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***Report on Children's Profile
at School Entry
2008-2009***

EVALUATION OF THE
'PREPARING FOR LIFE'
EARLY CHILDHOOD
INTERVENTION PROGRAMME

By

**UCD GEARY INSTITUTE PFL EVALUATION TEAM
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June 2009**



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Noel Kelly,
Manager, Preparing for Life.

Executive Summary

The Children's Profile at School Entry (CPSE) was conducted by the UCD Geary Institute who have been commissioned by the Northside Partnership to assess the levels of school readiness in a designated disadvantaged community of Ireland, as part of an overall evaluation of the *Preparing for Life (PFL)* early childhood intervention programme.

Purpose and Description of the CPSE

The CPSE is an annual representative survey of the levels of school readiness of junior infant children attending the local primary schools in the *PFL* catchment area. Specifically, the survey focuses on the children's levels of school readiness in the year they started school, and over time will 1) indicate the general level of school readiness for the older cohorts of children in the *PFL* area, 2) indicate whether the *PFL* programme is generating positive externalities, and 3) will serve as a baseline for the *PFL* cohort.

This report provides a thorough description of the definition, determinants and importance of school readiness for outcomes later in life. The holistic nature of school readiness is discussed, following by an in-depth review of the familial, societal and environmental factors influencing a child's readiness for school.

CPSE Method

The CPSE survey was conducted between October and December of the 2008-2009 academic year. Data were collected via online questionnaires completed by teachers and paper and pen questionnaires completed by parents. The teachers' and parents' response rate was 99% and 76%, respectively. This resulted in a CPSE sample of 101 children across five schools.

Pupil school readiness was assessed using teacher and parent reports on the Short Early Development Instrument (S-EDI; Janus Duku, & Stat, 2005). The S-EDI is composed of 48 core items and provides scores across five domains of school readiness (physical health and well-being, social competence, emotional maturity, language and cognitive development, and communication and general knowledge). The S-EDI has normative data that correspond to each domain, allowing comparisons with a representative Canadian sample. Parents and teachers also completed an additional set of questions on child behaviour to facilitate comparisons with a national Irish sample.

School Readiness in the 2008-2009 CPSE Cohort

S-EDI results indicate that teachers rated children in the 2008-2009 CPSE cohort as displaying significantly lower levels of school readiness than a Canadian norm, while parents rated children in this cohort as displaying significantly higher levels of school readiness than a Canadian norm. Specifically, tests show that parents rated children as displaying higher levels of physical health and well-being, social competence, emotional maturity, and communication and general knowledge, while teachers' ratings were significantly lower. According to both parent and teacher reports, children score highest on physical health and well-being and social competence, while they received the lowest scores on the communication and general knowledge scale by teachers and were rated lowest on the language and cognitive development scale by parents. Please see Figure 1 below.

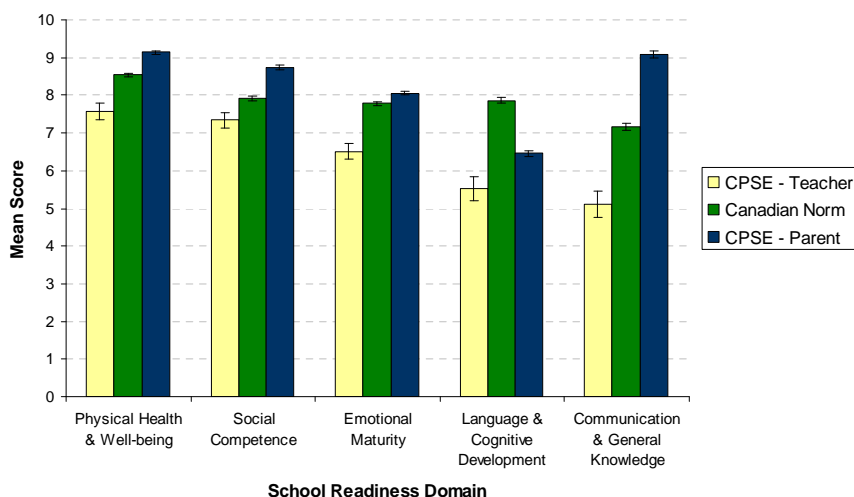


Figure 1. CPSE teacher, parent and youngest subset of Canadian norm means for each S-EDI domain.

While on average the teacher reported level of school readiness was significantly below the Canadian norm, approximately 50% of children in the CPSE cohort are performing above the norm in terms of physical health and well-being and social competence. However, approximately 70% of children were rated below the Canadian norm on the emotional maturity, language and cognitive development, and communication and general knowledge domains, demonstrating specific areas of weakness for a large portion of the CPSE cohort. In addition, about one-fifth of the children received a low score on one of the five domains and a further 11% scored low on two domains, with only 5% scoring low on more than three domains. This reinforces the need to focus on multiple domains of school readiness.

The differences in parental and teacher reports were replicated for the additional behavioural domains. In sum, teachers rate the CPSE children as displaying more behavioural difficulties in terms of hyperactivity/inattention and anxiety. In a comparison with a representative sample of Irish children from the *Lifeways Cross Generational Cohort Study*, teacher reports of behaviour demonstrate that children in the CPSE sample are more aggressive, oppositional, hyperactive, anxious, and less prosocial. However, comparing a low education sub-samples of the Lifeways and CPSE data reveal that the CPSE cohort are significantly less aggressive and anxious, yet more hyperactive/inattentive.

Group Differences in School Readiness

In addition to providing information on the children's readiness for school, the report also investigates differences in scores across a range of socio-demographic, parental, and environmental factors. Specifically, Monte Carlo permutation tests show that girls were reported to be more emotionally mature, more prosocial, and less aggressive than boys. Children with no siblings were rated as being more socially competent and less oppositional compared to their classmates with at least one sibling. Parental demographics played less of a role in children's school readiness. For example, no significant differences emerged by parental relationship status or age.

Yet indicators of parental socioeconomic status were associated with a child's readiness for school. Children of parents with very low levels of education were rated as being less socially competent and emotionally mature, and more aggressive, oppositional, and

hyperactive/inattentive than children of parents with higher education levels. In addition, children of employed mothers were rated as being more socially competent and exhibited fewer oppositional/defiant behaviours. Children of families in receipt of social welfare were rated as being less socially competent, less emotionally mature, more oppositional/defiant, and more hyperactive/inattentive than children in families not in receipt of social welfare.

The survey also found that children who spent time in centre-based childcare prior to school entry were rated higher across all domains of school readiness than children who did not experience any centre-based childcare. Note however that the majority of children (82%) in the sample had experienced some form of centre-based childcare.

Parenting and School Readiness

Although few significant relationships emerged between parenting behaviours and teacher rated school readiness, several relationships were identified between parenting and parent reported school readiness. Specifically, authoritative parenting behaviours were positively correlated with school readiness in children, while authoritarian and permissive parenting behaviours were negatively correlated with school readiness. These results highlight the important role parents can play in getting their children ready for school.

Conclusion

Based on teacher assessments of school readiness, this report indicates that children in the *PFL* catchment areas are not performing to the level of other children at school entry, a finding that provides quantitative evidence of the need for the *PFL* intervention. This initial report presents the results on the first of a series of CPSE surveys which will be conducted annually over the next four years. The report will be amended each year to include the results of each new data collection wave, in addition to comparisons examining annual changes in levels of school readiness. Finally, please note that the CPSE survey was conducted with a sample of ~100 Junior Infant children living in a disadvantaged urban area of Ireland, therefore these results should not be generalised to the wider population.

I. Introduction

A. Background & Aims

The Children's Profile at School Entry (CPSE) study was conducted by the UCD Geary Institute who have been commissioned by the Northside Partnership to assess the levels of school readiness in a designated disadvantaged community of Ireland as part of an overall evaluation of the *Preparing for Life (PFL)* early childhood intervention programme.

In 2004, a school readiness survey was conducted by the Children's Research Centre in Trinity College Dublin (Kiernan et al., 2008) in the *PFL* catchment area in which teachers reported that 52% of children were not ready for school. As a result, the *PFL* programme was set up with the aim of increasing the levels of school readiness in these disadvantaged areas.

PFL is a 5-year school readiness intervention starting in pregnancy and lasting until the children start school. The programme is jointly funded by Atlantic Philanthropies and the Office of the Minister for Children and Youth Affairs. The aim of the programme is to work with families from pregnancy onwards to help and support the healthy development of the child. All programme families receive facilitated access to enhanced pre-school and public health information, in addition to the services of a support worker. Half of these families are randomly allocated to receive enhanced supports including participation in a home-visiting mentoring programme and a group parent training programme. This experimental programme is one of the first of its kind in Ireland and aims to provide real time evidence on best practice in early intervention.

PFL operates under a holistic definition of school readiness composed of five dimensions: 1) physical health and well being; 2) socio-emotional development; 3) approaches to learning; 4) language development and emergent literacy; 5) cognitive and general knowledge.

The CPSE is an annual representative survey of the levels of school readiness of junior infants children attending the local primary schools in the *PFL* catchment area. Specifically, the survey focuses on the children's levels of school readiness in the year they started school, and will 1) indicate the general level of school readiness in the area for the older cohorts of children in the *PFL* area, 2) indicate whether the *PFL* programme is generating positive externalities, i.e. whether the public health style messages and improved service integration by the local providers translate into improving levels of school readiness, and 3) will serve as a baseline measure of school readiness for the *PFL* cohort.

This initial report presents the results on the first of a series of CPSE surveys which will be conducted over the next four years. This report will be amended each year to include the results of each new data collection wave, in addition to comparisons examining annual changes in levels of school readiness.

B. Overview of Report

This report describes the first annual CPSE survey conducted in 2008. The report will be amended throughout the next 4 years to include subsequent data collection waves. The report is organised as follows: Section II provides a robust definition of school readiness incorporating five dimensions. Section III examines the determinants of school readiness and the factors that can positively or negatively impact on a child's readiness for school. Section IV discusses the importance of school readiness for both short-term and long-term success. Section V discusses the differential parent and teacher definitions of school readiness. Section VI examines the role of parenting style in influencing school readiness. Section VII provides the methodology employed including survey design, instruments, response rates, and a description of the sample. Section VIII presents the results of the analysis. Finally, Section IX summaries and concludes the report.

II. Definition of School Readiness

School readiness is a multi-dimensional concept which reflects the holistic nature of children's development and takes account of a host of factors in their wider environment. Poor school readiness has been linked to later academic failure (Raver, 2003), poor socio-emotional adjustment (Arnold et al., 1999; Hinshaw, 1992), and poor life outcomes such as unemployment (Ross & Shillington, 1990) and teenage pregnancy (Brooks-Gunn, 2003). It has been described as a foundation on which all later learning is built and it has been argued that children who develop well at earlier stages and are ready to start school are in a position to elicit interactions and experiences that accelerate their subsequent development and facilitate their achievement (Heckman, 2000).

School readiness is often conceptualised in terms of the joint responsibilities that the home, school, and community have in providing caring environments that promote children's learning (Piotrkowski, Botsko, & Matthews, 2000). The many facets of the child's environment, including their family and societal systems and values, neighbourhood security, quality and equality of access to the public health system, governmental policies and practices, and economical considerations largely determine early childhood well-being.

While the traditional definition of school readiness focused on academic ability alone, more recent research on child development and early education has noted that school readiness is a multi-faceted concept which also includes physical health and well-being and motor development, social and emotional development, approaches to learning, language development, and emergent literacy (Child Trends, 2001; Kagan, Moore, & Bradenkamp, 1995). Together, these developmental domains have the capacity to influence the child's readiness for school and future academic achievement, as children who begin school with the appropriate cognitive and social skills maintain this advantage throughout the school years.

A. Physical Well-Being and Motor Development

Physical health and well-being incorporates both developmental progress and the child's context of development. It can be characterised as physical development and growth, but also incorporates physical abilities including motor skills and development during both the pre and postnatal environment (Kagan et al., 1995).

A number of studies have found that poor health in childhood, including inferior health status, growth deficiencies, disabilities, poor gross and fine motor skills, is associated with a lack of school readiness (Dockett, Perry, & Tracey, 2000). Children who are born prematurely or at a low birth weight are more likely to experience lower levels of school readiness upon school entry. Specifically, children born prematurely may experience difficulties in the social and emotional domain whereas low birth weight children may experience more problems with language development (Janus & Offord, 2001).

B. Social and Emotional Development

While social development is characterised by a child's interactions with others, emotional development refers to the child's awareness and knowledge of emotions for both the self and others, as well as the expression of feelings (Kagan et al., 1995). Social and emotional development are important contributors to a child's school readiness as they affect how a child interacts with teachers and peers in the classroom. A child who is mature in these domains may possess the skills necessary to engage in learning and interact with teachers and peers in a positive and effective manner, thus promoting school readiness.

Social development is an indicator of school readiness as social skills such as the ability to effectively interact with others, take turns, and display empathy can influence the child's transition into school. Therefore, children need a certain level of social competence when they start school (Ladd, 1999; McLellan & Katz, 2001; Parker & Asher, 1987) as having friends provides opportunities for social, emotional, and cognitive development (Hartup, 1989). Additionally, having the social skills necessary to form and maintain interpersonal relationships is important as it eases the transition to school (Ladd, 1990). Specifically, children perceive their friends as providing greater support than nonfriends (Berndt & Perry, 1986) during transitions and children who enter school with friends view school more favourably, enjoy school more, and display greater academic achievements (Ladd, 1990).

Having the skills to effectively interact with peers in the social domain is an important component of school readiness as this may enhance the child's desire and ability to learn. Specifically, children who are not well accepted by their peers display lower cognitive abilities (Newcomb, Bukowski, & Pattee, 1993) and experience various school difficulties such as decreased participation in the classroom, greater school avoidance, and lower school achievement (Buhs & Ladd, 2001; Buhs, Ladd, & Herald, 2006; French, Jansen, Riansari, & Setiono, 2003; Ladd, 1990). Consequently, children who do not maintain positive peer relationships are reported by teachers and peers as being more aggressive and withdrawn as well as lower in academic achievement and social preference within the classroom (French et al., 2003).

Socially negative behaviour, characterised by inattention and opposition in the classroom, has been found to be associated with emotional instability, disruptive peer interactions, and poor learning behaviours. Furthermore, children who experience socially withdrawn behaviour in the classroom show lower adaptability in terms of emotional interactions and these children lack an awareness of self and others (Fantuzzo, Bulotsky-Shearer, Fusco, & McWayne, 2005).

C. Approaches to Learning

Approaches to learning are characterised as clear, observable behaviours that illustrate ways children become engaged in classroom interactions and learning activities. Additionally, children display these behavioural patterns as they approach and undertake classroom learning tasks. Specific behaviours include initiative, curiosity, cooperativeness, engagement, and persistence (Fantuzzo et al., 2007). They directly affect school readiness as they refer to the child's inclination to use skills, knowledge and capacities. The key components of approaches to learning include enthusiasm, curiosity, and persistence on tasks, as well as gender, temperament, and cultural patterns and values (Conn-Powers, 2006).

Children who are aggressive or inattentive in the classroom setting typically display poorer approaches to learning. Specifically, aggressive behaviour is related to lower competence motivation and attitude toward learning, while inattention is related to lower competence motivation and lower task persistence (Fantuzzo et al., 2005).

D. Language Development and Emerging Literacy

Language development includes both verbal language and emerging literacy and provides children with the necessary tools for effective communication and learning (Whitehead, 2002; Whitehurst & Lonigan, 1998). Language development, including the child's ability to listen, speak and understand vocabulary, can affect school readiness as it enables effective communication. In addition, emerging literacy skills such as print awareness, story sense and writing process can also affect school readiness.

By the time they start school, children should be able to understand adults' and other children's verbal communication and also verbally communicate experiences, ideas, wishes, and feelings in a way that can be understood by others. These abilities help the child to adjust successfully to the school setting (Doherty, 1997). However, research suggests that the ability to communicate effectively with teachers (Dockett et al., 2000) and peers (Janus & Offord, 2000), rather than the actual developmental level of language, is more important for school readiness. Katz (1991) points out that even if children have the same 'mother tongue', they need to speak the same 'language', such as using the same words to refer to particular concepts and ideas.

E. Cognition and General Knowledge

Although the definition of school readiness has evolved into a multidimensional concept, cognition and general knowledge is still a significant component of a child's readiness for school. It incorporates physical knowledge (i.e., knowledge about the properties of objects), logical-mathematical knowledge (i.e., knowledge derived from looking across objects, events or people for similarities, differences and associations) and social-conventional knowledge (i.e., the assignment of particular letters to sounds, knowledge about shapes and spatial relations and number concepts). This knowledge is often derived from looking across objects, events, or

people for similarities, differences, or associations. These components of school readiness represent assimilation and accommodation of new information presented in a stimulating environment which assists in future problem solving capabilities (Kagan et al., 1995) and readiness for school.

III. Determinants of School Readiness

School readiness is a multidimensional concept which can be influenced by several factors affecting a child's development. International research has identified several factors that influence a child's readiness for school including child health, family factors, emergent literacy practices, early childhood care and education, school transitional practices, community and neighbourhood effects and media effects (Halle, Zaff, Calkins, & Geyelin-Margie, 2000).

A. Child Health

Suboptimal health early in life strongly contributes to vulnerability at school entry (Janus & Duku, 2007) as health in the early years, including birth weight, pre-birth, and post-birth health can affect multiple dimensions of children's readiness for school. Adequate nutrition; a quiet, toxin free environment; and appropriate treatment of childhood medical conditions all play an important role in ensuring that young children arrive at school each morning ready to learn (Pascoe, Shaikh, Forbis, & Etzel, 2007).

Nutrition is an important determinant of school readiness as it can affect a child's physical, intellectual, and behavioural development which subsequently affects his/her success in school (Korenman, Miller, & Sjaastad, 1995). Several studies have identified a causal relationship between nutritional deficits and lower cognitive test scores, even when the home environment and maternal characteristics are taken into account (Korenman et al., 1995; Grantham-McGregor, 1995). Low birth weight can affect the child's cognitive abilities (Hack et al., 1994; Klebanov, Brooks-Gunn, & McCormick, 1994; McCormick, Workman-Daniels, & Brooks-Gunn, 1996) and can lead to behavioural problems (Liaw & Brooks-Gunn, 1993; Pharoah, Stephenson, Cooke, & Stevenson, 1994), while immunisations protect children from communicable diseases which can cause school absences and affect learning capabilities.

Research suggests that childhood emotional and behavioural problems affect school readiness. For example, children who are depressed are more likely to display maladaptive social behaviours, such as poor problem-solving and poor conflict negotiation skills as well as affect regulation deficits (Rudolph, Hammen, & Burge, 1994).

Unintentional injury, which refers to events such as car crashes, fires, and accidents in the home, can affect a child's school readiness as it can result in long term deficits in cognitive, behavioural, and motor functioning. Accidents can also cause pain and can have emotional and economic costs to the family, as well as a reduction in the quality of life of the child (Deal, Gomby, Zippirolo, & Behrman, 2000). Other health factors that affect a child's school readiness include lead exposure which can lead to problems such as lowered IQ, short attention span, hyperactivity, learning disabilities (Canfield et al., 2003), and dental health such as tooth decay

which can lead to problems with eating and also to increased absences from school (Platt & Cabezas, 2000).

B. Family Factors

Research consistently highlights the importance of the environment in a child's early development and subsequently his/her success in school. Family factors which affect a child's school readiness include family poverty, maternal employment, maternal well-being, the home environment, and family structure.

Family poverty has a number of adverse effects on a child's school readiness. Children from lower socio-economic status (SES) backgrounds are more likely to have poor nutrition and poor physical health. They are also likely to score lower on tests of verbal ability (Brooks-Gunn, Britto, & Brady, 1999) and tests of cognitive skills including reading readiness, number skills, problem solving, creativity and memory (Stipek & Ryan, 1997). Additionally, children from low income families demonstrate greater vulnerability at school entry as they are likely to arrive at kindergarten/preschool with lower cognitive and reading skills. They are also likely to have less developed social skills and approaches to learning than children with fewer risk factors (Janus & Duku, 2007) and they are more likely to have emotional and behavioural problems (McLoyd, 1998).

Several maternal factors have the capacity to influence a child's readiness for school. For example, maternal employment is associated with lower levels of school readiness. Specifically, research has demonstrated that maternal employment when the child is nine months old is predictive of lower school readiness scores at 36 months, with the effects more pronounced when mothers were working 30 hours per week or more, a relationship that remained even when child care quality, the home environment, and maternal sensitivity were controlled for (Brooks-Gunn, Han, & Waldfogel, 2002). Additionally, maternal well-being has the capacity to influence a child's readiness for school as children of depressed mothers are at increased risk of suffering from behavioural and emotional problems (Hammen, Adrian, Gordon, Burge, & Jaenicke, 1987; Radke-Yarrow, Nottelman, Martinez, Fox, & Belmont, 1992).

Furthermore, the home environment, which includes aspects such as family relations, how parents and children interact and the physical environment within the home, can influence a child's school readiness. This particularly holds with regard to the social, emotional, and cognitive developmental aspects of school readiness (Caughy, 1996; Hammen et al., 1987; Radke-Yarrow et al., 1992). Family structure is important as research shows that children who are born out of a planned pregnancy, who grow up in a family with low conflict and where both biological parents are present, are likely to have better outcomes in the early years of school (Barber, Axinn, & Thornton, 1999; Moore et al., 1997; Morrison & Coiro, 1999; Thompson, Entwisle, Alexander, & Sundius, 1992). Paternal involvement in a child's life has significant effects on the child's school readiness and early development. Specifically, father involvement promotes physical play and parent-child play, which stimulates the child's emotional and cognitive development (Biller & Kimpton, 1997) and is usually matched with maternal involvement, resulting in children having two highly involved parents which in turn leads to diversity of stimulation (Amato, 1994). Father involvement also indicates good parental relations which creates a positive family environment leading to better child outcomes (Coiro & Emery,

1998). Paternal involvement typically leads to more educational activities, such as visiting museums, and to more resources in the home as it is usually accompanied by financial support, which has positive effects on child outcomes as it improves the economic well-being of the household (Flouri & Buchanan, 2004).

C. Emergent Literacy Practices

Emergent literacy refers to the earliest signs of interest in and abilities relating to reading and writing. It includes such skills as vocabulary, the ability to rhyme, and identification of letters (Whitehurst et al., 1994). These skills result from of the child's family environment and their early childhood care and education settings. A child's level of literacy when he/she enters school has been shown to be a good predictor of reading ability throughout the course of his/her education (Whitehurst & Lonigan, 1998).

Children who live in families where reading and writing are common practice are more likely to enter school with greater reading levels (Halsall & Green, 1995). Additionally, shared book reading with children is related to language development, emergent literacy, and reading achievement (Bus, van Ijzendoorn & Pelligrini, 1995). Furthermore, it appears that it is quality of reading rather than quantity that counts, as parents whose children learn to read more easily do not simply read to their children but engage in dialogic reading, a strategy of reading that involves asking questions to make children active participants rather than passive listeners (Whitehurst & Lonigan, 1998). Book reading, when combined with phonological training, is most effective in improving literacy skills. These findings are greater for children from low income families (Gillon & Dodd, 1995).

Although living in a supportive home environment can enhance emergent literacy practices in young children, there are several family risk factors that can have a negative impact on children's development of emergent literacy practices. Specifically, family poverty, living in a low income neighbourhood, limited proficiency in English, hearing impairments, low parental education, and parental illiteracy have all been found to have negative associations with a child's emergent literacy development (National Research Council, 1998). This negative relationship may be explained by lack of resources. If a family does not have the necessary resources, either financial or personal, to provide reading opportunities for their child, that child may not have as many opportunities to engage in reading in the home environment, thus influencing his/her emergent literacy practices at school entry.

D. Early Childhood Care and Education

Recent studies show that high quality childcare, early in life, may compensate for a low resource home environment among low SES children (Cote et al., 2007; Cote, Borge, Geoffroy, Rutter, & Tremblay, 2008; Geoffroy et al., 2006). One factor which directly influences the child's early environment is the form and quality of childcare. Research focusing on the effects of these on child outcomes offer contrasting results (Baydar & Brooks-Gunn, 1991; Belsky, 1990; Blau, 1999; Burchinal, Ramey, Reid, & Jaccard, 1995; Hickman, 2006; NICHD, 2000; Peisner-Feinberg et al., 2001), with results varying depending on the type, duration and age of entry. Evidence indicates that childcare quality is an important determinant of child outcomes, and that childcare has a differential impact across specific domains of child development (Burchinal,

Roberts, Nabors, Bryant, 1996; Burchinal et al., 2000; NICHD & Duncan, 2003; Love et al., 2003).

Although most studies examine the quality of centre-based care, evidence suggests that formal childcare is of higher quality than informal care, in terms of cognitive development and promotion of academic success (Bernal & Keane, 2006). In particular, studies have found that childcare characteristics which are commonly found to be positively associated with child outcomes include child to adult ratios, qualifications, experience, and stability of the childcare staff, the structure and content of daily activities, and the centre's space and facilities (Phillips, McCartney, & Scarr, 1987). High quality formal childcare has been found to have a positive impact on child cognitive abilities and school readiness, in particular math and reading skills, as well as expressive vocabulary and language development (NICHD, 2000; 2002; 2008; NICHD & Duncan, 2003). The literacy environment and activities within a childcare setting also can make important contributions to emergent literacy. Preschool settings where books are available and where children are read to either one-on-one or in small groups can promote higher reading abilities (National Research Council, 1998).

The quality of early childhood care and education affects a child's cognitive, emotional, and social development, expressive language, and receptive language (Kagan & Neuman, 1997; Vandell & Pierce, 2003). Furthermore, high quality care and education lead to higher cognitive test scores, better school achievement, less special education placements, and higher school completion rates (Barnett, 1995). Participation in high quality programmes, such as High/Scope Perry Preschool and the Carolina Abecedarian Project, has been shown to have a high impact on children from low income families (Barnett, 1995). Additionally, parental involvement in childcare setting has proven very beneficial to a child's school readiness (Mallory & Goldsmith, 1991). Well designed early education programmes serving disadvantaged children in the year prior to the first year of school have been shown to generate benefits for government, society, and for the participants themselves, across a wide range of measures. These associated benefits have been shown to outweigh the costs of the programmes (Karoly & Bigelow, 2005).

Previous research also has found that extensive non-maternal care can have detrimental effects on a child's development. It has been suggested that non-maternal care may have long term negative implications for social interactions. Recent evidence by Hickman (2006) shows that children in centre-based care actually have poorer peer-related social skills and their social skills may deteriorate over time. There may, however, be a potential trade off of non-parental care such that there are improvements in child's cognitive and language abilities (NICHD, 2000) at the expense of socioemotional development (Bates et al., 1994).

E. School Transitional Practices

Schools play a key role in preparing children for school. Not only is it important for children to be ready for school, but the schools also must be ready for children as they enter school with different skills, knowledge, and previous experiences (NGA Task Force on School Readiness, 2005).

Starting formal education can be a stressful time for children. They face many new challenges such as being expected to be independent and act responsibly, they must interact with teachers,

meet certain academic achievements, and face large class sizes (Rimm-Kaufman & Pianta, 2000). Children who do not make effective transitions to formal education may be less successful in school, have difficulties making friends, and may be vulnerable to mental health and adjustment problems (Goal One Ready Schools Resource Group, 1995).

To ease transitions to school, schools must be ready for the diverse experiences of the children. However, many schools do not have specific guidelines on how to facilitate this transition, nor is there extensive research on best practices in the area. The limited literature that does exist, however, suggests four steps that schools can take. Schools often do not build on what children have learned in preschools (Love, Logue, Trudeau, & Thayer, 1992), therefore, schools should maintain contact with the preschools so that they can plan for individual children which will ease the transition to school by helping the child to know what to expect as he/she enters school (Kagan & Neuman, 1998; Smolkin, 1999). The second step which schools can take is to maintain contact between the school and the child's home both before and after the child starts school so that the parents can be actively involved in their child's education (Melton, Limber, & Teague, 1999; Swick et al., 1997) as parental involvement can lead to higher grades, test scores and graduation rates, increased motivation and self-esteem, lower rates of suspension, and fewer instances of violent behaviour (Rose, Gallup, & Elam, 1997). Third, it has been suggested that schools should maintain contact with community resources so that a child can receive the services he/she needs as soon as possible (Halle, Zaff, Calkins, & Geyelin-Margie, 2000). Lastly, it has also been suggested that children should not be held out of school for an extra year as research suggests that this can have detrimental effects, especially for poor and minority children (Gullo & Burton, 1992; May & Kundert, 1997).

F. Community and Neighbourhood Effects

The community or neighbourhood that a child lives in can also affect school readiness as evidence has found that children who live in neighbourhoods with less than 10% poverty tend to score higher in cognitive tests (Brooks-Gunn, Guo, & Furstenburg, 1993). In contrast, poverty in the community is associated with lower school readiness and poorer long-term academic achievement (Brooks-Gunn, Duncan, & Aber, 1997; Ensminger, Lamkin, & Jacobson, 1996; Garner & Raudenbush, 1991; Klebanov, Brooks-Gunn, McCarton & McCormick, 1998). Additionally, children in high poverty neighbourhoods are at a higher risk of low birth weight, infant mortality, child abuse, and behaviour problems (Gephart, 1997), all of which have negative effects on school readiness.

Resources associated with increased levels of school readiness include a high quality neighbourhood environment (e.g., safe streets and playgrounds) which may not be available in neighbourhoods with high poverty rates. Areas that are characterised by crime, violence and vacant buildings, where parents may not allow children to play outside or walk to school alone, may adversely affect children through increased stress, negative peer influences, and a lack of positive role models (Jencks & Mayer, 1990). In particular, male unemployment levels in neighbourhoods have been shown to be associated with young children's behavioural and physical outcomes (Chase-Lansdale, Gordon, Brooks-Gunn, & Klebanov, 1997). Living among relatively affluent neighbours, on the other hand, has been shown to be particularly important for children aged three and older as families may model their neighbours' behaviours, such as regular school attendance and parental employment. However, research suggests that much of

the effect of poor neighbourhoods on negative child outcomes is mediated through the home environment. Therefore, parents who provide a warm, supportive home environment, who use appropriate parenting behaviours, and who provide a stimulating learning environment can offset the negative effects of living in a poor neighbourhood (Klebanov et al., 1998).

G. Media Effects

Exposure to television can have both positive and negative effects on a child's school readiness. Watching educational programmes such as Sesame Street has been found to increase children's vocabulary, letter and number knowledge, and positive attitudes towards school. These effects are most robust for children aged between two and four years of age. Specifically, experimental studies have shown that television viewing can improve vocabulary while longitudinal studies have found that the positive effect of educational television on cognitive and language development is greater for younger than older preschoolers (Rice & Woodsmall, 1988). Prosocial and moral shows have been found to increase a child's prosocial behaviour (Huston & Wright, 1998). On the other hand, watching adult programmes and cartoons does not show this effect and children who watch these programmes frequently have been shown to perform poorly on measures of pre-reading skills and school readiness (Wright & Heuston, 1995).

Although there are positive effects associated with developmentally appropriate television viewing, research finds that watching violent programmes is associated with a decrease in fantasy play and an increase in aggressive behaviour (Hughes & Hasbrouck, 1996; Huston-Stein, Fox, Greer, Watkins, & Whitaker, 1981; Noble, 1970). Time spent watching television can also take away from time spent doing physical and social activities and these children tend to be less creative and imaginative in school (Valkenburg & van der Voort, 1994). Additionally, frequent viewers of educational programmes spend more time reading or being read to than frequent viewers of cartoons and adult programmes (Huston & Wright, 1996), which can have an effect on the development of literacy skills.

The impact of other forms of media, such as video games and computers is less explored. One recent review of the literature found that the evidence of an association between video game playing and aggression in children is insufficient, contradictory, and methodologically flawed (Mitrofan, Paul, & Spencer, 2009). With regard to computer use among preschoolers, research indicates that children under the age of three should not use computers, although for three to four year olds computer programmes, when combined with teaching activities, can help develop long term memory, manual dexterity and verbal skills (Haugland, 2000).

IV. Importance of School Readiness

School readiness is a complex, multifaceted concept and is important across a wide range of areas. Each dimension of school readiness can have consequences for a child's social, physical and educational outcomes. Additionally, developmental problems in childhood are associated with negative life outcomes in adulthood. Poor school readiness is associated with difficulties in forming healthy relationships with peers, low academic achievement, lower likelihood of being in employment, higher rates of teenage pregnancy, and poor psychological well-being. The mechanisms by which these relationships operate are complex, and often result from cumulative negative consequences associated with low readiness at school entry.

A. Academic Achievement

Strong associations have been demonstrated between several dimensions of school readiness and later academic achievement. According to the North Central Regional Academic Laboratory, readiness for school “involves a specific set of cognitive, linguistic, social and motor skills that enables the child to assimilate the school's curriculum” (in Le, Kirby, Barney, Setodji, & Gershwin, 2006). School readiness affects a child's learning and school adjustment as well as future academic achievement (Forget-Dubois et al., 2007). Meta-analytic techniques have indicated that early math concepts are powerful predictors of later learning, and that early language, reading and attention skills are less powerful but consistent predictors of later learning across studies (Duncan et al., 2007). Additionally, longitudinal research indicates that children's emotional and social development is strongly linked to academic achievement as the relationships children form with peers and teachers stem from their ability to regulate emotions in prosocial versus antisocial ways and these relationships either help or hinder children's chances of academic success (Raver, 2003). Furthermore, research has demonstrated that children who act antisocially are less likely to be accepted by peers and teachers (Kupersmidt & Coie, 1990) and tend to participate less in class activities and receive poorer academic results than their prosocial counterparts, an association which remains when pre-existing cognitive skills and family backgrounds are controlled for (Ladd, Birch, & Buhs, 1999).

Different approaches to learning, children's tendencies, dispositions and learning styles in using their knowledge and skills to interact with their learning environment (Conn-Powers, 2006) are other dimensions of school readiness that have been shown to relate to academic achievement. Evidence suggests strong links between positive approaches to learning and children's success in school. Conn-Powers (2006) identified six key dispositions or skills that reflect important approaches to learning: curiosity/initiative, persistence, attention, self-direction, problem solving and creativity. Furthermore, Heckman has spearheaded much research stressing the importance of non-cognitive skills such as motivation, tenacity and perseverance in promoting higher achievement test scores and later social success (Heckman; 2006; Heckman & Masterov, 2007).

Several studies have shown that poor health status in childhood is associated with future deficits in academic performance, illustrating the importance of the physical well-being and motor development dimensions of school readiness in affecting future academic success. Caughy (1996) found that hospitalisation within a year of birth predicted lower reading recognition scores at ages 5 and 6 years. Additionally, longitudinal studies have shown that general and mental health status in kindergarten predicted third grade achievement when family

socioeconomic status variables were controlled for (Spernak, Schottenbauer, Ramey, & Ramey, 2006). Research has also found relationships between gross and fine motor skills and academic achievement as early kindergarten motor skills have been found to influence achievement in reading and mathematics at the end of first grade, after controlling for initial skills and demographics (Son & Meisels, 2006).

In sum, there is wide evidence that both academic and non-academic school readiness skills and competencies are related to later academic achievement and thus later social and career success.

B. Peer Relationships

It is well established that children's development in many areas of functioning is influenced by an ability to maintain positive, primary and consistent relationships with peers (Sroufe, Cooper, & DeHart, 1992). The social and emotional aspects of school readiness, such as the ability to interpret and express feelings, interact socially and display empathy, have been shown to increase the likelihood that a child will form friendships with peers (Ladd, 1999). In addition, studies have indicated important associations between positive peer play interactions and the development of other school readiness competencies, such as emerging literacy skills and self regulation (Fisher, 1992). Furthermore, children who form positive relationships in preschool are more likely to experience positive social and academic outcomes in the elementary and high school grades (Ladd & Price, 1987).

Although positive peer acceptance is an important aspect of development, the importance of reciprocated friendships cannot be overlooked as it constitutes a different domain to peer acceptance. Friendships are voluntary, intimate, dynamic relationships built on cooperation and trust (Gifford-Smith & Brownell, 2003). Whereas group acceptance reflects the perspective of the child's peer group, friendship serves as a means for mutual enjoyment, play and positive affect in the early years, achieving group identity and acceptance in middle childhood, and achieving individual identity and greater understanding of self in adolescence (Gifford-Smith & Brownell, 2003).

Whether or not a child has reciprocated friends can be a critical determinant of his or her social adaptation and adjustment. Children with mutual friends tend to be more prosocial, have higher levels of self-esteem and manage difficult transitions more smoothly (Ladd, 1990). Recent research stresses the importance of friendship quality in fostering self-esteem, promoting social adjustment, and enabling children to cope more efficiently with stressors (Hartup & Stevens, 1999). Friendship quality refers to the amount of positive characteristics a friendship features, such as intimacy, loyalty, or prosocial behaviour. Research shows that children who report their friendship to be high on one of these dimensions typically report that it is also high in all the other dimensions. This suggests that all positive features are linked to a single dimension of friendship quality (Berndt, 2002).

Children experiencing peer relationship difficulties are at risk for a variety of future adjustment problems, such as school drop-out, delinquency, and emotional problems. In addition, experiencing problems in the peer domain during childhood can predict mental health problems

such as depression and anxiety, as well as physical health and school problems (Parker & Asher, 1987).

C. Psychological Well-being

A relationship between school readiness and later mental health and socio-emotional well-being has been identified. As discussed above, high levels of school readiness increases the likelihood that a child will form friendships with peers. Children who have more friends in school tend to have higher levels of self-esteem and can cope with difficult life transitions more effectively (Ladd, 1990). Low self-esteem is strongly associated with the presence of psychiatric disorders in adolescence and adulthood, such as depression, anxiety and anorexia nervosa (Guillon, Croq, & Bailey, 2002).

Additionally, children's cognitive styles are linked to psychological well-being (Alloy, Abramson, & Francis, 1999) such that negative cognitive styles, such as catastrophising the consequences of a negative life event or the attribution of negative events to stable negative characteristics within the child (e.g., worthlessness), are associated with a vulnerability to depression (Alloy et al., 1999).

Psychological well-being also is linked to academic achievement, which is, in turn, influenced by a child's level of readiness at school entry. A 10-year longitudinal study of mental health in adolescence finds that negative self perceptions of academic competence, negative feelings of self-worth, and a sense of school as unimportant or uninteresting were important mediators in the relationship between poor academic grades and mental health problems (Roeser, Eccles, & Freedman-Doan, 1999). This again highlights the importance of incorporating non-cognitive traits such as motivation into the definition of school readiness.

Several of the long-term possible outcomes associated with poor school readiness, such as teenage pregnancy and unemployment, are also associated with poor psychological well-being. Teenage pregnancy has been shown to be strongly associated with maternal depression (Deal & Holt, 1998). Childrearing during the teenage years interrupts normal cognitive and developmental processes and is associated with a higher likelihood of socioeconomic disadvantage, single motherhood, and low social support. Teenage pregnancy also is associated with fewer years in education and thus diminished career opportunities, which in turn leads to financial instability and added life stress (Deal & Holt, 1998).

Research has long documented a link between poor mental health and unemployment; which is another long term outcome of low school readiness. Unemployment is associated with an increase in depressive symptoms, admissions to psychiatric hospitals, and death by suicide (Rodriguez, Frongillo, & Chandra, 2001). Research suggests that it is not simply the individual's financial situation which moderates these effects, but that social stigma and an individuals' self-perception may also have an effect (Rodriguez et al., 2001).

Thus, entering school with a low level of readiness puts children at greater risk of experiencing mental health difficulties as they mature. This stems from a greater likelihood of experiencing negative outcomes over the life course, such as fewer friendships in school, lower grades,

teenage pregnancy and unemployment in adulthood, which are all associated with poorer psychological well-being.

D. Teenage Pregnancy

Although poor school readiness is associated with a greater likelihood of teenage pregnancy, the mechanisms underlying this relationship are not yet clear (Brooks-Gunn, 2003). Similar to the issue of unemployment, it is most likely due to a negative set of events stemming from various dimensions of school readiness. Entering school with a low level of readiness is associated with poor peer relationships and academic achievement, both of which foster a negative attitude toward school. Dislike of school has been found to be associated with a young person's belief in becoming a parent before the age of twenty (Haldre, Rahu, Rahu, & Karro, 2009). Additionally, research has shown that 13 and 14 year olds who disliked school were more likely to have sexual intercourse, expect to have sexual intercourse by age 16, and expect to be parents by the age of 20, despite reporting similar levels of sexual knowledge and education (Bonell et al., 2003). Furthermore, research indicates a relationship between poor academic performance and likelihood of becoming a teenage mother, whereas educational attainment has been shown to have a strong delaying effect on motherhood (e.g. Kiernan, 1980; 1995; Marini, 1984).

Low self-esteem and poor peer relationships are factors associated with low school readiness and, in turn, teenage pregnancy. Low self-esteem may increase the likelihood of teenage pregnancy by up to 50%, which may be attributed to an increased likelihood of unprotected intercourse (Emler, 2001). Poor school readiness in socio-emotional domains is associated with peer rejection, which can lead to antisocial behaviour and the formation of deviant peer groups in later childhood and adolescence (Parker & Asher, 1987). Antisocial tendencies have also been linked to earlier childbearing (Woodward, Fergusson, & Horwood, 2001). Furthermore, research has shown that having conduct problems at age eight is linked to later pregnancy risk (Woodward & Fergusson, 1999).

Studies indicate clear and persistent relationships between early childbearing and a range of negative consequences such as poor mental health and psychological functioning, reduced earnings potential, lower levels of educational achievement, and greater health risks (Langille, 2007). Teenage mothers typically have lower incomes than older mothers, and therefore are subject to the risks associated with living in poverty such as less adequate housing, less access to medical care, and poorer nutritional intake (Coley & Chase-Lansdale, 1998). Their children are also at greater risk for low birth weight, infant mortality, cognitive delay, behavioural problems and child abuse (Paranjothy, Broughton, Adappa, & Fone, 2009), all of which have an effect on the school readiness of their children, representing a intergenerational cycle of disadvantage.

E. Employment & Earnings

Children who enter school not ready to learn tend to have lower educational levels and are subsequently more likely to have poor employment records in adulthood (Rouse, Brooks-Gunn, & McLanahan, 2005). Several lines of research have demonstrated that school readiness at age six predicts a child's academic success in the early grades of elementary school (Conn-Powers, 2006; Duncan et al., 2007; Raver, 2003). Due to the cumulative nature of curriculum subjects such as mathematics, early failure to grasp the basic concepts can impede children's ability to

grasp more advanced concepts over time (Barrington & Hendricks, 1989) and children may fall further behind and become increasingly less likely to complete school and proceed to third-level education. In addition, significantly more school drop-outs report difficulty understanding and completing an employment application (Doherty, 1997).

Research also shows that the level of formal education significantly predicts employability, with lower unemployment rates among males and females who proceeded to further education or training after high school (Doherty, 1997). For example, males who do not graduate from high school have on average 5.8 years of unemployment during a 40 year work life in contrast to 3.6 years among males who complete high school, while males with a third-level degree only experience 1.3 years of unemployment on average (Ross & Shillington, 1990). Furthermore, higher levels of unemployment lead to higher costs to society, as both males and females who have not completed high school are more likely to seek social assistance (Ross & Shillington, 1990). Unemployed individuals also pay little to no income tax, do not contribute employment insurance premiums, and have a tendency to pay lower consumption taxes as they purchase less than those who are employed (Doherty, 1997). Involuntary unemployment also has consequences for an individual's mental health. It can lead to feelings of incompetence and frustration, low self-esteem, and alienation from the norms and goals of society (Murphy & Athanasou, 1999).

Education and literacy also play an important role in future wage determination. Higher levels of education are typically associated with higher earnings (see Harmon, Oosterbeek, & Walker, 2000 for a review). Using the Living in Ireland survey one study finds that an additional year of education in Ireland is associated with an increase in earnings of between 5.6-8.4% for men and 7.5%-11.2% for women (McGuinness, McGinnity, & O'Connell, 2008). A study by Denny, Harmon and O'Sullivan (2003) also shows that the returns to literacy, as measured by the International Adult Literacy Survey, are among the highest in the OECD countries. They find that improving literacy scores by one standard deviation of the scores (52 points) is associated with an increase in earnings of 17%.

Therefore, the dynamic set of events stemming from a child's level of readiness at school entry can have consequences for their future skill level and labour market outcomes and thus society in general.

F. Criminal Activity

Poor school readiness may be linked to higher levels of delinquency and crime. For example, cognitive, social, linguistic and motor dimensions of school readiness have been linked to poor educational attainment later in life (Le et al., 2006) and a strong negative relationship between crime and educational attainment has been established after controlling for age, state of birth, state of residence, cohort of birth, and state-specific year effects (Lochner & Moretti, 2004).

Aggressive behaviour in early childhood is associated with delinquent and criminal behaviour in later years. Research finds that physical aggression in kindergarten is the single best predictor of later involvement in property crimes (Haapasalo & Tremblay, 1994). Individual risk factors associated with aggressive behaviour include restlessness, poor mental ability and poor linguistic skills, all of which form important facets of school readiness (DeMatteo & Marcyzk, 2005).

Conversely, prosocial behaviours such as helping, sharing and cooperation with others, appear to be robust protective factors for those with risk factors for committing violent and property crimes before the age of 13 (Haapasalo & Tremblay, 1994).

Further evidence suggests that peer rejection in childhood is a risk factor for antisocial behaviours later in life. Specifically, peer rejection in third grade is predictive of increasingly greater antisocial behaviours from sixth grade upwards, even when earlier aggressiveness is accounted for (Coie, Terry, Lenox, Lochman, & Hyman, 1995). In the first few years of school, peer rejection can strengthen the relationship between early attention/hyperactivity problems and conduct problems in fourth grade. It is well documented that early onset offending is related to later serious and chronic offending (McCluskey, McCluskey, & Bynum, 2006).

Criminal behaviour imposes a substantial cost on society, including government costs to operate the criminal justice system, medical costs for injuries, and the loss of productive citizens in the form of offenders who are not rehabilitated. Poor school readiness puts children at risk of increasing behaviour problems across their school years and increased likelihood of criminal activity.

V. Differential Parent and Teacher Definitions of School Readiness

Parents and teachers can have different definitions of school readiness, with parent definitions focusing more often on academic skills, and teachers on nonacademic skills (Knudsen-Lindauer & Harris, 1989; West, Hausken, & Collins, 1993). For example, parents rate knowledge of the alphabet and ability to count as essential components to school readiness, however both items are rated as very low in importance by teachers (Lewit & Schuurman Baker, 1995). Teachers are more likely to rate physical health, including nourishment and well-restedness, as being essential or more important than any other characteristic. Teachers also place more of an emphasis than parents on the child's ability not to disrupt a class (Harradine & Clifford, 1996). However, parents and teachers seem to be in general agreement about the order of importance of the various dimensions of school readiness. A majority of parents and teachers rate the nonacademic characteristics of communication skills, enthusiasm and turn-taking as either essential or very important for school readiness (Lewit & Schuurmann-Baker, 1995).

Research has also focused on the different social skills parents and teachers view as critical for success in school. Though it seems parents and teachers do not differ in the value placed on cooperation skills, parents rate assertion and self-control skills as more important than do teachers (Lane, Stanton-Chapman, Jamison, & Philips, 2007). In contrast, preschool teachers rated assertion skills almost exclusively as not being critical for classroom success. Studies have also examined the differences between preschool and kindergarten teachers' perceptions of school readiness, finding that preschool teachers place more importance on general knowledge at school entry (Piotrowski, Botsko, & Matthews, 2000).

Researchers have offered a number of possible explanations for these differing parent and teacher beliefs. One explanation is that parents may not comprehend all of the issues surrounding

school readiness, and that teachers gain a more holistic impression of readiness through classroom experience. This is supported in part by research findings that experienced teachers and student teachers place different values on aspects of readiness. Although both student teachers and experienced teachers tend to view academic skills as relatively unimportant, experienced teachers rate social skills, language competence and self-regulation as more important than student teachers. Both experienced teachers and student teachers rate their experiences with children as most important in informing their understanding of school readiness, with a lack of emphasis placed on textbooks and academic material in both groups (Cuskelly & Detering, 2003). Furthermore, qualified teachers are more likely than student teachers to see themselves recommending that a child be retained, supporting the idea that teachers place more of an emphasis on child characteristics, while less experienced professionals may believe that the responsibility for children's success lies in the school and the opportunities it can provide (Cuskelly & Detering, 2003). Similarly, it is suggested that parents' school readiness beliefs may be a function of concerns that their child will not succeed in a resource-poor school, particularly in disadvantaged communities. Parents may emphasise concrete academic skills to help children adjust successfully to classroom demands (Piotrkowski et al., 2001).

Some researchers have expressed concerns about the differing beliefs held by parents and teachers regarding readiness for school entry. It is important that parents and teachers share a common understanding of the attributes and attitudes essential for a smooth transition to school. Shared beliefs facilitate congruence between the skills that parents encourage in children before school entry, and the skills teachers look for in the child's first year of school. This, in turn, can increase a teacher's positive evaluation of the child early in school life and may contribute to a child's early school success (West et al., 1993). When a child is labeled "unready" by a teacher, it can influence how the child is treated in class and may have negative consequences for his or her academic and social development (Lewit & Schuurman Baker, 1995).

In sum, the main difference between teacher and parent definitions of school readiness lies in the tendency for parents to place more importance on academic skills. Though reasons for this difference are not fully understood, it is likely due in part to teachers' classroom experience and a more holistic impression of school readiness resulting from this experience. A gap between teacher and parent understandings of readiness potentially carries problems in the form of incongruence between skills encouraged at home and those encouraged in the classroom. Children whose parents have not encouraged the skills teachers focus on can be labeled "unready" by teachers, and thus may not reach their true potential in the first years of school due to differential classroom treatment.

VI. Parenting

With few exceptions, (e.g., Harris, 1998; Rowe, 1994; Scarr, 1992) a consensus has been reached that parents play a central role in the development of their children. While parenting practices, parent involvement in education, and parental expectations have been found to support or improve school performance among older children and adolescents (e.g., Dornbusch, Ritter,

Leiderman, Roberts, & Fraleigh, 1987; Griffith, 1996; Grolnick, Benjet, Kurowski, & Apostoleris, 1997), the relationships between parenting and schooling are less clear among younger children.

Differences in parenting can affect school readiness in a number of dimensions. For example, parenting practices such as reading to children and enrolling them in preschool promotes both school readiness and subsequent academic achievement (Zigler, Pfannenstiel, & Seitz, 2008) and supportive parenting during toddlerhood and early childhood is strongly related to school readiness and academic competence (Horvath, 2004). Harsh and inconsistent parenting, on the other hand, predicts social and cognitive deficits, which are associated with conduct problem behaviour, which in turn predicts elementary school social and academic failure (Dodge, Greenberg, & Malone, 2008).

Key dimensions of parenting in the literature include constructs reflecting parental acceptance or responsiveness, demandingness or control (Cummings, Davies, & Campbell, 2000; Maccoby & Martin, 1983), and emotional warmth (Maccoby & Martin, 1983). One of the best known is Baumrind’s person-centered analytical approach (1966; 1971), which identifies three types of parenting patterns based on the relative use of responsiveness and control. Using these two dimensions, Baumrind identified three parenting styles based on parents’ relative use of each dimension to parent their children (Baumrind, 1966; 1967). These parenting types are presented in Figure 2.

		Acceptance/Responsiveness	
		HIGH	LOW
Demandingness/Control	LOW	AUTHORITATIVE	AUTHORITARIAN
	HIGH	PERMISSIVE	

Note. This figure is adapted from Maccoby & Martin (1983).

Figure 2. Parenting styles identified by Baumrind based on parent use of responsive and controlling behaviours to parent their child.

A. Description of Parenting Styles Identified by Baumrind (1966)

1. Authoritative Parenting Style

The authoritative parenting style is characterised by high responsiveness and high control and is most consistently associated with instrumental competence and other positive outcomes in American samples. Children of authoritative parents are expected to respect parental decisions and demands, but parents, in turn, are responsive to their child's opinions and needs (Maccoby & Martin, 1983). Authoritative parents are consistent, loving, conscientious, and secure in their interactions with their child and these parents encourage independence by respecting the child's opinions and equipping the child with the skills to make independent decisions by providing reasons for rules and explanations for consequences of behaviour while engaging in open communication with the child, respecting his/her autonomy, and recognising the child's perspective and interests (Baumrind, 1966; 1967; Maccoby & Martin, 1983). These parents are demanding as they expect mature behaviour from their child, exhibit firm control and enforcement of rules, and set clear standards while simultaneously being supportive of and communicating clearly with the child (Baumrind, 1967; Maccoby & Martin, 1983). In sum, these parents are nurturing and warm. However, they are also controlling, demanding, and clear about expectations of the child (Baumrind, 1967).

2. Authoritarian Parenting Style

Baumrind's authoritarian parenting style is characterised by low responsiveness and high levels of control and is more commonly associated with negative outcomes in young children (Dornbusch et al., 1987; Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Querido, Warner, & Eyberg, 2002). Authoritarian parents are less nurturing and less involved in their child's development and demonstrate high levels of control and lack support and affection (Baumrind, 1967). The authoritarian parent is not open to a child's differing viewpoints, does not encourage the child to express himself/herself and exhibits high levels of directive control and imposes many rules while offering very little reason or explanation for rules and/or decisions (Baumrind, 1966; 1967; Shaffer & Kipp, 2007). Authoritarian parents value authority as absolute and correct, contain any attempts by their child to challenge their authority, and do not value give and take in the parent-child relationship (Baumrind, 1966; 1967; Maccoby & Martin, 1983).

3. Permissive Parenting Style

The permissive parenting style is characterised by a lenient pattern of parenting in which few demands, responsibilities, or expectations are placed on the child (Baumrind, 1966; 1967; Shaffer & Kipp, 2007). Permissive parents are disorganised and use little punishment (Maccoby & Martin, 1983). Rather, this parent attempts to have the child comply through the use of reason and manipulation (Baumrind, 1966; 1967). Permissive parents do not assert their parental authority, set boundaries or rules for their child, nor insist that the child exhibit mature behaviour (Maccoby & Martin, 1983).

B. Relationship between Parenting and Child Outcomes

Original research conducted by Baumrind (1967) demonstrated that children of authoritative parents are well socialised and independent. In terms of specific child outcomes, authoritative parenting is associated with better academic and social outcomes for children and adolescents (Baumrind, 1991; Hetherington, Henderson, & Reiss, 1999; Hill, 1999; Taylor, Clayton, & Rowley, 2004). Furthermore, authoritative parenting, characterised by high levels of warmth and responsiveness, has been shown to be associated with positive peer play interaction, and co-occurred with higher levels of parent education and lower stress levels (Coolahan, 1997).

Authoritarian parenting, on the other hand, is associated with children who are less content, less well liked by peers, more insecure, and more reactive in stressful situations than the children of authoritative parents (Baumrind, 1967). Additionally, authoritarian parenting, characterised by lack of warmth and responsiveness is negatively related to kindergarten/preschool readiness (Kessler, 2002) and is associated with problematic peer play interaction, withdrawn behaviour, higher stress levels, and lower educational levels (Coolahan, 1997).

Permissive parenting is characterised by parents who are non-controlling, non-demanding, and relatively warm. Parents are tolerant and accepting towards the child's impulses, use as little punishment as possible, make few demands for mature behaviour, and allow considerable self regulation by the child (Dornbusch et al., 1987). Children of permissive parents display lower levels of self-control and self reliance (Baumrind, 1967). These children were shown to be immature, lacking in impulse control, social responsibility and independence. Permissive parenting is negatively associated with grades (Dornbusch et al., 1987), and with social and cognitive competence (Baumrind, 1971, 1973).

In addition to Baumrind's parenting styles characterised by warmth and control, other dimensions or behaviours of parenting have become the focus of investigation in recent years. For example, autonomy support and coercion and psychological control are identified as important aspects of child rearing and have shown both direct and indirect links to early childhood behaviour and development (e.g., Brook, Zheng, Whiteman, & Brook, 2001; Grolnick, Price, Beiswenger, & Sauck, 2007). Support for a child's autonomy has been associated with higher levels of self regulation, greater academic achievement, higher levels of adjustment, fewer behavioural problems, greater peer acceptance, and more positive personality traits (Grolnick, Kurowski, Dunlap, & Hevey, 2000; Grolnick & Ryan, 1989; McNamara, Selig, & Hawley, in press; NICHD, 2008), and is related to increased friendship quality and peer acceptance (Clark & Ladd, 2000).

While autonomy support for young children is commonly associated with positive outcomes, controlling parenting behaviours are associated with more negative outcomes such as externalizing behaviour (Bates, Pettit, Dodge, & Ridge, 1998). Specifically, children of mothers who report little support for their child's autonomy and high restrictive control of their child's behaviours in their parenting style are more aggressive, less agreeable, conscientious, extraverted, and less well accepted by their peers than children of parents who report using less restrictive behaviours to parent their children (McNamara et al., in press). Theoretically, autonomy support encourages independence and allows young children to take an active role in their own problem solving. This may help them navigate the social world more effectively,

resulting in positive social outcomes. Controlling behaviours, on the other hand, may have the opposite effect. Specifically, children who experience high levels of parental control may not have the opportunity to learn to navigate the social world on their own resulting in a less effective interaction style (i.e., more aggressive) and lower peer acceptance.

VII. Methodology

A. Support from Local Primary Schools and Ethics Committee

Prior to conducting the CPSE study, members of the *PFL* programme team and the UCD evaluation team met with school principals, the Boards of Management and teachers from each school to describe the project and obtain their support for conducting the survey. These meetings were held sequentially. School principals agreed for the study to take place and wrote a letter in support of the project that was submitted to the UCD Ethics Board, along with the project proposal on 24th June, 2008. Ethics approval was guaranteed from the UCD Ethics Board on 24th July, 2008. Support was subsequently obtained from the Boards of Management and the junior infant teachers in all participating schools.

B. Survey Design and Piloting

In order to assess the level of school readiness in the *PFL* catchment area, a cross-sectional design was developed which collects information via surveys completed by the teachers and parents of junior infant children. Data for the CPSE were collected during October/November/December of the 2008-2009 academic year. All survey instruments were piloted prior to administering the surveys to the study population. The teacher questionnaire was piloted with four teachers from the local primary schools who do not teach junior infants. The pilot teachers were given a paper version of the questionnaire and asked to write any comments directly on the questionnaire. Pilot teachers provided feedback on items that were unclear and appropriate adjustments were made to the online teacher survey which was the teacher data collection tool.

The parent questionnaire was piloted with four parents of young children (not junior infants) in the *PFL* catchment area. Two UCD researchers and the *PFL* Programme Manager conducted a focus group with the pilot parents. The parents were given copies of the questionnaire and were asked to read through the questionnaire prior to this meeting. During the meeting the researchers went through the questionnaire question by question and asked the parents for their feedback on the material. Specifically, the parents identified sensitive questions which the parents participating in the project may not be comfortable answering and identified any questions that were unclear or that they did not understand. For questions or words that the pilot mothers did not understand, the researchers, together with the pilot parents, decided on alternative explanations to ensure 1) understandability of questions and 2) that standardised explanations would be given to all parents participating in the study.

C. Participants

1. Eligibility

All teachers and parents of junior infant children either residing in or attending schools in the *PFL* catchment areas were eligible for participation in the study. Parents were presented with an information and consent form which described the project in detail. Parents had to give consent to complete the questionnaire themselves and also for their child's teacher to complete the questionnaire. While the study is interested in gaining an index of school readiness for children who reside in the *PFL* catchment area, parents of classmates of children who do not reside in the area themselves, were also asked to participate to ensure no one child was excluded or singled out in the classroom.

It was anticipated that the majority of children living in the *PFL* catchment areas attend one of the two schools located in the area. However it was realised that an additional 20 pupils could be surveyed by approaching schools outside the area in which children living in the *PFL* catchment area were attending. Therefore, select children, identified by the school principals, from three additional schools were invited to participate. Once collected, data from all schools and parents were aggregated.

2. Response Rates

Based on local birth rates in the *PFL* catchment area, calculated using Census SAPS (Small Area Population Statistics) data from 2006, it was estimated that the potential sample for the survey would be the teachers and parents of between approximately 96 and 113 children.

Based on communications with the local school principals, it was determined that there were 102 eligible children in the two schools located in the *PFL* catchment areas. Of these 102 pupils, 80 (78%) of the parent questionnaires were completed and 87 (85%) of the parents gave permission for the teacher to complete the survey regarding their child. Additionally, 67 (76%) of the 88 children reside in the original *PFL* catchment area, 6 (7%) in the new *PFL* expansion area, 13 (15%) do not reside in either *PFL* catchment area, and two (2%) did not provide an address.

Based on these response rates it was decided to approach an additional three schools. Although these schools are not in the *PFL* catchment area, there were approximately 20 pupils residing in the area and attending these schools. By conducting the CPSE with these additional participants a more complete picture of school readiness of children residing in the *PFL* catchment areas could be achieved.

In total, there were 21 pupils who reside in the *PFL* catchment area, but attend schools outside the area. Of these 21 pupils, 14 (67%) of the parent questionnaires were completed and 14 (70%) of the parents gave permission for the teacher to complete the survey regarding their child. Additionally, 13 (93%) of the 14 pupils reside in the original *PFL* catchment area and the remaining 1 (7%) is from the new *PFL* expansion area.

Based on these figures, there were a total of 123 eligible pupils across the 5 schools. In total, 94 parent questionnaires were received resulting in a response rate of 76%. In total, 101 teacher

questionnaires were completed, capturing data for 82% of eligible participants. Teacher questionnaires were completed for all pupils with parental consent, bar one, resulting in a teacher response rate of 99%.

D. Instruments:

1. Teacher Questionnaire

The teacher questionnaire was administered using an online survey with the teachers accessing a secure website using a unique user ID and password. The teacher completed the questionnaire at his/her convenience. The survey could be completed in one session, or in multiple sessions, as the teacher was able to return to the secure website at a suitable time. By completing an online questionnaire, the data were automatically entered onto a secure server housed in the UCD Geary Institute. The questionnaire took approximately 10 minutes to complete for each child.

The teacher questionnaire contained the following instruments:

Teacher Demographics

Teachers were asked a number of demographic questions including their age, qualifications, how long they have been teaching in general, how long they have been teaching at this particular school, and how long they have taught junior infant classes.

Short Early Development Instrument (S-EDI; Janus, Duku, & Stat, 2005)

The core measure of school readiness in the teacher questionnaire was a short form of the Early Development Instrument (S-EDI). This instrument is a short version of the Early Development Instrument (EDI; Janus & Offord, 2000) which was developed at the Offord Centre of Child Studies, McMaster University (Hamilton, Ontario, Canada), with the specific purpose of meeting the needs implied by the paradigm shift in school readiness research in which a more holistic definition of school readiness was adopted. It was developed in consultation with the Early Years action group and Parenting and Literacy Centres, as well as with educators, in particular, kindergarten teachers. The EDI was refined through extensive preliminary testing in the 1998-1999 school year for validation purposes and cultural validity before being introduced in all kindergarten classes in the Metro Toronto and New York sections of the Toronto District School Board, as well as several other communities across Canada. The EDI is used regularly across Canada and has been used in many countries including America, Chile, Kosovo, Holland, New Zealand, and Jamaica.

The EDI was developed at the Offord Centre of Child Studies (OCCS) with the specific aim of designing an instrument to measure school readiness from a comprehensive perspective (Guhn, Janus, & Hertzman, 2007). The OCCS has established normative data for the EDI in order to set a representative benchmark for comparison of data from all projects using the instrument. Since 1999, EDI data have been collected for over 300,000 four to five year old children in Canada and several other countries. A subset of this database, including data from the year 2000 and later, were analysed to provide normative data on the EDI domains. The normative sample includes 116,860 children and represents 93.3% of the full sample of children. Using this normative sample allows users of the EDI to compare the results of their sample to a larger, normative sample of similar aged children. Research comparing the predictive capability of the EDI with

direct school readiness assessments has shown that the EDI predicts school achievement in early childhood as accurately as direct assessments of school readiness (Fantuzzo et al., 2005).

The short form EDI was developed by conducting a factor analysis of the 104 items on the long version of the EDI. The 16 subscales of the EDI were retained in this analysis and the three items with the highest factor loadings on each subscale comprised the S-EDI (Janus et al., 2005). Therefore, the S-EDI is composed of 48 core items and provides scores in five domains of school readiness. A description of all S-EDI scales and subscales is reported below. Standardised coefficient reliability estimates (Cronbach, 1951) are reported for each scale and are presented in Table 1. The number of observations used to calculate the standardised Cronbach alpha coefficients and the intercorrelations among factors also are reported. Teacher-rated S-EDI domains that reached reliability of .65 or above are included in further analyses.

Table 1
Standardised Cronbach alpha coefficients and intercorrelations between teacher rated S-EDI domains

Variable	N	1	2	3	4	5
1. Physical Health and Well-Being	79	(.71)				
Gross and Fine Motor Skills	85	(.68)				
Physical Readiness for the School Day		(.44)				
Physical Independence		(.41)				
2. Overall Social Competence	100	.61***	(.89)			
Responsibility and Respect	100		(.82)			
Approaches to Learning	101		(.86)			
Social Competence with Peers	101		(.84)			
Readiness to Explore New Things	101		(.72)			
3. Overall Emotional Maturity	51	.52***	.80***	(.85)		
Prosocial and Helping Behaviour [†]	65			(.87)		
Hyperactivity and Inattention	101			(.87)		
Anxious and Fearful Behaviour	100			(.81)		
Aggressive Behaviour	82			(.87)		
4. Overall Language and Cognitive Development	65	.57***	.69***	.48***	(.87)	
Interest in Literacy/Numeracy and Memory	86				(.80)	
Basic Numeracy Skills	77				(.80)	
Basic Literacy Skills	91				(.73)	
Advanced Literacy Skills	86				(.57)	
5. Communication and General Knowledge	101	.61***	.50***	.43***	.53***	(.90)

Note: Standardised reliability coefficients appear in parentheses. These coefficients were calculated using observations with no missing data. *** $p < .001$

[†]This subscale was reverse coded to derive the Overall Emotional Maturity construct.

The *physical health and well-being* construct is composed of three three-item subscales including physical readiness for the school day (e.g., over/underdressed for school related activities; too tired/sick to do schoolwork), physical independence (e.g., independent in washroom habits most of the time; well coordinated), and gross and fine motor skills (e.g., ability to manipulate objects;

overall physical development). The *social competence* construct comprises four three-item subscales including respect and responsibility (e.g., respects the property of others; accepts responsibility for actions), approaches to learning (e.g., works independently; able to follow class routines without reminders), readiness to explore new things (e.g., eager to play with a new toy; eager to play with/read a new book), and overall social competence with peers (e.g., ability to get along with peers; plays and works cooperatively with peers at age appropriate level). The *emotional maturity* construct consists of four three-item constructs including prosocial and helping behaviour (e.g., will try to help someone who has been hurt; comforts a child who is crying or upset), aggressive behaviour (e.g., gets into physical fights; bullies or is mean to others), anxious and fearful behaviour (e.g., appears fearful or anxious; appears worried), and hyperactive and inattentive behaviour (e.g., can't sit still is restless; fidgets). The *language and cognitive development* construct contains four three-item subscales related to basic literacy skills (e.g., is able to attach sounds to letters; is able to identify at least 10 letters of the alphabet), advanced literacy skills (e.g., is able to read simple words; is able to read simple sentences), basic numeracy skills (e.g., is able to count to 20; is able to say which is the bigger of the two), and interest in literacy/numeracy and memory (e.g., is interested in reading; is interested in games involving numbers). The final construct, *communication and general knowledge* comprises three items and contains items such as ability to tell a story and ability to communicate in an understandable way.

Additional Behavioural Questions

In addition to the core measure of school readiness (i.e., S-EDI), 18 additional items were included in the teacher questionnaire to assess several further components of school readiness. These additional items measure school readiness as characterised by the following five domains: *aggressive behaviour* (e.g., physically attacks people; kicks, hits or bites other children), *oppositional/defiant behaviour* (e.g., refuses to comply with rules or requests; punishment doesn't seem to change his/her behaviour), *hyperactivity/inattention* (e.g., has difficulty waiting his/her turn in games; is inattentive; unable to concentrate or pay attention for long), *anxiety* (too fearful or anxious; worries), and *prosocial behaviour* (e.g., tries to help someone who has been hurt; helps other children who are feeling sick).

It should be noted that there are a total of 18 items included in this measure. However, 10 of the 18 items overlap with items included on the S-EDI, leaving an additional 5 unique items that were included in this survey. These items were included in both the teacher and parent questionnaires as they are present in the 5-year old follow-up of the Irish *Lifeways Cross-Generation Cohort Study* which was conducted in 2007.¹ As there are no comparable data on the S-EDI available in Ireland, including these additional items enables a comparison between the CPSE sample and a sample of representative Irish children on several dimensions of school readiness.

¹ *The Lifeways Cross Generational Cohort Study* is a cross-generation cohort study comprising three generations of the same family. Its goal is to identify opportunities for development, change and improvement in the healthcare and well-being of the Irish population. The aim of this cohort study is a) to record physical and psychological health status and socio-economic circumstances in individuals at birth, during childhood, early childhood and early middle age in Ireland, b) to follow such individuals prospectively in order to measure their changing health status, c) and assess the extent to which that relates to their social circumstances. Between October 2001 and Jan 2003, 1124 pregnant women were recruited in the ante-natal clinics of the Coombe Hospital Dublin and University College Hospital, Galway. 1088 babies were born to 1076 mothers. Fathers (n=331), maternal grandparents and paternal grandparents (n=1231) were subsequently recruited. The study is now comprised of 520 three-generation families. Data includes; baseline lifestyle information on mothers, fathers and grandparents; electronic mother and child ante-natal/birth hospital records; grandparent examination and biological data; patient-held records for a sub-sample of children; general practice follow-up data and immunisation records of all infants/children. This cohort has been followed for five years to date.

Standardised coefficient reliability estimates (Cronbach, 1951) of the five scales derived from these additional items are presented in Table 2. The number of observations used to calculate the standardised Cronbach alpha coefficients and the intercorrelations among factors also are reported. All teacher-rated domains that reached reliability of .70 are included in further analyses.

Table 2
Standardised Cronbach alpha coefficients, and intercorrelations between teacher rated UCD Measure of School Readiness Constructs

Variable	N	1	2	3	4	5
1. Aggressive Behaviour	84	(.90)				
2. Oppositional/Defiant Behaviour	76	.77***	(.90)			
3. Hyperactive/Inattentive Behaviour	100	.56***	.66***	(.92)		
4. Anxious Behaviour	100	.20 [†]	.12	.05	(.72)	
5. Prosocial Behaviour	64	-.29**	-.33**	-.32**	-.07	(.86)

*** $p < .001$; ** $p < .01$; * $p < .05$; [†] $p < .10$

2. Parent Questionnaire

Parents were recruited via their child's teacher. Participating teachers gave a packet containing an information sheet, consent form, and parent questionnaire to the parents of every child in their class when the parents dropped off or collected their child from school. The consent form described the study in detail and provided contact information for the UCD researchers on the project. If the parent agreed to join the study they signed the consent form and returned it to the teacher along with the completed parent questionnaire. The questionnaire took approximately 30 minutes for the parent to complete.

Participating parents completed a paper and pen questionnaire consisting of the following measures:

Parent/Family Demographics

Socio-demographic information related to family composition, parent age, ethnicity, parent employment and education, family income, social welfare status, and childcare were included.

Short Early Development Instrument (S-EDI; Janus, Duku, & Stat, 2005)

The core measure of school readiness in the parent questionnaire was the short form of the Early Development Instrument (S-EDI) described above. Items were adapted to be answered by parents and assessed the parents' ratings of their child's *physical health and well-being, social competence, emotional maturity, language and cognitive development, and communication and general knowledge.*

Standardised coefficient reliability estimates (Cronbach, 1951) for parent rated S-EDI scales are presented in Table 3. The number of observations used to calculate the standardised Cronbach alpha coefficients and the intercorrelations among factors also are reported.

Table 3

Standardised Cronbach alpha coefficients, and intercorrelations between parent rated S-EDI domains

Variable	N	1	2	3	4	5
1. Physical Health and Well-Being						
Gross and Fine Motor Skills	86	(.38)				
Physical Readiness for the School Day	88	(.10)				
Physical Independence						
2. Overall Social Competence						
Responsibility and Respect	86	.32**	(.85)			
Approaches to Learning	90		(.67)			
Social Competence with Peers	89		(.63)			
Readiness to Explore New Things	92		(.58)			
	93		(.85)			
3. Overall Emotional Maturity						
Prosocial and Helping Behaviour [†]	66	.25*	.53***	(.71)		
Hyperactivity and Inattention	78			(.79)		
Anxious and Fearful Behaviour	87			(.80)		
Aggressive Behaviour	86			(.65)		
	85			(.68)		
4. Overall Language and Cognitive Development						
Interest in Literacy/Numeracy and Memory	47	.20 [†]	.48***	.33**	(.80)	
Basic Numeracy Skills	61				(.25)	
Basic Literacy Skills	80				(.56)	
Advanced Literacy Skills	86				(.57)	
	78				(.60)	
5. Communication and General Knowledge						
	92	.14	.29**	.16	.37***	(.77)

Note: Standardised reliability coefficients appear in parentheses. These coefficients were calculated using observations with no missing data.

*** $p < .001$; ** $p < .01$; * $p < .05$; [†] $p < .10$

[†]This subscale was reverse coded to derive the Overall Emotional Maturity construct.

Additional Behavioural Questions

As in the teacher questionnaire, 18 items comprising several additional behavioural domains related to school readiness were also included in the parent questionnaire. Standardised coefficient reliability estimates (Cronbach, 1951) are reported for the five scales derived from these additional items in Table 4. The number of observations used to calculate the standardised Cronbach alpha coefficients and the intercorrelations among factors also are reported.

Table 4

Standardised Cronbach alpha coefficients, and intercorrelations between parent rated UCD Measure of School Readiness Constructs

Variable	N	1	2	3	4	5
1. Aggressive Behaviour	89	(.63)				
2. Oppositional/Defiant Behaviour	88	.39***	(.54)			
3. Hyperactive/Inattentive Behaviour	82	.42***	.49***	(.76)		
4. Anxious Behaviour	86	.34***	.22*	.23*	(.65)	
5. Prosocial Behaviour	81	-.04	-.13	-.08	.16	(.80)

*** $p < .001$; ** $p < .01$; * $p < .05$; [†] $p < .10$

Parenting Styles and Dimensions Questionnaire (PSDQ; Robinson, Mandleco, Olsen & Hart, 2001).

This 32 item self report measure of parenting examines how often a parent displays certain behaviours toward his/her child yielding scores related to the traditional Baumrind (1971) parenting styles. The parent is asked to indicate how often he/she performs certain behaviours on a five point scale ranging from ‘Never’ to ‘Always.’ This measure yields three constructs regarding parent’s average use of authoritative parenting, authoritarian parenting, and permissive parenting behaviours.

The *authoritative* construct is composed of three subdomains, each comprised of five questions. Specifically related to the authoritative dimension, five items assessed connection (e.g., encourages child to talk about the child’s troubles; gives praise when child is good), five items assessed regulation (e.g., explains the consequences of the child’s behaviour; emphasizes the reasons for rules), and five items measured autonomy (e.g., shows respect for child’s opinions by encouraging child to express them; allows child to give input to family rules). The *authoritarian* construct comprises three four-item subdomains. Specifically, the authoritarian construct is composed of four items relating to physical coercion (e.g., spansks child when disobedient; uses physical punishment as a way of disciplining child), four items related to verbal hostility (e.g., explodes in anger toward child; scolds and criticises to make child improve), and four items related to non-reasoning/punitive behaviors (e.g., punishes by taking privileges away from child with little if any explanations; uses threats as punishment with little or no justification). Last, the *permissive* construct contains five items such as states punishments to child and does not actually do them, and spoils child.

Standardised coefficient reliability estimates (Cronbach, 1951) are reported for the scales and subscales derived from the PSDQ in Table 5. The number of observations used to calculate the standardised Cronbach alpha coefficients and the intercorrelations among factors also are reported. Parent-rated domains that reached reliability of .63 or above were included in further analyses. Therefore, the non-reasoning/punitive subdomain was dropped from further analyses due to the low reliability of this subscale.

Table 5
Standardised Cronbach alpha coefficients, and intercorrelations between parent rated parenting constructs

Variable	N	1	2	3
1. Authoritative Parenting Style	72	(.84)		
Connection Dimension (Warmth and Support)	86	(.69)		
Regulation Dimension (Reasoning/Induction)	81	(.65)		
Autonomy Dimension (Democratic Participation)	81	(.72)		
2. Authoritarian Parenting Style	83	-.12	(.74)	
Physical Coercion Dimension	86		(.63)	
Verbal Hostility Dimension	88		(.70)	
Non-Reasoning/Punitive Dimension	88		(.44)	
3. Permissive Parenting Style	87	-.26*	.41***	(.79)

*** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$

E. Testing Procedures

1. Non-Normality Tests

As the CPSE data violate assumptions of normality based on the Skewness/Kurtosis tests and the Shapiro-Wilk test for normality, all statistical procedures used for analysing the results are based on non-parametric assumptions.² In testing for differences, the Wilcoxon Signed-Rank test is used as an alternative to the paired samples t-test. In testing for relationships between two continuous variables, the non-parametric Spearman's rho correlation is used instead of Pearson's correlation/OLS. With one exception, where the CPSE data are compared with the Canadian norm on S-EDI scores, a parametric test is used as only the mean and standard deviation of the norm sample was available, thus it was not possible to carry out the non-parametric equivalent.

2. Use of Monte Carlo Permutation Tests

Classical hypothesis tests such as the t-test, f-test and chi-square tests can be unreliable when the sample size is small. Therefore, as the CPSE study is working with a relatively small sample (<100 observations), we use Monte Carlo permutation tests throughout to test whether the observed differences in S-EDI scores within the variables of interest (e.g., gender (male/female), education (high/low) etc.) are statistically significant. A permutation test is a statistical procedure for hypothesis testing whereby one calculates the values that the test statistic assumes on the observed data and on all permutations of the data to decide whether to accept or reject the null hypothesis. The p-value of a permutation test is computed as the proportion of permutations that have a test statistic greater than or equal to the observed test statistic (Marozzi, 2002). As permutation tests give accurate p-values even when the sampling distribution is skewed, they can be used when sample sizes are small and simple statistics are unlikely to be normal (Heckman, Moon, Pinto, Savelyev, & Yavitz, 2009). Monte Carlo permutation based inference tests, based on 20,000 replications, are therefore used throughout the remainder of the report to test for group differences in school readiness scores.

² Statistical methods are based on a number of underlying assumptions. If any of these assumptions are violated then the interpretation of the results may not be reliable or valid. One common assumption is that variables are normally distributed. This means that the majority of observations are clustered around the mean and when plotted graphically the distribution of the variable is bell-shaped. On plotting the CPSE data and conducting normality tests, it is clear that the data is not normally distributed i.e. it is skewed such that one tail of the distribution is considerable longer than the other. Therefore, using standard tests based on the assumption of normality is not feasible. Non-parametric tests such as the Wilcoxon Signed-Rank test is used instead, which do not rely on the assumption that the data is drawn from a normal distribution.

VIII. Results^{3,4}

A. CPSE Cohort Descriptives

Teacher characteristics

All teachers who were invited to participate completed the online CPSE questionnaire for students in their class who had parental consent. In total, 12 teachers from five different schools completed the online questionnaire assessing basic demographics of the teachers and each pupil's school readiness. On average, the teachers are 37.25 years old and have been teaching for 10.83 years. The average duration spent specifically teaching Junior Infants is 4.25 years. The amount of time spent teaching in the current schools ranges from one year to 31 years, with an average of 9.41 years. In terms of education, just over 58% of the teachers have a Postgraduate qualification and one-third have a Primary degree. All participating teachers are female. There is information on class size for 58% (n=7) of the teachers, with class sizes ranging from 13 to 16 students, and on average there are 14.7 (SD = 1.30) students in these classes.

Parent characteristics

In total, 94 respondents completed the CPSE pen and paper questionnaire assessing family socio-demographics, work life and finances of the respondent, parenting styles and behaviours, and the school readiness of their junior infant child. The majority (94%, n=87) of respondents are the child's biological mother. The average age of respondents is 30.48 years old and the majority of respondents are Irish (88%, n=81), with 9.78% (n=9) being Irish Travellers. This corresponds to the 2006 Census data for the PFL catchment area which report that approximately 10% of the population in this area are Travellers.

Child characteristics

The average age of the 2008-2009 CPSE cohort is 4.77 (SD = 0.39) years old and 59% (n=55) are male.

Household characteristics

On average, 4.69 people are living in each household and parents have 2.88 biological children.

Total Household Weekly Income

Sixty percent (n=56) of respondents provided information on their household weekly income, which includes income from all sources, social benefits, wages, salaries, dividends and interest, unemployment insurance, the dole, worker's compensation, government pension, child benefit, and child support for every member of the household. Fifty-five percent of the sample earn

³ The p-values represent the probability that the result obtained is due to chance rather than a true relationship between variables. Consistent with the literature, p-values below 0.05 (5%) are considered to be statistically significant in the present report. A p-value of less than 0.5 (5%), 0.01 (1%), 0.001 (0.01%) conveys that the probability that the difference between the two groups is due to chance is less than 5%, 1% and 0.01% respectively. Trend level results were reported if the p value was equal to or less than .10.

⁴ Tables 1 and 2 reporting the full descriptive statistics (mean, standard deviation, minimum and maximum values, and frequencies of categorical variables) for the variables reported in this section can be found in the Appendix.

between €200-500 per week, with the largest category being those that take home between €300-400 per week (20%, n=11) (Figure 3).

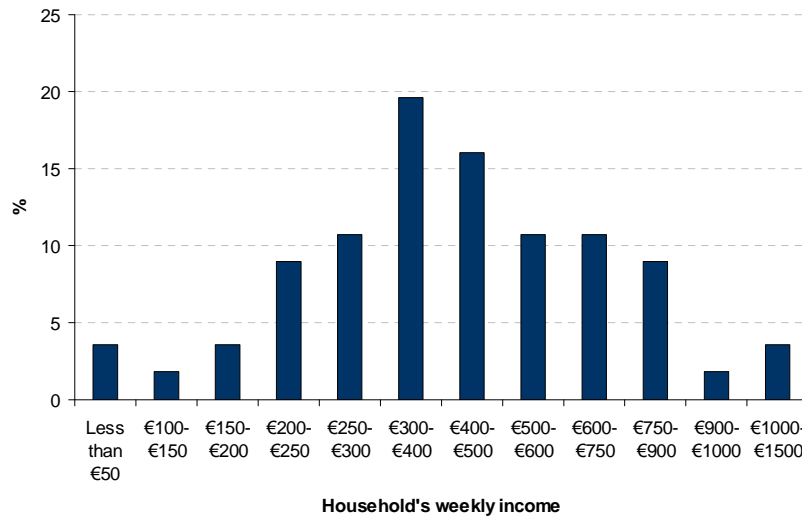


Figure 3. Weekly total household income.

Medical card, GP visit card, health insurance

Three quarters (75%, n=66) of respondents are in possession of a medical card, 12% (n=9) are in possession of a GP Visit Card, and 5% (n=4) of respondents have private health insurance.

B. School Readiness Assessment

The main measure of interest in this report is the Short Early Development Instrument (S-EDI; Janus et al., 2005) which measures children’s readiness for school across five domains including physical health and well-being, social competence, emotional maturity, language and cognitive development, communication and general knowledge. For each domain of the S-EDI, teacher and/or parent ratings are converted to a scaled score ranging from zero to ten. Higher scores indicate higher levels of that specific domain. Higher scores across the five S-EDI domains represent higher levels of school readiness. The teacher and parent report of S-EDI domains for the CPSE sample are presented in Figure 4 along with a comparison to Canadian norms.

Note that the error bars on each bar in the figure below represent the amount of error in that measurement. Error bars can be used to visually evaluate differences between two values. Specifically, if the error bars for two values do not overlap, it is a good indication that these two values are statistically significant. For more exact measures of significance, however, please refer to the reported test statistics and p values in Table 6.

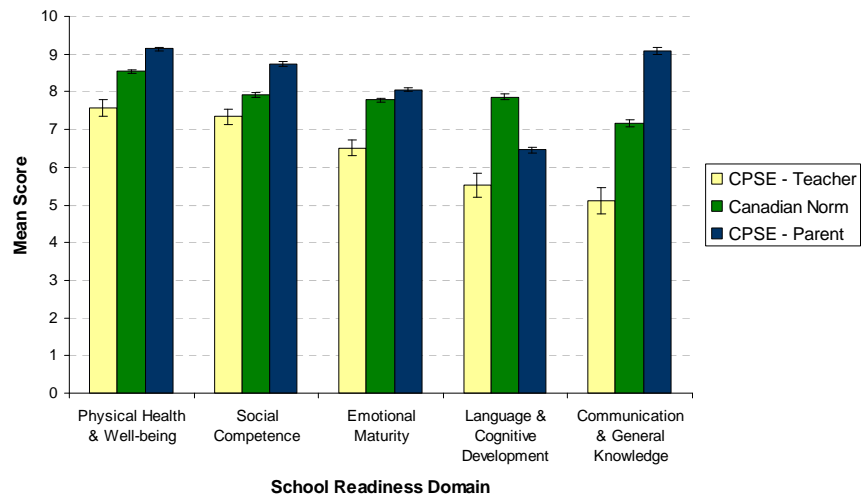


Figure 4. CPSE teacher, parent and youngest subset of Canadian norm means for each S-EDI domain.

Teacher Reported S-EDI

Teachers rated children in the 2008-2009 CPSE cohort highest on the physical health and well-being and social competence domains, with mean scores of 7.56 ($SD^5 = 2.18$) and 7.33 ($SD = 2.05$), respectively (see Figure 4). They rated the children lowest on the communication and general knowledge domain with a mean score of 5.12 ($SD = 3.47$). Children's scores on each teacher reported S-EDI domain were generally all statistically significantly different from each other with two exceptions. First, differences between the teacher rated physical health and well-being domain and the teacher rated social competence domain did not reach significance and second, differences between the teacher rated language and cognition and communication and general knowledge domains did not reach significance.

Parent Reported S-EDI

Parents rated children highest in the domains of physical health and well-being and communication and general knowledge, with mean scores of 9.14 ($SD = 0.94$) and 9.09 ($SD = 1.66$), respectively (see Figure 4). Parent reports of school readiness were lowest on the language and cognitive development domain, with a mean score of 6.45 ($SD = 2.20$). Children's scores on each parent rated S-EDI domain were significantly different from each other, with the exception that the differences between parent rated physical health and well-being domain and communication and general knowledge domain did not reach significance.

Comparisons of Teacher and Parent Reported S-EDI

As seen in Figure 4 above, parent ratings of child school readiness were significantly higher than teacher ratings across most domains, indicating that parents attributed their children with higher levels of school readiness compared to teachers. A Wilcoxon Signed Rank test was used to compare parent and teacher ratings of school readiness for each of the S-EDI domains. Parent ratings were significantly higher than teacher ratings on the S-EDI domains of physical health

⁵ SD represents the standard deviation.

and well-being, social competence, emotional maturity, and communication and general knowledge. Although not significant at the 0.05 level, trends in the data also reveal potential differences between parent and teacher reports of language and cognitive development. Results of these significance tests are presented in Table 6. Note that the parent and teacher reports of certain domains of school readiness follow similar patterns. For example, both teachers and parents rated children highest on the physical health and well-being domain. In contrast, parents rated children high on the communication and general knowledge domain, a domain that was rated low by teachers.

Comparisons of CPSE S-EDI Scores and Canadian Normed Scores

In addition to comparing teacher and parent ratings of the S-EDI domains within the CPSE sample, the developers of this instrument provide teacher rated norms representing a national Canadian sample. Teacher and parent ratings on each domain of the CPSE S-EDI were compared with the ratings of the youngest subset from the Canadian norm sample which includes children ranging in age from 4 years, 11 months to 5 years and 1 month. Note that the Canadian normed data is based on teacher reports.

Several similarities in the patterns of mean scores were present across parent and teacher reporters. Specifically, all reporters showed the same pattern in ratings for the physical health and well-being, social competence and emotional maturity domains, with scores decreasing across each one, with the mean scores across all three samples being highest in the physical health and well-being domain. Additionally, the communication and general knowledge domain received the lowest rating by the CPSE teacher report and the norm report, yet was rated as highest by parents.

An independent samples t-test (for unequal sample sizes) was used to compare the mean differences between parent reported S-EDI scores and Canadian norms as well as teacher reported S-EDI scores and Canadian norms. As illustrated in Figure 4, teacher rated school readiness of children in the 2008-2009 CPSE cohort was consistently below Canadian norms and parent ratings on each S-EDI domain. The test reveals that parent rated school readiness was significantly higher than the Canadian norms on the S-EDI domains of physical health and well-being, social competence, and communication and general knowledge. Conversely, parent rated language and cognitive development were significantly lower than the Canadian norm. Differences between parent rated emotional maturity and the Canadian norms did not reach significance. Tests also showed that teacher rated S-EDI domains were significantly lower than the Canadian norm on every S-EDI domain (see Table 6).

Table 6

Wilcoxon signed-rank and t-test results for comparisons of CPSE teacher ratings, parent ratings and Canadian norm on S-EDI

Comparisons		Physical health and well-being	Social competence	Emotional maturity	Language and cognitive development	Communication and general knowledge
CPSE Parent vs CPSE teacher	Z	6.06	5.42	6.18	1.76	7.49
	p	<.001***	<.001***	<.001***	0.079 †	<.001***
CPSE Teacher vs Canadian Norm	t	-6.11	-2.77	-7.41	-9.41	-6.82
	df	881	883	875	866	883
	p	<.001***	<.01**	<.001***	<.001***	<.001***
	t	4.01	3.97	1.64	-5.87	6.59
CPSE Parent vs Canadian Norm	df	874	874	868	864	876
	p	<.01**	<.001***	0.108	<.001***	<.001***

*** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$

Percentage Scoring Above and Below the Canadian Norm

Although the average teacher reported level of school readiness of children in the CPSE cohort was significantly below the Canadian norm, a number of children in the CPSE cohort are performing at levels above this norm in some domains. Specifically, teachers rated just under half (49.5%) of the children in the CPSE cohort above the Canadian norm on the physical health and well-being and social competence domains (Table 7). However, around 70% of children were rated below the Canadian norm on the emotional maturity, language and cognitive development and communication and general knowledge domains, demonstrating specific areas of weakness for a large portion of the CPSE cohort.

Table 7

Percent of teacher rated CPSE cohort below and above Canadian norm on S-EDI domains

S-EDI Domain	Teacher rated CPSE	Teacher rated CPSE
	% below Canadian norm	% above Canadian norm
Physical health and well-being	50.5	49.5
Social competence	50.5	49.5
Emotional maturity	69.7	30.3
Language and cognitive development	69.6	30.4
Communication and general knowledge	71.3	28.7

Percentage of ‘low’ scores

Just over 65% (n=66) of children in the CPSE cohort did not score in the lowest 10% of the cohort on any of the five S-EDI domains, according to teacher ratings (Table 8). However, close to one-fifth (19%, n=19) of the children scored low on one of the five domains, with a further 11% (n=11) scoring low on two domains. Four percent (n=4) of the CPSE cohort scored low on three out of five domains, while 1% scored low on four of the five S-EDI domains. None of the CPSE cohort scored low on all five of the domains.

Table 8

Number of S-EDI scales on which CPSE cohort scored low as rated by teachers

Number of S-EDI scales on which children score in the lowest 10%	n	%
None	66	65.3
One	19	18.8
Two	11	10.9
Three	4	4.0
Four	1	1.0

Additional Behavioural Item Comparisons

To facilitate comparisons with a sample of Irish children of similar age to the CPSE cohort, additional behavioural items were included in the surveys administered to the teachers and parents. These additional behavioural items are identical to a subset of questions included in the *Lifeways Cross Generational Cohort Study*, a national Irish cohort study comprising three generations of the same family. By including these additional behavioural questions, comparisons on school readiness domains can be made to a representative Irish sample, which is beneficial given potential social, economic, and cultural differences between not only Ireland and Canada, but also disadvantaged and non disadvantaged populations. These additional items are related to behaviours associated with aggression, oppositional/defiance, hyperactivity/inattention, anxiety, and prosociality.

CPSE Teacher Reported Additional Behavioural Items

Table 9 below shows that the highest CPSE teacher rated domain is prosocial behaviour (M= 5.22, SD = 2.74), with hyperactive/inattentive behaviour receiving the second highest rating (M = 4.82, SD = 3.34). Teacher reports of anxious and oppositional/defiant behaviours, were rated slightly lower with means scores of 2.64 (SD = 2.76) and 2.24 (SD = 3.16), respectively. Finally, teacher ratings were lowest in terms of aggression, with a mean score of 1.46 (SD = 2.41).

CPSE Parent Reported Additional Behavioural Items

Similar to teacher reports, prosocial behaviour received the highest score in terms of parent reports (please see Table 9 below), with a mean score of 8.05 (SD = 2.20). Parent rated oppositional/defiant and hyperactive/inattentive domains were rated similarly with mean scores

of 3.16 (SD = 2.38) and 3.29 (SD = 2.32), respectively. Finally, parent ratings show that children display few anxious and aggressive behaviours with mean scores of 1.10 (SD = 1.78) and 1.26 (SD = 1.80).

Comparison of Teacher and Parent Reported Additional Behavioural Items

As demonstrated in Figure 5 and Table 9 significant differences emerged between teacher and parent ratings of oppositional/defiant behaviour, hyperactive/inattentive behaviour, anxious behaviour, and prosocial behaviour, such that parents rated children in the 2008-2009 CPSE cohort as displaying more oppositional and defiant behaviours as well as more prosociality compared to teachers. Teachers, on the other hand, rated children as displaying more hyperactivity/inattention and anxiety. No significant differences were observed between the parent and teacher ratings of aggression.

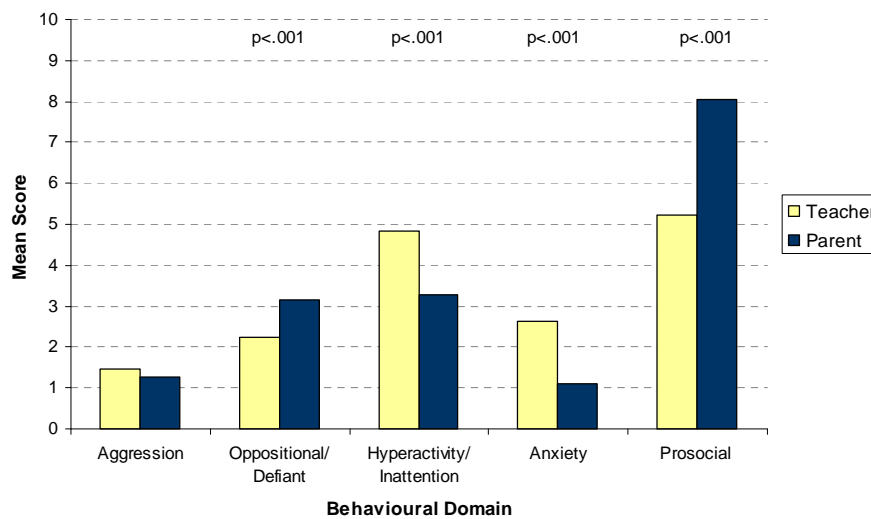


Figure 5. Comparisons of teacher and parent reports of the additional behavioural items for children in the 2008-2009 CPSE cohort.

Table 9

Wilcoxon signed-rank results for differences between CPSE parent and teacher ratings on additional behavioural domains

Domain	Parent			Teacher			z	p
	n	Mean	SD	n	Mean	SD		
Aggressive Behaviour	93	1.26	1.80	89	1.46	2.41	-0.27	0.791
Oppositional/Defiant Behaviour	94	3.16	2.38	101	2.24	3.16	3.27	0.0011**
Hyperactive/Inattentive Behaviour	92	3.29	2.32	101	4.82	3.34	-3.56	0.0004***
Anxious Behaviour	92	1.10	1.78	101	2.64	2.76	-5.07	<0.0001***
Prosocial Behaviour	91	8.05	2.20	78	5.22	2.74	5.39	<0.0001***

***p < .001; **p < .01; *p < .05; † p < .10

Comparison of CPSE Teacher Reported Behaviours and Lifeways School Reported Behaviours

As part of the *Lifeways Cross Generational Cohort Study* parents were asked to rate the frequency of their child's behaviours as they occur separately in the home setting and the school setting. This section compares parent reports of children's behaviours in school using the Lifeways data and teacher ratings of the CPSE cohort. Similar to the teachers in the CPSE cohort, parents from the Lifeways study rated their children highest on the prosocial domain and lowest on displaying aggressive behaviours (Figure 6 and Table 10). On the remaining domains, the Lifeways parents rated their children relatively low compared to the teacher ratings of the children in the CPSE cohort. Group differences between children in the Lifeways study and children in the 2008-2009 CPSE cohort were significant across all additional behavioural domains. Specifically, children in the Lifeways study were rated as being less aggressive, less oppositional/defiant, less hyperactive/inattentive, less anxious, and more prosocial in a school setting than teacher ratings of children in the CPSE cohort.

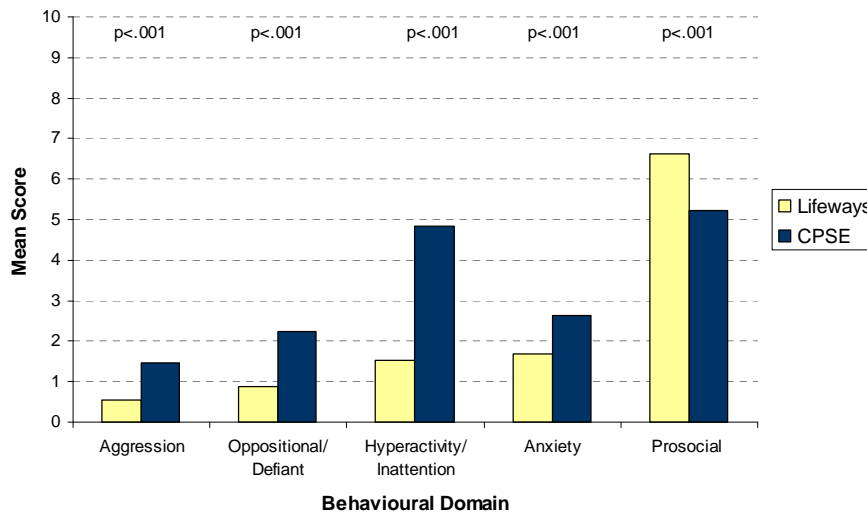


Figure 6. Comparison of CPSE teacher reported behaviours and Lifeways school reported behaviours.

Table 10

Wilcoxon signed-rank test results for differences in Lifeways parent school and CPSE teacher ratings on additional behavioural domains

Domain	Lifeways			CPSE teacher			z	p
	n	Mean	SD	n	Mean	SD		
Aggressive Behaviour	544	0.56	1.26	89	1.46	2.41	3.54	0.0004***
Oppositional/Defiant Behaviour	534	0.87	1.72	101	2.24	3.16	3.65	0.0003***
Hyperactive/Inattentive Behaviour	533	1.54	2.02	101	4.82	3.34	6.47	<0.0001***
Anxious Behaviour	537	1.68	2.14	101	2.64	2.76	2.78	0.0055**
Prosocial Behaviour	530	6.62	2.85	78	5.22	2.74	-3.53	0.0004***

*** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$

Comparison of CPSE Parent Reported Behaviours and Lifeways Home Reported Behaviours

This section compares parent reports of their children’s behaviours at home in the Lifeways sample with parent ratings in the CPSE cohort. As illustrated in Figure 7, parent ratings from the Lifeways study and CPSE parent ratings are more similar than the CPSE teacher ratings. However, comparisons of parent reported behaviour show that children in the CPSE sample are rated less aggressive, more hyperactive and inattentive, less anxious, and more prosocial by parents than the children in the Lifeways cohort. Group differences for oppositional/defiant behaviour did not reach statistical significance (see Table 11).

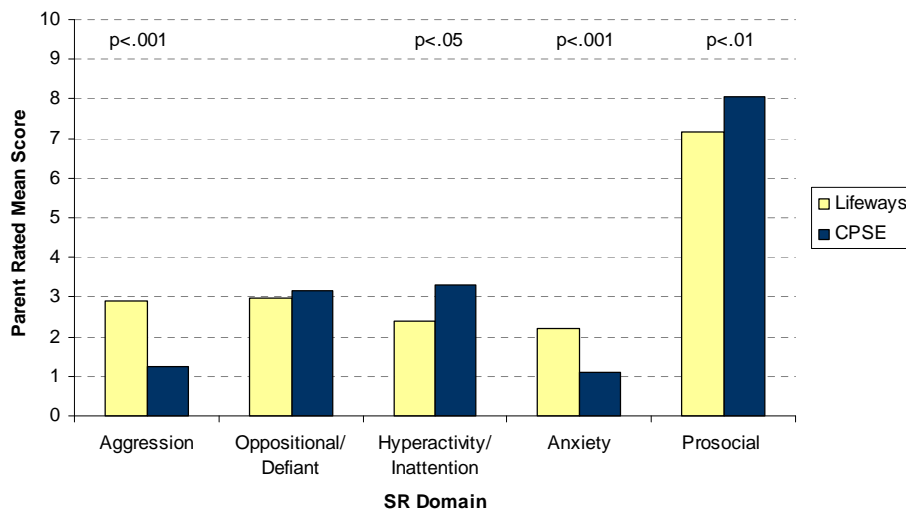


Figure 7. Comparisons of CPSE parent reported behaviours vs Lifeways home reported behaviours

Table 11

Wilcoxon signed-rank test results for differences in Lifeways parent home and CPSE parent ratings on additional behavioural domains

Domain	Lifeways		CPSE parent		z	p		
	n	n	Mean	SD			Mean	SD
Aggressive Behaviour	536	93	1.26	1.80	2.91	2.24	-4.91	0.0001***
Oppositional/Defiant Behaviour	542	94	3.16	2.38	2.99	2.22	-0.05	0.963
Hyperactive/Inattentive Behaviour	541	92	3.29	2.32	2.39	2.09	2.52	0.012*
Anxious Behaviour	541	92	1.10	1.78	2.22	2.19	-3.90	0.0001***
Prosocial Behaviour	522	91	8.05	2.20	7.16	2.77	2.58	0.010**

***p < .001; **p < .01; *p < .05; † p < .10

Comparison of matched education subsample of Lifeways and CPSE parent reports

To facilitate comparisons with a similar Irish demographic, a subset of the Lifeways cohort was compared to a subset of the CPSE cohort. These subsets were created based on the respondent’s highest level of education obtained. Observations were included if the respondent’s highest level of education was less than a Junior Cert. Therefore, the comparisons are among those with the lowest education in both samples. Using this categorisation, parent rated behavioural domains of the CPSE cohort were compared to the parent ratings of the Lifeways cohort at home (Figure 8). Significant differences emerged on several of the domains. Specifically, parents rated children in the CPSE cohort as less aggressive and anxious, however there was a trend for parents in the CPSE cohort to rate children as more hyperactive/inattentive and prosocial than children in the Lifeways cohort (Table 12).

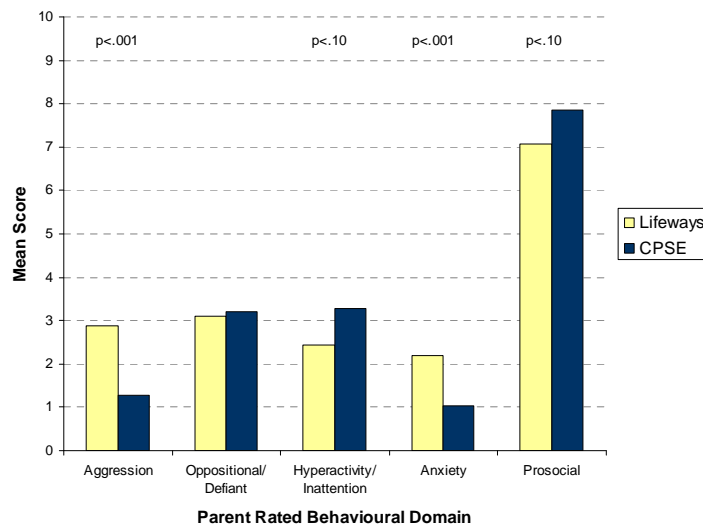


Figure 8. CPSE parent rated behavioural domains and Lifeways parent rated behavioural domains for a subsample who left formal schooling before receiving Junior Cert.

Table 12

Wilcoxon signed rank test results for differences in Lifeways parent home ratings for a subsample with less than secondary education and CPSE parent ratings on additional behavioural domains

Domain	Lifeways			CPSE parent			z	p
	n	Mean	SD	n	Mean	SD		
Aggressive Behaviour	83	2.87	2.36	67	1.27	1.90	-3.76	0.0002***
Oppositional/Defiant Behaviour	85	3.10	2.18	68	3.21	2.29	-0.35	0.728
Hyperactive/Inattentive Behaviour	85	2.44	2.16	66	3.28	2.29	1.69	0.091 [†]
Anxious Behaviour	85	2.20	2.09	67	1.04	1.66	-3.46	0.0005***
Prosocial Behaviour	81	7.08	2.94	67	7.85	2.33	1.79	0.074 [†]

***p < .001; **p < .01; *p < .05; [†] p < .10

Comparison of CPSE and QLSCD Sample

The *Quebec Longitudinal Study of Child Development* (QLSCD) is a prospective longitudinal study of a representative sample of children, starting at the age of 5 months, who were sampled to be representative of the population of infants born in the province of Quebec, Canada. More than 2,000 families participated in the study when the infant was aged five months between the months of March and November, 1998 (T1, n=2,120). These children were assessed at home, and their parents interviewed yearly. Follow-up assessments were at 17, 29, 41, 49 months, and then between the months of February and June of each following year. Regular assessments included questionnaires completed by the mother, the father, and the interviewer, and direct assessments of cognitive development with a strong emphasis on school readiness. Information regarding the additional behavioural items included in the CPSE study were obtained in the *QLSCD* at the 49 month follow-up, allowing comparisons with a representative Canadian sample.

Figure 9 illustrates the CPSE mean scores of parents and teachers along with the mean scores on the same domains of the *QLSCD* Quebec sample. Parents of the CPSE cohort rated children significantly lower than those in the *QLSCD* sample in terms of aggressive behaviours (Table 13). Teacher ratings of the CPSE cohort were significantly lower than the *QLSCD* sample in relation to display of oppositional/defiant behaviours, while trends in the data indicate parents also rate their children lower on this domain. The CPSE cohort were rated by teachers as displaying significantly higher levels of hyperactivity and anxious behaviours in comparison to the *QLSCD* sample, while conversely parents rated their children as displaying lower levels of anxious behaviours than the *QLSCD* sample. In a similar contrast, teachers of the CPSE cohort rated children as displaying significantly lower levels of prosocial behaviours than the *QLSCD* sample, whereas parents rated their children as displaying significantly higher levels than the *QLSCD* sample. In sum, unlike the comparison with the *Lifeways* sample, children in the CPSE sample are not consistently rated by both teachers and parents as displaying more behavioural problems than the *QLSCD* sample. The results are somewhat mixed, with CPSE children out-performing the Canadian sample in the domains of oppositional/defiant behaviour, but under-performing in regards hyperactivity.

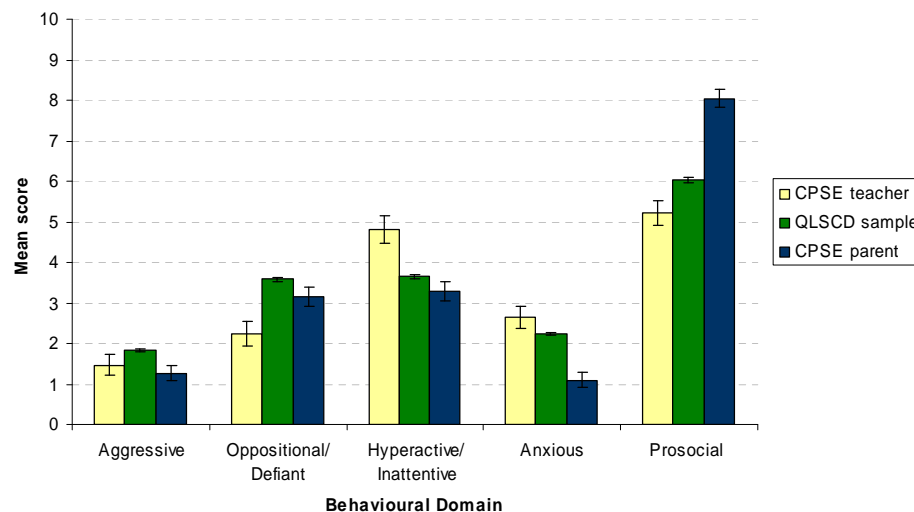


Figure 9. CPSE teacher, parent and QLSCD Quebec sample for each additional behavioural domain.

Table 13

T-test results for comparisons of CPSE teacher ratings, parent ratings and QLSCD Quebec sample on additional behavioural items

Comparisons		Aggressive Behaviour	Oppositional/ Defiant Behaviour	Hyperactive/ Inattentive Behaviour	Anxious Behaviour	Prosocial Behaviour
CPSE Teacher vs QLSCD sample	t	1.62	6.02	-5.27	-2.08	2.58
	df	2028	2041	2041	2041	2003
	p	0.1051	<0.0001***	<0.0001***	0.037*	0.01**
CPSE Parent vs QLSCD sample	t	2.58	1.86	1.60	5.65	-6.98
	df	2032	2034	2032	2032	2016
	p	0.01**	0.062†	0.11	<0.0001***	<0.0001***

*** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$

C. Use of Teacher Reported School Readiness

Although both parent and teacher reports of school readiness were obtained, the remaining results discussed in the report are based on teacher reported school readiness for three main reasons. First, teachers have long been thought to be accurate assessors of a child's abilities (Heaviside & Farris, 1993). By focusing on teacher reported school readiness, the results of this study can be readily integrated into the current literature as the majority of studies use teacher reported levels of school readiness (Rimm-Kaufman, Pianta, & Cox, 2000). Second, the teacher reported school readiness scores are used to help overcome problems of shared method variance that arise when you have the same person rating both the independent and dependent variables in analyses. For example, we use school readiness as reported by the teacher, and socio-economic information as reported by the parents. This can pose a problem as having the same reporter for both the independent and dependant variables can result in significant relationships that are not explained by the variables themselves, rather by the common reporter or method used to obtain that information (LaGrange & Cole, 2008). Third, as noted above, the parent and teacher ratings significantly differ across the majority of S-EDI domains. In particular, the CPSE children are rated significantly higher than the Canadian norms based on the parent report. As the normed data are based on a representative sample of Canadian children, which includes children from all social backgrounds, one would expect, on average, the Canadian norms to be higher than the CPSE scores (as demonstrated in the CPSE teachers rating) which are based on children from a designated disadvantaged community. For these reasons, the remaining analysis is based on the teacher report. Analyses based on parent reported school readiness are available upon request.

For the remaining analyses, the main five S-EDI domains are reported in addition to any statistically significant subdomains.

D. Child Age

The average age of children in the 2008-2009 CPSE cohort is 4.77 (SD = 0.39) years old. A Spearman's rho correlation was used to determine if there is a relationship between the age of the child and levels of school readiness identified on the S-EDI and the additional behavioural items. Table 14 below indicates a positive correlation between child age and scores on the physical health and well-being domain, suggesting that older children perform to higher levels on this domain, particularly in terms of physical independence and gross and fine motor skills. Older children are rated by teachers as displaying higher levels of social competence, and in particular, approaches to learning. The results also suggest that older children perform better on the language and cognitive development domain, with a trend suggesting this relationship is influenced by higher levels of basic literacy. Interestingly, in terms of the additional behavioural items, child age was negatively associated with the prosocial behaviour domain, suggesting that the younger children exhibit higher levels of prosociality than do the older children.

Table 14

Spearman's rho non-parametric correlations representing the relationship between child age and School Readiness

Domain	Child Age
S-EDI	
Physical Health & Well-being	0.227*
<i>Physical Independence</i>	0.219*
<i>Gross and Fine Motor Skills</i>	0.270*
Social Competence	0.223*
<i>Approaches to Learning</i>	0.280**
Emotional Maturity	0.156
Language and Cognitive Development	0.244*
<i>Basic Literacy</i>	0.186†
Communication & General Knowledge	0.112
Additional Behavioural Items	
Aggressive Behaviour	0.142
Oppositional/Defiant Behaviour	-0.008
Hyperactive/Inattentive Behaviour	0.138
Anxious Behaviour	0.118
Prosocial Behaviour	-0.322**

*** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$

E. Gender

Fifty-nine percent (n=55) of the children in the CPSE sample were male. Figure 10 below shows that significant gender differences emerged for the S-EDI construct of emotional maturity, such that males are rated as displaying lower levels of emotional maturity than females. Specifically, the subdomains of emotional maturity reveal a trend indicating that males display lower levels of prosocial and helping behaviour than their female classmates (see Table 15). There were no significant gender differences on any of the other S-EDI domains.

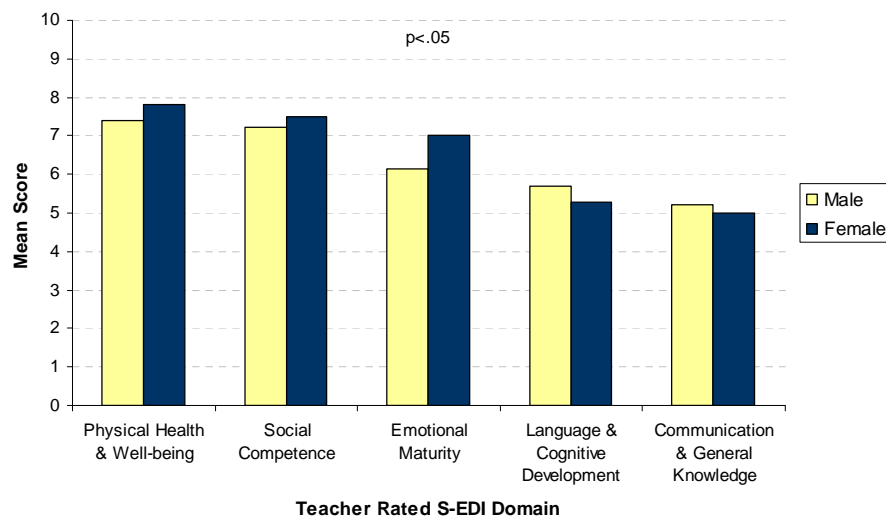


Figure 10. Gender differences in teacher reported S-EDI domains.

In terms of the additional behavioural items, teachers rated males as displaying significantly more aggression and less prosocial behaviour compared to their female counterparts (Figure 11 and Table 15). Gender differences in all other school readiness domains did not reach significance.

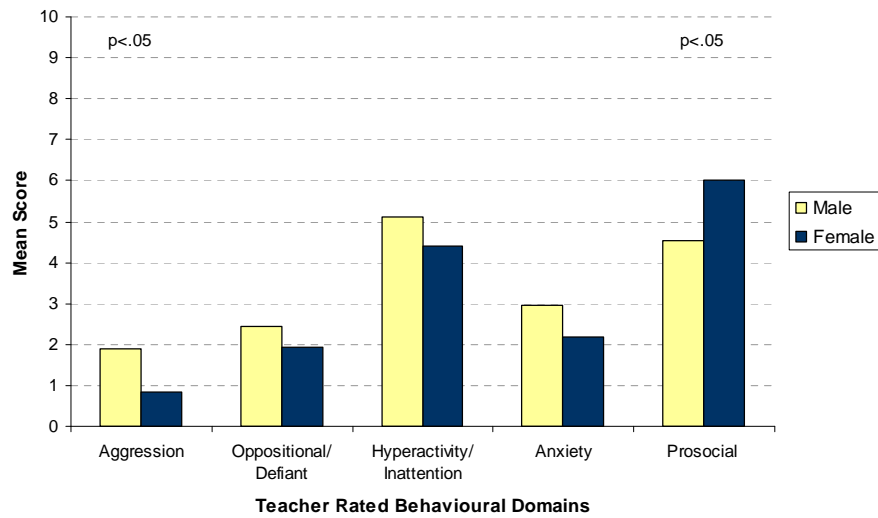


Figure 11. Gender differences in teacher reported behavioural domains.

Table 15

Monte Carlo Permutation test results for differences in School Readiness based on child gender

Domain	Male			Female			p value
	n	Mean	SD	n	Mean	SD	
S-EDI							
Physical Health & Well-being	59	7.39	2.34	42	7.79	1.92	0.357
Social Competence	59	7.22	2.21	42	7.50	1.79	0.511
Emotional Maturity	57	6.14	2.10	42	7.01	1.84	0.034*
<i>Prosocial and Helping Behaviour</i>	43	5.17	3.00	35	6.31	2.79	0.088 [†]
Language and Cognitive Development	56	5.68	3.23	36	5.27	2.60	0.526
Communication & General Knowledge	59	5.19	3.72	42	5.00	3.12	0.810
Additional Behavioural Items							
Aggressive Behaviour	52	1.91	2.74	37	0.83	1.71	0.034*
Oppositional/Defiant Behaviour	59	2.44	3.16	42	1.94	3.19	0.453
Hyperactive/Inattentive Behaviour	59	5.12	3.32	42	4.40	3.35	0.286
Anxious Behaviour	59	2.97	2.80	42	2.18	2.67	0.144
Prosocial Behaviour	42	4.54	2.82	36	6.02	2.46	0.015*

*** $p < .001$; ** $p < .01$; * $p < .05$; [†] $p < .10$

F. Siblings

Information on whether the CPSE child lived in the same household as any siblings was available for 89% (n=90) of the children. Of these, 18% (n=17) were the only child living in the household, while the remaining 82% were living with one or more siblings.

Children with no siblings in the household were rated by teachers as displaying significantly higher levels of social competence compared to children with siblings (Figure 12 and Table 16). Specifically, pupils who do not have any siblings in the household display significantly more respect and responsibility behaviours than pupils who have at least one sibling. Additionally, trends in the data show that pupils with no siblings display higher levels of social competence with peers, higher levels of emotional maturity and significantly lower levels of aggression than do their classmates who do have siblings.

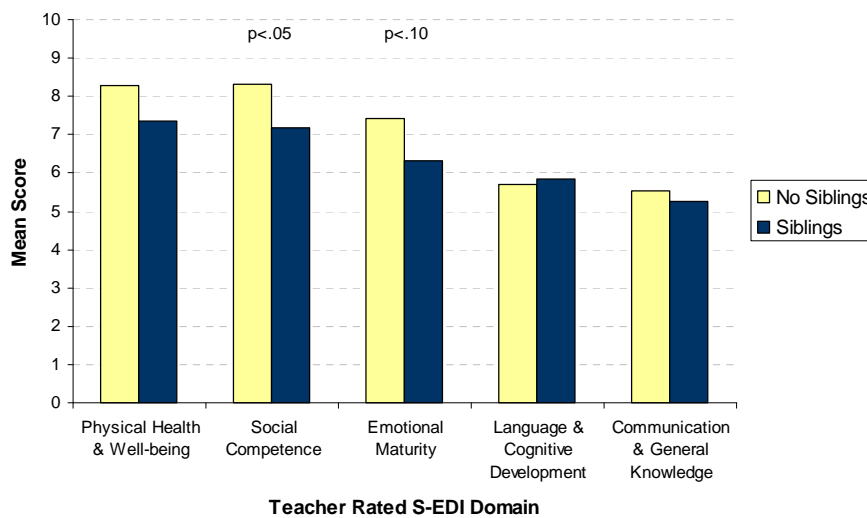


Figure 12. Differences in teacher reported S-EDI domains based on presence of siblings in the home.

In terms of the additional behavioural items, children who do not have any siblings are rated as displaying significantly less oppositional/defiant behaviour and trends reveal that these children also display fewer hyperactive/inattentive behaviours (Figure 13 and Table 16).

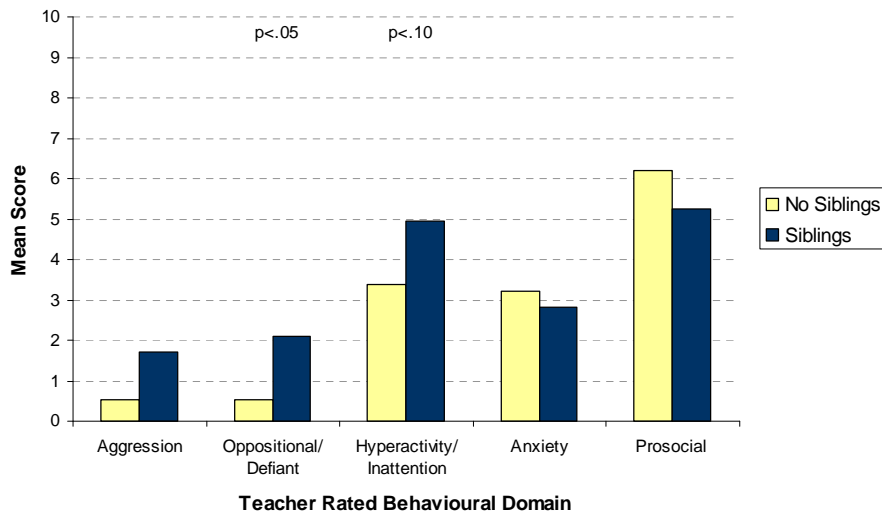


Figure 13. Differences in teacher reported behavioural domains based on presence of siblings in the home.

Table 16

Monte Carlo Permutation test results for differences in School Readiness based on sibling presence in household

Domain	No Siblings			Siblings			p value
	n	Mean	SD	n	Mean	SD	
S-EDI							
Physical Health & Well-being	16	8.27	2.10	74	7.36	2.20	0.135
Social Competence	16	8.33	1.94	74	7.20	2.03	0.047*
<i>Social Competence with Peers</i>	16	7.08	2.24	74	5.56	3.11	0.071 [†]
<i>Respect and Responsibility</i>	16	8.96	2.01	74	7.25	2.65	0.017*
Emotional Maturity	14	7.42	1.42	74	6.32	2.17	0.071 [†]
<i>Aggressive Behaviour</i>	14	0.54	1.11	67	2.08	2.86	0.047*
Language and Cognitive Development	15	5.70	3.11	67	5.83	2.84	0.878
Communication & General Knowledge	16	5.52	4.20	74	5.25	3.39	0.799
Additional Behavioural Items							
Aggressive Behaviour	14	0.54	1.11	65	1.71	2.66	0.114
Oppositional/Defiant Behaviour	16	0.52	2.08	74	2.08	3.16	0.012*
Hyperactive/Inattentive Behaviour	16	3.37	3.67	74	4.94	3.24	0.091 [†]
Anxious Behaviour	16	3.23	2.15	74	2.82	2.91	0.609
Prosocial Behaviour	12	6.18	2.42	56	5.24	2.82	0.279

*** $p < .001$; ** $p < .01$; * $p < .05$; [†] $p < .10$

G. Relationship Status

In regards relationship status, one-third (n=29) of respondents reported they are single, 30% (n=27) are married, and 22% (n=20) are living with their partner. One in ten (10%; n =9) have a partner they are not living with and just over 4% are separated or widowed (Figure 14).

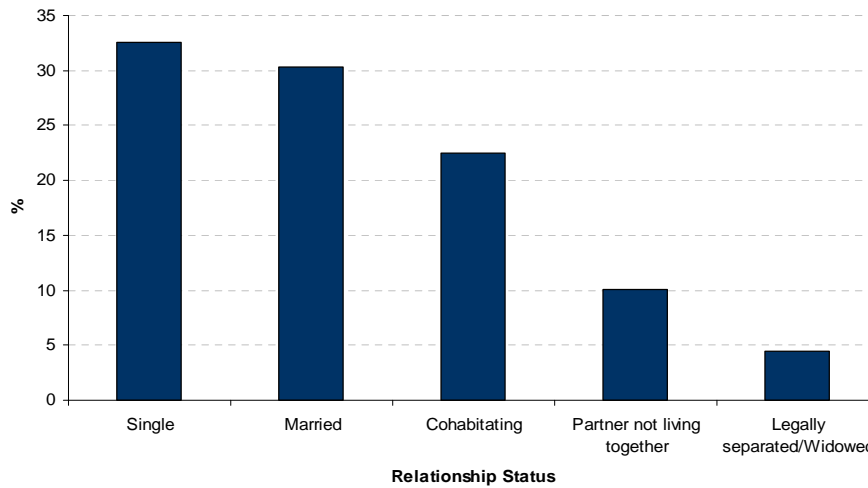


Figure 14. Relationship status of respondents.

Two categories were derived to examine differences in school readiness based on the relationship status of the respondent. 'Single' comprises respondents who indicate they are single, legally separated, or widowed. Respondents classified as 'being in a relationship' are those who are married, cohabitating, or have a partner with whom they are not living.

Although the association between the S-EDI domains and relationship status of the respondent did not reach statistical significance, trends in the data show that children of single parents are performing lower on measures of physical health and well-being, gross and fine motor skills, language and cognitive development, and basic literacy (Figure 15 and Table 17).

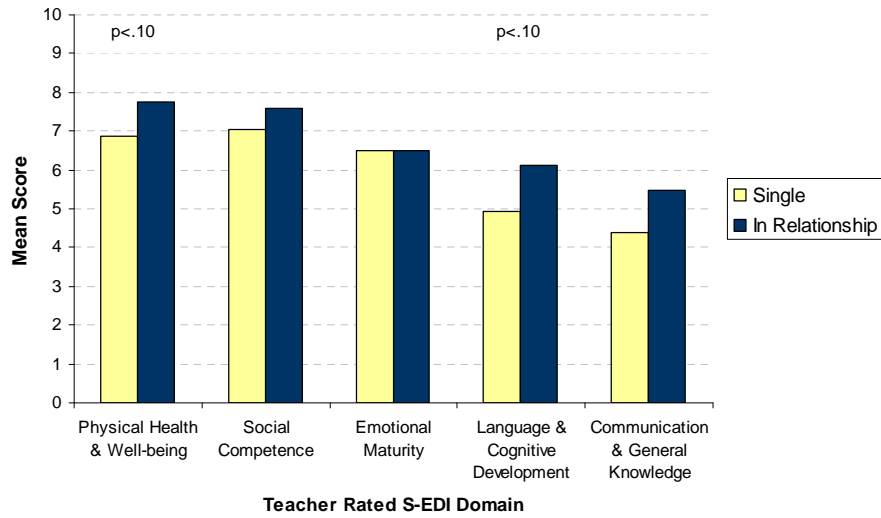


Figure 15. Differences in teacher reported S-EDI domains based on relationship status.

Results from the additional behavioural items did not reach significance (Figure 16 and Table 17).

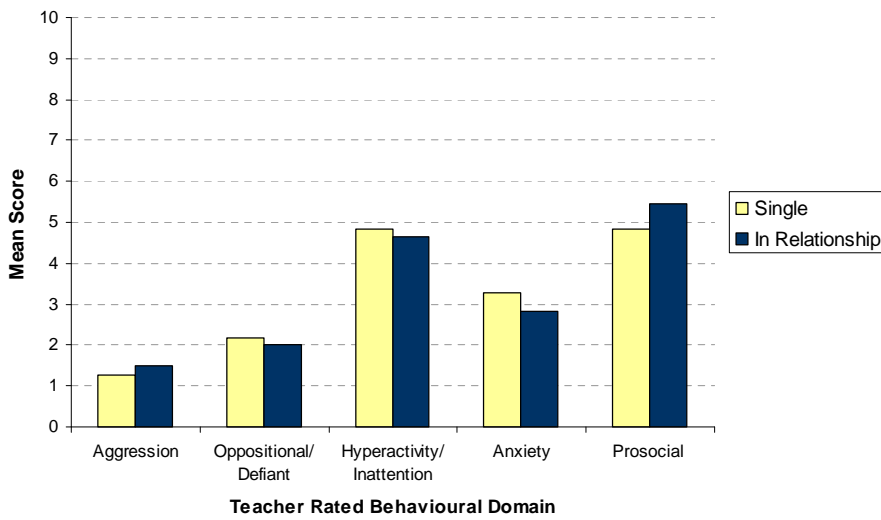


Figure 16. Differences in teacher reported additional behavioural domains based on relationship status.

Table 17

Monte Carlo Permutation test results for differences in School Readiness based on parent relationship status

Domain	Single			In Relationship			p value
	n	Mean	SD	n	Mean	SD	
S-EDI							
Physical Health & Well-being	32	6.85	2.39	55	7.76	2.16	0.074 [†]
<i>Gross and Fine Motor Skills</i>	30	5.47	3.546	44	6.818	3.236	0.093 [†]
Social Competence	32	7.05	2.32	55	7.57	1.86	0.267
Emotional Maturity	31	6.51	2.02	54	6.49	2.07	0.961
Language and Cognitive Development	28	4.93	2.88	51	6.12	2.91	0.090 [†]
<i>Basic Literacy</i>	31	5.97	3.38	54	7.38	3.66	0.092 [†]
Communication & General Knowledge	32	4.38	3.27	55	5.48	3.61	0.167
Additional Behavioural Items							
Aggressive Behaviour	29	1.26	2.29	49	1.50	2.45	0.684
Oppositional/Defiant Behaviour	32	2.19	3.32	55	2.00	2.79	0.783
Hyperactive/Inattentive Behaviour	32	4.84	3.55	55	4.64	3.25	0.799
Anxious Behaviour	32	3.28	3.04	55	2.82	2.62	0.465
Prosocial Behaviour	20	4.83	3.10	46	5.45	2.71	0.427

*** $p < .001$; ** $p < .01$; * $p < .05$; [†] $p < .10$

H. Parent Age

The mean age of parents in the 2008-2009 CPSE cohort is approximately 30 years old (SD = 5.53), with ages ranging from 22 to 45 years. A Spearman's rho correlation is used to determine if there was any discernable relationship between parent's age and teacher rated S-EDI and additional behavioural domains (Table 18). Results indicate there is no significant relationship between parent's age and teacher rated S-EDI domains. However, trends in the data indicate a positive correlation between parent's age and the oppositional/defiant domain, suggesting children of older parents exhibit more oppositional/defiant behaviours.

Table 18

Spearman's rho non-parametric correlations representing the relationship between parent's age and School Readiness

Domain	Parent Age
S-EDI	
Physical Health & Well-being	0.015
Social Competence	-0.061
Emotional Maturity	-0.093
Language and Cognitive Development	0.075
Communication & General Knowledge	0.112
Additional Behavioural Items	
Aggressive Behaviour	0.031
Oppositional/Defiant Behaviour	0.190[†]
Hyperactive/Inattentive Behaviour	0.133
Anxious Behaviour	-0.104
Prosocial Behaviour	0.007

*** $p < .001$; ** $p < .01$; * $p < .05$; [†] $p < .10$

In addition to treating age as a continuous variable, further analyses were conducted to examine whether the children of young mothers differ in terms of school readiness compared to children of older mothers. To achieve this, respondents were divided into two groups based on the age they were when the child was born. The first group consisted of those who were 20 years old or younger when the child was born and the second group consisted of those who were older than 20 years when the child was born. In the sample, 18% (n=15) are classified as being a young mother. Although no significant differences emerged based on this categorisation, trends in the data show the possibility of differences in the communication and general knowledge category such that children of parents who were 20 years or older when they were born perform higher in this domain (Figure 17 and Table 19).

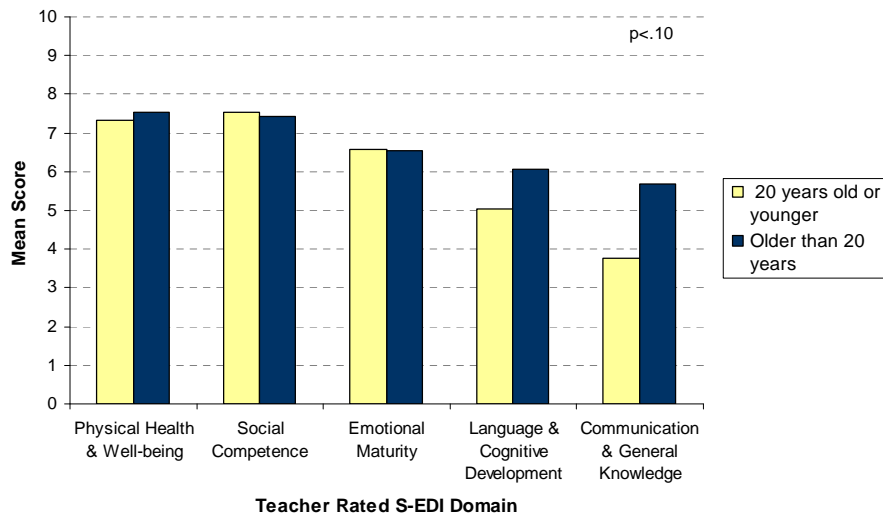


Figure 17. Differences in teacher reported S-EDI domains based on age of respondent when child was born.

Differences in the additional behavioural domains based on the young mothers categorisation did not reach significance (Figure 18 and Table 19).

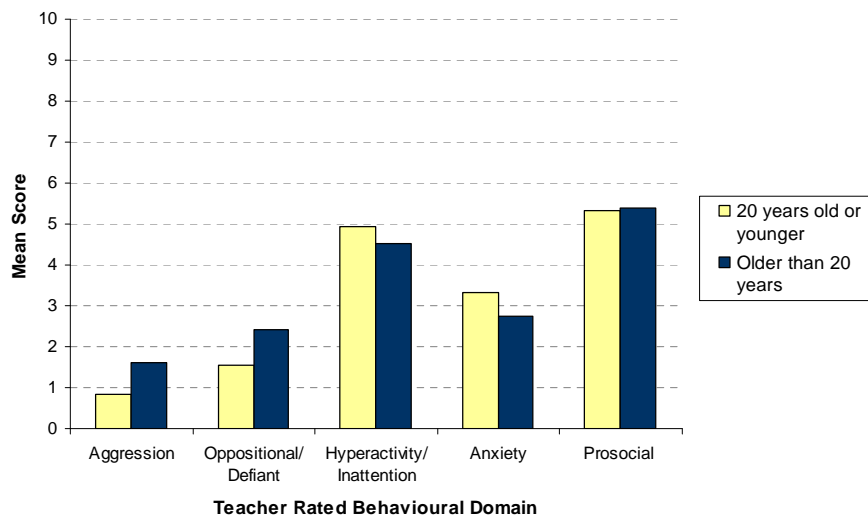


Figure 18. Differences in teacher reported additional behavioural domains based on young mothers categorisation.

Table 19

Monte Carlo Permutation test results for differences in School Readiness based on young mother's categorization

Domain	20 years old or younger			Older than 20 years			p value
	n	Mean	SD	n	Mean	SD	
S-EDI							
Physical Health & Well-being	15	7.33	2.30	69	7.53	2.28	0.768
Social Competence	15	7.52	1.79	69	7.42	2.09	0.862
Emotional Maturity	13	6.56	1.78	69	6.54	2.16	0.974
Language and Cognitive Development	13	5.02	3.01	63	6.07	2.78	0.228
Communication & General Knowledge	15	3.78	3.42	69	5.70	3.53	0.062†
Additional Behavioural Items							
Aggressive Behaviour	12	0.83	1.28	62	1.60	2.64	0.330
Oppositional/Defiant Behaviour	15	1.56	3.30	69	2.40	3.16	0.356
Hyperactive/Inattentive Behaviour	15	4.93	3.62	69	4.52	3.24	0.663
Anxious Behaviour	15	3.33	2.60	69	2.73	2.77	0.472
Prosocial Behaviour	13	5.32	2.58	50	5.40	2.94	0.945

I. Parental Education

The highest level of education attained by the majority (28%, n=25) of the CPSE respondents is the Junior/Group/Inter Certificate (see Figure 19) and the average school leaving age is 16 years old. Just over 11% (n=10) of respondents' highest level of education attained is Primary Education, while 16% (n=14) have completed Lower Secondary. Almost 15% (n=13) have Upper Secondary education, 14% (n=12) have the Leaving Certificate, 14% (n=12) have some form of non-degree qualification and finally, the highest level of education for 2% (n=2) of respondents is a Primary degree.

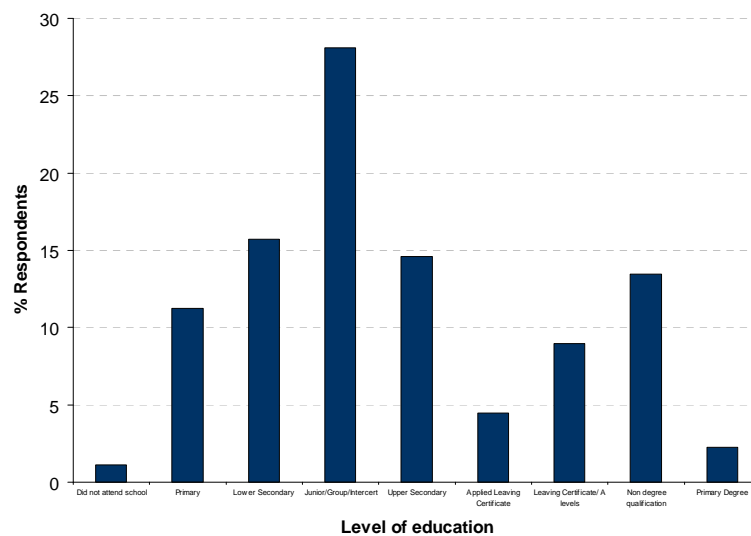


Figure 19. Highest level of education completed by survey respondent.

The educational categories reported above were collapsed in order to enable a comparison between those with the lowest level of education and those with higher levels of education. The low education group contains respondents who did not attend school, had primary education, or lower secondary education. It is important to note that the respondents represented in the low education group did not have a Junior Certification. The low education categorisation comprises approximately 28% (n=25) of the sample. For purposes of these results, the ‘high’ education categorisation was derived to include all respondents who have reached their Junior Certification or higher. The ‘high’ education category in this sample represents approximately 72% (n=64) of the total cohort.

Figure 20 and Table 20 below reveal that children of parents in the low education group were rated by teachers as displaying significantly less social competence as measured by the S-EDI. Specifically, children of low educated parents were significantly less socially competent in their interactions with peers. Additionally, teacher reports demonstrated that children of parents with low education display significantly less emotional maturity, particularly in terms of high levels of aggression and anxious and fearful behaviour, compared to children of parents who have reached the Junior Certification level of education.

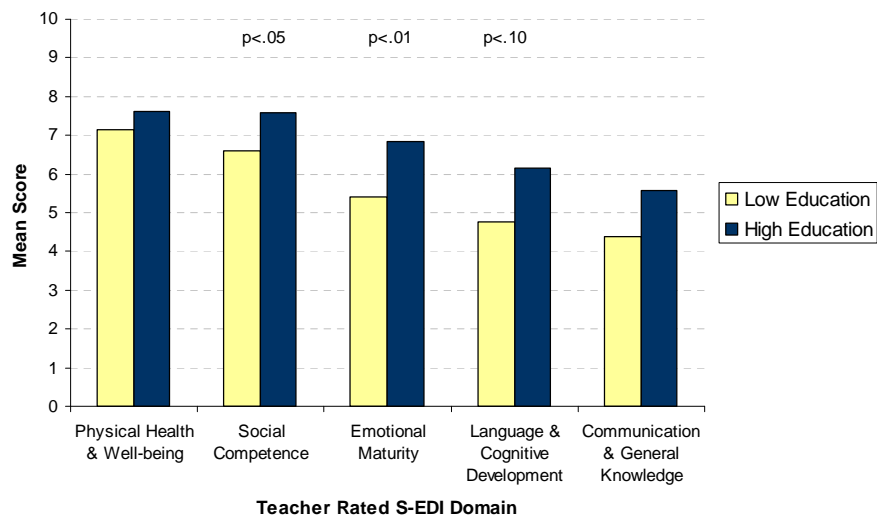


Figure 20. Relationship between teacher rated S-EDI and respondent education level.

In terms of the additional behavioural items, children of parents in the low education group are significantly more aggressive, oppositional/defiant, and hyperactive/inattentive than children of parents in the higher education group (Figure 21 and Table 20).

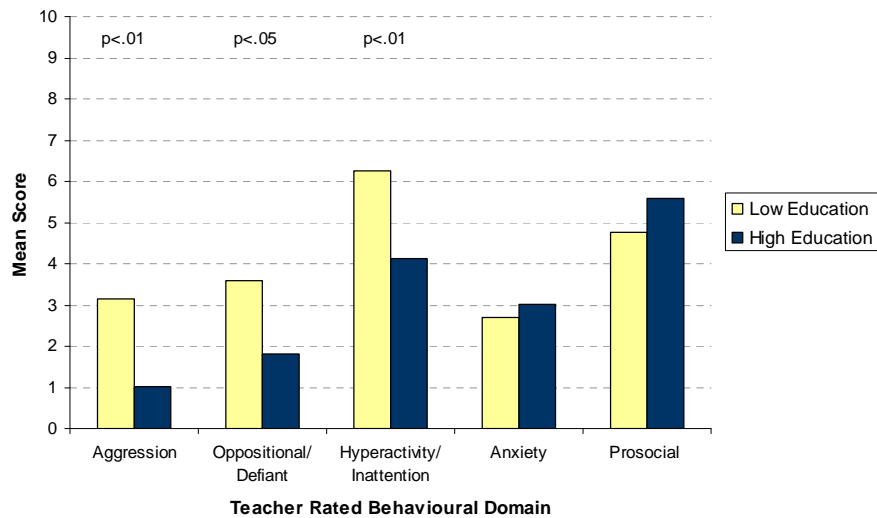


Figure 21. Relationship between teacher rated additional behavioural items and respondent education level.

Table 20

Monte Carlo Permutation test results for differences in School Readiness based on education level of respondent

Domain	Low Education			High Education			p value
	n	Mean	SD	n	Mean	SD	
S-EDI							
Physical Health & Well-being	25	7.14	1.97	62	7.61	2.36	0.370
Social Competence	25	6.60	1.73	62	7.60	2.12	0.039*
<i>Social Competence with Peers</i>	25	4.20	2.68	62	6.26	3.00	0.003**
<i>Respect and Responsibility</i>	25	6.67	2.85	62	7.80	2.48	0.069 [†]
Emotional Maturity	25	5.42	2.23	61	6.83	1.87	0.004**
<i>Aggressive Behaviour</i>	21	6.51	3.44	57	8.76	2.17	0.001**
<i>Anxious and Fearful Behaviour</i>	25	3.20	3.00	62	5.70	3.45	0.003**
Language and Cognitive Development	21	4.76	2.48	58	6.14	3.03	0.066 [†]
<i>Basic Literacy</i>	23	5.94	3.72	62	7.42	3.44	0.094 [†]
Communication & General Knowledge	25	4.40	3.00	62	5.59	3.60	0.154
Additional Behavioural Items							
Aggressive Behaviour	19	3.07	3.43	57	1.01	1.92	0.002**
Oppositional/Defiant Behaviour	25	3.43	3.47	62	1.84	2.88	0.036*
Hyperactive/Inattentive Behaviour	25	6.37	2.79	62	4.06	3.28	0.004**
Anxious Behaviour	25	2.60	2.73	62	3.06	2.82	0.51
Prosocial Behaviour	22	4.92	2.65	46	5.53	2.94	0.42

*** $p < .001$; ** $p < .01$; * $p < .05$; [†] $p < .10$

J. Employment Status⁶

Regarding employment status, the majority of respondents (34%, n=30) in the cohort are looking after their home or family, 24% (n=21) are in paid work, 5% (n=4) are on leave from paid work, 18% (n=16) are unemployed, 10% (n=9) are in paid FAS training, and 2% (n=2) are in unpaid FAS training. Five percent of parents who responded to the question on occupation categorised themselves as “Other.” Of the respondents who are currently in paid work, 95% (n=20) provided information on the number of hours worked. The average number of hours worked per week is 24.6.

Employment status was divided into two categories for further analyses. As 94% of respondents were biological mothers and employment status of mothers and fathers can be quite different, non maternal observations were excluded from this analysis. This resulted in excluding a total of five respondents from the analysis. The employment categories were based on those in paid work, at least part time (including paid training courses), and those not in paid work. Specifically, the maternal employment category consists of mothers who are in paid work, in paid work but on leave, in a paid training scheme (e.g., FAS, Failte Ireland, VEC course), or in part-time work. Results showed that children of employed mothers were rated as showing significantly higher levels of social competence (Figure 22 and Table 21). The subdomain show that these children were rated higher in regards to respect and responsibility and approaches to learning. Trends in the data suggest that children of employed mothers display higher levels of emotional maturity, a finding that is most likely driven by the significant subdomain finding that these children are rated as displaying lower levels of aggression.

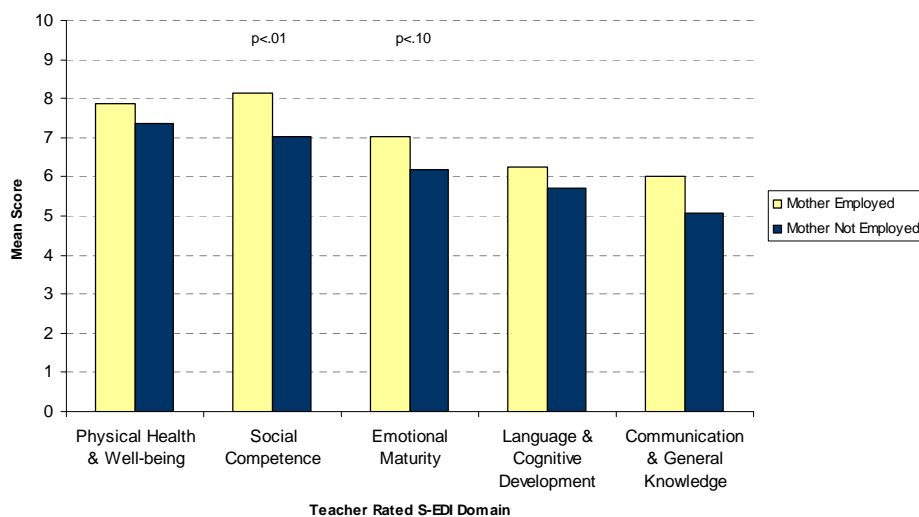


Figure 22. Relationship between teacher rated S-EDI and maternal employment status.

In terms of the additional behavioural items, children of employed mothers were rated by teachers as displaying fewer oppositional/defiant behaviours and there was a trend to suggest that

⁶ Note that the majority (94%) of respondents were biological mothers of the children, thus these figures largely represent the employment status of mothers.

these children display lower levels of hyperactivity/inattention than children of non employed mothers (Figure 23 and Table 21).

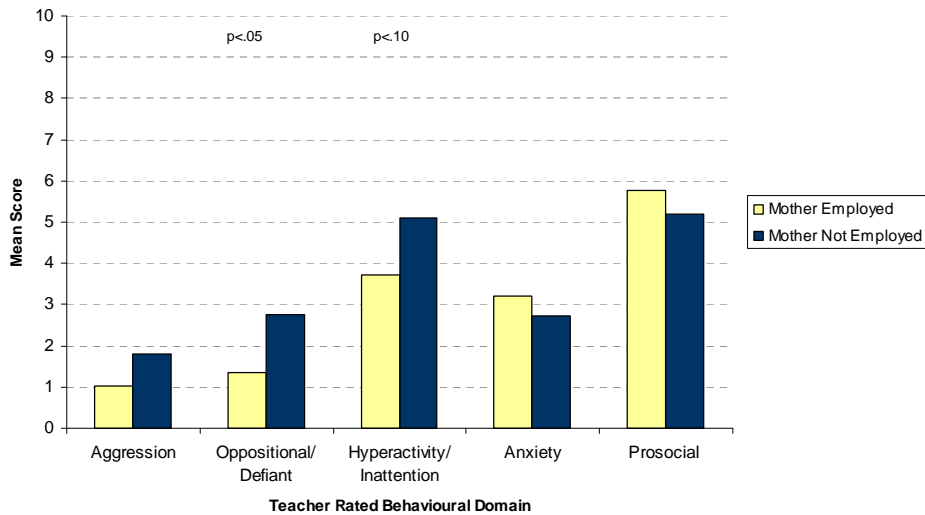


Figure 23. Relationship between teacher rated additional behavioural items and maternal employment status.

Table 21

Monte Carlo Permutation test results for differences in School Readiness based on maternal employment status

Domain	Employed mother			Not employed mother			p value
	n	Mean	SD	n	Mean	SD	
S-EDI							
Physical Health & Well-being	35	7.87	2.15	49	7.37	2.25	0.315
Social Competence	35	8.13	1.78	49	7.02	1.99	0.010*
<i>Respect and Responsibility</i>	35	8.43	2.17	49	7.04	2.81	0.020*
<i>Approaches to Learning</i>	35	8.43	2.25	49	7.18	2.48	0.022*
Emotional Maturity	34	7.02	1.74	49	6.19	2.33	0.083 [†]
<i>Aggressive Behaviour</i>	31	8.98	1.81	45	7.65	3.17	0.041*
Language and Cognitive Development	32	6.27	2.93	44	5.71	2.77	0.398
Communication & General Knowledge	35	6.00	3.57	49	5.07	3.50	0.235
Additional Behavioural Items							
Aggressive Behaviour	31	1.02	1.96	43	1.80	2.87	0.198
Oppositional/Defiant Behaviour	35	1.36	2.48	49	2.77	3.37	0.037*
Hyperactive/Inattentive Behaviour	35	3.71	3.19	49	5.10	3.35	0.061 [†]
Anxious Behaviour	35	3.19	2.84	49	2.72	2.82	0.463
Prosocial Behaviour	26	5.77	2.79	39	5.19	2.86	0.425

K. Social Welfare Dependency

Over two-thirds of the sample (69%, n=55) are receiving social welfare payments such as job seekers benefit, social welfare payments, rent allowance, disability allowance, or job seekers allowance. Social welfare is a good proxy for socio-economic status (SES) as there is often a high correlation between welfare dependency and SES indicators of low education, income and social class.

Differences on teacher reported S-EDI domains reached significance for the social competence and emotional maturity domains, such that children in families receiving social welfare payments were rated as displaying less social competence and lower levels of emotional maturity (Figure 24 and Table 22). In relation to social competence, significant differences emerged in the subdomain of approaches to learning and trends show a similar effect for the subdomain of respect and responsibility, such that children in families who are in receipt of social welfare payments are performing below their classmates in these areas. Finally, and in regard to the emotional maturity domain, children of families in receipt of social welfare were rated significantly higher in terms of aggression and anxious/fearful behaviour.

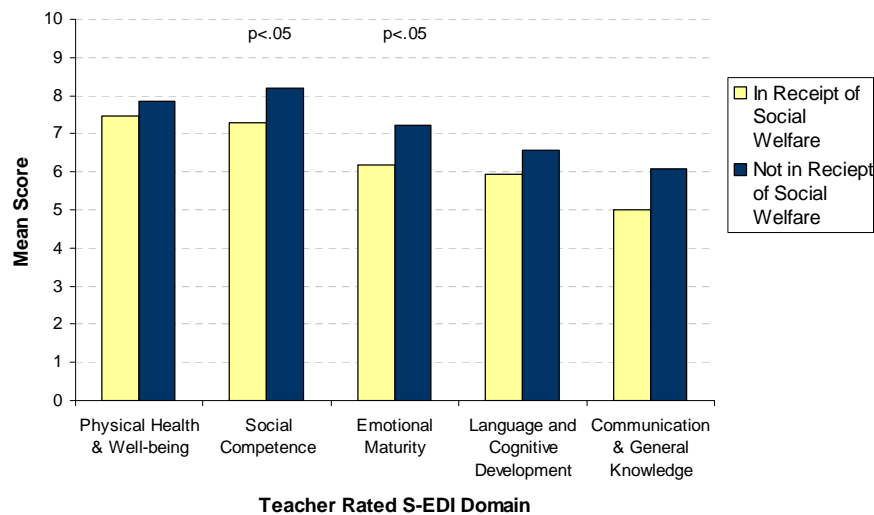


Figure 24. Relationship between teacher rated S-EDI and respondent receipt of social welfare payments.

Similarly, significant differences emerged in relation to the additional behavioural items, showing that children living in welfare dependent households are displaying more problematic behaviour in school than children from families not in receipt of social welfare payments (Figure 25 and Table 22). Specifically, children of families in receipt of social welfare payments are rated by teachers as displaying significantly more oppositional/defiant behaviour and hyperactive/inattentive behaviour. Additionally, trends in the data show that children of families in receipt of social welfare display more aggression than their classmates not in receipt of social welfare, which is in line with findings from the S-EDI.

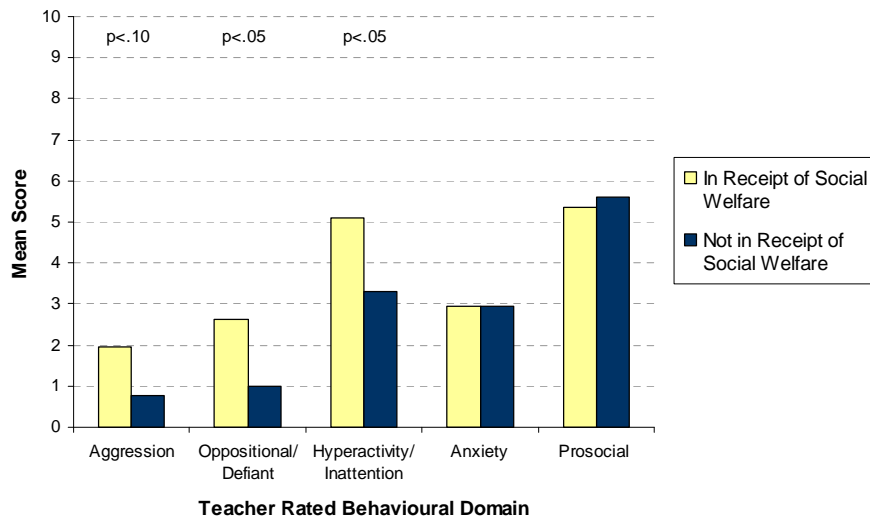


Figure 25. Relationship between teacher additional behavioural items and respondent receipt of social welfare payments.

Table 22

Monte Carlo Permutation test results for differences in School Readiness based on receipt of social welfare payments

Domain	In Receipt of Social Welfare			Not in Receipt of Social Welfare			p value
	n	Mean	SD	n	Mean	SD	
S-EDI							
Physical Health & Well-being	54	7.48	2.11	25	7.86	2.29	0.474
Social Competence	54	7.28	2.00	25	8.20	1.59	0.046*
<i>Respect and Responsibility</i>	54	7.35	2.83	25	8.53	2.11	0.063 [†]
<i>Approaches to Learning</i>	54	7.41	2.46	25	8.53	2.00	0.049*
Emotional Maturity	53	6.16	1.67	25	7.23	1.71	0.042*
<i>Aggressive Behaviour</i>	47	2.36	3.14	24	0.97	1.83	0.049*
<i>Anxious and Fearful Behaviour</i>	54	5.53	3.48	25	3.40	3.35	0.013*
Language and Cognitive Development	49	5.93	2.62	22	6.55	2.75	0.371
Communication & General Knowledge	54	5.00	3.36	25	6.07	4.08	0.246
Additional Behavioural Items							
Aggressive Behaviour	45	1.94	2.95	24	0.76	1.63	0.069 [†]
Oppositional/Defiant Behaviour	54	2.64	3.31	25	1.00	2.04	0.022*
Hyperactive/Inattentive Behaviour	54	5.09	3.32	25	3.30	3.05	0.023*
Anxious Behaviour	54	2.96	2.72	25	2.93	2.82	1.000
Prosocial Behaviour	42	5.34	2.82	22	5.61	2.64	0.709

*** $p < .001$; ** $p < .01$; * $p < .05$; [†] $p < .10$

L. Centre-Based Childcare

Respondents provided information on whether their children had received any form of childcare prior to entering school, including being looked after by grandparents, relatives, other friends, a nanny, or attending crèche, nursery, preschool or Montessori. The survey shows that 85% of children (n=80) experienced some form of childcare prior to starting school, with 82% attending centre-based care. Those children who received childcare in a home setting (either being looked after by grandparents, other relatives or nannies) were in this type of care for, on average, 27.5 months (SD = 14.44). Children who received centre-based childcare either in a nursery or Montessori school spent 18 months (SD = 10.52) on average in this type of childcare.

Several differences in school readiness emerged based on whether or not a child participated in centre-based childcare prior to school entry. The differences between these two groups emerged on all five domains of the S-EDI, in addition to multiple subdomains. Children who attended any form of centre-based care, for any period prior to entering primary school, were rated by teachers as displaying significantly higher levels of physical health and well-being, gross and fine motor skills, social competence, respect and responsibility, approaches to learning, readiness to explore new things, emotional maturity, and less anxious and fearful behaviour (Figure 26 and Table 23). They also are rated significantly higher than children who did not attend centre-based care in terms of levels of language and cognitive development, basic literacy, interest in literacy, numeracy, and memory, as well as higher levels of communication and general knowledge.

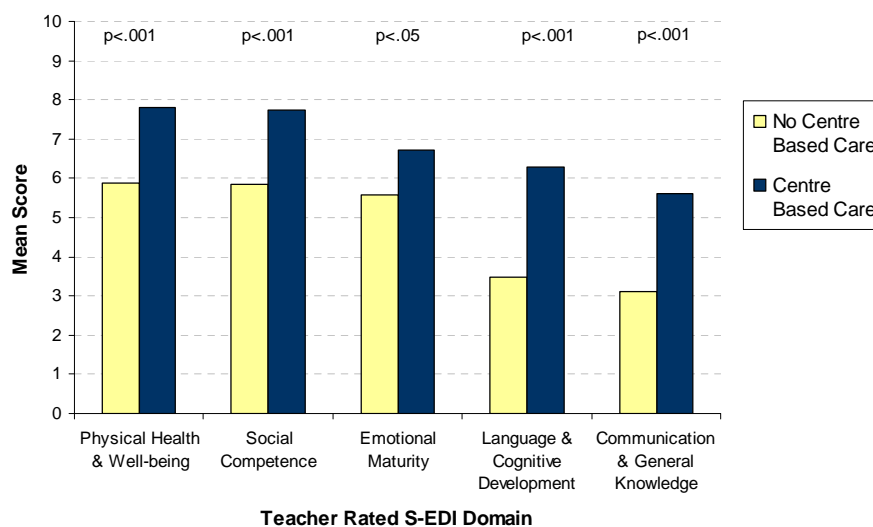


Figure 26. Relationship between teacher rated S-EDI and child's participation in centre-based childcare prior to school entry.

Although fewer differences emerged in terms of the additional behavioural items, children who attended centre-based care prior to school entry were rated by teachers as displaying fewer opposition/defiant and hyperactive/inattentive behaviours (Figure 27 and Table 23).

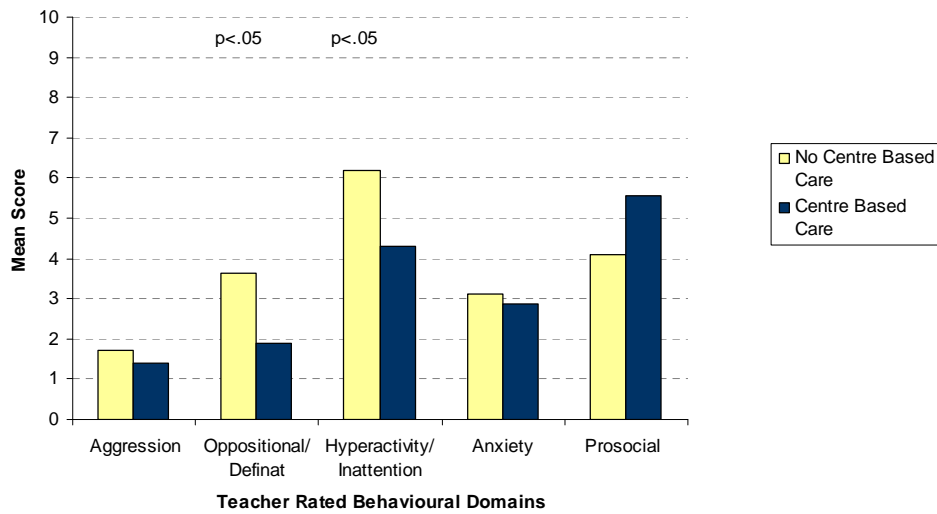


Figure 27. Relationship between teacher additional behavioural items and child’s participation in centre-based childcare prior to school entry.

Table 23

Monte Carlo Permutation test results for differences in School Readiness based on child’s participation in centre-based childcare

Domain	Centre-Based Care			No Centre-Based Care			p value
	n	Mean	SD	n	Mean	SD	
S-EDI							
Physical Health & Well-being	76	7.80	2.10	16	5.87	2.32	0.001**
<i>Gross and Fine Motor Skills</i>	63	6.88	3.24	14	4.17	3.28	0.005**
Social Competence	76	7.72	1.76	16	5.86	2.69	0.001***
<i>Respect and Responsibility</i>	76	7.86	2.51	16	6.35	0.04	0.039*
<i>Approaches to Learning</i>	76	8.00	2.18	16	5.31	3.29	< 0.0001***
<i>Readiness to Explore New Things</i>	76	9.01	1.37	16	6.98	3.40	< 0.0001***
Emotional Maturity	74	6.71	2.03	16	5.58	2.13	0.048*
<i>Anxious and Fearful Behaviour</i>	76	4.61	3.51	16	6.56	3.36	0.040*
Language and Cognitive Development	68	6.28	2.58	16	3.50	3.13	0.0003***
<i>Basic Literacy</i>	74	7.52	3.21	16	4.17	3.75	< 0.0001***
<i>Interest in literacy/numeracy & memory</i>	74	8.92	2.53	15	5.33	4.14	< 0.0001***
Communication & General Knowledge	76	5.61	3.56	16	3.13	2.91	0.0107**
Additional Behavioural Items							
Aggressive Behaviour	67	1.41	2.49	14	1.73	2.46	0.664
Oppositional/Defiant Behaviour	67	1.89	2.86	16	3.65	3.73	0.035*
Hyperactive/Inattentive Behaviour	76	4.31	3.27	16	6.20	3.29	0.036*
Anxious Behaviour	76	2.85	2.77	16	3.13	2.78	0.753
Prosocial Behaviour	59	5.55	2.71	11	4.09	3.11	0.111

*** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$

M. Parenting Behaviours³

Reports from the 'Parenting Styles and Dimensions Questionnaire' show that respondents indicated a high number of authoritative parenting behaviours when parenting their children ($M = 4.30$; $SD = 0.50$). It was indicated that the mean level of authoritarian behaviours used to parent children is 1.76 ($SD = 0.43$) and 2.28 ($SD = 0.91$) for permissive parenting behaviours (see Figure 28). Parents report using a significantly higher level of authoritative parenting behaviours than authoritarian and permissive behaviours ($Z = -8.37$, $p < 0.0001$ and $Z = -8.13$, $p < 0.0001$, respectively), while they use a significantly higher level of permissive behaviours than authoritarian behaviours ($Z = -5.25$, $p < 0.0001$).

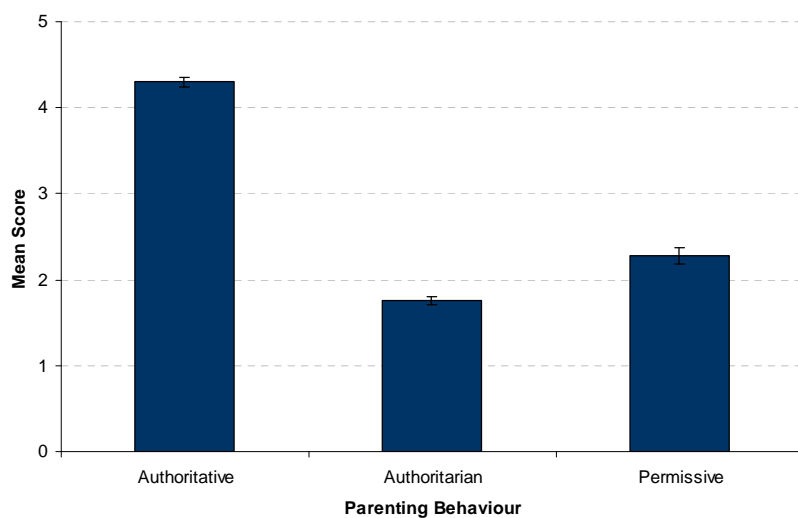


Figure 28. Mean scores of parenting style behaviours.

Figure 29 below shows the mean scores on the subscales that comprise the authoritative and authoritarian parenting styles. The non-reasoning/punitive subdomain of the authoritarian parenting behaviours has not been reported due to the low reliability of this scale ($\alpha = .44$). Each remaining subscale is significantly different within and across each parenting style. Of the parenting behaviours measured, parents endorsed the highest levels of *connection*, which relates to warmth and support, while displaying the lowest level of *physical coercion*, a subdomain characterised by the use of physical punishment (e.g., spanking, slapping). As expected based on the mean differences in the larger parenting constructs, parents reported that they engage in authoritative parenting significantly more often than they use parenting behaviours related to the authoritarian parenting style.

³ The authoritative parenting style is characterised by warmth and support, while the authoritarian style is characterised by low responsiveness and high control. Permissive parenting style, although characterised by warmth, is one in which parents exert little control over children.

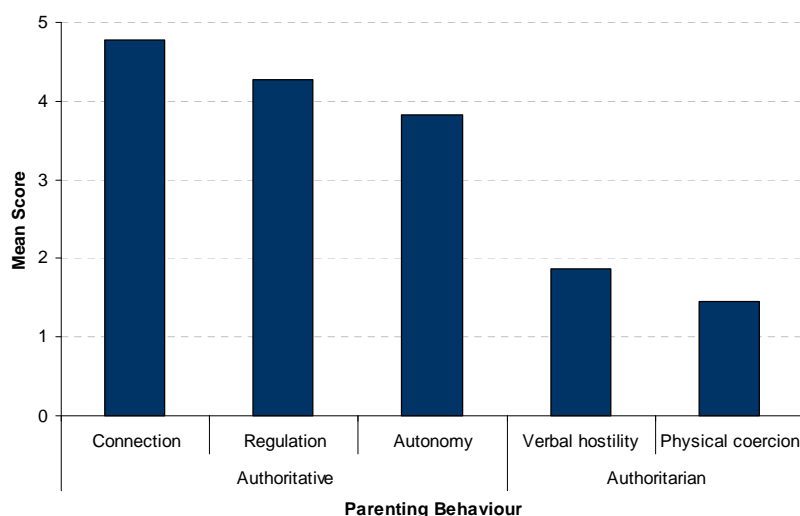


Figure 29. Mean scores on subdomains of parenting style behaviours

Authoritative parenting behaviour is positively correlated (using Spearman's rho correlation) with parent rated emotional maturity, communication and general knowledge, and prosocial behaviour, suggesting that higher self-reported use of authoritative parenting behaviours are related to higher parent reported levels of school readiness of children on each of these domains (see Table 24). Additionally, trends in the data show a positive relationship between use of authoritative parenting behaviours and parent reported language and cognitive development. Conversely, authoritative parenting was negatively associated with aggressive behaviour. There was a trend for authoritative behaviours to be negatively associated with hyperactivity/inattention, suggesting that greater authoritative parenting is associated with less aggression and hyperactivity/inattention as reported by parents. Authoritarian and permissive parenting behaviours, on the other hand, are both negatively correlated with parent rated emotional maturity, indicating that children of parents who report using a larger number of harsh or inconsistent parenting behaviours are reported as having lower levels of school readiness in this domain. On the other hand, authoritative and permissive parenting behaviours are positively correlated with oppositional/defiant behaviour and hyperactivity/inattentive behaviour, suggesting that higher use of these parenting behaviours is associated with greater levels of these behaviours in children.

Authoritarian parenting is negatively correlated with language and cognitive development and there is a trend illustrating a negative relationship between authoritarian parenting and social competence, suggesting that a high use of authoritarian parenting behaviours is significantly associated with lower parent reported language and cognitive development and social competence in children. Furthermore, there is a significant positive correlation between authoritarian parenting behaviours and aggression, suggesting that higher use of authoritarian parenting behaviours are associated with higher levels of aggression in children. Finally, permissive parenting also is negatively associated with physical health and well-being, social competence, and prosocial behaviour suggesting that greater use of lax parenting behaviours is

associated with lower parent reported levels of physical health and well-being, social competence, and prosocial behaviour in children.

Despite the reported correlations between parenting behaviours and parent reports of children's school readiness, few significant relationships emerged between parenting behaviours and teacher reports of school readiness. Specifically, three discernable relationships emerged among these variables. First, authoritarian parenting behaviours are positively associated with teacher reports of oppositional/defiant behaviours. Second, teacher reported physical health and well-being is negatively correlated with parent rated use of permissive parenting behaviours. Last, there is a trend suggesting that permissive parenting is positively associated with teacher reported hyperactive/inattentive behaviour.

Table 24

Spearman's rho non parametric correlations representing the relationship between parenting behaviours and school readiness

Domain	Parenting Behaviour					
	Authoritative		Authoritarian		Permissive	
	Teacher	Parent	Teacher	Parent	Teacher	Parent
S-EDI Domain						
Physical Health and Well-Being	0.02	0.01	-0.09	-0.15	-0.23*	-0.19*
Social Competence	0.05	0.09	-0.09	-0.19[†]	-0.02	-0.21*
Emotional Maturity	0.04	0.26**	-0.06	-0.28**	-0.12	-0.20*
Language and Cognitive Development	0.10	0.17[†]	-0.14	-0.22*	-0.07	-0.11
Communication & General Knowledge	0.07	0.24*	-0.06	-0.02	-0.03	-0.07
Additional Behavioural Items						
Aggressive Behaviour	0.11	-0.22*	0.08	0.32**	0.15	0.16
Oppositional/Defiant Behaviour	-0.01	-0.10	0.21*	0.34**	0.15	0.34**
Hyperactive/Inattentive Behaviour	-0.03	-0.18[†]	0.08	0.26**	0.19[†]	0.22*
Anxious Behaviour	-0.10	-0.04	0.01	0.10	0.11	0.06
Prosocial Behaviour	-0.01	0.29**	-0.08	-0.05	-0.03	-0.20*

*** $p < .001$; ** $p < .01$; * $p < .05$; [†] $p < .10$

IX. Summary & Conclusion

School readiness is a multifaceted concept, encompassing several domains of development. Due to its complexity, school readiness can not be adequately compiled into one concept or figure that is truly reflective of children's abilities, nor can one skill define school readiness. Rather, different areas of school readiness may have different relationships with child and family characteristics. It is therefore important to measure each domain of school readiness separately. By doing this, one can gain a more complete reflection of school readiness and the factors that influence a child's abilities at school entry.

The 2008-2009 CPSE report examines this holistic view of school readiness of a small sample of children living in a disadvantaged urban community of Ireland. Therefore for the purpose of this

study, assessments of school readiness were obtained via teacher and parent report using the short form of the Early Development Instrument. Several additional questions related to behaviours associated with school readiness were also measured to facilitate comparisons with a representative sample of Irish children. In addition to assessing school readiness, parents were asked questions regarding their socioeconomic situation as well as parenting behaviours that they use to parent their children.

School Readiness in the CPSE 2008-2009 Cohort

Using the Short Early Development Instrument (S-EDI) (Janus et al., 2005), allowed for parent and teacher ratings of school readiness to be compared to a normative sample of Canadian children. Although arguments regarding cultural, social and economic differences between Canada and Ireland can be made, it is important to note that there are no available representative or comprehensive data on the school readiness of Irish children. The S-EDI has been used in Canada, America, Australia and several other countries illustrating its cross cultural utility and validity (e.g., Brinkman et al., 2007). Additionally, research has highlighted the stability of EDI ratings across different groups of children (Guhn, Gaderman, & Zumbo, 2007). By using the S-EDI, the levels of school readiness in the 2008-2009 CPSE cohort can be compared to a representative sample, albeit a Canadian one, facilitating conclusions regarding the school readiness of children in this cohort.

Several differences emerged between parent and teacher rated school readiness and the Canadian norms. The general pattern shows that teachers rated children in the 2008-2009 CPSE cohort as displaying significantly lower levels of school readiness than the Canadian norm, while parents rated children in the cohort as displaying significantly higher levels of school readiness than the Canadian norm. While on average children in the CPSE sample scored below the norms across all domains based on the teacher reports, approximately half the sample are performing above the norm in regards physical health and well-being and social competence and one-third of the sample are scoring above the norm in the other three domains. Therefore, there is larger degree of heterogeneity within the CPSE sample.

As stated previously, several differences emerged between parent and teacher reports of school readiness for children in the 2008-2009 CPSE cohort. Both parent and teacher school readiness reports were compared across five domains of school readiness: physical health and well-being, social competence, emotional maturity, language and cognitive development, and communication and general knowledge. Results show that parents rated children as displaying higher levels of physical health and well-being, social competence, emotional maturity, and communication and general knowledge than the teachers. Although the difference between parent and teacher rated language and cognitive development was not significant, there is a trend to suggest that parents also rate their children higher in this domain.

To compliment the S-EDI, additional behavioural items were included in the questionnaire to facilitate comparisons with a national Irish sample, obtained from the Irish *Lifeways Cross-Generation Cohort Study* which was conducted in 2007. As there are no comparable data on the S-EDI available in Ireland, including these additional items enables a comparison between the CPSE sample and a sample of Irish children on several dimensions of behaviour related to school readiness. Significant differences emerged on the majority of these domains, with patterns

mirroring those elucidated in the S-EDI. Specifically, teachers rated children in the 2008-2009 CPSE cohort as displaying significantly more behaviours that are negatively associated with readiness for school such as aggression, oppositional/defiant behaviours, hyperactivity/inattention, and anxiety. Additionally, teachers rated children as displaying fewer prosocial behaviours compared to the behaviours ratings in the Lifeways cohort. Results for the parent rated items, on the other hand, were mixed. Specifically, parents rated children in the CPSE cohort as being more prosocial, less anxious, less aggressive, and more hyperactive/inattentive than the children in the national Irish sample. Although this measure does not include every domain of school readiness, it is the first step to comparing the 2008-2009 CPSE cohort to a representative sample of children growing up in Ireland and illustrates that children in these disadvantaged areas are performing below a representative sample of Irish children on these specific domains.

Results of the present report support the concept that school readiness is multidimensional in nature, encompassing several domains of development. Given that the traditional view of school readiness focused on cognitive development and general knowledge, it is important to note that several differences emerged for the social competence and emotional maturity domains of school readiness in this report. This further provides support for parents, schools, practitioners, and researchers to take a more holistic approach to the definition of school readiness. If this report took a more unidimensional view of school readiness, some of these important relationships may have been masked. Additionally, these findings demonstrate the importance of social and emotional development in preparing a child for success in school and such non-cognitive domains should also be targeted when designing programmes to promote school readiness of young children.

Group Differences in School Readiness

In addition to measuring the level of school readiness in the *PFL* catchment area, the report also investigates how school readiness differs by demographic and socioeconomic factors. The report replicates several of the findings from the 2004 school readiness survey conducted in the catchment area (Kiernan et al., 2008). For example, older children were reported as being more ready for school. In addition, girls were more emotionally mature, more prosocial, and less aggressive than boys. Several group differences in school readiness were also identified between high and low resource families, with children from high resource families typically performing above those from low resource families. Specifically, children of parents with less than a Junior Certificate qualification, families in receipt of social welfare payments, and those of single parents were not as ready for school as their classmates; findings supported in the literature (Janus & Duku, 2007). It is important to note that a lack of resources may play a direct role in school readiness. For example, parents of children who are less ready for school may not possess the necessary financial, material, and social resources to help prepare their children for school.

An interesting finding also emerged in the relationship between the presence of siblings in the household and child school readiness. Children with no siblings were rated as displaying higher levels of social competence, emotional maturity, less oppositional and defiant behaviours, and less hyperactivity and inattentive behaviours than those with siblings. There are several plausible explanations for this unexpected finding. First, children may be modelling their behaviour after their parents, rather than siblings, and parents may be exhibiting more socially competent and

emotionally mature behaviours than children. Second, parents of lone children may have more time to spend with them and this time may be more interactive, thus further providing the opportunity for children to learn socially competent and emotionally mature behaviours through these vertical relationships with parents.

Childcare & School Readiness

As formal childcare has been identified as one of key promoters of early school readiness (please see section III.D above), the CPSE survey collected detailed information about the children's childcare experiences prior to school entry in terms of childcare type, duration and starting age. A significant finding of this report is that the majority of children in the sample had experienced some form of centre-based childcare prior to starting school. The results also indicate that children experienced informal childcare (e.g. care by grandparents, other relatives or nannies) for an average of 28 months and formal childcare (care in nursery or Montessori school) for 18 months. Studies typically find that children from disadvantaged areas are more likely to avail of informal, rather than formal, childcare (Côté, Doyle, & Petitclerc, 2009) however this result is not borne out in the CPSE sample.

Several significant relationships were identified between participation in centre-based childcare prior to school entry and school readiness. The general finding was that children who participated in centre-based care were rated higher than children who did not attend centre-based childcare on all domains of school readiness. These findings are consistent with current literature which suggests that centre-based childcare is beneficial for children's development. A number of studies have shown that formal childcare, which tends to be of a higher quality than informal care, can have a positive impact on children's cognitive abilities and school readiness, in particular math and reading skills, as well as expressive vocabulary and language development (Clarke-Stewart, 1991; NICHD, 2002; NICHD & Duncan, 2003). Evidence also shows that intensive centre-based care which begins in toddlerhood may have positive effects on cognitive skills and language development (Gregg, Washbrook, Propper, & Burgess, 2005), with one study indicating that the greatest academic benefits are for those children that begin centre-based care at ages 2-3 (Loeb, Bridges, Bassok, Fuller, & Rumberger, 2007).

There is also evidence that the benefits of childcare may be greatest for those from disadvantaged backgrounds as childcare can play a protective role for children from low resource families. As demonstrated in this report, these effects can impact on all areas of development including cognitive ability (Geoffroy et al., 2006; Caughy, DiPetro, & Strobino, 1994), physical aggression (Borge, Rutter, Cote, & Tremblay, 2004; Côté et al. 2007) and emotional maturity (Côté et al., 2008). Childcare may have a direct effect on the school readiness of disadvantaged children as the quality of the childcare setting may be greater than the home environment, for example, low-income families may not have the available resources to provide an enriched home environment. In addition, formal childcare typically provides access to better facilities and resources and access to more educational stimulation. Childcare may also indirectly affect school readiness resulting from changes in parenting due to the child's childcare attendance (McCartney, Dearing, Taylor, & Bub, 2007).

Studies consistently show that the quality of childcare matters (Burchinal et al., 2000), particularly in terms of the qualification of childcare staff, the stability of staff, and the structure

and content of daily activities. However, it is important to note that this study does not control for the quality of the childcare settings which the CPSE cohort attended. Sfolta, the National Quality Framework for Early Childhood Education, which provides the first nationally agreed set of standards for early childhood care and education in Ireland, is currently being implemented by the local pre-schools, schools and childcare settings in the CPSE catchment area as part of the *Preparing for Life* programme. This framework is set to raise the standards of the childcare settings within the CPSE community, therefore future CPSE surveys may be able to incorporate these measures to analyse the effects on school readiness over time.

Differences in Parent & Teacher Reported School Readiness

An important observation of this report is that several differences emerged between teacher and parent reports on both the S-EDI and the additional behavioural domains. Such discrepancies across informants have been documented elsewhere and are a common finding in the literature (e.g., Gangon, Vitaro, & Tremblay, 1992; Shaw, Hammer, & Leland, 1991; Tasse & Lecavalier, 2000). The discrepancy between parent and teacher reported school readiness has several implications and possible explanations. First, parents may perceive the same child behaviours differently than teachers. The teachers observe multiple children on a daily basis and over many years, whereas parents may only regularly observe their own children, other children in the community, neighbours, and friends' children. Additionally, while teachers may interact with children from several areas, communities, and even cultures, parents may only be familiar with the children living in their area. Therefore, the frame of reference upon which these assessments of child skill and behaviour are made may be quite different for parents and teachers, resulting in mean differences between the school readiness and behavioural ratings in the CPSE sample.

Furthermore, this study was conducted in a designated disadvantaged area, with above national levels of unemployment and social welfare dependency (see Census Small Area Population Statistics from 2006). This is important to note as research has identified lower levels of school readiness in disadvantaged areas and has identified familial factors such as low socioeconomic status that put children at risk for poor school readiness (Janus & Duku, 2007; Lapointe, Ford, & Zumbo, 2007). Given these documented differences, the frame of reference upon which parents are rating their children may be skewed to this effect resulting in higher ratings of children's behaviour and school readiness. In other words, parents may see their children as performing above average for that community, a level which may be rated lower by individuals who have a more broad frame of reference upon which to compare children. Specifically, parents may witness low levels of school readiness and high incidence of problematic behaviours in the community. If the parent does not perceive his/her child to exhibit these negative behaviours to the same extent as he/she sees in the community, the parent and teacher ratings of behaviour may diverge. A plausible explanation for this divergence may result from teachers rating the child's behaviours based on a larger sample of children from several areas including those living in communities that do not experience the same high levels of delinquency and poor school readiness as often seen in disadvantaged areas.

A second possible explanation for differences between parent and teacher ratings of school readiness and behaviour is that children may behave differently in a school context than in a family context. Children are often expected to follow different rules in the home and school environment and the consequences for one's actions may not be consistent across contexts.

Therefore, the child may learn that some behaviours which are acceptable at school are not acceptable at home and vice versa. It may not be that parents and teachers are rating the same behaviours differently, rather it may be a function of children exhibiting different behaviours in different contexts. This argument is supported by the differences in parent reports of child behaviour in school and in the home. Specifically, data from the *Lifeways Cross-Generation Cohort Study* show significant differences between parent ratings of children's behaviour based on how the child behaves at home and at school, suggesting that according to parents, children behave differently in the school context than they do at home.

Although the lack of concordance between parent and teacher ratings of children's school readiness may be viewed simply as a methodological problem, it may represent a more interesting finding. One potential explanation is that parents in disadvantaged areas may view their children as thriving in the environment and therefore they may not recognise any weaknesses in their children's school readiness, and subsequently they may not recognise the need for early intervention to prevent or remedy these weaknesses. Therefore, the possibility of parental attitudes affecting parental behaviour, which clearly affect child behaviour and ultimately a child's readiness for school, cannot be ruled out and highlights the need for multiple sources to report on school readiness and the need for longitudinal studies to track children's progress over time. Given the present data, we are unable to determine whether parents and teachers are rating similar behaviours in a different way, whether children exhibit different behaviour in school versus the home environment, whether parent or teacher perceptions are skewed, or which report of school readiness is a more accurate reflection of children's true ability. Furthermore, it is important to note that the results cannot definitively show whether these discrepancies in parent and teacher reports of child's school readiness are simply due to a response bias in terms of the parents or teachers, or whether the difference between parent and teacher ratings is due to context specific behaviour on the part of the children.

Although clear differences emerged between parent and teacher ratings of children's school readiness, this report mainly focuses on the teacher reports. This method was employed for multiple reasons. First, teacher ratings are typically reported in the literature. Second, teachers have long been relied upon to make accurate assessments of children's readiness for school (Heaviside & Farris, 1993). Lastly, in an attempt to escape problems of shared method variance associated with one rater rating both the independent and dependant variables, the analysis used the school readiness scores as reported by the teacher and the socioeconomic data as reported by the parent.

Strengths and Limitations of the Study

The present study has several strengths. First, the reliability of the scales used in the analyses was acceptable, with the reliability of several scales falling above the .80 level. Additionally, the 99% response rate of teachers and 76% of parents is high for a study of this type. Another clear strength of the study is that non-standard statistical methods were employed specifically tailored to accommodate the small sample size used in the analyses. This allows for robust conclusions about the results to be obtained. Another benefit of the study is the holistic approach to school readiness through which this survey was designed. Specifically, the study assessed all five domains of school readiness commonly reported in the literature. It also is important to note that the *PFL* programme, which aims to improve levels of school readiness in the area, operates under this holistic definition of school readiness. Therefore, it is important to assess all areas of

school readiness in the area on a yearly basis to determine any year-on-year improvements, as well as any significant improvements of school readiness of children in the *PFL* cohort upon school entry. Lastly, although the results reported here focused on teacher reported school readiness, data were also obtained for parent reports of school readiness. By obtaining both teacher and parent reports of school readiness, important differences in these ratings were elucidated. Specifically, by using both reports it became clear that parents are consistently rating their children's levels of school readiness above the teacher's report which has several implications for future work in this area.

In addition, there are several limitations to the study that should be noted. First, all the analyses conducted to test for differences in school readiness across the range of socio-demographic factors (e.g., gender, maternal education and employment, social welfare dependency, parenting and childcare) represent correlations or associations in the data. They are indicative of underlying relationships that may exist between two factors, however they are not necessarily causal relationships, nor should they be interpreted as such. For example, the analyses show that attendance at centre-based childcare is associated with higher S-EDI scores. While childcare may directly lead to an increase in school readiness through providing a cognitively stimulating environment for the child (i.e., a causal effect), this relationship may also be driven by selection bias, whereby the types of families to place their children in childcare are also the types of families who readily invest in their children's development. Hence, 'childcare' may be a proxy for a range of other factors influencing the child's development, such as the quality of the home environment or parental income. Due to the relatively small sample size, controlling for such potentially confounding factors through multiple regression modelling is not possible, as such models are dependant on the number of observations in the analysis and the amount of factors included in the model. However, as the CPSE survey will be conducted annually for the next four years, the sample size is set to grow, which will allow us to estimate multiple regression models which will help uncover and disentangle some of these relationships. Therefore, caution should be taken when interpreting the results of this first study.

The Need for the PFL Intervention

The 2008-2009 CPSE was conducted as part of an overall evaluation of the *PFL* early childhood intervention programme. Thus, the results presented in this report are inherently intertwined with the *PFL* intervention itself. It is clear, based on teacher assessments of school readiness, that children in the *PFL* catchment areas are not performing to the level of other children at school entry, a finding that provides quantitative evidence for the need of the *PFL* intervention. Additionally, the vast differences between parent and teacher assessments of school readiness provide solid evidence that any intervention aiming to improve levels of school readiness in this area must integrate several contexts of development rather than simply focusing on one context. Development is based on the interaction of contexts and people within each of these contexts such as the family, the school, and the community, all of which have direct and indirect effects on child development and school readiness (Bronfenbrenner, 1986). Therefore, an intervention should focus on the multiple contexts in which a child is developing in order to effectively intervene and promote adaptive functioning and development, such as the *PFL* intervention. Intervening at the family level and operating through an ecological approach by providing opportunities for schools and the larger community to work together may allow for greater opportunities to improve school readiness of children in the area.

Future CPSE Surveys

The current report provides a comprehensive analysis of the levels of school readiness of junior infants children in a disadvantaged urban community in Ireland. The survey will be replicated and conducted annually until 2012. One of the aims of this study is to measure the general level of school readiness in the area for the cohort of children who are not receiving the *PFL* programme. By comparing the year-on-year changes in school readiness, this study will indicate if the *PFL* programme is generating positive externalities. It will determine whether providing an intensive school readiness intervention to the community's younger cohort will have knock-on effects for the older children in the community starting school between 2008-2012. The current report elucidates several interesting relationships in the data in terms of factors influencing school readiness. However, determining the causal nature of these relationships is constrained by the small sample size. Combining the samples of future CPSE surveys over time will provide much larger data which will deepen the richness of the analysis and allow us to fully investigate the determinants and antecedents to school readiness.

X. References

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XI. Appendix

Table 1
Descriptive Statistics for Continuous Variables

	N	Mean	St. Dev.	Min	Max
Child Information					
Age	92	4.35	0.64	2	7
Teacher Information					
Age	12	37.25	10.46	24	55
Years teaching	12	10.83	8.88	2	31
Years teaching Junior Infants	12	4.25	3.65	1	15
Years teaching at school	12	9.42	7.83	1	31
Number of students in class	7	14.70	1.30	13	16
Household Information					
Number of household members	91	4.69	1.44	2	9
No. of biological children	92	2.88	1.61	1	10
Number of siblings in household	94	1.84	1.52	0	7
Respondent Information*					
Age	92	30.48	5.53	22	45
Childcare information					
Length of time in home based care (months)	14	27.50	14.44	12	52
Length of time in centre based care (months)	80	18.44	10.52	6	45

* 94% of respondents are the child's mother.

Table 2

Descriptive Statistics for Categorical Variables

	n	%	
<i>Teacher Information</i>			
Highest level of education completed	Non-degree qualification	1	8.33
	Primary degree	4	33.33
	Postgraduate qualification	7	58.33
<i>Respondent Information</i>			
Relationship to child	Biological Mother	87	93.55
	Foster Mother	1	1.08
	Biological Father	1	1.08
	Adoptive Father	4	4.30
Ethnic group	Irish	81	88.04
	Irish Traveller	9	9.78
	British	1	1.09
	Other White	1	1.09
<i>Household Information</i>			
Household weekly income	Less than €50	2	3.57
	€100-€150	1	1.79
	€150-€200	2	3.57
	€200-€250	5	8.93
	€250-€300	6	10.71
	€300-€400	11	19.64
	€400-€500	9	16.07
	€500-€600	6	10.71
	€600-€750	6	10.71
	€750-€900	5	8.93
	€900-€1000	1	1.79
	€1000-€1500	2	3.57
<i>Childcare Information</i>			
Type of Childcare	Grandparent	12	12.77
	Other relative	1	1.06
	Nanny	1	1.06
	Nursery	41	43.62
	Montessori	39	41.50