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Cognitive theories of autism spectrum disorders: how do they impact children's ability to learn in education settings? ; Coming home: Exploring the experiences of mothers home educating their children with autism spectrum disorder

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Running Head: AUTISM: LEARNING AND EDUCATION

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Cognitive Theories of Autism Spectrum Disorders: How do they Impact Children's Ability to
Learn in Education Settings?

Coming Home: Exploring the Experiences of Mothers Home Educating their Children with
Autism Spectrum Disorder.

Theresa Kidd

A report submitted in Partial Fulfilment of the Requirements for the Award of Bachelor of
Arts/Science Honours, Faculty of Computing, Health and Science,

Edith Cowan University.

May 2008

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Abstract

Despite the increasing number of children with autism spectrum disorder (ASD) attending mainstream school, the process of facilitating their learning and participation remains a complex and poorly understood area of education (Simpson, de Boer, & Smith-Myles, 2003). Three key cognitive theories (theory of mind, theory of weak central coherence and theory of executive function) have been posited to provide the most complete understanding of the disorder (Baron-Cohen, 1989). Presently however, the developmental effects of these cognitive theories have been largely overlooked (Happe, 1994). Through examining how these models may affect cognitive processing in children with ASD, the learning and educational needs of these children may be better understood. Meanwhile, an increasing number of parents are addressing their children's unique learning challenges through home education. This individualised educative approach may possibly provide a paramount educational alternative to traditional schooling.

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Supervisor: Dr Elizabeth Kaczmarek

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Cognitive Theories of Autism Spectrum Disorders: How do They Impact Children's Ability to Learn in Education Settings?

Within Australia the rate of diagnosis of children with autism spectrum disorders (ASD) has risen dramatically over the past decade (Prior, 2003). Presently one child in every 160, between the ages of 6 and 12 years, has ASD. This rate implies that approximately 10,625 children with ASD are attending primary schools across Australia (McDermott, Williams, Rodley, Glasson, & Wray, 2006). The high prevalence of children with ASD within the education system, combined with the emergent move toward inclusive schooling (Seach, Lloyd, & Preston, 2005), has numerous effects. Since children with autism progress differently in their development in comparison to their neurotypical peers, their ability to thrive in education settings is often adversely affected (Jordan, 2005). Due to the complex nature and severity of ASD many teachers have reported feeling perplexed and less than adequately skilled in meeting the needs of these children (Starr, Foy, & Kramer, 2001). Meanwhile parental dissatisfaction and frustration with school-based services for their children with ASD has been frequently documented (Spann, Kohler, & Soenksen, 2003).

With past research often focusing on behavioural characteristics of autism, more recent work has proposed autism to be based in biology, with a strong genetic component (Bailey, Bolton, & Rutter, 1998; Baron-Cohen, Bolton, Wheelwright, Short, Mead, Smith & Scahill, 1998; Happe, 1999). Many researchers believe that it is the cognitive processes that underpin the social and communicative deficits engendering autism and as such provide the most complete understanding of this disorder (Baron-Cohen, 1989; Frith, 1991; Hill, 2004). Three key cognitive models in particular, have been developed by researchers in an attempt to understand the link between the brain and behaviour in autism; theory of mind, executive function and weak central coherence (Happe, 1994; Hill, 2004). As important as these are, the developmental effects of these cognitive theories have been largely overlooked (Happe,

1994). It has however been postulated that understanding the mechanisms of how children with ASD process information will have a significant effect on determining their needs and the educational difficulties they will face. Additionally it is hoped that such knowledge will enhance the identification and implementation of effective education practices for school-age children with ASD (Frith & Happe, 2004; Jordan, 2005).

This review proposes that developmental effects of the core cognitive features present in children with ASD can make learning in the mainstream classroom environment extremely challenging (Attwood, 2007). To examine this theory and to understand the varying challenges and abilities inherent in children with ASD, three cognitive models of autism will be reviewed in light of current research. Here, the manner in which cognitive processes affect social and communication abilities, along with behavioural flexibility in children with autism, will be explored. In particular, the impact that cognitive challenges have on a child's ability to learn and thrive in education settings will be reviewed. A brief discussion into current education issues for children with ASD will be given, with a focus on the emergent move towards the alternative educative practice of home education. Future research concerning cognitive models of ASD as well as home education, will be considered.

Autism: Definition and Diagnostic Issues

Autism is a pervasive developmental lifelong disorder that is often diagnosed before the age of 3 years. Autism has no identified aetiology or cure (Lovannone, Dunlap, Huber, & Kincaid, 2003). The term Autism Spectrum Disorders (ASD) was introduced by Wing (1981) to cover the diagnostic labels of Autistic Disorder, High Functioning Autism, Asperger's Disorder and Pervasive Developmental Disorder – Not Otherwise Specified (PDD-NOS). Despite varying intellectual functioning, across the autism spectrum core deficits in social and non-social domains appear to be universal and shape the diagnostic criteria (Leslie &

Frith, 1988). The Diagnostic and Statistical Manual of Mental Disorders - Text Revision (DSM-IV-TR) characterises these as qualitative impairments in social interaction and communicative development, accompanied by restrictive, repetitive and stereotyped patterns of behaviour, interests and activities (American Psychiatric Association, 2000). To date no psychological theory has been proposed that can explain all of these aspects satisfactorily. In recent years however, three cognitive models have been developed in an attempt to explain different features of these core deficits (Baron-Cohen, 1989; Leslie & Frith, 1988).

Cognitive Theories of Autism

Recent research has investigated three cognitive theories in an attempt to explain the core features of autism in terms of underlying cognitive deficits (Hoy et al., 2004). One such model is the theory of mind hypothesis, which, together with the theory of weak central coherence, may explain many of the deficits and abilities associated with ASD. It has been argued however, that the repetitive behaviours and restricted interests observed in individuals with ASD may be best explained by a third cognitive theory, that of executive dysfunction (Frith & Happe, 2004).

Theory of Mind

Theory of Mind (ToM) or “mentalising” is the ability to take account of one’s own and others’ mental states in understanding and predicting behaviour (Leslie & Frith, 1988). Children with ASD have been reported to have an under-developed ToM, that is, they have difficulties in deciphering the thoughts and feelings of other people, may have difficulty with empathising and often feel confused by other people’s behaviour (Baron-Cohen, 1989; Ozonoff & Miller, 1995). Neuroimaging studies have now illustrated that individuals with Asperger’s disorder show significantly less activation in the brain regions that are important for mentalising in neurotypical individuals (Castelli, Frith, Happe, & Frith, 2002).

The predominant view in the developmental literature is that, although somewhat complicated by developmental factors and type of ToM task, individuals with ASD demonstrate an apparent inability to think about thought. To determine ToM ability psychological research has employed a variety of first-order and second-order ToM tasks (Baron-Cohen, Tager-Flusberg, & Cohen, 1993). In first-order tasks the participant's ability to infer another's thoughts is generally measured, while in second-order tasks the participant's reasoning about what one person thinks about another person's thoughts is additionally assessed (Baron-Cohen & Joliffe, 1997). Most typically developing four-year-olds pass such tests however in a study by Baron-Cohen (1989) the majority of children with ASD, irrespective of intellectual ability, failed to represent another's mental state.

On the contrary, subsequent studies found some adults with high functioning autism and Asperger's Disorder actually passed first-order and second-order ToM tests (Bowler, 1992; Ozonoff & Rogers, 1991 as cited in Ozonoff & Miller, 1995), suggesting that these skills may develop at a later stage for the person with ASD. However, in support of Baron-Cohen's (1989) findings, a number of successive studies (Brent, Rios, Happe, & Charman, 2004; Happe, 1994; Klin, 2000 as cited in Brent et al., 2004) incorporating both children and adults, demonstrated significantly underdeveloped ToM in those with ASD. These results suggest that individuals with ASD experience difficulty in understanding that different people may have different beliefs about a situation. While somewhat dependent on the type of ToM task and developmental ability, research in this area can contribute to understanding and explaining the impairments that children with ASD have in social relations, communication and imagination (Wing, 1981; Baron-Cohen, 1989).

Weak Central Coherence Theory

Another key cognitive theory of autism views the socioemotional deficit in terms of weak central coherence (WCC) (Frith, 1989). According to this theory, a weakness occurs in

the operation of central systems that are normally responsible for integrating individual pieces of information to establish meaning. For individuals with autism this piecemeal approach to stimulus processing means that they are extraordinarily capable of attending to details, but demonstrate considerable challenges perceiving or understanding the overall picture, or 'gist' (Attwood, 2007; Plaisted, Saksida, Alcantara, & Weisblatt, 2003).

Proponents of this theory argue that other ASD features such as hyper or hypo-arousal to sensory stimuli, extreme sensitivity to small changes in the environment, and circumscribed interests can also be explained by WCC (Hoy, Hatton, & Hare, 2004).

Studies investigating WCC have used a variety of experimental tasks in order to examine different processing domains. Support for this cognitive theory has been found in studies using visuospatial tasks, for example, individuals with ASD have divided a design or figure into its constituent parts faster than control participants (Happe, 1999; Shah & Frith, 1993). In addition, Shah and Frith (1983) found children with autism showed significant differences compared to normally developing children in segmentation abilities on the Wechsler Block Design task of the Wechsler Intelligence Scale for Children (Wechsler, 1981). Expelling the notion that WCC is a function of intelligence, individuals with both low and high functioning autism have also been found to excel at the Embedded Figures Test, whereby a small shape must be found inside a large shape (Happe, 1994; Joliffe & Baron-Cohen, 1999). In examining verbal-semantic coherence, it has been revealed that individuals with ASD do not utilise semantic or grammatical relations in memory (Hermelin & O'Connor, 1967 as cited in Hoy et al., 2004). Instead, piecemeal processing is given preference over contextual meaning, for example, individuals with ASD will recall the details of a story rather than the general story and thus exhibit a weak central coherence (Hill, 2004).

While there is certainly growing empirical support for detailed-focused processing in children with ASD, more recently the validity of the theory of WCC to explain features of

autism has been questioned (Hoy et al., 2004). A number of studies have failed to find significant differences between children with autism and their peers (Mottron, Burack, Stauder & Robaey, 1999; Ozonoff, Strayer, McMahon, & Filloux, 1994; Ropar & Mitchell, 2002). While this suggests that the notion of local and global processing may need to be re-examined, Van Lang (2003, as cited in Mottron et al., 1999) proposes that the conflicting results may be explained by experimental measures. Mottron et al., (1999) suggest that people with ASD are able to process information globally when they are instructed to, however they tend to process information locally when they are not instructed to do so. There certainly seems substantiation for detailed processing in individuals with ASD, however the methodology employed in previous studies (e.g., were participants instructed to process information globally?) warrants further investigation (Hoy et al., 2004).

Executive Function Theory

'Executive function' (or executive dysfunction, as it is frequently termed) is an inclusive term referring to a set of abilities that allow individuals to achieve a particular goal (Welsh & Pennington, 1988). These abilities include functions such as planning, working memory, impulse control, inhibition, self-monitoring, generativity and mental flexibility (Griffith et al., 1999). It has been proposed that executive impairment reflects abnormalities in the frontal lobe and is accountable for the repetitive and restricted behaviour in autism (Happe, 1999). The literature on executive dysfunction as a causal factor in autism spectrum disorders is controversial (Griffith et al., 1999) however it has been demonstrated that executive function deficits do play a role in the social and cognitive deficits observed in school-age children with ASD (Ozonoff et al., 1991).

Numerous empirical studies have demonstrated significant impairments in executive function in school-age children, adolescents and adults with ASD when compared to a variety of control groups (Bennetto, Pennington, & Rogers, 1996; Ozonoff & Miller, 1995; Ozonoff

et al., 1991). When compared to children and adults with other developmental disabilities (e.g., ADHD, conduct disorder and Tourette syndrome), executive function in children and adults with autism has also been found to be more severely impaired (Pennington & Ozonoff, 1996). Initial studies with early school-age children (mean age of 5.4 years) reveal significant specific deficits (e.g., planning and cognitive flexibility) in children with ASD (Dawson, Meltzoff, Osterling, & Rindaldi, 1998; McEvoy, Rogers, & Pennington, 1993). However, there is accumulating evidence that pre-school age children (3.5-4 years old) with ASD, fail to demonstrate specific deficits in executive function (e.g., working memory and set-shifting/flexibility). Younger children with ASD perform similarly to mental-age-matched controls, while older children and adults tend to perform significantly worse than mental-age-matched controls on executive function tasks such as flexibility and planning. It has therefore been suggested by Yerys, Hepburn, Pennington, and Rogers (2006) that executive function deficits may actually be secondary to autism and emerge over the course of development.

Can Cognitive Theories Help us to Understand ASD in the Classroom?

The effects of cognitive impairment have been reported to be pervasive, subtle and specific in children with ASD (Happé, 1999). While the mutual relationship between these theories is presently unclear, individually, these key cognitive models of autism capture some but not all aspects of ASD (Noens & van Berckelaer-Onnes, 2004). Researchers argue that these cognitive theories are neither specific to one developmental group nor globally impaired across the spectrum (Frith & Happé, 2004). What these theories do imply is that children with ASD progress differently in their development when compared to their neurotypical peers (Frith & Happé, 2004). Moreover, irrespective of the cognitive models to explain cognitive impairments in individuals with ASD, substantial issues exist for them with respect to mastering skills and functioning in an environment promoting learning (Jordan, 2005). Through recognising and addressing the social, communicative and behavioural

difficulties of this disorder within a cognitive framework however, it has been suggested that the identification of alternate learning styles and educational needs for children with ASD are likely to emerge (Frith & Happe, 2004).

Social and Communication Issues in Autism

Qualitative impairment in verbal and non-verbal communication is generally recognized as a key feature of ASD (Attwood, 2007). Even individuals with ASD who demonstrate functional speech are significantly limited in their social and communicative capabilities (Noens & van Berckelaer-Onnes, 2004). Unlike 'typical' children, their speech often contains idiosyncrasies, metaphors and prosodic peculiarities (Attwood, 2007; Howlin, 1999), with difficulties in expressive speech frequently documented (Jordan, 2005). In addition, children with ASD have problems in the effective use of discourse for social participation and connection, in particular with initiating or sustaining reciprocal conversations with other people (Hale & Tager-Flusberg, 2005). In fact, language is rarely used as a means of communication in children with ASD, and for the most part it represents more of a monologue than a dialogue (Noens & Van Berckelaer, 2004).

In demonstrating an unusual communication style in comparison to their typical peers, it is understandable that communication problems play a crucial role in the interaction problems that are so distinctive of children with ASD (Noens & Van Berckelaer-Onnes, 2004). Furthermore, in most cases, challenging behavior of children with ASD appears to be the result of communication impairments (van Berckelaer-Onnes, Van Loon, & Peelen, 2002). It has therefore been suggested that communication enhancement should be a main priority of education and intervention (Wetherby, Watt, Morgan, & Shumway, 2007). The cognitive theories presented in this paper will be explored further to offer insight into some of the key communication, social and behavioural challenges for children and adolescents in mainstream educational settings.

Theory of Mind: Impact on Education and Learning

Baron-Cohen (2001) posits numerous manifestations of ToM in children with ASD.

Four of these will be reviewed in an attempt to illustrate how an impaired ToM may affect learning in the classroom: (1) structural components of language, (2) social interactions in the classroom, (3) understanding deception, and (4) impaired imagination.

(1) *Structural components of language.* The area of pragmatics, where communicating relies upon 'higher-order' abilities through the interaction of numerous cognitive systems, has been characterized as the interface between social, cognitive, linguistic and emotional development (Baron-Cohen, 1989; Leslie & Frith, 1988). In individuals with high-functioning autism or Asperger's disorder the basic structural components of language may be intact, but the pragmatics or ability to use language to engage socially is impaired (Kasari & Rotheram-Fuller, 2005). Happe (1993) established a link between deficits in Theory of Mind and pragmatic understanding in individuals with ASD when individuals with ASD who passed first-order ToM tasks did well on interpreting metaphors (such as "she's got a sharp tongue!"), but could not comprehend irony ("How clean your room looks today!"), attributing a literal meaning to the speaker. Only those participants who passed second-order Theory of Mind tasks could understand not only similes and metaphors but ironical utterances as well. Thus the extent to which individuals with ASD could understand figurative language was dependent upon their ability to understand another's mental state (Happe, 1993). Whether ToM is a precursor to developing social communication skills or whether social communication actually leads to proficient ToM reasoning is, however, still unclear.

(2) *Social interactions in the classroom.* In demonstrating an impaired ToM, children with ASD frequently exhibit an inability to fully comprehend social interactions in the classroom (Jordan, 2005). This is often due to pragmatic challenges such as adapting the

content of one's speech to what one already knows or doesn't know, respecting conversational maxims, having difficulty with turn-taking, poor topic maintenance in conversation, and inappropriate use of eye contact (Cumine, Leach, & Stevenson, 2001). Evidence of the latter was found when, Klin, Jones, Schultz, Volkmar, and Cohen (2002) used eye-tracking technology and discovered that adults with Asperger's Disorder looked less at the eyes and more at the mouth, body and objects than control participants did when viewing social scenes. However, research has also shown that when individuals with ASD do look at someone's eyes, they are less able to read the meaning in the eyes than control participants (Baron-Cohen & Jolliffe, 1997). Children with ASD have also been found to be impaired in gaze-direction which helps to ascertain when someone is thinking about something or to work out which of several objects someone wants, or might be referring to (Baron-Cohen, 2001). Findings on both eye contact and gaze-direction support ToM whereby the mentalistic interpretation of eyes of another person does not come naturally to individuals with ASD (Baron-Cohen, 2001). These results may also explain why social interactions within the classroom are frequently misunderstood by the child with ASD (Jordan, 2005).

(3) *Understanding deception.* Another social-cognitive difference in children with ASD, connected to ToM, is the difficulty they have in understanding deception, that is, in deceiving others and in being deceived (Baron-Cohen, 1992). Deception is relevant to understanding others' minds because it is based upon the belief that we can change another's mind. For example, we can make someone else believe that something is true when in fact it is false. While an inability to deceive may not seem like a negative attribute, there are cases when it may be worse to hurt someone's feelings by telling the truth, than to lie (for example, to be polite we may say that we like someone's new dress or a gift they have bought us, when in fact we don't). Typically children learn to distinguish white lies from other lies,

however developing such social skills and social cognition tends to be impaired in children with ASD (Baron-Cohen, 2001).

(4) *Impaired imagination.* An impaired imagination in children with ASD has also been demonstrated in children with autism (Craig, 1997 as cited in Baron-Cohen, 2001; Scott & Baron-Cohen, 1996). Imagination is relevant to ToM in that one is able to access the unreal world that exists purely in their mind and as such is able reflect on one's own mental state of imagining. Imagination is often required to complete curriculum tasks in schools (for example, creative writing and drawing). Failing to grasp such concepts may be confusing and frustrating for the child with ASD who is limited in this domain. Imagination is also related to spontaneous pretend play, a defining feature of ASD (Baron-Cohen, 2001). In contrast to the rich social and imaginary play of typical children, the play of children with ASD is strikingly detached and stark, and likely to affect the development of peer relationships (Wolfberg, 2003). However, whether this feature is actually a deficit in ToM has come into question. A child may in fact be experiencing difficulty in switching from 'reality mode' to 'pretend mode' and therefore a lack of pretend play may essentially result from an executive function deficit (Russell, 1997).

The literature reviewed here certainly suggests that a relationship exists between ToM and the social and communicative challenges inherent in children with ASD. In exhibiting such social communicative deficits, it is not surprising that children with ASD frequently fail to understand the communicative intent of much classroom language (Jordan, 2005). For example, in one study, teachers rated young students with autism as having difficulties in following instructions and problem solving, abstract reasoning, language expression, and although under researched, comprehension (Eaves & Ho, 1997; Noens & van Berckelaer-Onnes, 2004). Likewise, the difficulties in pragmatics and in understanding deception may be contributing factors to the ongoing difficulties these children experience in

developing peer relationships (Wetherby et al., 2007). It may also explain the high incidence of peer shunning and victimisation children with ASD experience in school settings (Little, 2002).

Weak Central Coherence: Impact on Education and Learning

The central coherence theory can offer insight into the specific social and communication problems of people with autism, particularly because a weaker drive for central coherence leads to problems in sense-making and, consequently, in relating to others (Noens & van Berckelaer-Onnes, 2004). With a primary feature of language being its reliance on context (Sperber & Wilson, 1986), studies show that children with ASD are unable to use context to access the less common but more appropriate meaning (Frith & Snowling, 1983; Joliffe & Baron-Cohen, 1999).

Due to having a detail-processing bias, information is likely to be stored differently than typically developing children who process information more globally, which, for the child with ASD, can lead to very different comprehension and learning (Frith & Happe, 2004). In a study by Diehl, Bennetto and Carter Young (2006) children with ASD were less likely to use the “gist” of the story to organize their narratives coherently than their neurotypical peers. These results resonate with the assumption that if words are being read or remembered in a list-like manner, then even the most fluent reader will not be able to extract meaning (Frith & Happe, 2004). As curriculum material in schools has been formulated to correspond with the learning style of neurotypical children, learning can be extremely challenging for the child who processes information atypically (Jordan, 2005). Undoubtedly, while the long term impact of weak central coherence has not been researched, what is known is that it may create very different memory systems to those developing more typically (Frith & Happe, 2004).

Certainly the extent that children with ASD understand speech is often overestimated, even those with functional speech often exhibit limited understanding of instructions or information (Noens & van Berckelaer-Onnes, 2004). Due to their detailed processing ability and subsequent prescribed interests, children with ASD are often articulate about certain topics. As a consequence teachers are often not prepared for the very basic communication failures that commonly occur (Starr et al., 2001). These children often require specific prompts to attend and comprehend, and due to the propensity to focus on details may require more time to process language and information than their typically developing peers (Attwood, 2007). Focusing on detail however can certainly have its advantages and savant skills (e.g., maths or music) and 'islets of ability' (such as performance on visuospatial tasks) may often be seen in children with ASD (Happé, 1999). Due to these strengths, Happé (1999) suggests that the central coherence account of autism be viewed as a cognitive style rather than cognitive deficit.

Executive function theory: Impact on learning and education.

Whilst it appears that executive dysfunction may be a component of ASD, it is not clear as to whether executive impairment is a causal factor contributing to communication difficulties in this population. Poor executive function may however impact on a child's behaviour and learning in the classroom. In the early years a child with ASD is likely to have difficulties with inhibiting a response (i.e., impulsivity), working memory and using new strategies (Attwood, 2007). As a child gets older, difficulties in planning and organisation are often apparent, as well as problems with time-management, prioritising, understanding abstract concepts and self-monitoring (Attwood, 2007; Cumine et al., 2001). Learning in the classroom may be hampered due to the child's inability to shift between activities or mental states.

For example, a study by Green, Sigafos, Pituch, and Itchon (2006) assessed behaviour flexibility in individuals with developmental disabilities and found that individuals with Asperger's disorder showed the most problems in relation to the insistence on sameness, followed by individuals with autism and Down syndrome, respectively. The result that higher-functioning children were more affected by these events reflects a preliminary study by Bartak and Rutter (1976, as cited in Green et al., 2006) which found higher-functioning children had more problems coping with new situations than did lower-functioning children. It may well be, as suggested by Wolf and Chess (as cited in Green et. al., 2006), that children with less severe disabilities appear to have more complex fixations than their lower-functioning peers. This creates a difficulty in transferring attention from one focus to another, or simply an inability to view the wholeness of a situation or task which suggests evidence of both executive dysfunction and weak central coherence. A developmental argument here is certainly conceivable considering that young children with ASD consistently fail to demonstrate specific executive function deficits.

A relationship between cognitive flexibility and social impairments in ASD was postulated to exist in a study by Ozonoff (1995). Traditionally, cognitive flexibility is often assessed using shifting tasks presented by a researcher. In this study however, tasks were presented by a computer. Hence the demand to interact socially was removed for the young adults with ASD and as a result their performance improved. Perhaps the removal of extraneous processing demands that arise from social settings may assist people with ASD maximise their compromised executive skills (Frith & Happe, 2004).

ASD and Education

When taking into account educational approaches it is crucial to have an understanding of how psychological processes are likely to be affected in children with ASD (Jordan, 2005). Within the classroom, for example, 'mindblindness' will significantly

compromise socially mediated learning (for example, through observation and imitation).

The impact of weak central coherence may be that the store of information and knowledge built up in a detail-focused mind may be very different from that of a typical child, leading to very different comprehension and learning. Socially, in noticing details that others miss and having prescribed interests, the child with ASD is likely to increasingly diverge from his or her peers (Frith & Happe, 2004). In the case of executive dysfunction, an inability to shift between activities or mental states clearly impacts on learning in the classroom. Working memory is nearly always affected in ASD and it is working memory that is of most significance in teaching and learning (Jordan, 2005).

Unfortunately many teachers have not been educated, trained or prepared for teaching children with ASD (Jordan, 2005). In fact, many teachers feel perplexed by the many manifestations of behavior seen in children with ASD and this can result in misunderstandings by teachers and others unfamiliar with these disorders (Starr et al., 2001). High-functioning individuals with autism or Asperger's Disorder, in particular, may be perceived as being defiant, rude and deliberately difficult (Starr et al., 2001). Reports of frustration from general education teachers are often expressed as the number of children with special needs in their classrooms increase without an increase in resources and professional education and training (Starr et al., 2001). Likewise, parents of children with ASD often report disappointment in the lack of support and individualized attention their children are receiving at school (Stoner, Bock, Thompson, & Angell, 2005). Results from a study by Spann, Kohler, and Soenksen (2003) found that nearly half of the parents of children with ASD interviewed, believed that schools were doing little or nothing in addressing their child's most pressing needs.

Home Education

In an attempt to attend to the individual needs of the child and possibly to regain an element of control in their child's education (Duffey, 2002), research conducted in the United States of America, and more recently Australia, indicates that many parents of children with disabilities are turning to an alternative teaching method, home education (Reilly, Chapman, & O'Donoghue, 2002). Often this is because parents believe their children are not receiving one-on-one instruction and support within the school environment (Duffey, 2002). It may also be because the teaching strategies do not correspond with the manner in which their child learns (Ensign, 2000). In home education the parent(s) facilitate their child's learning, usually from a home base, and assume primary responsibility for their child's educational programme (Jacob, 1991).

With a remarkable annual growth rate between 20 to 30 percent in Australia (McNiece, 2001) home education is an attractive option to many parents, especially those of children with disabilities. A child-centred education can be provided that is customized to the ability, learning style and individual needs of the child (Duffey, 2002). Previous concerns over parents lacking special needs teacher training seem to have been overridden, with research finding that home educated students with special needs experience greater academic success than their similarly disabled peers who attend public schools (Duvall, Delquadri, Ward, & Greenwood, 1997). Certainly with an individualized educational approach to suit the cognitive processing challenges discussed, along with an in-depth understanding of their child with ASD, parents can possibly provide a paramount educational alternative to traditional schooling.

Directions for Future Research

Although there has been a considerable amount of research conducted on the three key cognitive models of ASD, further research is still required to assess what impact these

models have on development, particularly in relation to learning and participating in mainstream classrooms (Frith & Happe, 2004). Information yielded from such studies could assist educators immensely in providing optimal learning environments for these students (Jordan, 2005).

Research pertaining to home education, including the home education of children with special needs, has grown considerably over the past decade (McNiece, 2001). Unfortunately research specifically investigating home educating children with ASD has been scarce. Ray (2000) posits that home schooling is a natural environment for customising instruction in order to meet the individual needs of children, especially those with special needs and significant strengths. Since children with ASD have been reported to be the most challenging to integrate into a regular classroom setting among children with disabilities (Down & Paine, 1998), along with the increasing number of parents choosing to home educate children with special needs, it would be valuable to research how home education impacts children with ASD. Such research may reveal educative and environmental strategies that could be of significant use to teachers, professionals and parents alike.

Conclusion

To date, no single cognitive deficit can be relied upon to explain the triad of impairments in ASD (social ability, communication and behavioural flexibility). Rather, different parts of the triad seem to be accounted for by underlying cognitive features. The 'theory of mind' suitably explains the social and communication impairments in ASD. While weak central coherence theory may account for a bias towards detailed processing, as well as 'islets of ability' in ASD, its long term impact is not known and further research using accurate measures are needed. The third cognitive deficit, 'executive dysfunction' explains impairments in behaviour flexibility. However, due to varying levels of support for this

theoretical explanation, a clearer conceptualization of how executive dysfunction develops across the lifespan of individuals with ASD is needed (Hill, 2004).

This paper has argued that these key cognitive theories can assist in explaining the challenges faced by students with ASD in educational settings, and has highlighted some of the ways that atypical cognitive processing may impact a child's ability to learn and thrive in the mainstream classroom. It has also suggested that children with ASD may benefit from alternative teaching practices, briefly commenting on the emergent move towards home education (Happe & Frith, 2004). Of course, consideration of individual needs and acknowledgment of varying learning styles, in light of atypical cognitive processing, is essential when developing an educational programme and creating a learning environment for children with ASD (Cumine et al., 2001). Future research exploring home educating children with ASD may well assist in the identification of valuable learning strategies. Similarly, research to understand more fully the developmental effects of cognitive processing may lead to significant improvements in the development and implementation of effective education practices for these children (Happe & Frith, 2004; Jordan, 2005). More importantly, findings from research in either of these areas have the potential to ameliorate the consequences of cognitive impairments and educational challenges in the daily lives of children with autism spectrum disorder (Hill, 2004).

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Running Head: AUTISM: LEARNING AND EDUCATION

Coming Home: Exploring the Experiences of Mothers Home Educating their
Children with Autism Spectrum Disorder.

Theresa Kidd

Abstract

The number of families deciding to home educate their children with disabilities, including Autism Spectrum Disorder (ASD), has escalated in Australia in recent years (Reilly, Chapman, & O'Donoghue, 2002). Due to limited research on this educative approach, the purpose of this qualitative study is to examine mothers' perspectives of home educating a child with ASD. Ten mothers were interviewed using a qualitative research design within an idiographic framework. A thematic content analysis identified three main themes; 'school experience', 'coming home' and 'mother's experience as educator'. Findings were dominated by mothers reporting an ability to provide an individualised education to their child, as well as observing an increase in their child's well-being. The attitudes, experiences and level of support required of mothers were found to directly relate to their perceived choice in home educating their child. This study has implications for parents, educators and health care professionals regarding the psychological and educational needs of children with ASD.

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Submitted: May 2008

Coming Home: Exploring the Experiences of Mothers Home Educating their Children with Autism Spectrum Disorder.

Introduction

Within Australia the diagnosis rate of children with autism spectrum disorders (ASD) has risen dramatically over the past decade (Prior, 2003). Presently in Western Australia it has been reported that schools can expect at least 64 children with an ASD diagnosis per 10,000 primary aged students, and 79 per 10,000 high school aged students (Buckley & Autism Aspergers Advocacy Australia, 2006). With the emergent move toward inclusive schooling (Seach, Lloyd, & Preston, 2005), students with ASD have been reported to be the most challenging to integrate into a regular classroom setting among children with disabilities (Down & Paine, 1998). Parental reports concerning the lack of individualised attention and support available to their children in mainstream classrooms are common (Starr, Foy, & Cramer, 2001). Progressively, some parents are choosing to educate their children with ASD at home, an option which Attwood (2006) believes to have proven beneficial to individuals with ASD. Unfortunately, despite the development of home education research, in areas of academic achievement, socialisation and even that pertaining to children with special needs, the impact of this educative option for children with ASD remains unexplored. The present study attempts to address the gap in the psychological literature by investigating the experience for mothers who choose to educate their child with ASD at home. It is envisaged that this alternative educative method may provide valuable information on the learning and educational needs of children with ASD.

The term Autism Spectrum Disorders (ASD) covers diagnostic labels which include Autistic Disorder, High Functioning Autism, Asperger's Disorder and Pervasive

Developmental Disorder – Not Otherwise Specified (PDD-NOS). The Diagnostic and Statistical Manual of Mental Disorders - Text Revision (American Psychiatric Association, 2000) characterises these disorders according to the degree of impairment that the child experiences with respect to communication skills, social interaction and stereotyped patterns of behaviour. While children with ASD all share difficulties with social and communicative symptoms, individual presentation can vary considerably due to the severity of symptoms and level of functioning (Mesibov & Shea, 2005). These within-individual variables can have a significant effect on determining each child's needs and the difficulties they will face in the education system (Jordan, 2005).

Including Children with ASD in Mainstream Education

Consistent with the principle of normalisation, children and adolescents with ASD are increasingly integrated into mainstream classes with their 'typically' developing peers (Eaves & Ho, 1997). The general purpose of inclusion is to create a life that is both satisfying and successful for the person with a disability (Renzaglia, Karvonen, Drasgow, & Stoxen, 2003). Unfortunately in education, the move to inclusion was made without any empirical evidence, and to date significant debate continues over the efficacy and appropriateness of recommending students with ASD to be placed in mainstream education settings (Jordan, 2005; Simpson et al., 2003).

Teachers. With an increase of children with special needs in their classrooms, general education teachers frequently report feelings of frustration. This has mainly been attributed to the insufficient resources and lack of professional education and training they receive (Starr et al., 2001). In particular, in comparison to any other group of learners, the unique cognitive profile and preferred learning style of students with ASD has provided the greatest challenge to teacher's professional assumptions about teaching and learning (Jordan, 2005). Unfortunately, while there is a considerable body of knowledge on effective teaching

strategies for this disability group, many teachers are unaware of what they are or how to implement them (Scheuermann, Webber, Boutot, & Goodwin, 2003). In addition, teachers often feel perplexed by, and often misunderstand, the many manifestations of behaviour seen in children with ASD (Starr et al., 2001).

Teachers often have difficulty recognizing that the behaviour of high functioning students with ASD is related to their disability (Jordan, 2005). These students often present with articulate speech and in-depth knowledge about certain topics of interest, yet are frequently deficient in basic social communication (Attwood, 2006). Teachers are however aware of their need for training in the area of autism, and in fact, they have rated it as the highest priority in their future training needs (Arick, Falco, & Brazeau, 1989). The necessity for teachers to understand ASD has become urgent in education (Starr et al., 2001), as indeed, without a proficient comprehension of ASD it is unlikely that the social, emotional and educational needs of the child can be adequately met (Jordan, 2005).

Students with ASD. There exists growing concern about the educational experiences of these students in mainstream classrooms (Humphrey & Lewis, 2008). The limited research on this topic asserts that school is a stressful and anxiety-provoking place for children and adolescents with ASD (Carrington & Graham, 2001; Humphrey & Lewis, 2008). In addition, adequate educational support may prove difficult to obtain, particularly for high-functioning students whose cognitive strengths may mask other fundamental deficits (Carrington & Graham, 2001).

One purpose of inclusive education is to provide children with ASD the opportunity to model appropriate behaviour and develop social and communication skills. However, guidelines for facilitating social interaction for these students are yet to be defined (Simpson et al., 2003), and simply placing them alongside their neurotypical peers is unlikely to result in imitation and interaction (Eaves & Ho, 1997). In fact, in one study, parents reported only

5% of their children with ASD to have “peer friends” (Eaves & Ho, 1997). In addition to social isolation and loneliness being common for these children at school, bullying is also a frequent occurrence (Attwood, 2006; Humphrey & Lewis, 2008). In a recent study of over 400 children and adolescents with Asperger’s disorder, Little (2002) found bullying to be four times higher than for their peers. However, it is not only within the peer circle that these children are shunned, children with ASD are on average 20 times more likely to be excluded from school than their peers (Barnard, Prior, & Potter, 2000).

Cognitive theories of ASD: How they relate to education.

Three key cognitive theories of autism may assist in explaining the social, communication and behavioural challenges for these children in school settings (Frith & Happe, 2004). Demonstrating cognitive deficits in Theory of Mind (inferring the thoughts of others), individuals with ASD often fail to understand the motives that underlie human action, and have difficulty understanding communication, and navigating social relationships. As such, classroom learning can prove problematic for the child with ASD (Baron-Cohen, 1989). The impact of the theory of weak central coherence may be that the store of information and knowledge built up in a detail-focused mind may be very different from that of a typical child, leading to very different comprehension and learning. Socially, in noticing details that others miss, and having prescribed interests, the child with ASD is likely to increasingly diverge from his or her peers (Frith & Happe, 2004). In the case of the third cognitive model, executive dysfunction, associated with an inability to shift between activities or mental states and planning, clearly impacts on learning in the classroom. Working memory, the ability to store and perform mental operations, is nearly always affected in ASD, and is of most significance in teaching and learning (Jordan, 2005). These theories combined may assist in understanding why the classroom can be a challenging place

for the child with ASD, and the barriers that interfere with their ability to thrive in education settings (Humphrey & Lewis, 2008).

Parents. A number of studies have reported parental dissatisfaction and frustration with school-based services (Spann, Kohler, & Soenksen, 2003; Starr et al., 2001). Specifically, the lack of individualised attention their children receive at school is of greatest concern (Stoner, Bock, Thompson, & Angell, 2005). For example, a study by Spann et al. (2003) found that nearly half of the parents of children with ASD interviewed, believed that schools were doing little or nothing in addressing their child's most pressing needs. More than half of parents with older children (between 10 and 14 years) stated that nobody had ever asked them what their priorities for their child were (for example, vocational, social and communication skills), with many families reporting conflicts on a variety of issues (e.g., how to manage a behaviour problem). A study by Starr et al. (2001) of 69 parents revealed numerous concerns regarding educators understanding of ASD, as well as in the planning and programming for their children within the general education setting. Such concerns certainly highlight the need for identification and implementation of effective teaching strategies (Jordan, 2005).

Home Education

In an attempt to attend to the individual needs of the child and possibly to regain an element of control and governance in their child's education (Duffey, 2002; McDowell, 2000), research conducted in the United States of America, and more recently Australia, indicates that many parents of children with disabilities are turning to an alternative teaching method, namely home education (Duvall, Delquadri, Ward, & Greenwood, 1997; Reilly, Chapman, & O'Donoghue, 2002). The move to home education is often driven by parents belief that their child is not receiving one-on-one instruction and support within the school environment (Duffey, 2002). Furthermore, parents are aware that teaching strategies do not

correspond with the manner in which their child learns (Ensign, 2000), and that home education will better meet the child's learning needs (Barratt-Peacock, 2003). In home education the parent(s), facilitate their child's learning, usually from a home base, and assume primary responsibility for their child's educational programme (Jacob, 1991).

With a remarkable annual growth rate between 20 to 30 percent in Australia (McNiece, 2001) home education is an attractive option for many parents. While not all families choose to register with their state Department of Education, home education is legally recognised in every state of Australia (Reilly et al., 2002). Academically, research both overseas and within Australia, has found that home educated students repeatedly outperform their classroom-schooled peers (Medlin, 2000; Ray, 1997; Thomas, 1998). Once they graduate from high school, home educators closely parallel their public school counterparts, whether they pursue more formal education or enter the job market (Ray, 1997; Webb, 1989). In terms of socialisation, research has documented home educated students to be socially and emotionally well-adjusted with a healthy self-esteem (Barratt-Peacock, 1997; Thomas, 1998) and self-concept (Taylor, 1986).

Amongst the growth of literature on home education has been the small development of research examining the home education of children with special needs (Duffey, 2002; Duvall et al., 1997; Ensign, 2000; Reilly et al., 2002). Initially concern existed over parents lacking special needs teacher training. These concerns however were soon overridden when home educated students with special needs were found to experience greater academic success than their similarly disabled peers who attend public schools (Duvall et al., 1997). In this study, home educated students engaged in academic activity two and a half times as often as public school students, and demonstrated more progress in reading and written language, with equal gains in math. The researchers signified that even parents who had not been trained in special education provided powerful instructional environments at home. Duffey

(2002) found, that for parents, home education became the solution to their life's challenges, and it enabled them to 'get their child back' and keep their family together (Duffey, 2002, p. 10). This affirms McDowell's (2000) findings where mothers perceive home education to have a positive impact on both themselves and their families. Mothers in this study also reported their two main stressors to be housework and concerns over whether their children were learning what they should be. In addition, mothers who felt forced to home educate tended to have a more negative view of home education.

To date, the only Australian study on home educating children with disabilities was conducted by Reilly et al. (2002). In this study, Western Australian parents revealed their decisions to home educate were primarily concerned with the negative socialisation their children encountered in schools, the lack of academic progress made and, the schools inability to understand their child's academic and social capabilities, or the nature of their child's disability. Consistent among all parents using this educative method, and in confirmation of Duffey's (2002) findings, was the benefit of flexibility and one-on-one teaching which enabled their children's particular learning needs to be addressed, and consequently enhanced the social and academic progress achieved by the child. Parents in Reilly's et al. study however did report their dissatisfaction with the lack of teaching resources and funding available in educating their children at home.

While limited research on children with special needs and home education has included families with children with ASD (e.g., Reilly et al., 2002), currently there are no studies examining this phenomenon specifically. It has been recommended by Duffey (2002) that future research on home educating children with special needs be narrowed to a specific disability group. She believes that the question of whether children with ASD learn more effectively in a home education setting compared to a school setting, for example, could then be answered. In addition, she purports that the frequently asked question about adequate

socialisation could also be answered if the population of a specific special education category is investigated.

The Present Study

The atmosphere of success and acceptance of home education as an educational practice has given rise to the number of parents withdrawing their children with special needs from mainstream schools to educate them at home (Duffey, 1999). Home schooling research indicates the home education of children with special needs as a favourable educative alternative, particularly in relation to flexibility, academic achievement and socialisation (Duvall et al., 1997; Reilly et al., 2002). With the growth in literature pertaining to the challenge that mainstream teachers are experiencing in attempting to meet the needs of their students with ASD (Starr et al., 2001), it is possible that literature acquired from home educating mothers could inform the psychological literature by providing a more comprehensive understanding of the challenges and needs of children with ASD relating to learning and education (Duffey, 2002). Such knowledge would compliment the perspectives obtained from psychological and educational literature based on the educational experience of children with ASD in schools.

A qualitative perspective exploring the experience of mothers educating their children with ASD at home, who presently have had no voice in the psychological literature, is paramount to gain insight into this educational alternative. While home education is acknowledged as one educative choice, the perspectives of women who choose this alternative option can be useful in assisting other parents, through education and experience, to consider and enrol in what may well be an empowering, positive and successful educational path for themselves and their children with ASD. Therefore, for the purpose of the present study the research question was: What is the experience of women home educating a child with autism spectrum disorder?

Method

Research Design

More recently qualitative analysis has been employed to clarify the personal narratives of parents of children with ASD (Midence & O'Neill, 1999). Fleischmann (2005) reports qualitative methodology to be effective in disclosing the personal perspectives of parents of children with autism, whilst Pugach (2001) suggests that such methods are most suited to learning about the processes and attitudes of special populations as it provides a vehicle for purposefully hearing the voices of those who have not been heard before. Accordingly, employing qualitative content analysis methodology, the present study, which is exploratory in nature and idiographic in approach, aimed to provide a local groundedness and richness in the data through exploring the experience of mothers home educating their child, or children, with ASD (Miles & Huberman, 1994).

Participants

In order for saturation to occur thus generating an adequacy of data and a comprehensiveness of the results (Rubin & Rubin, 2005), 10 parents who are home educating a child diagnosed with ASD participated in this study. Whilst it was recognised that there are differences in the presentation of disabilities within the autism spectrum of disorders it was decided that parents of children with different degrees of ASD be included in order to maximise participants. Participants were recruited through two Perth ASD home schooling email support groups and through the Home Based Learning Network (HBLN) newsletter. To be included in the study parents needed to be home educating a school-age child in Perth, Western Australia, who had a diagnosis of an Autism Spectrum Disorder (Autism, Asperger's Disorder or PDD-NOS). Whilst it was acknowledged that fathers often play an important

role in home education, all participants in this study were mothers and their mean age was 42 years and ranged from 37 to 46 years of age. Eight of the mothers had children diagnosed with autism and two of the mothers had a child diagnosed with Asperger's Disorder. Only one child of all the participants was diagnosed with a borderline intellectual disability, the remaining children had not been diagnosed with any intellectual disability however some had co-occurring speech difficulties or ADHD. One mother was home educating two children with autism and another mother had two children with ASD however, was only home educating one of them. Four of the mothers additionally home educated other children who were not diagnosed with ASD. The age of the participants' children with ASD ranged from 8 to 14 years (mean age of 10 years). Further demographic data is provided in Table 1 (Appendix G). To protect the identity of mothers and their children, pseudonyms have been utilised. Participation in the study was voluntary and no payment or reward was offered.

Materials

A tape recorder was used to record interviews. A demographic sheet (see Appendix A) was employed to obtain the following information, child's diagnosis, history of child's treatment and interventions. An information sheet (Appendix B) which outlined the details of the study and addressed issues such as confidentiality was also provided. A consent form (Appendix C) was signed by the participants once they agreed to partake in the study.

Data Collection

Semi-structured interviews were formulated utilising questions designed to elicit a rich description of the participant's experience. Three questions were formulated to guide the semi structured interview (Appendix D). Initial questions were broad to avoid bias on behalf of the researcher. Further questions funnelled down to more specific areas allowing for more in depth analyses of the topic (Smith, 1995). Although the interviews were guided by the

question format to assist in confirmability, the structure of the interview was deliberately flexible to accommodate new information and to adapt to the actual experiences of the individual participants (Rubin & Rubin, 2005). Prior to conducting interviews, the research questions were scrutinised by independent persons (two mothers who each have a child with Attention Deficit Hyperactivity Disorder that they have home educated) to assess face validity and suitability of the interview schedule. The interview questions were deemed appropriate and were not changed.

Procedure

Following approval from the Faculty of Computing, Health and Science Ethics Committee, eight participants were recruited via an advertisement (Appendix F) in the Home Based Learning Network (HBLN) newsletter or on local home education email groups. Two participants were recruited via snowballing techniques. On receipt of expression of interest from participants an interview time was arranged. Upon meeting, the potential participant reviewed the information letter (Appendix B) and was given the opportunity to ask any questions before deciding whether to participate in the study. All participants decided to take part in the study and consequently were asked to read and sign the consent form (Appendix C) and answer a number of demographic questions (Appendix A). The interviews lasted approximately 45 minutes and were audio taped.

During the interviews open-ended and flexible questions were used to elicit participant's views, understandings, experiences and opinions (Byrne, 2004). The researcher was sensitive of her positionality, that is, her own bias when interviewing participants, as similar to the participants she home educates her own child with autism (Marshall & Rossman, 2006). It is of the researcher's opinion that rapport was enhanced as participants inquired about the researcher's experience. The researcher conducted all ten interviews. It was decided not to take notes during the interview, thus attempting to address the power

dynamic by conducting research 'with' the participant rather than 'on' the participant (Letherby, 2003). The reduction of researcher effects by addressing similarity issues, having one researcher to conduct interviews and power dynamics in conjunction with supervisory debriefing after interviews assisted in the confirmability of the interview data (Breakwell, 1995).

At the conclusion of the interview each participant was thanked, and given the opportunity to ask questions about the process of the project. Participants were also given a list of support organisations (Appendix E), should they need them to assist in maintaining their well-being. Following each interview the researcher recorded reflections and impressions in a journal to assist in analysis.

Ethical considerations were rigidly adhered to throughout the process, including elimination of all identifying names and places in the data. In addition, pseudonyms replaced participant's names and the names of their children.

Data Analysis and Research Rigour

Interviews were analysed utilising an idiographic approach. The analysis began with the collection of data. The interviews were recorded and transcribed verbatim. Contact summary sheets (Miles & Huberman, 1994) were employed to ascertain the main concepts, themes, issues and reflections that arose from each interview. The analytic process then involved the interview transcripts being read a number of times in order to ensure insightful information was gathered (Smith, 1995). Thematic content analysis techniques were employed to analyse the data as outlined by Miles and Huberman (1994). Following their Flow Model, three major flows of analysis activity took place: data reduction, data display and conclusion drawing/verification. Processes employed here included code creation, clustering and identification of recurrent themes and issues. A reflective journal containing notes, ideas and reactions to the data collection and analysis process assisted in verification

by means of an audit trail as well as ensuring that any biases identified by the researcher were noted.

A triple column data display technique was utilised during the transcription process to record reflections and themes. In the left hand column impressions, personal bias and general thoughts were documented. The middle column consisted of the interview transcribed verbatim and the right column was used to record themes and sub themes that were elicited from reading through the text.

A question ordered matrix was employed to assist in data reduction (Miles & Huberman, 1994). The matrix columns were organised in order to allow the researcher to view participant responses to the interview questions. The columns represented participant responses while the rows represented each individual. The matrix provided a platform for the researcher to discover recurrent themes and issues. In using quotations, the salience and 'thickness' of such themes was illustrated, and the translation fidelity of participants' constructs verified (Miles & Huberman, 1994).

Categorisation of the data followed whereby significant words, phrases, sentences, and passages were underlined in each transcript to form categories of emergent themes (Cresswell, 2007). To protect against researcher bias and to assist in the verification of themes, the frequency of these codes was recorded to signify themes (Miles & Huberman, 1994). The main themes and sub-themes representing the meaning underlying a group of codes were then derived (Creswell, 2007).

In meeting the need for confirmability and transferability a method of member checking as outlined by Miles and Huberman (1994) was conducted whereby the tentative findings were taken back to a small number of participants for respondent validation to ensure authenticity of the researchers' interpretations (Silverman, 1993). The method of triangulation was employed to minimise researcher bias and thus enhancing credibility of the

findings (Miles & Huberman, 1994). The researcher had her supervisor cross check the interpretations of the themes and issues to ensure their validity.

Findings and Interpretations

The aim of the present study was to explore the experiences of women who were home educating their child, or children, with ASD. A thematic content analysis demonstrated positive experiences on a number of levels, particularly the increase in children’s well-being, along with academic progress (addressing individual learning needs and flexibility in learning) and family strengthening. The challenging role of mother as educator, and the lack of support and resources, was also established. Three major themes, each incorporating three subthemes, emerged from the data (See Table 2).

Table 2

Themes and Sub-themes of Mother’s Experience of Home Educating the Child with ASD

Themes	Sub Themes
School Experience	Cognitive Challenges
	Anxiety/Stress
	Teacher’s Understanding of Autism
Coming Home	Increased Well-Being
	Individual Learning Needs Met
	Flexibility
Mother’s Experience as Educator	Multi-Roles
	Support

School Experience

Consistent with the findings of Duffey (2002) and Reilly et al. (2002) relating to the reasons parents decide to home educate their children with special needs, all participants in the present study discussed the experiences their children had at school and attributed these to their decision to educate their child or children at home. Three main sub-themes arose here. Firstly, cognitive and educational challenges were not adequately addressed by the school. Secondly, children experienced stress and anxiety as a result of circumstances that occurred at school. And thirdly, the lack of understanding that educators had in relation to ASD.

Cognitive Challenges. The literature suggests that children with ASD process information differently in comparison to their neurotypical peers and therefore may benefit from alternative teaching practices than those offered in general education settings (Frith & Happe, 2004). In accordance with the research (Jordan, 2005), cognitive challenges or learning needs not being adequately addressed in school was the most frequently mentioned reason by mothers for deciding to home educate their child. Eight out of ten mothers discussed the atypical learning style of their child and the difficulty that they perceived the schools had in modifying the curriculum to meet the child's needs. In the words of Sally:

Yep they refused or were unable to modify the curriculum to suit the needs of an autistic child, um they say on an ad hoc basis they have some success with it but they don't because the kids learn by rote, computer, most of them want to work on a computer and work has to be closed sort of questions, any concept of imaginative work is really difficult for them... so when you ask someone to modify it they simplify it, they don't modify it.

Five of the mothers commented on their child 'falling through the cracks' or failing to progress academically. This may be attributable to the Theory of Mind whereby children with ASD have shown to experience substantial deficits in social communication and thus may be left behind academically (Baron-Cohen, 1989). Deficits in executive function such as working memory, planning and organisation, and abstract thinking, may additionally contribute to an inability to keep up with academic progress within the classroom (Frith & Happe, 2004). Dana gave an example of her 14 year old son with high-functioning autism, upon withdrawing him from school:

He couldn't write to save himself. To get something on paper was like trying to pull teeth. It would take hours to get a page of writing that he'd tell you, and that you'd transcribe for him.

In agreement with the literature (Frith & Happe, 2004; Jordan, 2005), participants reported that because of their child's uneven cognitive profile, teachers would expect their child to understand or learn more than they were capable of. Dawn articulated:

Because he could do certain things in academics, they expected more out of him...

In concurrence with the cognitive theory of executive dysfunction, the behavioural inflexibility of these children was often not catered for in the classroom. Dawn gave an example of her child with ASD having difficulty moving from one task to another:

...they didn't use a lot of visuals for him to tell him what was coming up next. Um, like he might be on the computer and if (he had) his regular aid, Christina, she'd say, "Luke you'll have a time of five minutes and you've got to stop that and come back to your worksheets". Whereas the other teacher would just (say), "Luke you've got to stop" and not give him a warning, and just turn the computer off on him while he is in the middle of something. So he always needs to finish what he's doing, so they would

turn it off, so he would sit there and start screaming and throw himself on the floor and having a tantrum....

Anxiety/Stress. The experience of school has been documented as being a source of anxiety and stress for the child with ASD (Carrington & Graham, 2001; Humphrey & Lewis, 2008). Likewise, in the current study, nine of the ten mothers reported stress and anxiety as being major factors in withdrawing their child or children from school. In fact, two mothers were advised by psychologists to remove their children from school due to the level of anxiety the child was experiencing. Dana explains:

I guess for me I got into it because I was forced into it, it wasn't something that I did by choice, um my son was so distressed with massive breaches of the Disability Discrimination Act that the paediatrician recommend that he homeschool. Accordingly the psychs recommended that he never return to school, um so when I started homeschooling I was dealing with a really, really distressed boy, um, melting down left right and centre.

Prior to withdrawing their child from school, mothers discussed a common phenomenon, a stress reaction that their child experienced at the end of their school day. Nine out of ten mothers discussed how their child would come home from school and 'melt down'.

Many attributed this reaction to the child 'holding it together' whilst at school, Sally describes:

... sometimes he'd come home from school and after he'd yelled and screamed and threw his bag and punched me he'd then go to bed and cry himself to sleep and sleep for 2 to 3 hours. And that often happened every day.

Not surprisingly, in addition to the child's anxiety, mothers also reported the stress that they felt in response to the child's school experience. Dana stated:

Yeah, massively, massively distressful because especially when the vast majority of people that you deal with him at school are nice people. They are not horrible, they are not out to intentionally cause hurt, but you just want to bang their heads against a brick wall and say....you bloody idiot, how could you do this again, and again and again. So, I don't have to deal with that, that's a huge reduction in stress.

Dawn stated:

...sort of like crying and stressed all the time, you know, but I'd be crying....saying I don't know what I'm going to do anymore, where is he going to go, you know, is he going to get, like, tall and bigger and hit me...

The affect on the whole family was apparent in Dawn's account:

Very stressful for the whole family. I dreaded having to go to school to pick him up because I knew he'd be angry, and even in the car... So his brothers didn't want to come and like ... I'd pick Simon up from high school first and then get Tim and John, but he didn't want to go there and get John because he'd be embarrassed, and it got too...it was too frustrating.

In some children the anxiety and stress was caused by bullying. In fact, six of the ten mothers reported that their child was subjected to bullying at school. These findings support those by Little (2002) who reported that a high percentage of children with Asperger's Disorder are bullied. Participants in this study certainly attributed bullying to one of their reasons in deciding to home educate. Dana explains:

So um he was chased by a year 11 student swinging an iron support, chased through the school ground... in primary school he was ... repeatedly called retarded, that, he's copped his whole school life, to be called retarded. In high school he was hit by a coin that must have been shot from a sling-shot because it hit him so hard it cut the skin from his ear, but they never found his attacker. ... I'm still fighting the pain and

anguish from that, um, but the bullying at school led to the pain and anguish that he currently suffers...

Another experience was described by Linda:

...bullying started rearing its ugly head...so much so that I did actually come upon three boys; two were holding him down while the other kicked him. It was the worst day of my life...

In addition, two of the ten mothers reported that their child engaged in self-harm and attributed this to the stress and anxiety encountered at school. Dawn explained:

He was frustrated and stressed and was starting to bite himself and self injure...

Teacher's Understanding of Autism. Many participants felt that their children's teachers and other education professionals they dealt with while their child was at school did not really understand ASD and therefore were unable to implement appropriate strategies that were needed to make the education placement successful. These findings correspond with the literature that highlights that many teachers are perplexed by ASD (Starr et al., 2001). Consistent with Scheuermann's et al. (2003) research, many mothers found that when strategies were developed they were not implemented properly or consistently, and they believed this to be detrimental to their child's learning. This particular concern was discussed by Sally and initiated her decision to home educate her son:

Because he was having meltdowns all the time and because they weren't managing his environment or modifying the curriculum to suit his needs, they were still trying to get him to write with a pencil, still trying to get him to play football games, still trying to get him to accept relief teachers without prior warning. All the things that set them off they

continued to do and they had a behaviour management plan and there were consequences for his bad behaviour but they were not willing to change and it was always like, we'll cure him of this by giving him a string of consequences or punishing him... it makes no sense to Alex, it doesn't make any sense, he gets angry and upset because something doesn't work for him, for his brain, punishing him for that, he doesn't really even know why he's been punished.

Therefore whilst there were several reasons given by participants that led to their decisions to home educate their children, many revolved around the major themes of their child's educational needs being unmet, stress and anxiety experienced by the child, and a lack of understanding of autism by educators.

Coming Home

Increased Well-Being. Research on home education has found home educated students to demonstrate a healthy self esteem (Barrett-Peacock, 1991) and self concept (Taylor, 1986). Similar to these findings, the majority of mothers in this study asserted that their child experienced less stress and anxiety once they were home educated. Many mothers reported that their child additionally demonstrated an increase in confidence and social skills, as well as feelings of happiness. For example, in discussing her son's well-being, Sally asserted:

...anxiety is less because he's at home...not being bullied...he's happier at home.

Sondra discussed her son's well-being in comparison to the self harm he exhibited when he was attending school:

Um self harm was an issue, he used to hit himself in the head ... that's a behaviour that's completely gone now... He's heaps less stressed...I mean he comes up to me all the time and just gives me a hug and goes, I just love you mum you know and I'm like well I just love you too matey, you know so he's really, he's happy.

Since home educating her son, Linda stated:

It's just a really happy, thriving boy who...has left a lot of autistic traits behind...

An increase in confidence was apparent in many of the children after beginning home education. Linda continues to describe the changes in her son:

Yes, well we've just seen him blossom...I knew that we could do better than school in terms of his academic progress but to see him blossom as a person, that's come as a big surprise.

A by product of demonstrating an increased well-being may be an increase in social skills. Certainly home educated students have generally been documented in the literature as being socially well-adjusted (Barratt-Peacock, 1991; Thomas, 1998). The improvement in social skills once home educated was found by Duffey (2002), similarly, a number of mothers in this study discussed the development in their own child's social skills. Dana asserts:

I was astounded at how much better his social skills were within weeks of leaving school. That just astounded me, um, everybody said that these kids have got to be at school for them to learn social skills, to be able to get on with other people, and my experience is that this is a load of hogwash.

Individual Learning Needs Met. The mother's ability to meet their child's learning needs at home was the most frequently mentioned issue in all interviews. Consistent with the findings of Duvall et al. (1997) and Reilly et al. (2002), all participants discussed the ability they have in being able to provide their child with an education that is suited to the way in which they learn. In addition, mothers discussed their ability to control their child's environment in order to enable learning to take place. Kelly describes:

We've been able to reduce a lot of the issues that were preventing them from learning...

The progress mothers have observed in the amount of work their children accomplish now that they are home educated, combined with academic growth, fits with current literature

whereby children with special needs have made academic gains alongside and above their school-educated peers (Duvall et al., 1997). Sally states:

The amount of work that I've been able to get him to do...the volume of work I've been able to get him to do is substantial compared to what he ever did at school.

And Dana, who earlier discussed the extensive challenges her 14 year old son had in writing when he initially commenced home education, expressed:

I taught him how to type...and so he's now written about five books.

Consistent with the findings of Duvall et al. (1997) the mothers in this study reported improvements in academic progress.

Flexibility. The ability to incorporate flexibility and solitude time was seen as an important benefit to participants, in terms of well-being and in terms of learning. With respect to flexibility and well-being, taking time out (solitary time), throughout the day or week was regarded as important. Gale explains:

...if I see that that he's getting stressed, I can send him off, and he can have his downtime, which they don't get at school

Likewise, Kelly has found her children with ASD need breaks in between formal learning:

... You know we'll do something and they'll go up and swing in their hammocks and their hammock chairs or bounce on the trampoline, um we have lots of breaks...

Secondly, mothers reported that they were able to be flexible in resourcing learning material that met the individual learning needs of their child. For example, if one type of learning material was not working then a more suitable resource was obtained. This however, was a challenge for some mothers. Gale stated:

Um, I think the biggest challenge is, apart from keeping him focused, is um getting material which will keep him engaged.

Kelly explained that resourcing appropriate learning resources takes time:

...I have to do a lot of research on what will work with them...that is time consuming.

While some challenges presented themselves to mothers in terms of resource allocation and child compliancy, the reported benefits of home education as perceived by mothers— increased well-being, individual learning needs met, along with academic progress and flexibility in learning, were certainly common.

Mother's Experience as Educator

Research has documented that the major stressors for mothers who home educate their children are related to the dual roles of housework and educating, with concerns about their children learning what they need to be learning (McDowell, 2000). While these findings have been observed in home education literature generally, they were also observed in this study. Many participants in the present study discussed their multifaceted role, as well as concerns over their child's future academic outcomes.

Multi-roles. The majority of participants highlighted the juggling of roles required of them. For example, as illustrated by Kelly:

...trying to marry home schooling and all the other things that I'm supposed to be doing as mother, cook, laundress, blah, blah cleaner...

Additionally Sally stated:

...it's tough on me to both have to manage and teach him to manage his anxiety, manage his disability, look after him as a mother and educate him, that's one hell of a job...

Support. Support or lack thereof, was expressed in terms of educational support, social support and financial support. Whilst some participants said that they did not need educational support to help them with home education, others had tried fervently to attain it,

often to no avail. Interestingly, those that felt they needed the support more were the mothers that felt they were not given a choice to home educate. Dana explains:

... Looking at it from a teaching point of view. If you are a teacher in a school, at recess and at lunchtime you get together with the other teachers and can say, 'I'm having a problem here' or 'where could I find'. So there is a huge amount of support in the school situation that you don't have as a homeschooler... I've needed it, it's not available. Um, I need it now. I keep ringing up and saying 'help me, help me'

Not only did there not seem to be any effective help in terms of educative support for the mothers, but social support, such as home schooling groups, were also a challenging resource to become part of, with some mothers attributing this to having a child with ASD. For example, Gale perceived that the home education community would be more accepting of a child with ASD:

I've been a bit naïve, I think...assuming that the homeschooling community would be different to the overall community. It's not, it's exactly the same, in fact, it's worse.

Similarly Sally commented:

I want support, I need support but it's finding it. I know there are homeschooling groups. Liam has such social problems that he would be uncomfortable and disruptive and the other parents may not be accepting of him.

For some mothers, a lack of support meant that they were unable to have time away from their children. Certainly it may be that time out for mothers who home educate their child with ASD is more difficult to attain than for home educating mothers generally. This may be due to the high needs their child presents with, as well as the child's need for familiarity of caregivers. Dana stated:

I have no time out. ...I can't use respite because my kids can't tolerate strangers in the house, and I have no partner to support me...

Of interest, not all mothers voiced needing time away or 'time out' from their child. In fact, mothers that felt they had no choice but to home educate their child voiced needing more support in comparison to mothers who felt they had chosen this educative alternative. Certainly for the majority of mothers, the stressor of keeping the house clean whilst simultaneously home educating was more common.

In addition, many participants commented on the lack of financial assistance available for home educating families, an assertion supported by Reilly et al. (2002). Dana states in regards to the financial outlay for home educating:

Huge, huge financial costs...

Attitude/perspective. There seemed to be two types of attitudes toward home education, and these tended to relate to whether the mother had chosen to home educate her child or whether she had been told or advised to by a health professional. Consistent with McDowell's (2000) finding, mothers who felt 'forced' into home education viewed the experience in a more negative way. It may well be, as purported by McDowell, that for mothers in this study who perceived a lack of control in educating their child, experienced a loss of power and were resistant to their role as educator. Sally states:

It's hard for me because I don't want to be at home.

Dana expressed how her life could have been:

...but it's also a lot more pressure on me...I could have had a life and had a job, or completed my studies...

Eight of the ten mothers however felt positive about home educating their child or children. These women felt they had made the decision to home educate their child and as such expressed an emergent sense of power and control over their situation compared to when their child attended school. This finding, which reflects Duffey's (2002) research, was evident for Linda:

I think it's more than what I thought. When people say "Oh it must be so hard" I go "No it's a piece of cake compared to the futile fights I was wasting my time on with school". I've realised I've done a 360 degree and all that effort has been put into something so positive, I think it's more than I could ever have hoped for.

Some mother's have constructed the home education experience to be a personal journey for them. This was depicted by Kelly:

...it's actually learning about ourselves and what we're capable of and what we're not capable of, looking at our strengths and our weaknesses and how then we can use that for our kids and that's what I think home schooling is all about.

To Marilyn home educating is clearly her job:

I suppose that's it, it's my full time job. I am a teacher. I am an educator. So it is my full time job. That's exactly how it is.

For a number of mothers, one of the outcomes of home education has been the strengthening of family bonds. This was discussed by Duffey (2002) who reported that mothers were able to 'get their child back' and keep their family together (p.10). Dawn explains how it has affected her relationship with her son:

It's spending that time and I think just getting that closeness back with your child too ... Sometimes I felt that that was being lost a bit too.

And the effect on her family:

The whole family is a lot happier, with the family like a unit as well.

Overall here, if mother's felt they had control over the decision to home educate their child they were quite positive about the experience, and often about their own journey, as well as their role as educator. Families too were seen to be strengthened through the experience of home education.

The responses gained from the current study appear to be consistent with the literature on home education and special needs as described by Duvall et al. (1997) and Reilly et al. (2002). Reasons for deciding to educate their children with ASD and the ability to specifically address their children's learning needs in a flexible manner reflect current literature pertaining to children with special needs. Participants in this study believed their children had made substantial academic progress since being home educated which reflects the findings of Duvall et al. (1997). The extensive stress and anxiety experienced by the participant's children whilst attending school is in accordance of Carrington and Graham's (2001) findings. The increase in well-being experienced since being home educated may well be a new and important finding in this area of research. Likewise, for many mothers, stress levels were seen to decrease once they began home educating their child with ASD, and family bonds were often strengthened. In addition, certain factors, such as perceived choice in home educating and level of support, influenced how mothers viewed their role as educator, a finding previously reported by McDowell (2000).

Conclusions

The purpose of the present study was to explore the experiences of mothers who are home educating their child, or children, with ASD. Utilising an idiographic approach, it was found that the experience of home education was extremely positive for the majority of women in this study, and was for many mothers, related to their child's progress, in terms of learning and well-being. Reasons for mothers deciding to home educate were compatible

with previous research on mothers home educating children with special needs (Duffey, 2002; Reilly et al., 2002). Namely, schools failing to address their children's different learning needs, children lacking individualised attention, and teachers failing to understand the nature of their child's disability. Mothers in this study additionally reported that the school environment was a considerable source of anxiety for their child, a finding which is congruent with the growing research on ASD and inclusive schooling (Carrington & Graham, 2001; Humphrey & Lewis, 2008). Furthermore, and consistent with Spann et al. (2003), it was not unusual for mothers to report their own feelings of stress as a result of the difficulties their child experienced at school. Since the stress of the child was often carried over into the home, it was not unusual for the entire family to be negatively impacted by their child's needs being unmet at school.

The most important finding appeared to be related to the increase in well-being that mothers observed in their child with ASD once home educated. Mothers also reported an improvement in their child's confidence and social skills, which lends support to general home education research (Jacob, 1991; Thomas, 1998). Duffey's (2002) question of whether home education provides adequate socialisation for this specific group of students may therefore be answered in the current study, and is an unanticipated finding considering children with ASD present with numerous challenges in the area of socialisation (Eaves & Ho, 1997). It may be that a reduction in anxiety is related to an increase in social ability.

While much of the satisfaction associated with home educating appeared to be related to their children's increased well-being, additionally notable were mothers reporting a considerable decline in their own stress levels. Moreover, and consistent with Duffey's (2002) findings, the majority of mothers expressed greater connectedness with their child with ASD as well as an increase in family strengthening. This may possibly be linked to the reduction of stress in the family as well as an increase in time spent together.

Similar to previous home education research, mothers in this study perceived their children to demonstrate academic progress since being educated at home (Barratt-Peacock, 2003; Duvall et al., 1997). This progress was determined by the use of individualised tuition, modified teaching strategies and flexibility, and frequently contributed to the mother's fulfilment with the process and ongoing outcomes of home education. Inconsistent with this finding, however, were mothers who felt they did not have choice in home educating their child. These mothers, whilst very satisfied with their child's academic progress and increased well-being since commencing home education, perceived their role as home educator in a more negative way and tended to resent it. This could possibly be attributed to the feeling of being 'forced' to home educate their child, and as a consequence, failing to perceive a sense of control in their situation, as previously found by McDowell (2000). These particular mothers also voiced the need for considerably more support. In comparison, mothers who felt they had chosen their role often constructed their identity around it, and for these mothers a sense of empowerment was apparent. Here, exerting control over their child's education may certainly attribute to their positive outlook in regards to their role as home educator.

Limitations of the Study

While qualitative research is useful for topics that are exploratory in order to avoid inaccurate assumptions, it does limit the generalisability of the sample to the larger population. In addition, the volunteer sampling technique may have limited the findings of this study through potential self-selection bias (Liamputtong & Ezzy, 2005). The non random sampling method of recruiting participants via advertisements may attribute to a sampling bias, however considering the differing perspectives of mothers in relation to their home education role it may well be that these participants were in fact, an accurate representation of this particular population.

Implications

The research described in this study has valuable implications for practice and intervention deriving from the analysis of mothers' reports on home educating their child with ASD. This research has provided insight from 10 home educating mothers whose experience with their child's educational journey may or may not be typical of the larger population of students with ASD. However, the commonalities of these findings with those from related studies, suggest that they are (for example, Carrington & Graham, 2001, Reilly et al., 2002). First, it can be suggested that educational practices need to be addressed for this group of children considering the emergent growth of families who are home educating children with special needs. Second, the findings contribute towards the understanding teachers and educational professionals require to effectively provide optimum learning environments for children with ASD through recognising the cognitive and psychological needs of these children. Third, knowledge gained from this study can assist parents in becoming aware of this educative alternative, and additionally can assist them in deciding whether to home educate. And finally, given that mothers report home education to be a positive experience for the child with ASD, with the possibility of increasing well-being and academic performance, an opportunity of empowerment for the mother, and a strengthening of family relationships, imparting this information to health professionals working in the autism field may be especially helpful.

Future Research

The present study has addressed the gap in the psychological and educational research concerning the home education of children with ASD. Future research could employ a mixed method design incorporating both qualitative and quantitative methodology in order to allow for generalisation. Indeed this study provides a conceptual framework to guide a more detailed exploration of home educating children with ASD and suggests a platform for the

cognitive theories of ASD to be investigated in relation to their impact on learning and education. Whilst the perspective of the mother has been extremely insightful, the perspectives of children and adolescents with ASD who are home educated could provide additional information to be better able to isolate the characteristics of home education that are seen to lead to positive outcomes for these children.

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Appendix A

Demographic Sheet

(Researcher to ask participant these questions prior to interview)

First Name:.....

Age:.....

Area of Perth you reside in:.....

Relationship status:.....

Number of children:.....

Age of child with ASD:.....

Exact diagnosis of child with ASD:.....

Age when child was diagnosed:.....

Length of time home educating child with ASD:.....

History of intervention and therapy services child has
received:.....

.....

.....

.....

Is your child receiving any current intervention/therapy?

Please provide details:.....

.....

.....

.....

Appendix B

Information Sheet - Invitation to Participate in Research

Dear Potential Participant

This research is part of the fourth year Psychology (Honours) student programme at Edith Cowan University and complies with the guidelines provided by the Edith Cowan Faculty of Computing, Health and Science Ethics Committee for the conduct of Ethical Research.

To be included in this study you must be a parent home educating a child with an Autism Spectrum Disorder.

For this research I will be interviewing participants about their experiences of home educating their child with ASD. You will be encouraged to reflect on why you chose this method of educating your child, and how you believe your child has responded to this method of education. The interview will take approximately 45 minutes of your time and will be tape recorded for later transcription. The format will be more like a conversation than a question and answer session. I am interested in everything you have to say about this topic, and please be assured that there are no right and wrong answers.

Participation is entirely voluntary and you are free to withdraw (without prejudice) at any time you wish, in which case the data will be removed from the study. Names will not be documented with interview material at any stage and any information will be held in strict confidence with all identifying information being omitted from the finished work. After the interview has been transcribed, the tape will be erased. At the end of the year a report of the results will be made available to participants upon request.

Any questions regarding my research may be directed to myself on (08) 9304 3578 or my supervisor, Dr Elizabeth Kaczmarek in the School of Psychology, Edith Cowan University, Joondalup Campus, on (08) 6304 5193. Alternatively if you wish to contact someone not connected with the study, please contact the 4th year Psychology Coordinator, Dr Dianne McKillop on (08) 6304 5736. If you would like to participate, please complete the attached form before commencing with the interview. Your input and participation in this project is greatly appreciated.

Thank you for your time.

Ms Theresa Kidd (Student Researcher) Date

B.A (Psych)

(This page is to be kept by participants)

Appendix C

Consent Form

Please read the following statements, and sign below if you agree to participate

- I have read and understood the information sheet
- I have been given the opportunity to ask any questions about the project and these have been answered to my satisfaction
- I understand that I am not obliged to participate in this study and I am free to withdraw at any time without prejudice
- I can refuse to answer any question without reason
- I understand that information gathered will be treated with confidentiality and that the research data gathered for this study may be published provided I am not identifiable
- I have the right to view the finished project

Participant signature_____ Date_____

Participant's first name_____

Contact telephone number_____

Researcher's signature_____ Date_____

Appendix D

Interview Schedule

- 1) Can you tell me about your experience of home educating a child with an autism spectrum disorder?
- 2) What led you to choose home education?
- 3) Is home educating what you thought it would be?

Prompts:

- Are there challenges?
 - What are the benefits?
 - Has anything taken you by surprise?
 - Have you needed support to help you with home educating?
 - Who has provided support?
-

Appendix E
Support Organisations

CarersWA

255 Walcott Street, North Perth WA 6006

Phone: (08) 9444 5922

1300 CARERS (227377)

24 hour Carer Counselling Line 1800 007 332

Email info@carerswa.asn.au

Kalparrin Centre (PMH)

Cnr Roberts Road and Thomas Street, Subiaco WA 6008

Ph: 08 9340 8094

Autism Association of Western Australia

37 Hay Street, Subiaco 6008

Telephone (08) 9489 8900

E-mail: autismwa@autism.org.au

Website: autismwa.org.au

Disability Services Commission

146-160 Colin Street, West Perth WA 6005

Ph: 1800 004 544 (Free Call)

<http://www.dsc.wa.gov.au>

Therapy Focus

Level 2, 161 Great Eastern Hwy, Belmont WA 6104

Ph: 08 9478 9500

<http://www.therapyfocus.org.au/>

FOCUS (Focus on children within the autism spectrum Inc.)

Ph: (08) 9490 5887

Email trobless@iinet.net.au

www.focus.iinet.net.au

Department of Education and Training (WA) - home education offices

<http://www.det.wa.edu.au/education/homeeducation/index.htm>

Swan District Education Office Phone: 08 9442 6666

West Coast District Education Office

Joondalup Phone: 08 9301 3000

Osborne Park Phone: 08 9202 7333

Fremantle/Peel region Education Office Phone: 08 9550 2555

Canning District Education Office Phone: 08 9311 0500

Appendix F
Advertisement

Home Educating a Child with Autism Spectrum Disorder?

I am looking to interview parents about their experiences of home educating their child with autism spectrum disorder as part of a Psychology (Honours) programme at Edith Cowan University.

The interview will be tape recorded and will take approximately 45 minutes. All information obtained during interviews will be held in strictest confidence and you are free to withdraw at any time from the study.

If you are interested in participating please contact myself, Theresa Kidd.

Appendix G

Table 1.

Demographic Data Collected from Participants

Participant Pseudonym	Marital Status	Number of Children	Age of Child with ASD (years)	Diagnosis	Age at diagnosis (years)	Years home educating
Kelly	Married	2	9	Autism/ADHD	4.2	3.4
			8	HFA/ADHD	3.10	3.4
Sally	Married	2	11	Asperger's Disorder	9	2
Sondra	Married	2	12	Autism	2.8	1
Linda	Married	2	13	HFA	8	3
Gale	Married	2	9	HFA	4	2
Dawn	Married	3	9.5	Autism/Borderline	9	0.6
				Intellectual Disability		
Lorelle	Married	3	8	Autism	3	3
Dana	Single	2	14	Asperger's Disorder	9	1
Mary	Married	2	8	Autism	5	1
Marilyn	Married	7	8.5	Autism/Dyspraxia	8	3

Note. HFA signifies a diagnosis of high functioning autism.

Guidelines for Contributions by Authors

Notes for Contributors

Autism provides a major international forum for research of direct and practical relevance to improving the quality of life for individuals with autism or autism-related disorders. The journal's success and popularity reflect the recent worldwide growth in the research and understanding of autistic spectrum disorders, and the consequent impact on the provision of treatment and care.

Articles include substantive research reports, as well as smaller-scale action research and case studies. Critical reviews of recent experimental work, and its relevance to intervention and care provision, are also a core feature of the journal.

Autism is published six times a year by Sage Publications, in January, March, May, July, September and November. The journal aims to:

- encourage research into practice in the field of autism spectrum disorders
- encourage theoretical and academic researchers to consider the implications of their findings for practice.

1. The aim of the journal is to publish original research or original contributions to the existing literature on autism. Papers should not previously have been published or be under consideration elsewhere.
2. Each paper submitted will be refereed by at least two anonymous referees.
3. The number of high quality submissions to the Journal has increased significantly over the last few years and in order to facilitate more rapid publication of important papers it has become necessary to limit the size of manuscripts accepted. The maximum text length, therefore, should be 5000 words and the total number of end references should not exceed 30

entries. In exceptional circumstances we may be able to accept manuscripts that exceed this length, but this should be discussed with one of the editors before submission.

4. In order to protect the identity of clients or participants, authors should use pseudonyms and remove any information leading to identification of any of the individuals described in the study.

5. The Editors welcome contributions to the Letters to the editors section of the journal. In the interests of saving space, or to protect confidentiality, for example, the Editors may edit letters for publication.

6. Unsolicited manuscripts will not be returned to authors if rejected.

7. Blind peer review. Authors should provide two title pages, one containing names, affiliations, full mailing address plus telephone, fax, email address, and one containing the title only.

9. Please number all pages except the title pages, in the following order: abstract (100-150 words), keywords (up to five), address for correspondence; main text; appendices; acknowledgements; notes; references; tables; figure captions; figures. Each of the above sections should start on a fresh page.

10. Articles submitted for publication must be set in double spacing throughout (especially all notes and references), with generous left- and right-hand margins but without justification.

Titles and section headings should be clear and brief with a maximum of three orders of heading.

11. Quotations. Lengthy quotations (exceeding 40 words) should be indented in the text.

12. American or UK spelling may be used, to the author's preference. Indicate italics by underlining and use single quotation marks. Dates should be in the form '9 May 1995'. Delete points from 'USA' and other such abbreviations.