

Productivity Commission Inquiry into Child Care and Early Childhood Learning



University of Wollongong ~ Consultation Paper

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Preamble

The Productivity Commission's '*Inquiry into Child Care and Early Childhood Learning*' presents a significant opportunity for many different stakeholders to consult on the current system of early childhood education and care in Australia with the aim of shaping reforms that will ensure an accessible and sustainable system in the future. Whilst the Commission's approach is appropriately broad, the University of Wollongong is well placed to comment on particular items outlined in the 'Issues Paper' that directly align with its own mission and goals. These include:

- the social and economic benefits that accrue from investment in high quality early childhood education and care
- children's learning and developmental needs particularly with regard to transition into the formal education system
- the provision of specialised services for children who are designated as 'at risk' or with additional needs, including the particular challenges faced by children from regional, rural and remote areas and those from Aboriginal and Torres Strait Islander backgrounds
- the opportunities for collaboration with colleagues whose experiences of international models of early childhood education and care have relevance for Australia
- workforce issues, including education-related issues, resulting from changes to the National Quality Framework (NQF) and the implications this has for the National Quality Standards (NQS).

Underpinning these issues is the University's continued focus on identifying and meeting the particular educational needs of regional, rural and remote communities, a goal which it has pursued more recently through the *Early Start* initiative (<http://www.earlystart.uow.edu.au>). The capital investment of \$31 million for this project was awarded in the 2012 round of the Commonwealth Government's Education Investment Fund (EIF). This initiative is described below.

We appreciate the opportunity to provide this initial submission to the Productivity Commission and would welcome further involvement through our national and international experts during the public hearing phase of the process.

Context: *Early Start* and the University of Wollongong

The University of Wollongong is a regional University with a main campus at Wollongong and a series of other campuses extending from Sydney's CBD and Southern Sydney to the Southern Highlands as well as south to Nowra (Shoalhaven Campus), Bateman's Bay and Bega. In addition, a substantial campus is based in Dubai and a range of programs is offered through sites in Malaysia, Singapore and Hong Kong (<http://www.uow.edu.au>).

The *Early Start* initiative is one of the University's most recent enterprises. *Early Start* embodies a multi-disciplinary approach to developing practice and research on the earliest years of life with a particular focus on birth to five years. It involves three key elements: a 'state-of-the-art' building currently under construction at the University's Wollongong campus; the 'Discovery Space' housed

within the main building and providing public access to children and families; and, a 'connected' network of 38 early childhood education and care services in areas of recognised disadvantage across NSW. The University aims to drive positive social change by enhancing the learning and development experiences of children, families and communities through the inter-connectedness of these facilities.

Early Start is on schedule to be fully operational in 2015 and collaboration with the 38 services, or 'Early Start Engagement Centres', is regarded as integral to the success of the venture. The Centres extend from Tweed Heads in the north to Broken Hill in the west and to Bega in the south of the state. The University is providing each Centre with resources that will reduce communication barriers. These resources include video-conferencing facilities, an interactive display panel, an interactive play table and, where appropriate, iPads or tablets.

The resources provided are designed to enhance children's learning experiences as well as providing a means for staff and families to connect directly to academics, discipline experts and professionals who specialise in children's learning and development. The Centres are encouraged to form their own network to ensure their 'connectedness' across the sector, opening up channels of communication that currently don't exist, further supporting the professional development of staff. Interestingly, as the technology is currently rolled out to the 38 selected Centres, we are witnessing overwhelming enthusiasm from many other early childhood education and care services in regional, rural and remote areas.

Connections from the University to early childhood and family services, as well as other community agencies in regional, rural and remote areas, will extend the reach of higher education beyond current boundaries. These connections will ground teaching, research and community engagement activities in real life settings, providing authentic learning opportunities for students and researchers across many disciplines, whilst providing communities with strong links to experts in fields such as Early Childhood Education, Developmental Psychology, Social Work and Health.

Through *Early Start* the University is committed to developing a cutting edge research and teaching agenda with a focus on the earliest years. To achieve this aim colleagues from international institutions, including Professor Edward Melhuish and Professor Iram Siraj from the United Kingdom (both of whom are mentioned in the Productivity Commission's Issues Paper, December 2013) as well as other eminent scholars, are currently working in close collaboration with academics at the University of Wollongong. In conjunction with the University's other resources, *Early Start* will provide a multi-disciplinary platform for informing theory, policy and practice in the early years of life, both within Australia and internationally.

Investing in high quality early childhood education and care

Investment in the early years is vital in terms of addressing social, educational and economic disadvantages that contribute to the gaps in equity that currently exist in Australia. Globally, in the face of increases in wealth and material advantage, there exists what is often termed a 'paradox of progress'. In other words, at the same time that we see increased economic growth, particularly in stable countries such as Australia, we can also measure increases in inequality (World Bank, 2005). It is the inequalities that have an impact on our youngest children and their families that are of particular concern. These inequalities influence not only individual development but also the social and economic capacity of our society. Research has documented the potential of high-quality early childhood education to support optimal development for all children, with the largest benefits shown by children considered 'at risk' due to poverty or other disadvantage.

A new wave of research has confirmed the critical impact that investment in the early years can have on development, education and life outcomes. The benefits of high quality education and care offered

by well-qualified educators for young children, their families and society in general are well documented. In essence, the life trajectories of children whose early experiences are shaped by the positive influences of appropriately qualified and resourced educators are productive at both the individual and societal levels. For example, when examining the health and academic outcomes for young children in Latin American countries, Mustard and Tinajero (2010) showed that the lowest mortality rates and strongest education outcomes were to be found not in the wealthier countries such as Chile, but rather in poorer countries such as Cuba where strong investments are made in integrated programs in the earliest years of a child's life.

Nobel prize winner in Economics in 2000, Professor James Heckman based at the University of Chicago, argues strongly for investment in early childhood education and the propensity this has for transforming lives. Professor Heckman's research leads him to regard educational equity as more than a question of social justice. Rather, it is an economic imperative with far-reaching implications for nations. Much of the impetus for *Early Start* is predicated on the work of Professor Heckman and others in the field.

Heckman (2000) contends that early interventions can promote a range of personal and social achievements that have an impact at the individual and societal levels. Interventions that improve child and social welfare are estimated to have high benefit-cost ratios and rates of return in the range of 6–10% per annum. In a report in the *American Educator* in 2011 he wrote, "*The evidence is quite clear that inequality in the development of human capabilities produces negative social and economic outcomes that can and should be prevented with investments in early childhood education, particularly targeted towards disadvantaged children and their families.*" (p. 32).

Whilst some research reports specifically on the benefits of entry to pre-school for those who suffer socio-economic disadvantage, there is a strong case for benefits for all. The 'pay offs' are high for *all* children, but particularly for those who experience disadvantage when we institute programs with a clear focus on the years prior to school, yielding huge returns with regard to human capital (Heckman, 2000). Investing early facilitates larger benefits over a longer period of time, building on the return to investment.

As recently as 28 January 2014, in his State of the Union address to a joint session of Congress, President Obama called for increased support for the earliest years of life. He noted that, "*Research shows that one of the best investments we can make in a child's life is high-quality early education*" (<http://www.whitehouse.gov/the-press-office/2014/01/28/president-barack-obamas-state-union-address>). Obama's call for government investment in "*partnerships with states and communities across the country . . . to help more kids access the high-quality pre-K they need*" received bipartisan support from Congress as reported in The New York Times (see <http://www.nytimes.com/2014/01/30/opinion/kristof-pre-K-the-great-debate.html?hp&rref=opinion&r=0>).

In Australia we are well aware of both the advantages and disadvantages that can accrue as a result of children's early experiences. A recent report by The Benevolent Society (Moore & McDonald, 2013) supporting increased investment in the early years summarises international research and confirms that the experiences of children in Australia parallel those of their peers overseas. In fact, it appears that the situation in Australia may be deteriorating, with children and young people facing increasingly high levels of disadvantage.

Optimising transition into the formal education system by meeting children's learning and development needs

Research documents a wide range of compounding benefits that early childhood education and care can have for individuals and the broader society. Interventions in health and education services result in children who are more likely to be healthy, who will be primed and ready to learn as they enter primary school, who will remain in school for extended periods with improved educational attainment, and whose life-time well-being is also likely to be enhanced.

Professor Edward Melhuish from Oxford University cites long-term studies demonstrating the consistent and enduring benefits associated with entry to high-quality pre-schools for children aged three or four years. For example, a study based in the United Kingdom (Sammons, Sylva, Melhuish, Siraj-Blatchford, Taggart & Hunt, 2008) showed that the effect of attending a high-quality pre-school on subsequent literacy and numeracy levels at eleven years of age can equal or surpass other factors, including the quality of a primary school education. More recently, Professor Melhuish (2011) argues that "*the benefit deriving from 18 months of pre-school is similar to that gained from 6 years of primary school*" (p.300). The challenge, of course, is to make sure that pre-school learning is of the highest quality.

In the US and the UK, the argument for benefits in terms of school readiness suggests that the greatest advantages result for those who enter pre-school between two and three years of age (Loeb, Bridges, Bassok, Fuller & Rumberger, 2007; Sylva, Melhuish, Sammons, Siraj-Blatchford, & Taggart, 2004). Other evidence affirming the positive effects of high-quality pre-school attendance indicates that children aged 15 years who had attended pre-school were, on average, one year ahead of those who had not attended pre-school in terms of educational attainment (Organisation for Economic Co-operation and Development [OECD], 2011).

The most comprehensive study of child care in the United States, the Study of Early Child Care and Youth Development by the National Institute of Child Health and Human Development (NICHD SECCYD) began in 1991 and involved over 1300 children in 10 sites across the US. Children and families from a range of socioeconomic backgrounds were included in the study which found that higher quality child care is related to better cognitive-academic performance not only at pre-school (NICHD, 2002) but through early and later elementary school (NICHD, 2005), and also persists to age 15 (Vandell, Burchinal, Vandergrift, Belsky, Steinberg, & NICHD Early Child Care Research Network, 2010). In fact, Vandell and colleagues (2010) reported that higher quality child care was associated with greater cognitive-academic achievement at age 15, "*with escalating positive effects at higher levels of quality*" (p. 737). Contrary to the 'fade out' assumption that educational gains diminish over time, the adolescent outcomes were similar in size to those reported at younger ages.

In the longer term we can expect that, as adults, children who attend high-quality pre-schools will be socially well adjusted and productive, contribute to the economic growth of society and develop capacity for breaking what we often see as an inter-generational cycle of poverty. The long-term benefits resulting from early pre-school attendance are evident in the literature. Melhuish (2011) notes that the work of Reynolds, Temple, Ou, Arteaga and White (2011) in the US shows these benefits can be particularly pronounced for disadvantaged males and for children of parents who failed to complete secondary schooling. For example, Reynolds et al. (2011) show that by the age of 28, educational levels, incomes and socio-economic status were higher for those who start pre-school at the age of three or four. At the same time, these individuals appear to experience lower rates of substance abuse and of legal problems.

In short, the research both nationally and from overseas is consistent: our focus must be on the earliest years of life because, according to Esping-Andersen (2004), it's likely that 'the race is already halfway run' before formal schooling begins.

Specialised services for children who are 'at risk' or with additional needs, including the particular challenges faced by children from Indigenous backgrounds and families living in regional, rural and remote areas

A variety of factors may lead to a child being designated as 'at risk' and requiring specialised attention and support. The challenges this situation poses for families may be reduced through access to appropriate resources and support. For families living in regional, rural and remote areas with limited access to facilities that will support their children's development and education, the challenges are compounded. In fact, there is likely to be a profound impact on the long-term life chances of these children.

Services with the potential to connect with families in more remote areas are vital if the significant needs of these children are to be acknowledged and addressed. Parents and members of extended family networks require specialised information and support to address the additional needs that arise in circumstances where a child is deemed to be vulnerable. Services that combine the expertise of professionals across disciplines, for example, early childhood educators, social workers and health professionals, are vital yet often not accessible.

What is also now evident is that a child's life trajectory is well established by around five to six years of age. While individual children may benefit from intensive, remedial-focused educational interventions in later years, research at the population level shows a child's future on a comprehensive range of quality of life measures such as income, emotional stability and academic achievement is essentially mapped by the time they begin formal schooling.

Professor Edward Melhuish (2011) highlights the risks associated with adversity in the earliest years of life. Children who lack the advantages that many of us may take for granted (even simple things like eating a nutritious breakfast each morning or enjoying a safe, secure and stimulating home environment) face likely outcomes of poor rates of literacy and educational attainment. There is also an increased risk of poor mental and physical health, as well as lower adult mortality at later ages. In addition, as we know, children who lack these basic experiences in their early years are over-represented in youth and adult populations showing evidence of poor educational and occupational success, anti-social behaviour and substance abuse. These characteristics are well documented among those in prison. Clearly, this does not apply to all children who suffer adverse experiences in their early years. The point is that it should not apply to any.

In the US two well-known and often-cited programs have demonstrated the promise of early childhood interventions to positively impact achievement and overall development in children from low-income backgrounds: the Perry Pre-school and Abecedarian projects. Despite being relatively small-scale programs, the empirical research base established by these studies has documented the efficacy of high quality early childhood programs in reducing the impact of poverty on school achievement and other important long-term outcomes (Campbell et al., 2002; Schweinhart, 2005).

The Perry Pre-school Project started in 1962 and has followed the lives of 123 African Americans born in poverty and at high risk for school failure. From 1962–1967, at ages 3 and 4, these 123 children were randomly assigned to a program group receiving a high-quality pre-school program and a control group who received no pre-school program. The study's most recent results, published in 2005, focus on the 97% of the study participants still living who were interviewed at age 40. Additional data were gathered from the participants' school, social services and arrest records. The study found that adults at age 40 who experienced the pre-school program had higher earnings, were more likely to hold a job, had committed fewer crimes, and were more likely to have

graduated from high school than adults who did not experience the pre-school program. This report (Schweinhart, 2005), the eighth monograph following these individuals, and other reports documenting child outcomes at younger ages can be accessed at <http://www.highscope.org>. The Abecedarian Project was also a longitudinal study of the benefits of early childhood education for children living in poverty. Four cohorts of infants, born between 1972 and 1977, were randomly assigned to either the early education intervention group or the no treatment control group. The intervention group experienced a full-time, high-quality educational program from infancy through to age five. Children's progress was monitored over time with follow-up studies at ages 12, 15 and 21. The findings document a wide range of cognitive and social benefits for the intervention group at every age. The young adult findings demonstrate that long-lasting, socially significant benefits were associated with attendance at the early childhood program (Campbell, Ramey, Pungello, Sparling & Miller-Johnson, 2002). The numerous publications resulting from the Abecedarian Project can be accessed at <http://www.fpg.unc.edu/~abc/#citations>.

In a recent interview on 'Today Tonight' (21 January 2014) Professor Frank Oberklaid, Director of the Community Child Health Centre at Melbourne's Royal Children's Hospital, noted that children who start school from a position of vulnerability will lack the resources to benefit from all that schools have to offer. He notes that as a society our expectation is that teachers will "*do the impossible to make up for what has been missing in the first five years of a child's life*" (<http://au.news.yahoo.com/today-tonight/latest/article/-/20918> accessed 24 January 2014).

As one of the architects of the Australian Early Development Index (AEDI), Professor Oberklaid expressed concern about initial results: "*About one in four children [currently] arrive at school vulnerable in one area of development, and about one in nine children arrive at school significantly at risk in terms of health and development . . . Our global report card reveals Australia is consistently out-performed in mathematics, science and reading by Shanghai, Hong Kong, Korea and Singapore*" (<http://au.news.yahoo.com/today-tonight/latest/article/-/20918> accessed 24 January 2014).

The AEDI indicates that Indigenous (Aboriginal and Torres Strait Islander) children in particular fare very poorly compared with non-Indigenous children, being twice as likely to be developmentally vulnerable. Recently Professor Oberklaid, Professor Melhuish and others collaborated in an article in the *Archives of Diseases in Childhood* encouraging greater integration of early years services to help tackle these issues for children from disadvantaged families (Oberklaid, Baird, Blair, Melhuish & Hall, 2013).

Collaboration with colleagues from international institutions whose experiences in the sector have relevance for the Australian context

The University of Wollongong has good mechanisms in place for collaboration with eminent early childhood researchers both nationally and internationally. The following examples whilst not exhaustive provide an indication of the extent of the work that is currently underway at the University with a focus on the early childhood sector.

Professors Melhuish and Siraj (previously Siraj-Blatchford) have both been involved in extensive research with a wide range of researchers in the UK and elsewhere and have accepted part-year appointments to work with colleagues at the University of Wollongong. They were both principal investigators of the Effective Provision of Preschool Education (EPPE) project in England and the EPPNI project in Northern Ireland. Both Melhuish and Siraj are currently working with researchers at the University of Wollongong on a multi-disciplinary project to collect baseline data from the 38 Early Start Engagement Centres on a range of cognitive, psychosocial and physical development factors.

As Professor of Early Childhood Education at the University of London, Professor Siraj's recent research projects have included leading on the 'Evaluation of the Foundation Phase across Wales'. She is a principal investigator of the major DCSF 15-year study on Effective Pre-school, Primary and Secondary Education (EPPSE 3-16, 1997-2013) and of the influential Researching Effective Pedagogy in the Early Years project (REPEY). She is currently working on a series of longitudinal studies as a principal investigator in a number of countries including the UK, Australia and Ireland. Her recent DfE publications on effective pedagogy in primary schools (EPPSEM study, Siraj-Blatchford et al. 2011) and 'unpacking' the influences on the trajectories of children performing 'against the odds' (Siraj-Blatchford et al. 2011) have received international recognition.

She is a specialist early years advisor to governments and ministers in the UK and internationally and has advised UNESCO, World Bank and UNICEF on early education and care. She is also a specialist adviser to the House of Commons Select Committee on Education and is undertaking a stocktake of the Foundation Phase (children aged from 3 to 7 years) for the Welsh government.

Professor Melhuish was Executive Director of the National Evaluation of Sure Start (<http://www.ness.bbk.ac.uk>) and his work was pivotal in establishing Children's Centres as the delivery model for Sure Start (mentioned in the 'Issues Paper'). He is currently involved in collaboration with researchers from eleven European countries (UK, Netherlands, Poland, Germany, Italy, Norway, Finland, Denmark, Greece, Portugal and Belgium) in producing a report for the European Commission on early childhood education and care. The report identifies eight key issues for which effective policy measures and instruments should be developed. They concern assessing the impact of early childhood education and care, optimizing quality and curricula to increase effectiveness, raising the professional competencies of staff, monitoring and assuring quality, increasing inclusiveness for disadvantaged children, funding, and the need for innovative indicators of children's wellbeing.

The project is addressing these issues in an integrative way by combining state-of-the-art knowledge of factors determining personal, social and economic benefits with knowledge of the mechanisms determining access to and use of early childhood education and care services. This work will include the perspectives of important stakeholders and integrate cultural beliefs and values. The central aim is to develop an evidence-based and culture-sensitive framework of (a) Developmental goals, quality assessment, curriculum approaches and policy measures for improving the quality and effectiveness of early years services and (b) Effective strategies of organizing, funding and governing services that increase impact on children's outcomes.

Professor Melhuish is a member of the [Human Capital and Economic Opportunity Working Group Early Childhood Interventions Group, based at the University of Chicago](#), which integrates research from several disciplines and researchers across many countries. He has also acted as a consultant for children's organisations (e.g. UNESCO), UK government departments (e.g. DfE, DWP, DoH, Treasury, Prime Minister's Office), served as an expert witness to several UK House of Commons Select Committees and is a consultant to the Stanford Research Institute, USA, and a scientific advisor to the UK research councils, Nordic Research Council, Academy of Finland, Portuguese Research Council, Australian Research Council, Deutsche Forschungsgemeinschaft (German Research Council), South Korea, Canada, Saudi Arabia and Chile, as well as the European Commission, OECD and the World Health Organization (WHO). He has supervised research in rural China, and has links with Beijing and Shanghai universities. He collaborated with researchers from several countries in a three volume WHO report on improving the lives of children and young people (Barnekow, Jensen, Currie, Dyson, Eisenstadt & Melhuish, 2013) and has written a report for the OECD.

From the US, Dr Diane Horm is the George Kaiser Family Foundation Endowed Chair of Early Childhood Education and Founding Director of the Early Childhood Education Institute (ECEI) at the University of Oklahoma in Tulsa. She has accepted an honorary professorial appointment at the University of Wollongong and will provide consultation on the further development of the University's early childhood courses. In addition, drawing from her own experiences in the US, she will collaborate with other researchers at the University with a focus on the design and evaluation of early childhood interventions and their impact on local and national policy.

Dr. Horm is currently leading several applied research initiatives including program evaluation research of Oklahoma's efforts to expand and enhance group care and education for children from birth to three years. Her involvement in Educare, an innovative research-based early childhood education program model that serves children from birth to five years from low-income families is currently implemented in 17 sites across the U.S and continues to expand (<https://www.ou.edu/content/education/centers-and-partnerships/early-childhood-education-institute/current-projects.html>). The 'embedded' evaluation has documented that Educare classrooms are high quality and that children are demonstrating gains in school readiness skills. The results highlight the importance of starting early, at around two years of age, and continued participation in a high-quality early childhood program as key for reducing or even preventing the income-linked achievement gap evident at formal school entry.

Professor John Reilly from the University of Strathclyde in the UK is a prominent international expert in early years sedentary behaviour and obesity. As a visiting fellow at the University of Wollongong he works closely with Professor Anthony Okely, the Director of Research for *Early Start*. Professor Okely led the research team that developed the Australian Physical Activity Recommendations for Children 0 – 5 years and the Australian Physical Activity and Sedentary Behaviour Guidelines for Children and Young People. Professor Okely is the most published researcher in the world in the area of pre-school physical activity and in movement skills.

Professor Donna Berthelsen at the Queensland University of Technology is Design Leader for the Education Team (one of the five major streams) of the \$60 million Longitudinal Study of Australian Children (LSAC). She is also currently collaborating with Professor Okely on an NHMRC Project Grant investigating a whole of community approach to promoting physical activity in disadvantaged preschoolers. Professors Melhuish, Siraj and Professor Dale Ulrich (University of Michigan) are also involved in this study.

Professor Fred Paas holds a key position in educational psychology at Erasmus University Rotterdam in the Netherlands. As a professorial fellow at the University of Wollongong he works closely with Professor Paul Chandler, Executive Director Early Start and Pro Vice Chancellor (Inclusion and Outreach). Professor Chandler is widely acknowledged as a leader in education in Australia with a strong focus on improving outcomes in education and health for Aboriginal and Torres Strait Islander children. He is regarded as an international expert in cognition and learning and in 2008, at a National Press Club event, was awarded as one of Australia's ten most pre-eminent researchers.

Professor Paas uses the theoretical framework of cognitive load theory to investigate the instructional control of cognitive load in the training of complex cognitive tasks. His research focuses on the design of effective and efficient learning environments by applying current multi-disciplinary scientific knowledge about the human cognitive system. This research has resulted in measurement techniques for cognitive load, instructional efficiency and involvement, identification of germane cognitive load through the variability effect, the cognitive aging effect, the human movement effect, and the collective working memory effect.

The University of Wollongong in conjunction with the *Early Start* initiative plans to make use of these and other international collaborations to strengthen the quality of research being produced in the early childhood field and the impact this has upon policy and practice.

Workforce issues and education-related issues resulting from changes to the National Quality Framework (NQF) and the National Quality Standards (NQS)

The Productivity Commission's Research Report on the Early Childhood Development Workforce, released on 1 December 2011, states that high quality early childhood services, including transition to the first years of school, are recognised as vital in improving long term educational, health and social outcomes. This report also acknowledges that a well-trained workforce is essential to the delivery of these services.

One of the most important components of quality for early childhood education and care has been identified as higher qualifications for early childhood professionals. An additional factor is the child-educator ratio as outlined in the NQS although concerns exist about the ability to meet current and expected demands. The attraction and retention of an appropriately qualified workforce must therefore be regarded as a high priority.

A priority for the University of Wollongong is the provision of innovative ways of offering current and new degrees that will benefit from the connections and resources provided by *Early Start*. Students across the region as well as those in rural and remote areas will have opportunities to study in courses that previously have not been offered beyond the Wollongong campus. The B. Education – The Early Years (Birth – 5 Years) is one particularly relevant example. This four-year course will be available in 2015 to students at Shoalhaven, Bateman's Bay and Bega campuses in addition to the Wollongong campus where it is currently delivered and it will draw on all of the resources that *Early Start* offers. Importantly, the curricula are informed by the best available evidence and knowledge base regarding the key components of successful and high-quality early childhood education and care programs.

The B. Social Work and the B. Social Sciences, new degrees for the University of Wollongong, will also be offered for the first time in 2015 across a number of regional campuses and will draw on *Early Start* resources. Given that the University of Wollongong is conducting cutting-edge and highly innovative research in areas such as child development and wellbeing, cognition, integration of technology into practice, and healthy lifestyles, we are in a unique position to apply this knowledge quickly and directly into our programs.

In all cases, the specialised resources that *Early Start* offers and its connections to the network of 38 early childhood and education centres will provide access to students who previously would have been under-represented in higher education. Programs such as these and others will contribute to a workforce that requires a specialised knowledge and understanding of the requirements for optimal development of young children and the support mechanisms necessary for their families. Importantly for the centres, access to the University will ensure that, even at a distance, staff, children and families will have direct contact with professionals who can provide much-needed advice and support.

Concluding remarks

The focus of the Productivity Commission and its interest in early childhood education and care is significant in terms of Australia's social and economic future. National and international research has identified the risks and challenges that exist when appropriate resources are not accessible to young children and their families.

The skills needed for good life chances are expanding and becoming more complex. At the same time, there has been little progress in equalizing opportunities, with the impact of social origins on child outcomes and well being persisting and even increasing. The aims of equality and future productivity merge in policy in realising that learning capabilities and social dispositions are primarily formed during the early childhood years. Thus, improving life chances in early childhood can serve both the goals of reducing inequality and raising the productive capacity and global wellbeing of a society. This will have an impact upon the wellbeing of the population as a whole but with even greater benefits for children from disadvantaged backgrounds.

The University of Wollongong has a keen interest in the development of the discussion engendered by the Productivity Commission. We have considerable resources dedicated to research across the early childhood sector and our scholars would welcome opportunities to provide evidence-based input to the Inquiry as it unfolds.

References

- Barnekow, V., Jensen, B.B., Currie, C., Dyson, A., Eisenstadt, N. & Melhuish, E. (Eds.) (2013). Improving the lives of children and young people: Case studies from Europe: Volume 1. Early years. Copenhagen: WHO Regional Office for Europe. Retrieved from <http://www.euro.who.int/en/publications/abstracts/improving-the-lives-of-children-and-young-people-case-studies-from-europe.-volume-1.-early-years>
- Barnekow, V., Jensen, B.B., Currie, C., Dyson, A., Eisenstadt, N. & Melhuish, E. (Eds.) (2013). Improving the lives of children and young people: Case studies from Europe: Volume 2. Childhood. Copenhagen: WHO Regional Office for Europe. Retrieved from http://www.euro.who.int/_data/assets/pdf_file/0016/232504/WHO-case-studies-Volume-2-MS-with-cover-rev1.pdf
- Barnekow, V., Jensen, B.B., Currie, C., Dyson, A., Eisenstadt, N. & Melhuish, E. (Eds.) (2013). Improving the lives of children and young people: Case studies from Europe: Volume 3. School. Copenhagen: WHO Regional Office for Europe. Retrieved from http://www.euro.who.int/_data/assets/pdf_file/0017/232505/WHO-case-studies-Volume-3-MS-with-cover-rev1.pdf
- Campbell, F. A., Ramey, C. T., Pungello, E. P., Sparling, J., & Miller-Johnson, S. (2002). Early childhood education: Young adult outcomes from the Abecedarian Project. *Applied Developmental Science*, 6, 42-57.
- Esping-Andersen, G. (2004). Untying the Gordian Knot of Social Inheritance. *Research in Social Stratification and Mobility*, 21, 115-139.
- Heckman, J. J. (2000). Invest in the Very Young. Chicago, Illinois, Ounce of Prevent Fund and the University of Chicago Harris School of Public Policy Analysis.
- Heckman, J.J. (2011). The Economics of Inequality. *American Educator*, 35 (1), 31-47.
- Kristof, N. (2014). 'Pre-K, the Great Debate', The New York Times, 29 January 2014. Retrieved from <http://www.nytimes.com/2014/01/30/opinion/kristof-pre-K-the-great-debate.html?hp&rref=opinion&r=0>
- Loeb, S., Bridges, M., Bassok, D., Fuller, B., & Rumberger, R.W. (2007). How much is too much? The influence of pre-school centres on children's social and cognitive development. *Economics of Education Review*, 26, 52-66.
- Melluish, E.C. (2011). Preschool Matters. *Science*, 333, 299-300.
- Moore, T.G. & McDonald, M. (2013). Acting Early, Changing Lives: How prevention and early action saves money and improves wellbeing. Prepared for the Benevolent Society. Parkville, Victoria: Centre for Community Child Health at The Murdoch Children's Research Institute and The Royal Children's Hospital.

- Mustard, F., & Tinajero, A. (2010). Cuba and Early Human Development. Report for Van Leer Foundation, in Alfredo R. Tinajero, Scaling-up early child development in Cuba - Cuba's education your children program: Strategies and lessons from the expansion process. Wolfensohn Center for Development at Brookings, Working Paper 16, April, 2010. Retrieved from http://www.brookings.edu/~media/research/files/papers/2010/4/child%20development%20cuba%20tinajero/04_child_development_cuba_tinajero.pdf
- 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. *American Educational Research Journal*, 39, 133-164.
- NICHD Early Child Care Research Network. (2005). Early child care and children's development in the primary grades: Results from the NICHD Study of Early Child Care. *American Educational Research Journal*, 43, 537-570.
- Obama, B. (2014). State of the Union Address to Congress, 28 January 2014. Retrieved from <http://www.whitehouse.gov/the-press-office/2014/01/28/president-barack-obamas-state-union-address>.
- Oberklaid, F. (2014). Today-Tonight Interview, 21 January 2014. Retrieved from <http://au.news.yahoo.com/today-tonight/latest/article/-/20918>.
- Oberklaid, F., Baird, G., Blair, M., Melhuish, E. & Hall, D. (2013). [Children's health and development: Approaches to early identification and treatment](#). *Archives of Diseases in Childhood*, 2013;0:1-4. doi:10.1136/archdischild-2013-304091.
- Organisation for Economic Co-operation and Development. (2011). *Pisa in focus 2011/1: Does participation in preprimary education translate into better learning outcomes at school?* Paris. Retrieved from <http://www.pisa.oecd.org/dataoecd/37/0/47034256.pdf>
- Productivity Commission (2011). *Education and Training Workforce: Early Childhood Development*, Research Report, Canberra.
- Reynolds, A.J., Temple, J.A., Ou, S., Arteaga, I.A., & White, B. (2011). School-Based Early Childhood Education and Age-28 Well-Being: Effects by Timing, Dosage, and Subgroups. *Science*, 333, 360-364.
- Sammons, P., Sylva, K., Melhuish, E.C., Siraj-Blatchford, I., Taggart, B., & Hunt, S. (2008). *Influences on children's attainment and progress in Key Stage 2: Cognitive outcomes in Year 6*. London, UK: DCSF.
- Schweinhart, L. J. (2005). *Lifetime effects: The High/Scope Perry Preschool study through age 40*. Ypsilanti, MI: High/Scope Press.
- Vandell, D. L., Burchinal, M., Vandergrift, N., Belsky, J., Steinberg, L., & NICHD Early Child Care Research Network. (2010). Do effects of early child care extend to age 15 years? Results from the NICHD Study of Early Child Care and Youth Development. *Child Development*, 81(3), 737-756.
- Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I. & Taggart, B. (2004). *The Effective Provision of Pre-School Education (EPPE) Project: Technical Paper 12 - The final report*. London: DfES / Institute of Education.
- Vandell, D. L., Burchinal, M., Vandergrift, N., Belsky, J., Steinberg, L., & NICHD Early Child Care Research Network. (2010). Do effects of early child care extend to age 15 years? Results from the NICHD Study of Early Child Care and Youth Development. *Child Development*, 81(3), 737-756.
- World Bank (2005). *World Development Report 2006: Equity and Development* (Washington: World Bank). Retrieved from <http://go.worldbank.org/T5GDMUEE40>