Exploring Eclecticism: The impact of educational theory on the development and implementation of comprehensive education programmes (CEP’s) for young children with Autism Spectrum Disorder (ASD).

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Abstract

Despite considerable evidence that programmes grounded in Applied Behaviour Analysis (ABA) should be at the forefront of education and intervention in the treatment of Autism Spectrum Disorder (ASD) programmes of an eclectic nature are regularly implemented. Theoretical orientations undoubtedly influence the instructional practices adopted by educators but exploration of the significance of educational theory in the development of eclectic programmes remains lacking. This paper outlines the importance of competing theories to autism education, specifically Constructivist and Behavioural theories, and demonstrates how eclectic programmes may be misinformed when educators view approaches through a Constructivist lens. We conclude that it is imperative to interrogate and challenge the theoretical orientations of educators responsible for the development and implementation of comprehensive programmes of education (CEP’s) for young children with autism if we are to bridge the divide between evidence and practice in relation to ASD education.

Keywords: Comprehensive Education Programmes; Eclectic; Applied Behaviour Analysis; Constructivism

Article Classification: Review Article
Introduction

Education for children with an Autism Spectrum Disorder (ASD) has become synonymous with intervention in the treatment of the excesses and deficits associated with the disorder (McMahon & Cullinan, 2014). This is largely due to the fact that educational based programmes are often the only form of intervention given to children with ASD (Reed, Osborne, & Corness, 2007). Autism specific education is viewed as an opportunity to acquire the knowledge and skills that support personal independence and social responsibility as well as the academic goals more traditionally considered within education curricula. As a result comprehensive education programmes (CEP’s) that target multiple features associated with the developmental delay present in children have been developed by researchers. These programmes typically comprise of a set of practices that derive from either developmental or behavioural orientations which influence goals, intervention procedures and methods of evaluation (National Research Council, 2001).

For those who have followed the educational debate surrounding autism the importance of theory has become ever clearer. Considerable confusion and dispute has marked the development and implementation of CEP’s delivered to young children with autism in applied educational settings (Dillenburger, Keenan, Doherty, Byrne, & Gallagher, 2010). In particular the theoretical framework to draw upon when choosing and employing teaching strategies and methodologies has become a cornerstone of the discussion. There is general agreement that ASD is most effectively treated through intervention and educational approaches that are behavioural in origin, theory and practice (National Research Council, 2001; Odom, Hume, Boyd, & Stabel, 2012), often labelled applied behaviour analysis (ABA) or early intensive behavioural intervention (EIBI). However with the notable exception of Norway, whose government and educational institutions support education based on the principles of ABA, in much of Europe an ‘eclectic’ approach’ is promoted in the education of children with ASD (Dillenburger et al., 2010). Despite ABA being endorsed across North America and Canada by federal and state agencies including the U.S. Public Health Service (U.S. Public Health Service, 1999) many educators in Europe argue that this paradigm is too limiting and that an eclectic framework for choosing intervention approaches is more advantageous to a broad spectrum of student. Yet despite the assertion that an eclectic approach provides students with the opportunity to avail of all methodologies with the greatest evidenced benefits (including those derived from
behaviour analytic principles), it is becoming increasingly clear that access to ABA based intervention is frequently denied, or is minimally provided. For example a recent large scale European study (1680 families participated) found that only one third (32.3%) of parents of young children with ASD (<6 years) reported receiving behavioural interventions of any description (Salomone et al., 2016). In addition freedom of information reports for the United Kingdom (South East England, North West England, Scotland, Wales & Northern Ireland) indicates inadequate and uneven provision of ABA (North-Bates, 2016), whilst analysis of educational policy documents from across Europe demonstrate a clear preference for an ill-defined ‘eclectic’ programme (Keenan et al., 2015). This has been a leading factor in the controversy surrounding the eclectic approach and is best exemplified by high profile cases in which parents have taken recourse to tribunals and courts of law in Europe in order to access ABA schooling for their children (Keenan, 2010).

Whilst researchers have attempted to understand why ABA does not yet form the cornerstone of ASD education in Europe; accounts vary from mistakes in understanding ABA (Dillenburger, 2011) to conscious attempts to discount evidence (Morris, 2009), one aspect that has yet to be fully explored is that educational decisions are not made in a vacuum, but rather they emerge from particular theoretical viewpoints. Information is processed through these viewpoints and conclusions drawn may be seen as upholding one belief system and rejecting another. The purpose of this paper is to examine the paradigm informing European governments approach to autism specific education, to explore the concept of ‘theoretical filtering’ and to outline the implications of choosing educational methodologies filtered through a theoretical lens in relation to autism specific education.

1. **Eclecticism in ASD education**

As previously noted an ‘eclectic’ approach is widely promoted across Europe as the preferred framework for the development and implementation of comprehensive programmes of education (Dillenburger, 2011). Eclecticism is difficult to define but, in general, is viewed as using a combination of principles and methods from a variety of theories or models to inform strategies (Heward, 2003) and, according to government education reports, applying them according to identified needs (Marwick, Dunlop, & MacKay, 2005; Parsons et al., 2009). Dillenburger outlines the composition of
typical eclectic programmes as drawing from ABA, the Hanen Programme; Sensory Integration; Floortime; Lovaas, TEACCH; Picture Exchange Communication System (PECS); Sonrise and other manualised programmes (Dillenburger, 2011). To date empirical research of the effectiveness of eclectic programmes of intervention have demonstrated poor efficacy with young children with ASD (Eldevik et al., 2009; Makrygianni & Reed, 2010) and such programmes have been described as inconsistent and ineffective (Howard, Sparkman, Cohen, Green, & Stanislaw, 2005) and inferior to programmes derived from behaviour analysis (Howard, Stanislaw, Green, Sparkman, & Cohen, 2014).

The ethos attributed to an eclectic approach is that due to the heterogeneous nature of children with ASD, no one methodology (or approach) is suitable for all therefore practitioners must be free to choose from all methods or practices. From a theoretical position the eclectic approach is neutral; it may incorporate a range of theoretical paradigms and does not elevate one above another. The assumption is that the needs of the child are foremost and that strategies are chosen based on practical educational value rather than theoretical orientation. As noted by Heward (Heward, 2003) the logic is reasonable and superficially there is much to be gained from the approach. Indeed, Odom and colleagues strongly advocate for a form of eclecticism termed technical eclecticism in developing CEP’s (Odom et al., 2012). Technical Eclecticism refers to the selection of empirically supported treatments from different theoretical perspectives for use with individuals. This is juxtaposed with unsystematic eclecticism in which eclecticism is viewed as “jack-of-all-trades-master-of-none approach” (Odom et al., 2012) and has been largely criticised as a method of programme development (Dillenburger, 2011; Fox, 2001; Heward, 2003; Odom et al., 2012; Snider & Roehl, 2007).

Yet advocates of eclecticism have not yet acknowledged the tension between an atheoretical approach and the body of literature that suggests that teachers’ beliefs exert powerful influences on both teacher practice and student outcomes (Clark & Peterson, 1986; Pajares, 1992). Harste and colleagues (Harste & Burke, 1977; Harste, Woodward, & Burke, 1984) strongly argue that teachers’ decisions are shaped by epistemological beliefs, such as their theoretical orientation and that teaching practices are aligned with such viewpoints (Graham, Harris, MacArthur, & Fink, 2002).
Further to this researchers have noted that teacher beliefs influence classroom practice, expectations for success and even public policy (Snider & Roehl, 2007). This has important connotations for autism-specific education where evidence for effective teaching methods has largely emerged from an alternate theoretical paradigm to the conventional paradigm of the educational establishment. In order to fully understand the inertia of European education departments to provide adequate access to ABA it is necessary to explore the prevailing theoretical lens of educators across Europe.

2. Constructivist Theory

2.1 Understanding Theory

To discuss educational theory it is first useful to define the terminology used in the discourse surrounding it. Shoenfeld (Schoenfeld, 1999) states that theories should support prediction have explanatory power and be applicable to broad ranges of phenomena. Dubinsky and McDonald (Dubinsky & McDonald, 1999) add that a theory should help organise one’s thinking about complex interrelated phenomena, serve as tools for analysing data and provide the language for communication of ideas that go beyond superficial descriptions. The term ‘theory’ is closely aligned with the word ‘paradigm’ and the two are often used interchangeably. A paradigm may be thought of as a pattern or model of something that is structured (the parts and interrelationships) and how the parts function (behaviour within a specific context or time dimension) (Huitt, 2010). Kuhn (Kuhn, 1962) coined the term ‘scientific paradigm’ and defined it as “accepted examples of actual scientific practice, examples which include law, theory, application, and instrumentation together--[that] provide models from which spring particular coherent traditions of scientific research (p.10). Writing from the perspective of analysing past and present activity to predict future trends Harmon (Harman, 1970) and Baker (Baker, 1992) built on Kuhn's definition (Huitt, 2010). Harmon defined a paradigm as ‘the basic way of perceiving, thinking, valuing, and doing associated with a particular vision of reality...’ (Harmon, 1970 p. 5), while Baker defined a paradigm as ‘a set of rules and regulations (written or unwritten) that establishes or defines boundaries and tells you how to behave inside those boundaries in order to be successful’ (Huitt, 2010). However Capra’s (Capra, 1996) definition is most closely aligned with general concepts of educational paradigms. Drawing on previous definitions and working from a dynamic systems perspective, Capra defined a paradigm as “a constellation of concepts,
values, perceptions and practices shared by a community, which forms a particular vision of reality that is the basis of the way a community organises itself* (p. 6).

2.2 Constructivism Explained

Currently the most dominant paradigm in the European educational field is Constructivism and underpins much of what is referred to as developmental practice (Burman, 1994). Referred to as both a ‘paradigm’ and a ‘theory’ constructivism can be traced back to the 18th century and to the writings of Vico, philosopher and scientist, who wrote that the true is what is made (Glasersfeld, 1984). However it was the philosopher and educator John Dewey that, at the turn of the 20th century, brought Constructivist beliefs to bear on education and was influential in the development of future constructivist concepts. The importance attached to ideals of childhood reflects Dewey’s notion of the child being the ‘starting point, the centre and the end’ (Dewey, 1902). For Dewey learning is active and he argued that the source of whatever is dead, mechanical and formal in schools should be replaced, as it subordinates the life and experience of the child to the curriculum (Dewey, 1902). Dewey finds that other ‘unnamed’ viewpoints posit a fundamental opposition between child and curriculum overlooking the experience already contained within the child. Dewey foreshadowed the work of leading figures in Constructivism such as Jean Piaget and Leo Vygotsky and the field evolved to have many variants including Piagetian constructivism, neo-Vygotskian constructivism, Feuersteins’s mediated learning radical constructivism and various forms of social constructivism, as listed by Fox (Fox, 2001). As a theory of learning constructivism posits that humans generate (construct) knowledge and meaning from an interaction between experiences and their ideas (Cunningham, 2008) and learning is perceived as a socially situated activity that is enhanced in functional, meaningful and authentic contexts (Harris & Graham, 1994; Palincsar & Klenk, 1993). In this paradigm teachers are seen as assisting performance and the construction of knowledge, rather than as explicitly providing knowledge and information (Tharp & Gallimore, 1989). The tenets of Constructivism are summarised by Fox (Fox, 2001) as:

1) Learning is an active process
2) Knowledge is constructed rather than innate, or passively absorbed.
3) Knowledge is invented not discovered
4) All knowledge is personal and idiosyncratic
5) All knowledge is socially constructed
6) Learning is essentially a process of making sense of the world
7) Effective learning requires meaningful, open-ended, challenging problems for the learner to solve

2.3 The Rise of Constructivism

The Constructivist perspective was embraced in the 1960’s and 1970’s, was promoted in the emergence of ‘progressive’ education and was synonymous with a cognitive and more holistic outlook towards learning (Burman, 1994). It emerged as the leading theory of learning in the field of education as interest diminished in the behaviourist perspective (Mayer, 1996 in Liu & Matthews, 2005) and criticism of behaviourist approaches as being too restrictive became more prominent (Liu & Matthews, 2005). In fact the import of Constructivism is so pronounced that the pivotal argument played out in the educational arena during the past 20 years is between constructivism and ‘not constructivism’.

Constructivism is invariably described as ‘natural, holistic, child-centred, flexible, active, voluntary, fosters curiosity, progressive and facilitates knowledge’ with perspectives that are ‘not constructivist’ termed ‘positivist, instructivist, reductionist, behavioural, traditional, content-driven, skills, bottom-up, transmission instruction, direct instruction, behaviourism, and explicit instruction (Snider & Roehl, 2007). The first results from the Teacher and Learning International Survey (TALIS), an OECD (Organisation for Economic Co-operation and Development) report published in 2009 (OECD, 2009) provided the first internationally comparable data on the theoretical orientations of teachers across 23 participating European countries. This study found that in almost all OECD countries teachers predominantly see their role as a facilitator of active learning by students who seek out solutions for themselves (constructivist beliefs) as opposed to a role in transmitting knowledge and providing correct solutions about teaching (direct transmission beliefs). This was again reported in TALIS 2013 (OECD, 2014) where it was found that over ninety percent of teachers see their role as facilitators of learning and the majority aligned themselves with a constructivist approach to teaching and learning.

2.4 Constructivism and ASD education

Constructivist approaches to the treatment of ASD emerged in the early 1980’s and drew largely on Piagetian developmental psychology as well as the social-pragmatic model of language acquisition
derived from the work of leading Constructivists such as Bruner (Bruner, 1983 in Ingersoll, 2010; NRC, 2001). A sample of interventions includes DIR/Floortime (Greenspan & Wieder, 1998), Hanen (Manolson, 1992 in Ingersoll, 2010) and SCERTS (Prizant, Wetherby, Rubin, & Laurent, 2003). A preference to implement strategies aligned with Constructivist beliefs in the education of children with ASD has wide ranging implications and has created tensions in the field of autism education. One issue for advocates of evidence based practice is that typically cited Constructivist principles are not well aligned with our knowledge of children with ASD. Although each child diagnosed with ASD is unique, various characteristics associated with the disorder challenge the usefulness of Constructivist informed methodologies.

Constructivism operates on a variety of assumptions, some of which are difficult to resolve with the information available on children with ASD. For example, as described by Chall (Chall, 2000), constructivism assumes an intrinsic motivation for learning and exploring one’s environment, the view that ‘learning is good in and of itself and as a source of pleasure’. In fact Matthews (Matthews, 2003) notes child-directed learning is not assessed but taken as an a-priori belief. However as highlighted by researchers, children with autism typically respond less to environmental stimuli and often fail to explore new environments (Koegel & Egel, 1979) with decreased initiation of joint attention (e.g., through pointing) identified as one of the most reliable early signs of autism (Dawson et al., 2004). In addition attention to social and environmental stimuli can be uneven and inflexible (Prizant, Wetherby, Rubin, & Laurent, 2003) and restricted to certain categories of objects (e.g. trains) (Sasson & Touchstone, 2014). Constructivism also focuses on the ‘big’ picture arguing that children will develop greater understanding by seeing things as a whole (top-down strategy). As such it is less concerned with content knowledge, basic skills, drill and practice and sequences of instruction (Cunningham, 2008). However research indicates that children with autism are more successful when tasks are broken down into their constituent parts and built up to perform whole tasks (bottom-up) (Alcantara, 1994; Matson, Taras, Sevin, Love, & Fridley, 1990) and are provided many opportunities to practice skills across multiple settings (Harris et al., 2015). Constructivism also emphasises learning through language and dialogue with the learner. The notion is that children have innate tendencies towards behaviours such as oral language as a function of natural selection (Matthews, 2003; Simon, 1999). Further to this there is frequently an emphasis on providing meaningful, authentic experiences,
engagement in excellent reading & writing opportunities and a strong focus on student choice with little or no explicit, focused instruction and practice in basic skills (Harris & Graham, 1994). However many children with ASD’s have language impairments and require specific intervention to acquire language skills (Sigman & McGovern, 2005). For example PECS, a widely used intervention for language/communication development with children with ASD, aims to teach spontaneous social-communication skills by means of symbols or pictures and teaching relies on behavioural principles, particularly reinforcement strategies and has demonstrated effectiveness (Howlin, Gordon, Pasco, Wade, & Charman, 2007). In addition Constructivist approaches assume the presence of prerequisite skills (build on prior knowledge) whereas many children with autism lack the prerequisite skills to engage in certain activities (Shipley-Benamou, Lutzker, & Taubman, 2002). Constructivist approaches also assume that children naturally follow the adults’ lead or example whereas children with ASD seldom learn from watching adults modelling without prior instruction (Cardon, 2012; Egel, Richman, & Koegel, 1981). Whilst some researchers have noted an increase in prosocial behaviour when a caregiver imitates the child with ASD (Heimann, Laberg, & Nordøen, 2006), the wider literature indicates well documented difficulties in imitation skills and such deficits in imitation have been associated with impairments in other important social-communication skills (B. Ingersoll, 2010; Ingersoll & Gergans, 2007; Ingersoll & Schreibman, 2006; B. R. Ingersoll, 2010). Finally Constructivism emphasises the role of self-regulation in learning and development (Anderson, 1996; Ertl & Kraan, 1997; Piaget, 1926; Vygotsky, 1978; Wadsworth, 1996 in Simon, 1999) and a hierarchical progression in abilities whereas children with ASD often lack the skills implicit in emotional regulation (Bachevalier & Loveland, 2006; Downs & Smith, 2004) and typically exhibit uneven skill development (Burack & Volkmar, 1992; Volkmar et al., 1987). The information on the assumptions of Constructivism and the challenges in relation to the current knowledge of the development of children with ASD is summarised in table 5.0
<table>
<thead>
<tr>
<th>Assumptions</th>
<th>Challenges</th>
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<tr>
<td>1. Assumes motivation</td>
<td>Children with ASD’s demonstrate lower levels of motivation in the typical activities/problems/issues of normally developing children</td>
</tr>
<tr>
<td>2. Assumes focus on ‘big’ ideas</td>
<td>Children with ASD are more successful when tasks are broken down</td>
</tr>
<tr>
<td>3. Assumes language</td>
<td>Many children with ASD’s have limited language ability</td>
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<tr>
<td>4. Assumes prerequisite skills</td>
<td>Children with ASD often lack prerequisite skills for certain activities</td>
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<tr>
<td>5. Assumes the child naturally follows an adults example</td>
<td>Children with ASD seldom learn from watching adults models without prior instruction</td>
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<tr>
<td>6. Assumes progression in abilities</td>
<td>Children with ASD often exhibit uneven skill development</td>
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<tr>
<td>7. Assumes a degree of emotional self-regulation</td>
<td>Children with ASD often lack the skills implicit in emotional self-regulation</td>
</tr>
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Table 1.0 *The assumptions and challenges to using Constructivist approaches in the education of children with ASD*

3. **Applied Behaviour Analysis through the Constructivist lens**

3.1 *Alternative Explanations for Resistance to ABA*

Building on research from the 1960’s Applied Behaviour Analysis (ABA) is the most frequently studied intervention for children with ASD (Matson & Smith, 2008) and has been demonstrated to be the most effective form of educational intervention (Eikeseth, Smith, Jahr, & Eldevik, 2002, 2007; Eldevik, Eikeseth, Jahr, & Smith, 2006; Eldevik et al., 2009; Peters-Scheffer, Didden, Korzilius, & Sturmey, 2011; Reichow & Wolery, 2009; Remington et al., 2007). It is described as:

‘a scientific approach for discovering environmental variables that reliably influence socially significant behavior and for developing a technology of behavior change that takes practical advantage of those discoveries’ (Cooper, Heron & Howard, 2007, p. 3).

All behaviour interventions share a common set of assumptions as outlined by Ingersoll (2010). The first is that operant behaviours (e.g. language, play, social skills) are under voluntary control and can
be learned. The second is that antecedent’s and consequences (observable environmental events occurring before and after an event) control the development and maintenance of behaviour and are subject to manipulation (i.e. teaching and learning). In addition specific teaching tools derived from these assumptions are characteristic of behavioural interventions such as prompting (presenting cues that elicit the target response), shaping (incremental cues that increase the likelihood of a specific response), chaining (connecting two or more behaviours together) and fading (gradually reducing prompts over time to encourage the spontaneous response). Although behavioural interventions were initially highly structured (Lovaas, 1987) contemporary ABA techniques are more naturalistic and child directed e.g. incidental teaching (Hart & Risley, 1975), milieu teaching (Alpert & Kaiser, 1992) and pivotal response training (Koegel, Koegel, Harrower, & Carter, 1999) and have significant empirical support (Reichow & Wolery, 2009; Peters-Scheffer et al., 2011).

Yet ABA is frequently viewed negatively and inaccurately perceived by mainstream educators (Allen & Bowles, 2014). That an error in the understanding of ABA is occurring has already been addressed on some level by various other researchers. For example as far back as the early nineties Axelrod (Axelrod, 1992) discussed several reasons that might affect the adoption or understanding of behaviour-analytic teaching strategies. Axelrod highlights a language and tradition barrier. He notes that the languages and practices of applied behaviour analysis are in contradiction to the language and perceived practices of educators and that to traditional educators ABA may be construed as ‘mechanistic and deterministic’. A second difficulty is that the success of behaviour-analytic techniques in disabled populations has led to a perception of behaviour-change technology as more suitable to specialist populations and as too difficult for mainstream teachers to carry out. A third difficulty explored is the lack of expertise in behaviour analysis at the initial teacher training stage. Axelrod notes that most academics in behaviour analysis are located within psychology departments and so teachers graduate without a lack of familiarity with applied behaviour analytic literature. Axelrod concludes by determining that information on behaviour analytic methodologies have been poorly disseminated (Geller, 1989; Schwartz & Baer, 1991 in Axelrod 1992), which hampers the development of behaviour change procedures.
However, in recent years strong representations have been made to educators for the development and implementation of behaviour analytic teaching methodologies especially in relation to the education of young children with autism. Yet the teaching community remains unwilling to acknowledge the usefulness of behaviour change technology and frequently misrepresents the technology (Jones et al., 2008; Jordan, 2001; Keenan, 2010). For example in 2009 Edward Morris (Morris, 2009) published an article that was borne out of frustration with the misrepresentation of ABA by Ann Gernsbacher, an award winning educator. Morris noted that Gernsbacher ‘inaccurately represented research reviews, wrongly characterised applied behaviour-analytic interventions, misleadingly appealed to history, inaccurately conveyed research designs, selectively omitted research results, and incorrectly interpreted intervention outcomes (Morris, 2009). Dillenburger (Dillenburger et al., 2010) also notes that despite high profile evidence reviews highlighting the success of interventions grounded in a behaviour analytic approach to autism that departments of education across Europe remain resistant to its widespread use with children diagnosed with ASD.

Dillenburger describes how the misunderstanding and resistance of ABA can, in many instances, be attributed to a category mistake. The term ‘category mistake’ was coined by Ryle (Ryle, 1949, 2002) and is used in situations where things or facts from one category are presented as if they belonged to another. As noted by Dillenburger, educators make frequent reference to ABA as a single methodology (Gladwell 2010, Mattaini, 2008 in Dillenburger, 2010) and refuse to support procedures grounded in ABA on that basis (believing that one methodology cannot be used with all children diagnosed with ASD). However as ABA is the applied science division of the discipline of behaviour analysis this assumption is incorrect. It is not a single methodology, as it is often presented, but rather, comprises of numerous methodologies derived from research in the field of behaviour analysis. Dillenburger (Dillenburger, 2011) states that when ABA is presented as a single intervention that a category mistake is being made, and that this has been one of the main stumbling blocks in bringing science-based interventions to individuals diagnosed with ASD and other children with special needs. However, category mistake cannot fully explain misunderstandings of ABA by a large proportion of educators, for example misrepresentations of its methods as ‘too rigid’ (Jordan, 2008) or as ‘less flexible’ (McConkey, Kelly & Cassidy, 2007 in Dillenburger, 2010) than alternative interventions.
3.2 Theoretical Filtering of ABA

That Constructivism is so deeply embedded within European education has important connotations for views on behavioural approaches to learning. Thomas (Thomas, 1979) likens theory (as pertaining to children and education) to a lens through which one views children and their growth filtering out certain facts and giving a particular pattern to those it lets in. Thomas suggests that adherence to particular model or predominantly accepting a paradigm in relation to children and their education can result in rejecting the tenets or structures of alternate viewpoints. He writes that typically we are interested in comparing theories along two dimensions, how theories differ or are akin to each other but also in judging if one is better than another. This judgment will likely be determined by preconceived standards or values associated with children and their development. Such standards may range (in fact Thomas postulates there are nine such standards) from thinking a theory is better if it reflects the facts of real world children, e.g. inferences from sample populations can be transferred to the general population (objective) or that a good theory is self-satisfying, (explains development in a way that we feel makes good sense, in other word self-affirming) (subjective). As such through a constructivist lens the behavioural paradigm may seem to run counter to the theory that finds favour with the majority of European educators and as previously noted methods derived from the behavioural paradigm are frequently negatively appraised in the literature (Hastings, 2013) Building on Thomas’ work it is conceivable that behaviour analytic approaches to autism education are filtered by mainstream educators through a constructivist lens, and might be rejected on the belief that its tenets do not align with educators own philosophies about childhood and education. Whereas Constructivist approaches are viewed as a natural, child-centred and holistic approach that facilitates learning and fosters curiosity, the process of theoretical filtering may result in ABA being interpreted as an unnatural, teacher-directed and reductionist approach that focuses on the transmission of knowledge and subdues curiosity. Fig 5.0 outlines the tenets of Constructivism as viewed by its advocates and conversely how the tenets of ABA might be viewed through this constructivist lens. (see Fig. 1).
Theoretical filtering fosters confirmation bias which connotes the inappropriate bolstering of hypotheses or beliefs whose truth is in question and refers to the unwitting moulding of facts to fit hypotheses or beliefs (Nickerson, 1998). Nickerson notes that people may treat evidence in a biased way when they are motivated by the desire to defend beliefs that they wish to maintain (Nickerson, 1998). Grey (Grey, 2008) writes that in Ireland, in relation to the teaching of children diagnosed with ASD, the department of education’s adherence to policies that have little or no evidence base clearly points to the upholding of a departmental ideology and a bias on behalf of the teaching community which has been highly resistant to evidence presented on the effectiveness of behavioural intervention (Keenan, 2010; Keenan, Martin, & Leslie, 2013). Grey notes that leaders in the Irish educational community have taken a strong stance on their refusal to teach children predominantly through ABA methods and there have been similar instances by governments and educational...
institutions across Europe (Keenan et al., 2015). Nickerson (1998) explains that once one has taken a position on an issue that one's primary purpose becomes that of defending or justifying that position. A number of experimental findings add weight to this concept. For example people tend to restrict their attention to a favoured hypothesis and preclude the possibility of interpreting data as supportive of alternative explanations (Nickerson, 1998). This tendency can be referred to as pseudodiagnosticity, in that the focus is exclusively on the case in which the hypothesis is assumed to be true (Doherty & Mynatt, 1986; Doherty et al., 1979; Fischoff & Beyth-Marom, 1983; in Nickerson, 1998). Morris (Morris, 2009) pointed out that even when informed of the inaccuracies of her representations of ABA-EIBI Gernsbacher persisted in those misrepresentations. In addition, research has indicated that people give preferential treatment to evidence supporting existing beliefs (Baron 1991, 1995; Perkins, Allen & Hafner, 1983; Perkins, Farady & Bushey, 1991 in Nickerson 1998). For example Kuhn details in one study, that when children and young adults were provided with evidence that was inconsistent with a theory they favoured, they often ‘either failed to acknowledge discrepant evidence or attended to it in a selective, distorting manner’ (Kuhn, 1989). Such studies have also demonstrated that people tend to overweight positive confirmatory evidence and underweight negative disconfirmatory evidence (Pyszczynski & Greenburg, 1987). Instances in which proponents of eclecticism criticise the field of ABA for a lack of Randomised Controlled Trials (RCTs; the gold standard of evidence-based practice) whilst inconsistently not demanding RCT’s to support the implementation of their own educational approach exemplify this bias (Dillenburger et al., 2010).

These biases are not exclusive to ASD education. In the broader context of special education Brigham et al., (2004) notes that a confirmation bias is contributing to difficulties in implementing the No Child Left Behind Act (NCLB; 2001) in the United States of America. The NCLB is a policy document that concerns the education of children in public schools. A central feature of the NCLB is the requirement that educators use practices that are validated through scientific research. Brigham and colleagues (Brigham, Gustashaw, & Wiley, 2004) note that many controversial treatments for disabilities appear to be supported by confirmation bias. The researchers explain that rather than providing clear data obtained under less replicable conditions, proponents of less-accepted treatments (and some popular but refuted treatments) use anecdotal evidence about how the
treatment worked for them or a given child to assure decision makers that it will, therefore, work for others as well (Brigham et al., 2004).

Several theorists have proposed that defense motivations also guide human behaviour and can account for elements of theoretical filtering. Defense motivations are related to dissonance theory. Festinger (1957) first noted that discomfort arises from the mere presence of cognitive conflict (exposure to information contrary to held ideas/beliefs) and that selective exposure to congenial information (information that will bolster one’s own views) is a (defense) strategy to relieve or avoid cognitive dissonance (Hart, Eagly, Albarracin, Brechan, & Merrill, 2009). When people encounter a challenge to recently expressed attitudes, beliefs, or behaviours, their effort to reduce cognitive conflict may enhance the congeniality bias (Beauvois & Joule, 1996; Festinger, 1964 in Harte et al., 2009). This effect is enhanced when the uncongenial information is high quality, when the individual’s commitment to the pre-existing attitude, belief or behaviour is strong or when they are value-relevant, i.e. linked to broader value-based beliefs. Many mainstream educators and professionals have already professed beliefs against the implementation of ABA based curricula (Jones et al., 2008; Jordan, 2001; Parsons et al., 2009). For example Howlin (2013) a leading education figure in the field of ASD, notes that ‘there is still no evidence that any one high quality, specific intervention is superior to any other in opposition to current research evidence (Odom et al., 2012) and international best practice guidelines (U.S. Department of Health, 1999). Drawing on Festingers and others work, such figures would likely place low regard on any evidence that challenges them to do alter their stance. In the Irish context Irish-American journalist Tish Durkin (Durkin, 2010) concludes that despite a wealth of evidence presented to them (Keenan et al., 2015) the actions of the Irish government are a purposeful move in a direction away from grounding approaches to ASD in ABA and towards aligning ASD education with their own values and belief system.

4. Implications for the Development of Eclectic Programmes

It is precisely the atheoretical nature of eclecticism that opens it up to being so powerfully influenced by an individual’s own theoretical stance. Indeed research indicates that when building an eclectic programme teachers may unknowingly pick and choose some of the ineffective components of a particular model and that even when an evidence base exists may ignore the evidence (Carnine,
As such failing to address educator bias towards a Constructivist approach in relation to autism leads to a ‘powerful restriction on scientifically informed educational improvement and more broadly on teacher and parent efforts to influence child development’ (Stone, 1996, p9 in Matthews, 2003).

To date empirical research of the effectiveness of eclectic programmes of intervention have demonstrated poor efficacy with young children with ASD (Eldevik et al., 2009; Makrygianni & Reed, 2010) and such programmes have been described as inconsistent and ineffective (Howard, Sparkman, Cohen, Green, & Stanislaw, 2005) and inferior to programmes derived from behaviour analysis (Howard, Stanislaw, Green, Sparkman, & Cohen, 2014). In addition constructivist approaches are still under researched and where evidence exists has been examined primarily using nonexperimental designs (e.g. Greenspan & Wieder; 1997; Mahoney & Perales, 2003, 2005; Rogers & Lewis, 1989; Solomon, Necheles, Ferch & Bruckman, 2007; Wetherby & Woods, 2006 in Ingersoll, 2010). Where research designs are robust, research has yet to demonstrate superior outcomes. For example a randomised controlled study of a widely used technique in eclectic programmes of intervention, the Hanen’s ‘More Than Words’ programme of intervention with young children with ASD found no main effects of the HMTW intervention on either parental responsivity or children's communication (Carter et al., 2011). Dillenburger also notes that Constructivist based educations association with the term ‘child-centred’ has led to misuse of the term in relation to ASD education in order to exclude any methods that are construed as teacher-directed (Dillenburger, 2011). However, she notes that methods that work are truly in a child’s best interests and that to date an education that draws heavily on behaviour analysis in its development and implementation offers the greatest opportunity to provide a ‘child-centred’ education. Dillenburgers’ call to reframe behaviour analytic methodologies in the discourse of Constructivism is timely. As has been noted elsewhere communication across the conceptual divide should be encouraged as rather than there being two diametrically opposed theories, that there are in fact many similar and powerful insights that have been arrived at by both sides, albeit by different paths (Hutcheon, 2010).

5. Moving Closer to an Evidence Based Approach to ASD intervention

This paper has been moving toward an understanding of how eclectic programmes are viewed as a pragmatic solution to the lack of consensus on a singular framework to working with young children
with ASD but that beliefs and worldviews may compromise the development of the evidence based programmes envisaged by researchers such as Odom and colleagues (Odom et al., 2012). Undoubtedly conflicts in paradigms relating to educational theory have played a significant role in the controversy surrounding the development of autism-specific education. Predispositions towards constructivist approaches may have obscured and distorted the evidence that weighs heavily in favour of employing a behaviour analytic approach as the cornerstone of education for children with ASD. Such theoretical filtering in the form of a confirmation bias may have the unfortunate outcome of moving ever further away from a model of autism-specific education that is grounded in evidence and best practice. It is imperative upon those with an interest in advancing technical eclecticism in ASD education to continue to explore ways of bridging the gap between those entrenched in alternate paradigms. Kimball (2002) notes that opening communication between the two paradigms will be difficult and those opponents of a behavioural approach will continue to resist the behaviour analytic position. She draws on Kuhn (Kuhn, 1970) who wrote:

> When paradigms enter, as they must, into a debate about paradigm choice [italics added], their role is necessarily circular. Each group uses its own paradigm to argue in that paradigms defence. It cannot be made logically or even probabilistically compelling for those who refuse to step into the circle. As in political revolutions, so in paradigm choice [italics added] – there is no standard higher that the assent of the relevant community. (p. 94)

The first step in advancing a technical eclecticism must be to identify those practices and methods common to both constructivist and behavioural bodies of literature. For example Ingersoll provides a robust comparison between naturalistic behavioural approaches and developmental social-pragmatic approaches for children with ASD (Ingersoll, 2010). She identifies several common characteristics including a focus on increasing social-communication skills, fostering intervention in meaningful contexts and basing intervention on the child’s interests. Second the language barrier between the two paradigms needs to be overcome and the development of a shared understanding of the literature underpinning both approaches to child development should be a priority. Ingersoll (2010) suggests offering interdisciplinary courses covering both the behavioural and developmental literatures as they relate to ASD interventions and programme development. Further to this
Cunningham (Cunningham, 2008) highlights that, whilst there is a broad literature base that has demonstrated the effectiveness of behaviour analytic approaches, that most teachers are embedded within a Constructivist approach that stems from their initial teacher education. This he notes is because the state's higher education establishment for teachers is dominated by adherents to Constructivist ideology, which is also true of institutions across Europe. Thus, one way of balancing the debate is to locate behaviour analysts within schools of education so that teachers can learn theory and instructional methodologies from both paradigms and thus exercise greater choice when designing curricula for children. This has considerable importance for children with ASD because, the most resilient or ‘core’ teacher beliefs are formed during initial teacher education, and as previously noted such theories are often resistant to change and serve as a core reference point for teachers as they process new information and theories (Golombek, 1998; Roberts, 1998).

Finally, researchers must continue to attend to the social validity, the extent to which consumers of an intervention are satisfied with the goals, procedures and outcomes of a programme/intervention, (Wolf, 1978), of empirically sound interventions, particularly where those interventions derive from a body of literature that is counter intuitive to mainstream educators. Whilst, encouragingly, all evidence based practices identified by the National Autism Center’s (NAC, 2009) National Standards Project and the National Professional Development Center on Autism Spectrum Disorders (NPDC) (Callahan et al., 2016; Odom, Collet-Klingenberg, Rogers, & Hatton, 2010) had at least a minimal level of social validation to accompany their empirical reports of effectiveness, overall evidence of social validation remains sparse (Callahan et al., 2016).

6. Conclusion
The present paper has shown how theoretical orientations impact on the development and implementation of CEP’s for young children with ASD. Although reconciling ASD education with an evidence-based approach has been underway for several decades it will continue to be a contentious issue if the perception of educators of ABA as a largely irrelevant approach based on a mechanistic worldview and an overly simplistic theory is not overcome (Kimball, 2002). Allowing untested theoretical biases to inform eclectic CEP development and implementation will dictate poorer long term outcomes for children with ASD. Whilst future research may provide greater evidence of the
efficacy of Constructivist approaches to ASD intervention (Smith, 2012), behavioural approaches will undoubtedly continue to play an important and defining role. As such is imperative that educators are exposed to alternate theoretical paradigms, especially those that are empirically validated, if we are to ensure that all children with ASD have access to a truly child-centred, evidence based programme of education.

7. References


