocational education students in the field of early childhood, by level of education Frequency: Annual from 2002 Notes: Commencing students are not covered in the National Centre for Vocational Education Research (NCVER) provider collection. Completions data are not comparable prior to 2002 and may not be strictly comparable to higher education completions.	NCVER provider collection

1 Management types to be determined

INDIGENOUS CHILDREN	MAIN SOURCE
Indigenous preschool staff[1], as a percentage of all preschool staff, in Indigenous preschools[2] Frequency: Annual from 2005 Notes: Some definitional and scoping issues affect the NPC. Source may be supplemented by other administrative data for scope exclusions.	NPC
Indigenous preschool teachers, as a percentage of all preschool teachers in Indigenous preschools[2] Frequency: Annual from 2005 Notes: Some definitional and scoping issues affect the NPC. Source may be supplemented by other administrative data for scope exclusions.	NPC
Proportion of Indigenous contact staff with a bachelor degree or higher in an early childhood teaching field employed in Indigenous preschools[2] Frequency: Annual, pending progress on data developments in this area Notes: ABS is seeking to develop an administrative data collection on early childhood participants and staff, which should allow for this measure to be collected. Options for collection of such data are still being investigated.	ABS future collection sourced from state/territory administrative data
Proportion of Indigenous contact staff qualified in a children's services related field, employed in preschool services, by management type[3] and level of education Frequency: Annual, pending progress on data developments in this area Notes: ABS is seeking to develop an administrative data collection on early childhood participants and staff, which should allow for this measure to be collected. Options for collection of such data are still being investigated.	ABS future collection sourced from state/territory administrative data
Proportion of Indigenous contact staff employed in preschool services, by management type[3] and level of education Frequency: Annual, pending progress on data developments in this area Notes: ABS is seeking to develop an administrative data collection on early childhood participants and staff, which should allow for this measure to be collected. Options for collection of such data are still being investigated.	ABS future collection sourced from state/territory administrative data
Indigenous child to Indigenous staff ratios in Indigenous preschools[4] Frequency: Annual, pending progress on data developments in this area Notes: ABS is seeking to develop an administrative data collection on early childhood participants and staff, which should allow for this measure to be collected. The calculation of child to staff ratios relies on information on the full-time equivalence of both children's and staff hours. Options for collection of such data are still being investigated.	ABS future collection sourced from state/territory administrative data

1 Includes teaching staff, teaching aides and 'other' (e.g. administrative staff). Excludes workers on contract.
2 Preschools containing at least one Indigenous child
3 Management type to be determine
4 Preschools containing at least one Indigenous child

Number of commencements and completions of Indigenous higher education students in the field of early childhood, by level of education Frequency: Annual from 2001	DEST HE student collection
Number of completions of Indigenous vocational education students in the field of early childhood, by level of education Frequency: Annual from 2002 Notes: Commencing students are not covered in the NCVER provider collection. Completions data are not comparable prior to 2002 and may not be strictly comparable to higher education completions.	NCVER provider collection

MEASURES OF ACTIVITIES

ALL AUSTRALIAN CHILDREN	MAIN SOURCE
Proportion of parents reporting that child's carer/teacher in preschool or long day care has let them know of child's developmental progress Frequency: 3 yearly from 2008, pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change.	CEaCS
Proportion of parents reporting that child's carer/teacher in preschool or long day care has communicated learning goals for the child Frequency: 3 yearly from 2008, pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change.	CEaCS

INDIGENOUS CHILDREN	MAIN SOURCE
Proportion of parents in Indigenous households reporting that child's carer/teacher in preschool or long day care has let them know of child's developmental progress Frequency: 6 yearly from 2008, pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change.	NATSISS
Proportion of parents in Indigenous households reporting that child's carer/teacher in preschool or long day care has communicated learning goals for the child Frequency: 6 yearly from 2008, pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change.	NATSISS

MEASURES OF OUTPUTS/OUTCOMES

ALL AUSTRALIAN CHILDREN	MAIN SOURCE
Proportion of children assessed as having a smooth transition to formal schooling by selected characteristics[1] Frequency: Annual from 2010 Notes: MCEETYA/COAG proposed measure.	Source to be determined

INDIGENOUS CHILDREN	MAIN SOURCE
Proportion of Indigenous children assessed as having a smooth transition to schooling, by selected characteristics[1] Frequency: Annual from 2010 Notes: MCEETYA/COAG proposed measure.	Source to be determined

CONTEXT MEASURES

ALL AUSTRALIAN CHILDREN	MAIN SOURCE
Demographic	
Children aged 0-8 years as a proportion of total population Frequency: Annual from 2001	ERP
Children aged 0-8 years living in remote and very remote areas as a proportion of total population Frequency: Annual from 2001	ERP

INDIGENOUS CHILDREN	MAIN SOURCE
Indigenous children aged 0-8 years as a proportion of total Indigenous population Frequency: Annual from 2001 Notes: Indicator may not be able to be disaggregated by individual year of age because of use of Indigenous projections. This source may be replaced by other data if available.	Indigenous projections

1 Selected characteristics to be determined

ALL AUSTRALIAN CHILDREN	MAIN SOURCE
Parental education	
Proportion of children aged 0-8 years where mother/lone parent or guardian has no qualification, by selected characteristics[1] Frequency: Annual from 2008, pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change. CEaCS data may be supplemented by Survey of Education and Work (SEW) or other source to provide annual data.	CEaCS
Proportion of children aged 0-8 years where mother/lone parent or guardian has not completed school to Year 12, by selected characteristics[1] Frequency: Annual from 2008, pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change. CEaCS data may be supplemented by SEW or other source to provide annual data.	CEaCS
INDIGENOUS CHILDREN	**MAIN SOURCE**
Proportion of Indigenous children aged 0-8 years where mother/lone parent or guardian has no qualification, by remoteness area and selected characteristics[1] Frequency: 3 yearly from 2008 , pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change. NATSISS data may be supplemented by NATSIHS to provide 3 yearly data.	NATSISS
Proportion of Indigensous children aged 0-8 years where mother/lone parent or guardian has not completed school to Year 12, by remoteness area and selected characteristics[1] Frequency: 3 yearly from 2008 , pending decisions on final content Notes: This measure may be affected by sample error issues. Survey development is still in progress. Measure or characteristics may change. NATSISS data may be supplemented by NATSIHS to provide 3 yearly data.	NATSISS

1 Selected characteristics to be determined

ABBREVIATIONS

ABS	Australian Bureau of Statistics
AEDI	Australian Early Development Index
AGCCCS	Australian Government Census of Child Care Services
AIFS	Australian Institute of Family Studies
AIHW	Australian Institute of Health and Welfare
ASGC	Australian Standard Geographical Classification
CCB	Child Care Benefit
CCS	Child Care Survey
CCTR	Child Care Tax Rebate
CEaCS	Childhood Education and Care Survey
COAG	Council of Australian Governments
CS NMDS	Children's Services National Minimum Data Set
DEST	Australian Government Department of Education, Science and Training
EC	European Commission
ECEC	Early Childhood Education and Care
EDI	Early Development Index
ERP	estimated resident population
EU	European Union
FaCSIA	Australian Government Department of Families, Community Services and Indigenous Affairs
FDC	family day care
GDP	gross domestic product
GFS	Government Finance Statistics
GPC	Government Purpose Classification
HE	higher education
IEP	Indigenous Education Program
IESIP	Indigenous Education Strategic Initiatives Programme
IGR	Indigenous Generational Reform
ISCED	International Standard Classification of Education
LDC	long day care
LSAC	Growing Up in Australia: the Longitudinal Study of Australian Children
MCEETYA	Ministerial Council on Education, Employment, Training and Youth Affairs
NATSIHS	National Aboriginal and Torres Strait Islander Health Survey
NATSISS	National Aboriginal and Torres Strait Islander Social Survey
NCAC	National Childcare Accreditation Council
NCVER	National Centre for Vocational Education Research
NETSU	National Education and Training Statistics Unit
NICHD	National Institute of Child Health and Human Development
NPC	National Preschool Census
NSSC	National Schools Statistics Collection
OECD	Organisation for Economic Co-operation and Development
ROGS	Report on Government Services
SCRGSP	Steering Committee for the Review of Government Service Provision
SEW	Survey of Education and Work

UIS	UNESCO Institute for Statistics
UNESCO	United Nations Educational, Scientific and Cultural Organization
UOE	UNESCO-UIS/OECD/EUROSTAT
VET	vocational education and training

APPENDIX 1 FRAMEWORK FOR EDUCATION AND TRAINING STATISTICS

INTRODUCTION

Measuring Learning in Australia: A Framework for Education and Training Statistics (cat. no. 4213.0) was developed by the National Education and Training Statistics Unit in the ABS. The framework was a joint initiative of the Department of Education, Science and Training, the former Australian National Training Authority, all state and territory education and training departments, and the ABS. It was the result of extensive consultation with stakeholders throughout Australia and their assistance is gratefully acknowledged. This appendix outlines the main components of the framework, and applies the framework to children's learning and development.

BACKGROUND

The provision of learning has undergone significant change in recent years. From a statistical perspective, the complexity of the area and the pace of change present considerable measurement challenges. Increasingly, those involved in the analysis and development of policy and delivery mechanisms are seeking high quality information which supports cross-sectoral, and cross-jurisdictional, analysis and performance measurement. The public also has a right to information which measures the 'health' of the national education and training system, and offers a window on the work and performance of the various jurisdictions and providers.

WHAT IS THE FRAMEWORK?

The framework is a suggested way of thinking about statistics on learning. It is a broad level conceptual 'map', which defines the boundaries and content of these statistics.

Traditionally, statistics on education and training have been organised largely according to sector. However, there is a growing need to provide different perspectives on learning activities such as on individual learning pathways, on a geographic basis, or over time.

The framework can help us to move towards:

- a more comprehensive and integrated statistical view of learning
- increased comparability and consistency of statistics
- better relationships between learning- related statistics and other social and economic data and their frameworks.

The framework does not itself prescribe priorities for data collection. In fact, the scope of the framework is deliberately broad, allowing data users and policy makers to consider the relative importance of various types of information.

WHAT IS LEARNING?

Learning occurs within a wide range of settings, some more formal than others. At one end of the continuum, formal learning is provided in the traditional manner by teaching institutions, or through other courses, seminars or workshops. At the other end of the continuum, non-formal learning includes activities such as managers coaching or mentoring staff, parents involving themselves in their children's learning, or members of the community teaching each other living skills.

Learning is a lifetime process. Typically, a range of learning activities, which develop particular qualifications, skills or competencies, is available to individuals over the course of their lives. Individuals in each age group may undertake these activities sequentially, or concurrently. These activities can take place in a range of settings, from formal educational institutions to the individual's home.

DEFINING LEARNING IN THE FRAMEWORK

In the framework, ' learning' refers to both formal and non-formal learning. It is intentional and sustained, and mostly involves a transfer of knowledge or skills from one person to another. It can involve a wide variety of channels and media. It may be verbal or written. It may be delivered face-to-face or by other means.

Typically, formal learning is:

- *institutionalised* - the activities take place via an institution or organisation that structures, funds and/or conducts the learning process and may also set the content, methods, timing and admission requirements

DEFINING LEARNING IN THE FRAMEWORK *continued*

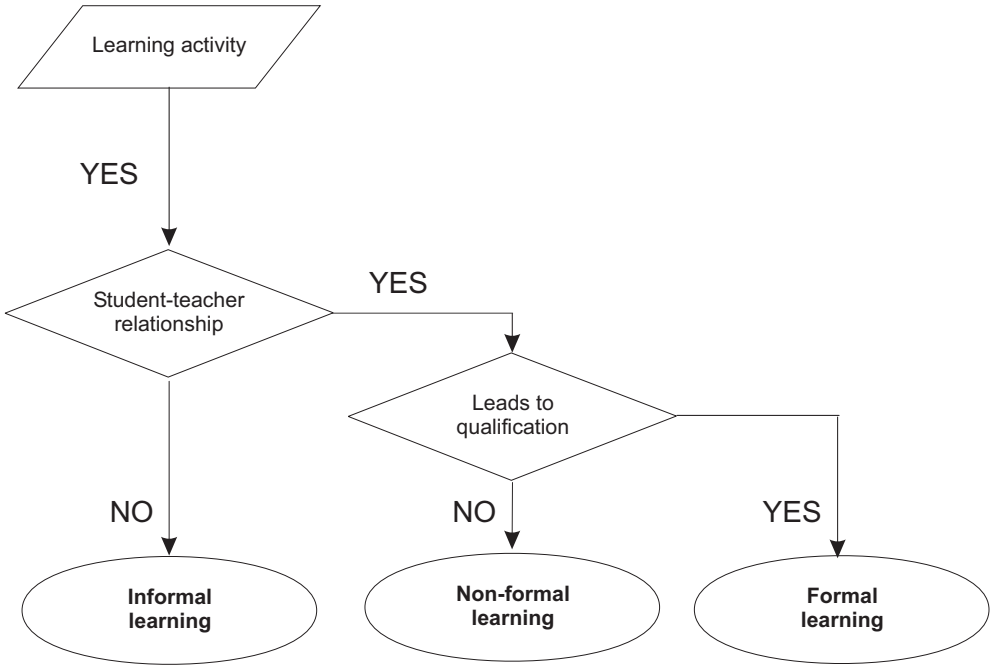
- *delivered* - there is a direct or indirect (e.g. on line) student/teacher relationship, or body/agency through which the course content is provided or delivered
- *structured* - it has a designated course content, such as a school curriculum or competency-based training package
- *evaluated* - it is assessed, accredited or monitored.

Non-formal learning still involves course or classroom-based instructional activities, but is not evaluated.

Since the framework was developed, information on a third category - informal learning - has been recognised as a form of learning distinctly different from course or class-based learning. Informal learning refers to largely unstructured, non-institutionalised learning activities that may occur in the family and in daily life. It includes activities like using the internet and going to a museum.

Incidental learning, which occurs unintentionally or coincidentally during a person's development or daily experience, is outside the scope of the framework.

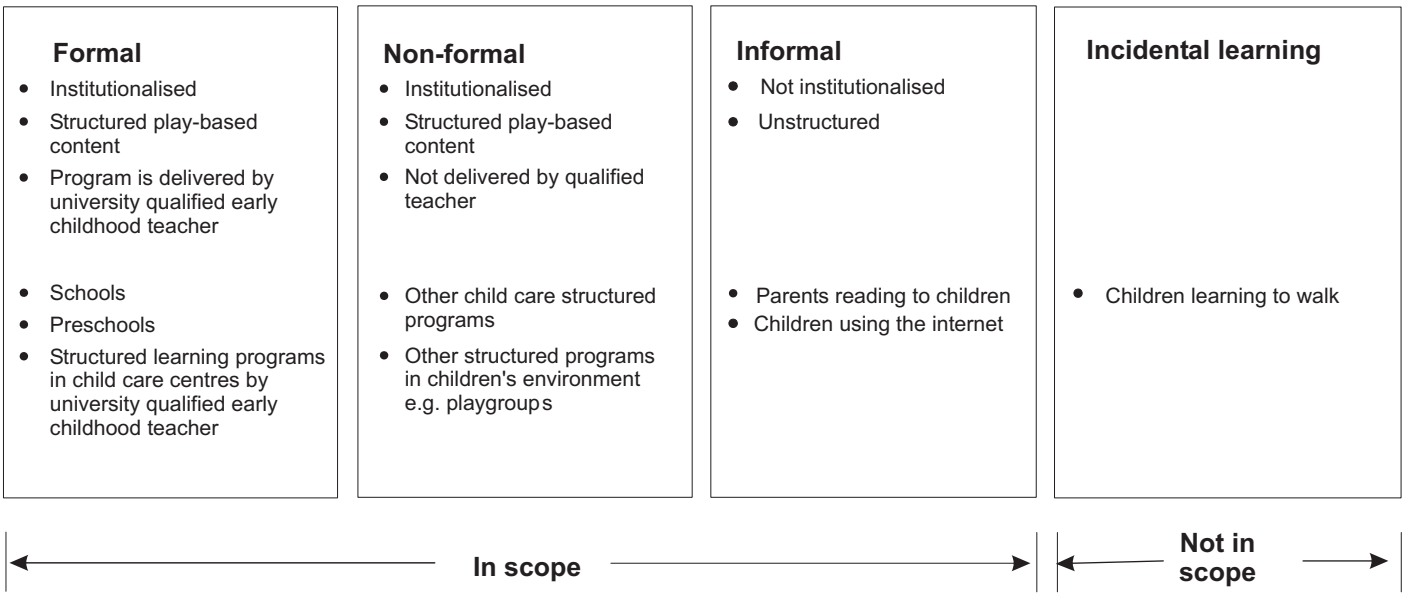
LEARNING ACTIVITIES DECISION TREE



There is no assessment or evaluation process which operates in the context of early childhood learning, so the distinction between formal and non-formal early childhood learning has some additional criteria to those outlined above. While both preschool and long day care settings are institutionalised and structured, this does not discount that there is a broad range of experiences offered to children across preschool and child care settings, and that programs may or may not be delivered by someone with education qualifications in these settings. Programs also vary in terms of their intensity and structure. The identification of preschool programs in child care settings is an important additional information requirement through the presence of qualified teachers.

The following diagram illustrates how some common examples relating to children's activities may be conceived within the three-way model of formal, non-formal and informal learning, as well as outlining activities that could be considered to be out of scope:

TYPES OF LEARNING IN THE EARLY CHILDHOOD CONTEXT



ELEMENTS OF THE FRAMEWORK

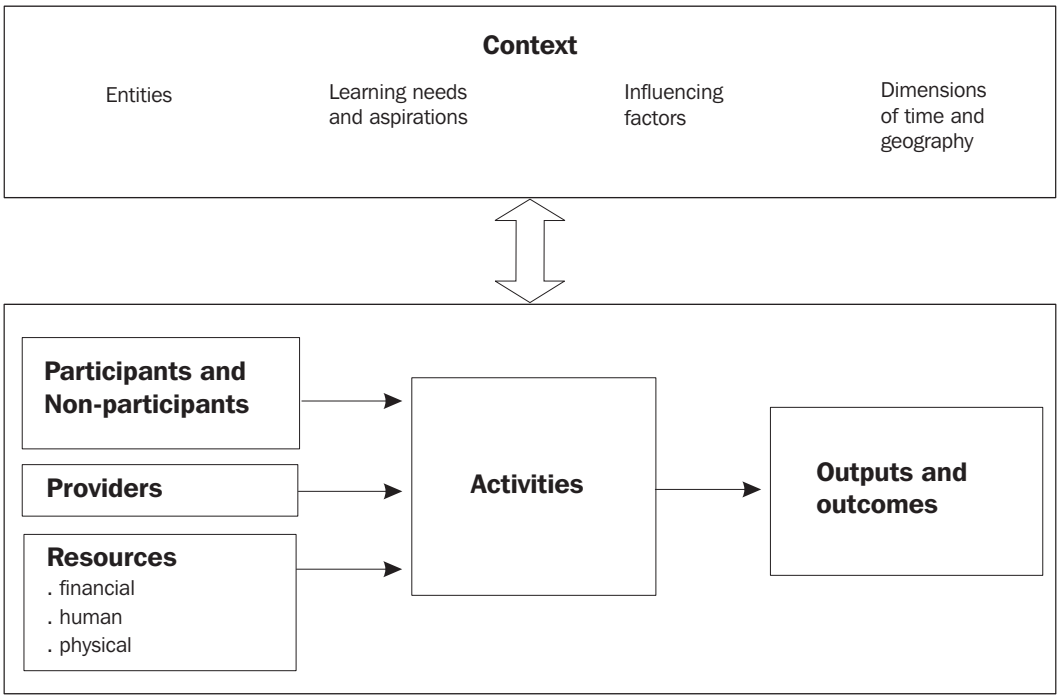
The framework is based on a model which describes the seven key elements about which information is required:

- *Participants*: those who are undertaking learning activities
- *Non-participants*: those who are not undertaking learning activities
- *Providers*: organisations, and in some cases individuals, that deliver learning activities
- *Resources*: the financial, human and physical resources which are necessary for learning to occur
- *Activities*: learning activities, activities of educational institutions, as well as the activities of non-participants
- *Outputs and outcomes*: the results and/or effects of learning activities
- *Context*: the wider environment within which decisions are made about learning activities.

THE FRAMEWORK MODEL

Each of the elements in the framework is represented within the following model, which can be used to describe the flows and relationships surrounding learning activities.

THE MODEL UNDERPINNING THE FRAMEWORK



COMBINING ELEMENTS AND LEVELS

Combining the elements with the types of learning in the model provides a useful way of thinking about the main types of statistical information which may be required. In terms of early childhood learning, the framework provides a useful basis on which to categorise all identified information needs and to assist in identifying the areas where additional information is required.

APPENDIX 2 SOURCE SUMMARIES

SOURCE SUMMARIES

This appendix provides summary information on each of the sources used in the assessment of indicators in Chapter 4. Specific information on each of the measures derived from these sources can be found in that chapter. The sources are:

Australian Bureau of Statistics collections

- Census of Population and Housing
- Child Care Survey
- Experimental Estimates of the Aboriginal and Torres Strait Islander Population
- Government Finance Statistics
- National Schools Statistics Collection

Other collections

- Australian Government Census of Child Care Services
- National Preschool Census
- Literacy and Numeracy Benchmarks
- State, territory and Australian Government administrative data

Please note that since the time of publication, agency names and website addresses may have changed.

ABS DATA QUALITY FRAMEWORK AND SOURCE ASSESSMENTS

The quality of sources has been evaluated using a data quality framework commonly used by the ABS (originally found in Brackstone 1999). This framework includes an assessment of fitness for purpose of sources based on six criteria. A description of each criterion is given below.

RELEVANCE

The assessment indicates the relevance of the collection to stakeholders in the area of early childhood learning. It notes the sample, frame and what is collected.

ACCURACY

Statistical collections are prone to both sampling and non-sampling error. Sampling error is the difference between the published estimate and the value that would have been produced if all dwellings had been included in the survey and is particular to each survey. Non-sampling errors are inaccuracies that occur because of imperfections in reporting by respondents and interviewers, and errors made in coding and processing data. These inaccuracies may occur in any enumeration whether it be a full count or a sample. Measurement errors of this kind may affect movements in counts from year to year, or between states and territories, particularly for smaller populations. For the purpose of the source assessments, discussion of accuracy focuses on how often data are updated and revised, and any other concerns about the accuracy of data in each survey.

TIMELINESS

Timeliness refers to both the frequency with which a source is collected, and also the amount of time it takes to release the data once collected. For the purposes of this project, the main consideration is the overall frequency of the collection. This is because, in relation to the assessment of indicators, it may become outdated.

ACCESSIBILITY

Data sources employ a range of methods to collect data. Hence the costs associated with gaining access to the data will vary. An assessment is made on the accessibility and availability of a source and the implications for statistics on early childhood learning.

INTERPRETABILITY

This is an assessment of how consistent and comparable a source is, taking into account how understandable and comprehensible it is, and the availability of metadata.

COHERENCE

This assessment examines changes in concepts and classifications over time.

CENSUS OF POPULATION AND HOUSING

ORGANISATION RESPONSIBLE

ABS

CURRENT REPORTING

Statistics are provided on the ABS website (http://www.abs.gov.au/census) free of charge. Preschool data are available in Census Tables, Community Profiles and CDATA online, for a broad range of geographic areas. A range of more detailed output including a 1% and 5% Confidentialised Unit Record File and Table Builder will also be available for the 2006 Census.

RELEVANCE

The Census counts the number of people in Australia on Census night (8 August 2006), identifying their key characteristics and those of the dwellings in which they live. Information is available on a range of geographic areas from collection district through to state/territory and Australia. Information on the number of children attending preschool is obtained in the Census from a question on type of educational institution attending, within which there is a response category 'Preschool'.

ACCURACY

The Census involves a total enumeration and therefore is expected to attract a 100% response. As a result, there is no sampling error, however Census data are subject to a number of inaccuracies. These inaccuracies result from errors by respondents or mistakes in collection or processing. Whilst many of these are corrected by processing procedures, some still remain. The effect of the remaining errors is generally slight, although it may be more important for small groups in the population. The main kinds of errors to keep in mind are: Respondent error, Processing error, Random adjustment and Undercount. As the Census is self-enumerated, there are also issues associated with how respondents define the term 'preschool'. Although instructions on the Census form state "Mark 'no' for children enrolled only at child care centres", some children attend child care centres that offer preschool programs and may be included in the figures. This example of respondent error is reflected in the higher overall rate of preschool attendance and the variation by state/territory and age when comparing the census to the estimates from other sources.

TIMELINESS

The Census is held every 5 years. Data are thus infrequent and may, for this and the other reasons outlined above, be less useful than other sources on early childhood learning. It remains the case however, that the Census is the only reliable source of data on small areas and small populations.

INTERPRETABILITY

Data on preschool are widely accessible. However, sources of non-sampling error and definitional issues that are known to be associated with the data are not fully documented.

CHILD CARE SURVEY

ORGANISATION RESPONSIBLE

ABS

CURRENT REPORTING

The collection is published in *Child Care, Australia* (cat. no. 4402.0).

RELEVANCE

The CCS collects data on child care usage and associated issues such as receipt of the CCB and parents' working arrangements. Data from the survey are used to maintain existing funding programs and develop new policies associated with the provision of child care services. The scope of this collection is children aged 0-12 years.

CHILD CARE SURVEY continued

While data are collected on attendance at both preschool and school, early childhood learning is not the current focus of this survey. However, in recognition of the need for better data on early childhood learning, in June 2008, the ABS is redeveloping the Child Care Survey to include new content on early childhood learning from June 2008.

ACCURACY

The CCS is a sample survey conducted as a supplementary to the monthly Labour Force Survey. Depending on the characteristic being examined, the size of the sample can result in reasonably high standard errors for the smaller states and territories. The survey collects information in both urban and rural areas in all states and territories, but excludes people living in remote and sparsely settled parts of Australia. The exclusion of these people has an impact on aggregate estimates that are produced for individual states and territories, with the largest impact being for the Northern Territory.

TIMELINESS

The CCS is run every three years, with the most recent survey conducted in 2005. The usefulness of the data is somewhat affected by the relatively infrequent collection period. The reference period for enumeration of the survey has also varied, being March in 1996 and June in 1999, 2002 and 2005. Overlap with school holidays in some states and territories has impacted on the time series for earlier data.

COHERENCE

For the first time in 2005, preschool was excluded from the definition of formal care due to the widely-accepted view that the main focus of preschool is on education and preparing children for school, rather than child care. Data on preschool attendance which are collected as part of the survey are presented separately from formal child care in the publication.

The reference period for collection of data is the week prior to the survey date. Children who usually attend an institution but did not attend in the reference week because they were sick or on holidays would not be included in the estimates. Similarly, the use of the term 'attendance' rather than 'enrolment' in questioning parents encourages parents to respond on the basis of the actual presence of the child in the institution during the prescribed week rather than their typical pattern of activity. Data in the survey are collected from either parent in the family and all the data items are subject to respondent perceptions, as well as the level of recall of the selected parent. In practice, this leads to some variation in the quality of the answers to the filter questions on school, preschool and child care participation.

ESTIMATED RESIDENT POPULATION

ORGANISATION RESPONSIBLE

ABS

CURRENT REPORTING

The collection is published quarterly in:

- *Australian Demographic Statistics* (cat. no. 3101.0)

and published annually in:

- *Population by Age and Sex* (cat. no. 3201.0).

RELEVANCE

The ERP is the official measure of the population of Australia and is used to benchmark a range of ABS surveys, appearing as the 'Total Population' denominator for a variety of indicators, with appropriate scope inclusions and exclusions taken into account. The ERP is based on the concept of usual residence. It refers to all people, regardless of nationality or citizenship, who usually live in Australia, with the exception of foreign diplomatic personnel and their families. In the Census, on which population counts are

ESTIMATED RESIDENT POPULATION continued

based, place of usual residence refers to the address at which a person has lived or intends to live for a total of six months or more in the Census year.

ACCURACY

After each Census, the ABS uses Census counts by place of usual residence to construct a new base population figure for 30 June of the Census year, from which to estimate quarterly ERP forward. Because this new population estimate uses the Census as its main data source, it is said to be 'based' on that Census and is referred to as a population base. Estimates of the Australian resident population are then generated on a quarterly basis by adding natural increase (the excess of births over deaths) and net overseas migration. For state and territory population estimates, an additional term of net interstate migration is added.

TIMELINESS

At any point in time, ERP is defined as being 'preliminary', 'revised' or 'final'. Preliminary estimates are produced quarterly, revised annually and then updated to final following each Census. For example, the following table shows the current status of ERP and the components of population change: natural increase, net overseas migration and net interstate migration.

STATUS OF QUARTERLY ESTIMATED RESIDENT POPULATION (ERP) DATA—as at 24 September 2007

Reference period	*Census base*	*Natural increase*	*Net overseas migration*	*Net interstate migration*	*ERP STATUS*
		1996–2001 INTERCENSAL PERIOD			
Sep. 1996–Jun. 1997	Final rebased — based on 2001 Census	Final	Final	Final — rebased to 2001 Census	FINAL
Sep. 1997–Mar. 2001	Final rebased — based on 2001 Census	Final	Final — category jumping set to zero	Final — rebased to 2001 Census	FINAL
Jun. 2001	FINAL BASE — based on 2001 Census	. .	. .	. .	FINAL
		2001–2006 INTERCENSAL PERIOD			
Sep. 2001–Mar. 2006	Component revision – based on 2006 Census	Revised — based on date of occurrence	Final — includes migration adjustment using matched passenger cards	Revised on 2006 Census data — modelled - expansion factors based on 2001 Census	REVISED
Jun. 2006	PRELIMINARY BASE — based on 2006 Census	. .	. .	. .	PRELIMINARY
		2006–2011 INTERCENSAL PERIOD			
Sep. 2006–Mar. 2007	Preliminary estimate — based on 2006 Census	Preliminary — based on date of registration	Preliminary — improved method of NOM introduced and used for Sep. quarter 2006 onwards. Preliminary NOM estimates are based on international movement data for the reference quarter, adjusted by information derived from travellers with the same characteristics from the corresponding quarter two years earlier.	Preliminary — modelled - expansion factors based on 2001 Census	PRELIMINARY

. . not applicable

ESTIMATED RESIDENT POPULATION continued

COHERENCE

There have been no major changes to the collection between 2001 and 2006. For September quarter 2006 onwards, the scope of the ERP changed from excluding overseas visitors residing in Australia for less than 12 months to excluding overseas visitors residing in Australia for less than 12 months out of an 18 month period. This change in classification was instigated to include individuals as travellers rather than movements in the scope of the ERP thereby more accurately reflecting the numbers of overseas students and other temporary visitors to Australia.

EXPERIMENTAL ESTIMATES AND PROJECTIONS OF THE ABORIGINAL AND TORRES STRAIT ISLANDER POPULATION

ORGANISATION RESPONSIBLE

ABS

CURRENT REPORTING

The publication *Experimental Estimates and Projections, Indigenous Australians, 1991 to 2009* (cat. no. 3238.0) contains the most recent estimates and projections of the Indigenous population. Unpublished estimates and projections for specific variables or aspects of the Indigenous population are also available as special tabulations.

RELEVANCE

This source is used to benchmark a range of ABS surveys, and appears as the 'Total Population' denominator for a variety of indicators of the Aboriginal and Torres Strait Islander Population. The Indigenous population comprises people who are of Aboriginal origin, Torres Strait origin or both Aboriginal and Torres Strait Islander origin. Census data, on which the estimates and projections are based, are compiled on a usual residence basis. In the Census, on which population counts are based, place of usual residence refers to the address at which a person has lived or intends to live for a total of six months or more in the Census year. Persons who do not report a place of usual residence, or are of indeterminate address or homeless, are imputed as being a resident of their place of enumeration.

ACCURACY

The estimates and projections of the Indigenous population presented in this source are experimental. The intercensal volatility in Indigenous Census counts and the quality of the data on births, deaths and migration do not support the standard approach to population estimation. Various adjustments are made to the estimates. The adjustment process takes account of: non-response to the Aboriginal and Torres Strait Islander origin question in the Census; unknown Indigenous status on Census forms imputed by ABS when a form cannot be obtained from persons identified in the field; net Census undercount of Indigenous persons; and residents temporarily overseas on Census night. To project the population, the data are further adjusted using the cohort component method, which takes into account future fertility levels, mortality, migration and change in propensity to identify.

The projection results are not intended as predictions or forecasts, but are illustrations of growth and change in the population which would occur if the assumptions about future demographic trends prevail over the projection period. While the assumptions for the projections are formulated on the basis of an assessment of past trends, there is no certainty that any of the assumptions will or will not be realised over the projection period. These projections reveal the size, structure and distribution of the future Indigenous population if various assumptions are made about births, deaths, migration and change in propensity to identify.

TIMELINESS

Experimental Indigenous population estimates and projections are calculated after each Census every five years. Results are currently based upon the 2001 Census, with adjustments. Preliminary estimated resident population by Indigenous status based on

EXPERIMENTAL ESTIMATES AND PROJECTIONS OF THE ABORIGINAL AND TORRES STRAIT ISLANDER POPULATION continued

the 2006 Census by age group and sex as at 30 June 2006, were released in *Australian Demographic Statistics* (cat. no. 3101.0) in September 2007. Final results based upon the 2006 Census by age group and sex as at 30 June 2006 will be released in a datacube spreadsheet (cat. no. 3238.0.55.001) in mid 2008. A final time-series based on the 2006 Census will be released in *Experimental Estimates and Projections, Indigenous Australians, 1996 to 2016* (cat. no. 3238.0) in August 2009.

ACCESSIBILITY

Indigenous population estimates and projections are available on an individual year basis in *Experimental Estimates and Projections, Indigenous Australians, 1991 to 2009* (cat. no. 3238.0). Indigenous projections are not projected as far, or are as readily available, as those for the total Australian population.

COHERENCE

There have been no major changes in key classifications between publications in 1998 and 2004, while various changes in prediction methods were implemented from previous estimates of Aboriginal and Torres Strait Islander populations in order to gain more accurate results.

The growth in the Indigenous population counts between 1996 and 2001 cannot be fully explained by births, deaths and migration as outlined above. Much of this growth can be assumed to be changes between Censuses in the propensity for people to identify as Indigenous. With the release of 2006 Census data, new results based upon the 2006 Census and Indigenous population estimates will then be rebased for each year as far back as 1996 and projected forward for each year to 2016 (proposed).

GOVERNMENT FINANCE STATISTICS

ORGANISATION RESPONSIBLE

ABS

CURRENT REPORTING

The most detail on public expenditure on education is reported in the publication *Government Finance Statistics, Education* (cat. no. 5518.0.55.001). Statistics are also available on the ABS website (http://www.abs.gov.au) and special data services are available on request.

RELEVANCE

The system of Government Finance Statistics (GFS) is designed to provide statistical information on public sector entities in Australia. This collection enables policy makers and other users to analyse the financial operations and the financial position of the public sector at the level of government, sector, or a particular set of transactions. Data are used by the Australian Government and state/territory treasuries and other agencies to analyse public sector activity.

The Government Purpose Classification (GPC) used in GFS shows government expenditure on most levels of education, including primary schooling, secondary schooling, university, technical and further education, and other education. There is, however, no separate category for preschool which is combined with 'education not definable by level'.

ACCURACY

The way in which individual units are covered in GFS data dictates the level of data estimation, which affects the quality of GFS particularly at low levels of disaggregation. When assessing the accuracy and reliability of GFS output, it is essential to take the statistical production cycle into account. For any given year, forward estimates are replaced by preliminary estimates and preliminary estimates are replaced by final data. Thus, large revisions could occur simply because forward (budget expectations) data are replaced by input data based on actual transactions (the preliminary and final data).

GOVERNMENT FINANCE STATISTICS continued

In addition to production cycle effects, there are a number of other factors which affect the accuracy and reliability of GFS. These include the nature of source data, data collection timetables, data processing methods, coverage, accounting bases, estimation errors, consolidation and data revision policies.

The classification represented in GFS data is based on types of providers by main activity. Education providers are thus confined to the formal education system. Expenditure on the provision of education in child care institutions, for example, is not included in the estimates.

TIMELINESS

Annual estimates are produced in two phases on a forward annual and final annual basis. The phases provide a progressive refinement of the data over the cycle. Timeliness of GFS output differs for the different streams of data. Forward and quarterly estimates are the most timely, followed by preliminary data.

ACCESSIBILITY

National and international frameworks for the collection of these statistics are presented in the *Australian System of National Accounts* (cat. no. 5204.0) and the *Australian System of Government Finance Statistics: Concepts, Sources and Methods* (cat. no. 5514.0.55.001 - electronic version) (cat. no 5514.0, PDF version).

COHERENCE

The major change to GFS over time has been the introduction of accrual accounting in 1998-99. Data prior to this date are largely not comparable with those from 1998-99 onwards.

NATIONAL SCHOOLS STATISTICS COLLECTION

ORGANISATION RESPONSIBLE

ABS, in conjunction with state, territory and Australian Government education authorities

CURRENT REPORTING

Data are supplied electronically to the ABS by state and territory education authorities from clients' administrative collections. The census date is the first Friday in August; age is collected as at 1 July. The data for this collection are published annually (in February), in *Schools, Australia* (cat. no. 4221.0) available on the ABS website (http://www.abs.gov.au).

RELEVANCE

The purpose of the NSSC is to provide nationally comparable data on primary and secondary schools, students and staff. Results are used extensively by governments and private organisations to assist with education policy and research decisions and government funding arrangements.

Data are collected from the relevant authorities on a range of issues relating to schools, students and staff in primary and secondary schools throughout Australia. NSSC uses a set of concepts, definitions and classifications developed jointly by these agencies. The data are covered under the Census and Statistics Act once they are received by ABS.

ACCURACY

The NSSC is an administrative collection. All data are validated by the ABS to ensure their quality and comparability. The compilation of NSSC data from jurisdictional aggregates detracts from the utility and flexibility of the data and comparability with other sources. For example, geographic data on students are limited to states and territories, though more detailed data are available at jurisdictional level.

NATIONAL SCHOOLS STATISTICS COLLECTION continued

TIMELINESS

The NSSC is an annual collection and on this basis could be considered appropriate for use for early childhood learning indicators.

INTERPRETABILITY

The scope of the NSSC currently includes students enrolled, and staff employed at, all establishments (schools) which have as their major activity the administration or provision of full-time day primary, secondary and/or special (school) education. This includes establishments in both the government and non-government sectors, but currently excludes preschools from scope. Information on early childhood education providers, staff and students has the potential to be included as part of the NSSC in the future.

COHERENCE

The ABS has published school education statistics for many years. Prior to the implementation of the NSSC, the data were not necessarily comparable between states and territories. With the implementation of NSSC concepts, the definitions, classifications and coverage were revised. The new government schools series was implemented in 1981 and the non-government schools series in 1984. Therefore, particular care should be exercised when comparing data with that prior to 1981 and 1984 for the government and non-government schools series respectively, and between the two series from 1981 to 1983. Since this time, the collection has remained largely unchanged. Two activities are of particular note in relation to early childhood learning:

- In 2001 - the Indigenous status standard was endorsed by Education Ministers for use in all school enrolment forms to improve the quality of Indigenous student data.
- The structure of Western Australian schooling changed from 2002: pre-year one education was extended to five days a week, bringing these students within the scope of the NSSC, and school starting ages also altered. Over the years 2005 to 2007, full-time pre-year 1 education in Queensland has also been introduced. Care should be taken when comparing data for students in these states up to and including these years, with later years.

Metadata can be found in the explanatory notes of *Schools, Australia* (cat. no. 4221.0).

AUSTRALIAN GOVERNMENT CENSUS OF CHILD CARE SERVICES

ORGANISATION RESPONSIBLE

Department of Families, Community Services and Indigenous Affairs

CURRENT REPORTING

The AGCCCS is published free of charge in the following:

- Australian Government Census of Child Care Services
- Australian Government Census of Child Care Services - Summary Booklet

These publications are available on the FaCSIA website (http://www.facsia.gov.au).

RELEVANCE

The AGCCCS collects data on Australian Government approved and funded child care. It is used extensively for monitoring growth, operation of services and assisting in policy formulation and planning. Externally, summary data may be made available to state/territory and local governments, peak child care organisations, the SCRGSP and for academic research into child care. All Australian Government approved and funded child care services are included. These are drawn from the Centrelink active services database several weeks prior to Census time.

ACCURACY

Unit record data are not released by FaCSIA. Summary data can be requested by contacting FaCSIA.

AUSTRALIAN GOVERNMENT CENSUS OF CHILD CARE SERVICES continued

TIMELINESS

The AGCCCS has been conducted every one to two years by FaCSIA since 1986. The last Census was conducted in 2006.

ACCESSIBILITY

Unit record data are not released by FaCSIA. Data can be requested, via the consultancy service. The average waiting period is approximately four weeks.

INTERPRETABILITY

For further information regarding the AGCCCS please contact FaCSIA.

COHERENCE

There have been a number of changes in AGCCCS design between Censuses. Definition revisions mean that private long day care and community long day care counts are not comparable between censuses. Changes in policies and programs have also led to changes in record collection depending upon current practice. From 2006, relevant fields in the AGCCCS became consistent with the definitions and classifications in the Children's Services National Minimum Data Set. However, the AGCCCS may not be conducted again in its current form. The Australian Government is currently investigating data collection mechanisms to supplement these data.

NATIONAL PRESCHOOL CENSUS

ORGANISATION RESPONSIBLE

Department of Education, Science and Training

CURRENT REPORTING

Annual data are published annually in two publications:

- *National Preschool Census, Aboriginal and Torres Strait Islanders and All Students - Summary Report*
- *National Preschool Census, Aboriginal and Torres Strait Islanders and All Students - Technical Report.*

RELEVANCE

The NPC, previously called the National Indigenous Preschool Census, is conducted to determine Indigenous Education Program (IEP) funding for institutions in scope of the collection. While the collection focuses on Indigenous students, some data on non-Indigenous students are also available by state and territory and by other basic cross-classifiers. Data on government preschools are compiled from government departments using their existing Government Census arrangements. Data on non-government establishments involved in the provision of preschool education, registered preschools and centres offering an educational program are obtained by DEST through the Non-Government Supplementary Census on contract. Institutions included in the NPC are not necessarily eligible for IEP funding.

ACCURACY

The collection counts students as enrolled if they were on the roll and had attended a preschool education program in the last month. Considerable variability of definitions of preschool are present in both the Government Census and the Non-Government Supplementary Census. In addition, because of coverage issues in Victoria, there is an apparent undercount of total estimates of those in preschool which currently limits the use of this source for national estimation of preschool participation. The response rate for the NPC was 99% in 2006, though the response rate for individual questions was variable.

TIMELINESS

The NPC is run annually and on this basis could be considered appropriate for use for early childhood learning indicators.

NATIONAL PRESCHOOL CENSUS continued

ACCESSIBILITY

Unit record data are not released. Aggregate reports are produced annually by the agency contracted to provide the data and special requests may be made to access the data. Information is documented in the NPC *Technical Report* and in the NPC *Summary Report*.

INTERPRETABILITY

There is variability in the definitions of preschool used in both the Government Census and the Non-Government Supplementary Census. The measurement of Indigenous status within the existing state/territory government collections which contribute to the NPC, also varies in terms of questions and terminology. The estimates from this collection differ from those in other sources as there are scoping differences in some states and territories. Additional scoping rules are applied to answers in the questionnaire, and the data collection times differ.

COHERENCE

From 1995 all preschools were required to return the census form, even if they had no Indigenous enrolments. The National Indigenous Preschool Census became the National Preschool Census in 2005. This was to reflect that data are collected on all preschool students. The collection has been conducted since 1983 with comparable data available from 2001 onwards. In 2005, additional data items were collected, including basic demographic data on all students, staff and enrolments of three year olds.

LITERACY AND NUMERACY BENCHMARKS

ORGANISATION RESPONSIBLE

MCEETYA

CURRENT REPORTING

The literacy and numeracy benchmarks are published annually in the MCEETYA annual *National Report on Schooling in Australia*, available on the MCEETYA website (http://www.mceetya.edu.au).

RELEVANCE

Literacy and numeracy benchmarks articulate nationally agreed minimum acceptable standards in literacy and numeracy and are part of a national literacy and numeracy plan agreed to by state, territory and Australian Government Ministers for Education. Performance against the national benchmarks for reading and numeracy is currently assessed for year 3, 5 and 7 students through state and territory testing programs. Comparability of results obtained through the different state/territory-based assessment programs are achieved using an equating process.

ACCURACY

The state and territory testing is undertaken by all students enrolled in the applicable years at school. While benchmark testing is intended to collect data on all students, some students may be exempted from the testing by state and territory authorities. For example, exemptions may be given to children with disabilities or impairments, or children who speak a language other than English. Exemptions account for less than 3% of the year three schooling population throughout Australia.

Exempt students are included in the calculation of benchmark results whereas students absent or withdrawn are not included in the benchmark calculations.

TIMELINESS

Benchmarks are collected annually and on this basis could be considered appropriate for use for early childhood learning indicators. However, there may be a considerable time lag between collection and reporting of the benchmarks.

LITERACY AND NUMERACY BENCHMARKS continued

ACCESSIBILITY

Reporting of the benchmarks shows the proportion of students who have achieved along three dimensions - reading, writing and numeracy - as a proportion of all students participating in the testing (excluding students who are absent on the day of testing). Each child's achievement against the literacy and numeracy benchmarks has been reported to parents, schools, and classroom teachers since 2004. Unit record data are not accessible by any person or organisation, though results have been linked and correlated with some variables in other sources such as the WA Child Health Survey.

INTERPRETABILITY

The MCEETYA website provides a number of reports, discussion papers and technical papers which cover methodology, sampling design, development of the testing process and data management issues. Further information can also be found at each jurisdiction's website.

COHERENCE

The benchmarks were introduced in 1999 for year 3 reading and writing, and in 2000 for year 3 numeracy. Before this time, most states and territories also collected and compiled similar data which were not nationally equated. Some states and territories maintain a longitudinal dataset of student results for the different years of schooling, but in general scores for each individual year are not designed to be analysed progressively.

Since 1999, scores have been collected and administered by state and territory jurisdictions, and standardised and reported on a national basis. It is proposed that, subject to agreement from all state and territory ministers of education, from 2008, these scores will be compiled from a single national battery of tests.

STATE, TERRITORY AND AUSTRALIAN GOVERNMENT ADMINISTRATIVE DATA

ORGANISATIONS RESPONSIBLE

Administrative data collections in the area of early childhood learning are managed by a variety of agencies within each jurisdiction. These agencies are mainly government departments with responsibility for education and/or children's services functions, but also cover some non-government bodies. The data collections from which indicators are

STATE, TERRITORY AND AUSTRALIAN GOVERNMENT ADMINISTRATIVE DATA continued

sourced in this publication are administered by the following agencies in each state and territory (noting that agency names may have changed since the time of publication):

Australian Government
Department of Education, Science and Training
Department of Families, Community Services and Indigenous Affairs
New South Wales
Department of Community Services
Victoria
Department of Human Services
Queensland
Department of Communities
Education Queensland
Creche and Kindergarten Association of Queensland
South Australia
Department of Education and Children's Services
Western Australia
Department of Education and Training
Department for Community Development
Tasmania
Department of Education
Australian Capital Territory
Department of Education and Training
Office for Children, Youth and Family Support
Northern Territory
Department of Health and Community Services
Department of Education

CURRENT REPORTING

Administrative collections in the area of early childhood learning are published jointly in the following publications:

- *Report on Government Services, Steering Committee for the Review of Government Service Provision* (http://www.pc.gov.au/gsp/)
- *Education at a Glance*, OECD

Individual agencies administer access to their own administrative collections and may also release results to their websites or as special tabulations in particular instances.

RELEVANCE

Administrative systems are primarily used for accessing, retrieving, updating and maintaining client, program and service information. This normally relates to a single or series of discrete activities, services or interactions between the agency and an individual or client. Administrative data may measure agency performance in a range of areas including equity, access, appropriateness/quality of service, and economic efficiency. Administrative data are often used in conjunction with survey data to provide a more rounded statistical picture. In some instances, these data are used when a more representative source is not available.

ACCURACY

Administrative collections are usually a by-product, that is, they are created for another purpose than statistical or research output. As data are collected in respect of a full population (e.g. the population of school students), they are not subject to the sampling error that is the main cause of volatility in survey estimates. However, the appropriateness of an admistrative data source for the construction of statistical measures depends on the purpose for which that measure is used.

STATE, TERRITORY AND AUSTRALIAN GOVERNMENT ADMINISTRATIVE DATA continued

Differences in scope, concepts, structure and collection methodology of the administrative datasets of the respective sectors makes comparability and aggregation of these data a careful exercise. Quantification of overlap between sectors (for example, children participating in both preschool and child care) must be considered. In the longer term, agreement on the concepts being measured and implementation of agreed standards across all sectors will facilitate improved comparability and cohesiveness of the aggregate statistics. Similarly, the longer term development of individual identification in each of the sectors will improve the potential for reduction of duplication and research using data linkage techniques.

TIMELINESS

Although administrative data collections are usually updated regularly and therefore timeliness is not an issue, processing lags may affect the uses to which the data can be put. There are different ways through which statistical data can be extracted from an administrative system which include taking a snapshot or census, generating a statistical record at the time of each administrative transaction, or querying for statistical information on an ad hoc basis. Processing lags arise when data entry, editing and analysis occur at a time after the actual information is collected. This may cause problems with data quality, particularly when edits are not able to be solved at the time of data capture.

INTERPRETABILITY

As responsibility for early childhood issues lies across a number of jurisdictions and portfolio responsibilities, there is no single body which makes decisions about data standards and reporting for all these areas of concern, and data may not be directly comparable. Comparability issues arise in administrative collections when:

- definitions or counting rules differ
- aggregation of data results in double-counting or under-reporting
- the scope of collections differ from each other
- census dates for output of data are variable.

BIBLIOGRAPHY

Andersson, B-E 1992, Effects of day care on cognitive and socio-emotional competence of 13-year-old Swedish schoolchildren, *Child Development*, no. 63, pp. 63-78.

ABS (Australian Bureau of Statistics) 2001a, *Experimental Estimates of Indigenous Australians*, cat. no. 3238.0.55.001, ABS, Canberra

ABS 2002, *Child Care Australia*, cat. no. 4402.0, ABS, Canberra.

ABS 2003, *Measuring Learning in Australia: A Framework for Education and Training Statistics*, cat. no. 4213.0, ABS, Canberra.

ABS 2004a, *Experimental Estimates and Projections, Aboriginal and Torres Strait Islander Australians*, cat. no. 3238.0, ABS, Canberra.

ABS 2004b, *Measuring Learning in Australia: Dictionary of Standards for Education and Training Statistics*, 2004, cat. no. 4232.0.55.001, ABS, Canberra.

ABS 2004c, *Measuring Learning in Australia: Plan to improve the quality, coverage and use of education and training statistics*, 2004, cat. no. 4231.0, ABS, Canberra.

ABS 2006a, *Australian Social Trends 2006*, cat. no. 4102.0, ABS, Canberra.

ABS 2006b, *Australian System of Government Finance Statistics: Concepts, Sources and Methods*, 2005, cat. no. 5514.0.55.001, ABS, Canberra.

ABS 2006c, *Improving Statistics on Children and Youth: An Information Development Plan*, cat. no. 4907.0, ABS, Canberra.

ABS 2006d, *Population by Age and Sex, Australian States and Territories*, cat. no. 3201.0, ABS, Canberra.

ABS 2006e, *Schools, Australia 2006*, cat. no. 4221.0, ABS, Canberra.

ABS 2007a, *Australian Demographic Statistics*, cat. no. 3101.0, ABS, Canberra.

ABS 2007b, *Government Finance Statistics, Education, Australia, 2005-06*, cat. no. 5518.0.55.001, ABS, Canberra.

ABS forthcoming, *Data Gaps in Early Childhood: Identifying and bringing together available information*, cat. no 4105.0.55.001, ABS, Canberra.

ABS & AIHW (Australian Institute of Health and Welfare) 2005, *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples 2005*, ABS cat. no. 4704.0, AIHW cat. no. IHW14, ABS, Canberra.

AIHW (Australian Institute of Health and Welfare) 2003, *Australia's Welfare*, AIHW cat. no. AUS 24, Canberra.

AIHW 2005, *A Picture of Australia's Children*, AIHW cat. no. 58, Canberra.

AIHW 2007, *Final report on the development of the Children's Services National Minimum Data Set*, AIHW, Canberra.

Brackstone, G 1999, 'Managing Data Quality in a Statistical Agency', *Survey Methodology,* vol. 25, no. 2, Statistics Canada.

Boocock, SS 1995, 'Early childhood programs in other nations: Goals and outcomes', *The Future of Children,* vol. 5 (3), pp. 94-115.

Brennan, D 1998, *The Politics of Australian Child Care: Philanthrophy to feminism and beyond*, Cambridge University Press, Melbourne.

Brinkman, S, Silburn, S, Lawrence, D, & The Australian Early Development Index Partnership 2006, *Construct and concurrent validity of the Australian Early Development Index, A report to the Technical Advisory Group for the Australian Early Development Index: Building Better Communities for Children Project*.

Buckingham, J 2007 *Child Care: Who Benefits?,* Centre for Independent Studies.

Campbell, F, Ramey, CT, Pungello, EP, Sparling, J & Miller-Johnson, S 2002, 'Early Childhood Education: Young Adult Outcomes from the Abecedarian Project', *Applied Developmental Science,* no. 6, pp. 42-57.

Centre for Community Child Health 2000, *A Review of the Early Childhood Literature*, Department of Family and Community Services, Canberra.

Centre for Community Child Health & Telethon Institute for Child Health Research 2005, *Australian Early Development Index: Building better communities for children, Community Results 2004-2005*, Centre for Community Child Health, Melbourne.

COAG (Council of Australian Governments), *COAG Human Capital Reform: National Reform Initiative Working Group for COAG*, December 2005, viewed 15 October 2007.

COAG, *Council of Australian Governments Meeting, Communique: 10 February 2006*, February 2006, viewed 15 October 2007.

COAG, *Council of Australian Governments Meeting, Communique: 13 April 2007*, April 2007, viewed 15 October 2007.

Cunha, F, Heckman, J J, Lochner, L & Masterov, D V May 2005, *Interpreting the evidence on life cycle skill formation, Working Paper 11331*, National Bureau of Economic Research, Cambridge.

DEST (Department of Education, Science and Training) 2004, *National Report to Parliament on Indigenous Education and Training*, Commonwealth of Australia, Canberra.

DEST 2006a, *The Early Childhood Education Workforce in Australia*, Working paper, Canberra.

DEST 2006b, *National Report to Parliament on Indigenous Education and Training*, Commonwealth of Australia, Canberra.

Department of Family and Community Services 2004, *Stronger Families and Communities Strategy: National Agenda for Early Childhood*, Department of Family and Community Services, Canberra.

Doig, B, McCrae, B & Rowe, K 2002, *A good start to numeracy.* ACER Press, Camberwell.

Elliott, A 2006, *Early Childhood Education: Pathways to quality and equity for all children*, ACER Press, Camberwell.

EC (European Commission) 2005,

EC 2006, *Classification of Learning Activities - A Manual,* ISSN. 1725-0056, European Commission, Luxembourg.

EC 2005, *Task Force Report on Adult Education Survey*, ISSN. 1725-065X, European Commission, Luxembourg.

Farquhar, S 1999, 'The trouble with "quality"', *The First Years: New Zealand Journal of Infant and Toddler Education,* vol. 1 (1), pp. 10-14.

Fleer, M 2000, *An early childhood research agenda: voices from the field*, Commonwealth Department of Education, Training and Youth Affairs, McMillan Printing Group, Canberra.

Fleer, M & Udy, G 2002, 'Early years education in Australia', *Yearbook, Australia*, cat. no. 1301.0, ABS, Canberra.

Government of South Australia 2005, *The Virtual Village: Raising a Child in the New Millennium*, Department of Education and Children's Services: Report of the Inquiry into Early Childhood Services, January 2005, DECS Publishing, Adelaide.

Gray, M & Sanson, A 2005, 'Growing up in Australia: the Longitudinal Study of Australian Children', *Family Matters,* no. 72, Summer, pp. 4 - 9.

Harrison, L & Ungerer, J 1997, 'Child Care Predictors of Infant-Mother Attachment Security at Age 12 Months', *Early Child Development and Care,* vol. 137, pp. 31-46.

Heckman, J 2006a, *Investing in Disadvantaged Young Children is an Economically Efficient Policy - Building the Economic Case for Investments in Preschool*, 10 January, Committee for Economic Development, New York.

Heckman, J 8-9 February 2006b, *The economics of investing in early childhood*, *Prevention: Invest Now or Pay Later*, NIFTeY National Conference, Sydney.

High, P, LaGasse, L, Becker, S, Ahlgren, L & Gardner, A 2000, 'Literacy promotion in primary care pediatrics: Can we make a difference?', *Pediatrics,* vol. 105(4), pp. 927-933.

Hoff, E & Naigles, L 2002, 'How children use input to acquire a lexicon', *Child Development,* vol. 73(2), pp. 418-434.

Lindsey, G 1998, 'Brain research and implications for early childhood education', *Childhood Education, Winter,* vol. 75 no. 2, pp. 97-104.

McCain, M & Mustard, JF 1999, *Early Years Study: Reversing the real brain drain*, Final report to Government of Ontario, Toronto.

Machin, S 2006, 'Social Disadvantage and Education Experiences', *OECD Social, Employment and Migration Working Papers,* no. 32, OECD, Paris.

Magnusson, K, Meyers, M, Ruhm, C & Waldfogel, J 2004, 'Inequality in Preschool Education and School Readiness', *American Educational Research Journal,* vol. 41, pp. 115-57.

Masse, L & Barnett, WS 2002, *A Benefit Cost Analysis of the Abecedarian Early Childhood Intervention*, National Institute for Early Education Research, Rutgers University, New Brunswick, N J.

Melhuish, EC 2003, *A literature review of the impact of early years provision on young children, with emphasis given to children from disadvantaged backgrounds.* National Audit Office, London.

Meyers, M, Rosenbaum, D, Ruhm, C & Waldfogel, J 2004, 'Inequality in Early Childhood Care and Education: What do we know?' in K. Neckerman (ed.), *Social Inequality*, Russell Sage Foundation, New York.

MCEETYA (Ministerial Council on Education, Employment, Training and Youth Affairs) 2006, *Australian Directions in Indigenous Education 2005-2008*, viewed 15 October 2007.

MCEETYA 2000, *National Report on Schooling in Australia*, viewed 15 October 2007.

MCEETYA 2005, *National Report on Schooling in Australia*, viewed 15 October 2007.

Mustard, JF 2005, *Early child development and experience-based brain development - The scientific underpinnings of the importance of early child development in a globalized world,* Paper prepared for the World Bank International Symposium on Early Child Development, September 27-29 Washington D.C.

NICHD Early Child Care Research Network 1996, 'Characteristics of Infant Child Care: Factors contributing to positive caregiving', *Early Childhood Research Quarterly,* no. 11, pp.269-306.

NICHD Early Child Care Research Network 2002, 'Early child care and children's development prior to school entry: Results from the NICHD study of early child care', *Child Development,* no. 72, pp. 1478-1500.

NICHD Early Child Care Research Network & Duncan, G J 2003, 'Modeling the impacts of child care quality on children's preschool cognitive development', *Child Development, no. 74,* pp. 1454-1475.

Olmsted, PP & Montie, J 2001, *Early Childhood Settings in 15 Countries: What are their structural characteristics?*, High/Scope Educational Research Foundation, Ypsilanti, Michigan.

OECD (Organisation for Economic Cooperation and Development), *OECD Family Database*, viewed 12 December 2007.

OECD 2001, *Starting Strong: Early Childhood Education and Care*, OECD, Paris.

OECD 2005, *Education at a Glance*, OECD, Paris.

OECD 2006, *Starting Strong II: Early Childhood Education and Care*, OECD, Paris.

Peisner-Feinberg, E, Burchinal, M, Clifford, M, Culkin, M, Howes, C, Kagan, S & Yazejian, N 2001, 'The relation of preschool child care quality to children's cognitive and social developmental trajectories through second grade', *Child Development,* vol. 72, no. 5, pp. 1534-1553.

Peisner-Feinberg, ES, Burchinal, MR, Clifford, RM, Culkin, ML, Howes, C, Kagan, SL, Yazejian, N, Byler, P, Rustici,J & Zelazo, J 2000, *The children of the cost, quality, and outcomes study go to school: Technical report*, Frank Porter Graham Child Development Center, University of North Carolina, Chapel Hill.

Press, F & Hayes, A 2000, *OECD Thematic Review of Early Childhood Education and Care Policy: Australian Background Report*, Commonwealth of Australia, Canberra.

Press, F 2006, *What about the kids? Policy directions for improving the experiences of infants and young children in a changing world*. NSW Commission for Children and Young People, Qld Commission for Children and Young People and Child Guardian and National Investment for the Early Years, Sydney.

Raban, B & Ure, C 1999, *Accelerating literacy progress for new school entrants*, Paper presented at the Australian Association for Educational Research Conference, Melbourne.

Reynolds, AJ 1999, *The Chicago Longitudinal Study: A Study of Children in the Chicago Public Schools,* viewed 15 October 2007.

Russell, A 1985, *An observational study of the effect of staff-child ratios on staff and child behaviour in South Australian kindergartens*, Flinders University, Adelaide.

Sabatini, J P 2004, *Framework for the Assessment of Reading Component Skills*, Educational Testing Service, Princeton.

Scarr, S, Eisenberg, M & Deater-Deckard, K 1994, 'Measurement of quality in child care centres', *Early Childhood Research Quarterly,* vol. 9, pp. 131-151.

Schweinhart, LJ 2005, *The High/Scope Perry Preschool Study Through Age 40 - Summary, Conclusions and Frequently Asked Questions*, High/Scope Educational Research Foundation, Michigan.

Shonkoff, J, & Phillips, D 2000, *From Neurons to Neighbourhoods: the science of early childhood development*, National Academy Press, Washington DC.

Siegel, D & Hartzell, M 2003, *Parenting from the Inside Out*, Guilford Press, New York.

Siraj-Blatchford, I 2004, 'Quality teaching in the early years', in A. Anning, J. Cullen & M. Fleer (eds.) *Early childhood education - Society and culture*, SAGE publications, London, pp. 137-148.

Smith, AB, Grima, G, Gaffney, M, Powell, K, Massee, L & Barnett, S 2000, *Strategic Research Initiatives: Literature review*. Early Childhood Education Report to the Ministry of Education, New Zealand.

SCRGSP (Steering Committee for the Review of Government Service Provision) 2003, *Overcoming Indigenous Disadvantage - Key Indicators 2003*, Melbourne.

SCRGSP 2005, *Overcoming Indigenous Disadvantage - Key Indicators 2005*, Melbourne.

SCRGSP 2007a, *Overcoming Indigenous Disadvantage - Key Indicators 2007*, Melbourne.

SCRGSP 2007b, *Report on Government Services*, Productivity Commission, Melbourne.

Sylva, K, Melhuish, E, Sammons, P, Siraj-Blatchford, I, Taggart, B & Elliot, K 2003, *The Effective Provision of Pre-School Education [EPPE] Project*, The EPPE Symposium at The British Educational Research Association Annual Conference, University of London, London.

Tuijnman, A 1996, *Lifelong Learning for All,* OECD, Paris.

Tymms, P & Whylde, M 2003, *Baseline assessment and monitoring in primary schools*, Paper presented at the Suymposium Connectable Processes in Elementary and Primary Section, April 2003, Bamberg.

Watson, J & Moore, T 2002, *Towards a more effective system of support and intervention for young children and their families*, Early Childhood Systems National Meeting. Centre for Community Child Health, Canberra.

Waldfogel, J 2006 *What Children Need* ,Harvard University Press, London.

Whitehurst, G & Lonigan, C 1998, 'Child development and emergent literacy'. *Child Development,* no. 69, pp. 848-872.

Wylie, C, Thompson, J, Hodgen, E, Ferral, H, Lythe C & Fijn, T 2004, *Competent Children at 12*, Ministry of Education, New Zealand.

Zubrick, SR, Silburn, SR, Gurrin L, Teoh H, Shepherd C, Carlton J, & Lawrence D 1997, *Western Australian Child Health Survey: Education, health and competence*. ABS and The TVW Telethon Institute for Child Health Research, Perth.

Zubrick, SR, Williams, AA, Silburn, SR & Vimpani, G 2000, *Indicators of Social and Family Functioning*, Department of Family and Community Services, Commonwealth of Australia.

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