PRAGMATISM AS A RESEARCH PARADIGM IN THE SOCIAL STUDY OF CHILDREN

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ABSTRACT

The purpose of this paper was to examine to what extent social researchers who study children, either quantitatively or qualitatively, can be observant of the philosophical assumptions that underpin the methodological approaches they undertake. Primarily, the philosophical underpinnings of quantitative and qualitative social research, especially as they pertain to the social study of children, were delineated. Then, two systematic literature reviews of peer-reviewed articles that report on empirical studies published in the past year were conducted. One review focused on qualitative studies and the other on quantitative studies. The findings of these reviews suggest that strict adherences to the philosophical underpinnings of quantitative and qualitative social research are nearly impossible. In view of the findings, and in consideration of the unique limitations associated with the social study of children, pragmatism is suggested as an appropriate social research paradigm.

Key Words: Quantitative Research, Qualitative Research, Social Study of Children, Research on or with children, Philosophy of Social Research, Epistemology, Ontology, Methodology, Research Paradigm, Pragmatism.

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Chapter 1: Introduction

Researchers working with/on children are often divided into those who conduct quantitative or qualitative studies. Those using either approach are often dismissive of the other because of assumed paradigmatic differences between them (Delanty & Strydom, 2003; Johnson & Onwuegbuzie, 2004; Morgon, 2007; Pole, 2007). However, a closer examination of recent studies involving children indicates that the boundaries between research paradigms may be much more porous than it is commonly thought. Contemporary researchers working with children seem to take a more eclectic approach, breaking with research traditions that demand a close coupling between ontology, epistemology and methodology. This opens up the possibility of more multi- and cross-disciplinary research, which could be very helpful in advancing the state of knowledge about children.

The Research Question

The purpose of this study is to find out: How far do contemporary researchers working with children adhere to paradigmatic traditions, why or why not, and what are some implications of their decisions for future research involving children. To answer this question, I will use two systematic literature reviews of peer-reviewed articles that report on empirical studies published in the past year. One review will focus on qualitative studies and the other on quantitative studies.

Chapter 2: Theoretical Foundations

In this section, I will outline key issues pertinent to the philosophical foundations of quantitative and qualitative social research. These issues are based on different ontological, epistemological, and methodological assumptions, which in turn, have given rise to unique features associated with the two approaches (Harrits, 2011; Johnson & Onwuegbuzie, 2004). First, I will provide a general overview of features of quantitative and qualitative social research. Then, I will give a brief historical account of the emergence of social science research, followed by an explication of aspects of constructivism/interpretivism and positivism/post-positivism as social research paradigms. In doing so, I will pay close attention to the defining features of said paradigms and how they provide the bases for all the characteristics of quantitative and qualitative social research. I will then discuss how and why the social and the natural sciences differ in terms of methodological approaches and lead into an examination of contemporary ideas about what can actually be known in the social sciences. Finally, I will complete this section by discussing how research involving children differs from research involving adults. This section will be used to analyze and to evaluate the findings of the two SLRs.

Research Paradigms

Ontology is a branch of metaphysics concerned with the nature of reality or questions such as: What exists? What is the nature of existence? Does truth/knowledge exist? Where? Epistemology is concerned with human relationship with 'reality', or questions such as: What can be known? To what extent can it be known? How can such knowledge be justified? And, methodology refers to the processes through which knowledge about reality is acquired and justified (Crumley II, 2009; Aune, 1970; Delanty & Strydom, 2003).

Ontological beliefs, or our perceptions about the nature of reality, shape our assumptions about how knowledge can be acquired and justified. For instance, an individual who believes that reality is independently existent (it is out there – a realist), would believe that knowledge about it can be acquired through observations (an empiricist) and justified by reasoning (a rationalist) (Aune, 1970; Delanty & Strydom, 2003; Johnson & Onwuegbuzie, 2004). However, a person who sees reality to be dependent upon the social and personal characteristics of the observer might arrive at the conclusion that knowledge is socially (a constructivist) and individually created (a relativist) (Chaille, 2008; Delanty & Strydom, 2003; Franklin & Nurius, 1998).

Methodology – or the approaches taken to find or create social knowledge – follows from ontological and epistemological beliefs (Delanty & Strydom, 2003; Feilzer, 2010). To elaborate, a social researcher who is a realist and an empiricist would employ a methodological approach that aims to *discover* the objectively existent truth (Aune, 1970; Delanty & Strydom, 2003; Johnson & Onwuegbuzie, 2004). This researcher would employ 'the scientific method' used in the natural sciences – usually taking a quantitative approach – to explain, control and predict phenomena (Wellington & Szczerbinski, 2007). However, a researcher who thinks reality is constructed by individuals based on their personal and social characteristics will be interested in finding out what people think about the phenomena under study (Chaille, 2008; Delanty & Strydom, 2003; Franklin & Nurius, 1998). In doing so, the researcher *constructs* an account – usually through the use of a qualitative approach – aiming to understand perceptions about phenomena (Wellington & Szczerbinski, 2007). Congruent ontological beliefs, epistemological perspectives, and methodological approaches constitute *research paradigms* (Lincoln & Guba,

2003; Delanty & Strydom, 2003; Wellington & Szczerbinski, 2007) and are thought to be foundational to research designs (Delanty & Strydom, 2003; Rosenberg, 2008).

Researchers in the social sciences, however, do not always adhere to paradigmatic traditions (Asberg, Hummerdal & Dekker, 2011; Johnson & Onwuegbuzie, 2004). This may be due to the fact that the social phenomenon under study cannot be appropriately studied through rigid adherences to one methodology. Convenience, accessibility, ethical concerns, and other circumstantial factors may also force a researcher to seek unconventional methods in studying social phenomena, particularly in research involving children (Dockett, Einarsdottir, & Perry, 2009; Einarsdottir, 2007; Freeman & Mathison, 2009). Finally, a social researcher may identify with a paradigm that *necessitates* the use of methods drawn from different methodological approaches (see the discussion of pragmatism) since he/she believes that methodologies should be interchangeably employed depending on the specific situation or social phenomenon at hand (Feilzer, 2010; Morgon, 2007).

Overview of quantitative and qualitative social research.

In a general sense, quantitative research produces knowledge through the use of numeric data and mathematical techniques. On the other hand, qualitative research is often characterized by its emphasis on the analysis of textual information in creating knowledge. For many researchers, and especially those at the primary stages of scholarship, this is the most important distinction between the two approaches, and it is often believed that all other differentiating factors arise from this distinction. In this paper, however, it is contended that this is a superficial way of understanding the differences between quantitative and qualitative research; and also that each of the characterizing features of the two approaches is shaped by ontological, epistemological, and methodological assumptions. Furthermore, researchers' awareness of these

philosophical assumptions does not play a role in how they formulate aspects of a social research approach. For example, it is not necessary for a social research to *know* about objectivism's role in formulating aspects of quantitative social research; through the employment of quantitative methodologies, the researcher *must* abide by certain expectations that have roots in objectivism as a philosophical assumption.

Below, an explanation of different aspects of quantitative and qualitative social research is provided. As mentioned, each of the factors that define these approaches has roots in philosophical assumptions. These philosophical assumptions along with explanations about how they help form the underlying paradigms of quantitative and qualitative social research will follow.

- Quantitative research considers the researcher (the person employing this type of research approach) as an *objective outsider* who, through the use of this method, is by necessity, a *neutral* observer (Creswell, 2009; Frankfurt-Nachmias & Nachmias, 2008; Johnson & Onwuegbuzie, 2004; Slevitch, 2011; Wellington & Szczerbinski, 2007). Furthermore, this type of research always aims to *support* or *fail to support* an already set *hypothesis* which is *reductionist* in nature and works to promote a *parsimonious* understanding of the phenomenon under study. This is accomplished through the use of *structured methods* (such as *experiments, quasi-experiments, and correlational studies*) which gather information through observations, interviews, and surveys. Finally, the overall goal of quantitative social research is to *predict* and *control.*

- Qualitative research sees the researcher a*s involved* in the social research process, from start to finish (Creswell, 2009; Frankfurt-Nachmias & Nachmias, 2008; Johnson & Onwuegbuzie, 2004; Slevitch, 2011; Wellington & Szczerbinski, 2007). As such, this

requires the researcher t*o reflect* on all aspects of the process and to work with the general understanding that one can never be without *a subjective worldview* and to be able to observe a social phenomenon as a*n outsider*. This type of research always aims t*o interpret* social phenomena through the provision of *a holistic* description of their occurrences; this necessitates regarding social phenomena as naturall*y irreducible*. This is accomplished through the use o*f narrative, phenomenological, ethnographic* and other research methodologies that aim to capture th*e whole* by the use of observations, interviews, and surveys. Finally, the overall goal is not to predict, but t*o describe* and to *understand*.

Brief history of the philosophy of social research.

Two philosophic traditions − rationalism and empiricism − constitute the foundations of what is known as 'knowledge' (Aune, 1970; Cottingham, 1988; Carlin, 2009). Rationalism is associated with Greek philosophers (and later revitalized by European philosophers of the early modern period) who believed that logical arguments are central to the creation of knowledge (Cottingham, 1988). In the 16th and the 17th century, however, there was a major shift towards empiricism, primarily associated with the works of Locke, Hume, and Berkeley (Aune, 1970; Carlin, 2009). Emanuel Kant is credited with the synthesis of these two traditions, which laid the foundations for what is known today as 'the scientific method' (Hay, 2009). The main assumption of those who believe in the scientific method is that reality exists independently and outside the subjective mind, and can be discovered through the use of the right method (Delanty & Strydom, 2003; Hay, 2009).

The social sciences saw the work of many philosophers who introduced the scientific method with its realist assumptions and rationalist-empiricist epistemologies in investigating the

truth of the social and the individual (Delanty & Strydom, 2003). Most pioneering social scientists argued that the same theoretical and philosophical assumptions should be transferred and applied to the social sciences as well (Delanty & Strydom, 2003). However, many contemporary social researchers do not necessarily agree with this position, even those who use the scientific method in their investigation of social phenomena. These scientific attempts were later met with an array of epistemological arguments that were shaped by an ontological set of beliefs, known collectively as idealism (Cottingham, 1988). These epistemologies are understood as a critical rejection of an objective, overarching truth about the social and their emphasis on subjective truth emerged through social interactions and other human endeavors (Delanty & Strydom, 2003; Dicken, 2010).

Social and natural sciences: differences in methodological approaches.

When it comes to the *aim* of social science research, many contemporary writers argue for a differential outlook and a fundamental shift from assumptions that have shaped the philosophy of research done in the natural sciences (Delanty & Strydom, 2003; Rosenberg, 2008).

Why is this topic introduced here? Prior to continuing on with the understanding of the underlying philosophy of social research, it must be mentioned that many of the philosophical traditions introduced herein primarily influenced research done in the natural sciences. According to Rosenberg (2008), many philosophers of the social sciences argue that the philosophical underpinnings of research in the social sciences naturally differ from those of the hard sciences. Rosenberg outlines two possible reasons for this perspective: lawlessness in the social sciences, and contradictory purposes.

Lawlessness in the social sciences.

According to this position, the reason why the social and the natural sciences differ in their progression and therefore, require differential philosophical presuppositions has to do with the different nature of the subjects of study in the two categories (Rosenberg, 2008). Humans as the subject of the social sciences are fundamentally different from the subjects of the natural sciences (such as a cellular body, motion of planets, or a certain chemical reaction). The excessively complicated attributes of humans, as well as restrictions of resources and ethical concerns regarding the social position of humans are the reasons why the social scientists cannot use the same methodological approaches with humans as natural scientists do with the objects of their fields. It also follows that with these differences in mind, research in the social sciences cannot have the same philosophical underpinnings as that of the natural sciences. When it comes to children as the object of the social sciences, the same issues apply in that children, characterized as complex "systems" of social and biological traits, require different ways of understanding and explaining than do inanimate and lifeless matters.

Contradictory purposes.

Rosenberg (2008) presents another view regarding the differential underlying philosophies of the social and the natural sciences. Drawn from the work of Kuhn, Rosenberg states that viewing the progress of the natural *and* the social sciences through an absolutist lens instigated by Newtonian science proves useless as this is no longer the case in either category. "Newtonian science made prediction a requirement of scientific achievement because it was a deterministic theory of causal mechanisms. But quantum mechanics has revealed that the world is indeterministic; thus, definitive prediction can no longer be a necessary condition of scientific success." (Rosenberg, 2008, p. 37) With this depiction in mind, we can see how viewing

progress in the social and the natural sciences through the lens of determinism can only mislead us in assigning the purpose of research in these domains in providing causal links between phenomena and nothing else.

Rosenberg (2008) continues to state that even with such progressions in the physical science – progressions that take on speculative qualities – the aim of the natural science research remains to be that of the provision of causative links. However, the aim of the social sciences must not remain within such confinements. Rosenberg goes on to argue that folk psychology, or common sense knowledge, are our best *causative* social theories that have been a part of human reasoning far before social science disciplines began to exist. Furthermore, causation in the social sciences cannot possibly be any more accurate than that of folk psychology. In line with this perspective, the aim of the social sciences should be *understanding* of social phenomena and not explaining or predicting them. In applying this notion to social research with children, it is easy to see how social research can have the twofold purposes outlined above. If the aim of social research was that of determining causative links, a child's behaviour comes to be seen as responses *due to* other phenomena. On the other hand, in *understanding* a child's behavior from the latter perspective, the behaviour comes to be looked at as a process in which a child is interacting with his/her surrounding and making meaning of his/her own experiences (Chaille, 2008; Einarsdottir et al., 2009).

As explained at the beginning of this section, the reason why views about the distinctions between research in the social and natural sciences was outlined is because philosophical traditions, such as rationalism and empiricism, were primarily seen as epistemological underpinnings of the natural science research (Delanty & Strydom, 2003; Rosenberg, 2008). However, aspects of such traditions are incorporated in the social science research even though

the aim of the social sciences is seen as distinct from the aim of the natural sciences. This point will be further elucidated when research paradigms that govern quantitative and qualitative social research with children are discussed.

The philosophical underpinnings of quantitative research.

In this section, I will outline the key features of positivism and post-positivism, which are the underlying paradigms of quantitative research. The main difference between the two is that positivists believe that 'hypotheses' can be *proved* while post-positivists claim that they can only be *disproved*. However, they share many of the following features (Delanty & Strydom, 2003).

Empiricist suppositions.

The most crucial aspect of the positivist/post-positivist paradigm is its focus on empirical investigation of truth. Information that can be gathered through the senses, over time and space, is sufficient to establish the 'truth' about the phenomenon under study (Carlin, 2009). This was found to be particularly useful in the study of natural phenomena and was used extensively in most natural science disciplines. In the social sciences, this supposition means that only observable phenomena should be the subject of study (Delanty & Strydom, 2003; Feilzer, 2010). If certain phenomena are non-observable (such as emotions), they should first be made observable (such as quantifiably assessed physiological reactions, e.g. EEG outputs), and then studied (Frankfurt-Nachmias & Nachmias, 2008).

Objectivism.

According to this view, it is indeed possible for knowledge to exist outside of the knowing agent, the knower. In other words, truth and reality are not dependent on who is seeking knowledge and in what context, as long as appropriate methods are consistently and rigorously used (Hay, 2009; Johnson & Onwugbuzie, 2004). In the case of social research involving

children, an objectivist supposition would mean that childhood is an objective reality and that it can be measured, analyzed, and discussed uniformly and impartially.

Value Freedom.

Primarily, value freedom involves the assumption that a social scientist is able to (and in fact, he/she ought to) arrive at objective social knowledge through the use of the scientific method which provides a deductive way of explaining social phenomena (Delanty & Strydom, 2003). Furthermore, it is believed that it is possible for the social researcher to stay neutral and to not incorporate personal, cultural, ethical, and other ideological factors in their investigation of social truths (Madill & Gough, 2008).

In the social study of early childhood, this aspect of positivism can be translated to mean that an adult researcher can arrive at true knowledge about the child and childhood if he/she stays neutral and does not incorporate personal beliefs into his/her investigation.

Instrumentalism.

An instrumentalist view of a social theory involves the belief that it is possible to formulate a theory that is derived *exclusively* from research findings, achieved through a systematic employment of the scientific method. Also, directly related to the supposedly causative nature of social knowledge, instrumentalism is a position that involves *manipulation* of one variable and the observation of change made in another (Hay, 2009; Delanty & Strydom, 2003).

Applying the notion of instrumentalism to the study of early childhood involves believing that any change resulting from the control and manipulation of one aspect of a child's life (an independent variable) is causatively linked to the affected construct (dependent variable). Furthermore, an instrumentalist belief about theory production in the social sciences is that results derived from the "correct" methodology (scientific method) are objectively true.

Reductionism.

Another feature of positivism/post-positivism is the tendency to reduce phenomena to their composite parts which are treated as variables (Hay, 2009; Rosenberg, 2008). Reductionism in the study of early childhood could mean that a complex behaviour of a child should be reduced to basic units that can be indubitably measured. As an example, a child's play can be conceptualized as having an affective, a cognitive, and a behavioural component. Reducing the complex act of play to these three more basic conceivable units can supposedly help a researcher better understand play than if he/she was to study play holistically.

Language of science.

An emphasis on precision in scientific language grew from the work of Ludwig Wittgenstein. It was argued that the often misleading and vague characteristics of everyday language do not capture the true identity of phenomena under scientific study. Instead, precise scientific language has an "isomorphic" relationship with the natural world (Delanty & Strydom, 2003). Scientific terminology, which is different from 'everyday' language, would be used to convey specific constructs. It is believed that this kind of language would be less prone to misinterpretation.

Parsimony.

The theory of parsimony states that among competing explanations for the occurrence of the same phenomenon, the simplest explanation is most likely the correct explanation (Hay, 2009; Rosenberg, 2008). Furthermore, adhering to this theory would require a social researcher to present the simplest explanations for how social variables are causatively linked to one another. In the social investigation of children, for example, if one theory states that a child's intelligence is caused by one variable, and another theory considers it to be caused by three

variables, the former is taken as having a higher level of validity, as it provides the simplest explanation for a child's intelligence.

The philosophical underpinnings of qualitative research.

This method is essentially rooted in the belief that reality is subjective and is socially constructed (Dicken, 2010; Harrits, 2011; Slevitch, 2011). Furthermore, the presumption that it is *impossible* to segregate facts and values underlies every aspect of this research approach (Madill & Gough, 2008). Therefore, the presence of the researcher is seen as an inescapable and inevitable presence. That is why this approach highly focuses on reflectivity and being critical about all processes involved in a research endeavor.

Qualitative research is an approach that emerged as a response to the over-emphasis on the scientific method in the social sciences. Even though qualitative research had been used by many social scientists of the 19th and 20th century (such as Wilhelm Wundt and Sigmund Freud) and even prior to that by early ethnographers of the 17th century, the emergence of a range of methodological approaches as a comprehensive alternative to quantitative research was not seen until the 1920s and 30s (Delanty & Strydom, 2003; Dicken, 2010; Rosenberg, 2008). The approach was based on a relativist ontology which considered reality and knowledge to be personal creations and to inherently differ from person to person (Franklin & Nurius, 1998; Rosenberg, 2008). Furthermore, "the epistemologies undergirding qualitative methods are constructivist or social constructionist, asserting that humans create and act on their own personal realities, thus precluding objective social and psychological realities." (Franklin, et al., p. 98) This section of the paper will consider the significance of the philosophical positions of constructivism, relativism, idealism, social constructionism, subjectivism, qualitative

pragmatism, and holism (or irreducibility) as they pertain to qualitative social research involving children.

Constructivism.

Constructivism is an epistemological view that regards knowledge as individually constructed and socially mediated (Franklin & Nurius, 1998; Dicken, 2010). The main tenet of constructivism is the notion that reality of the world may or may not be mind-independent, but knowledge of that reality depends on the knower. As such, knowledge cannot be objectively defined as it is personally constructed (Franklin & Nurius, 1998; Rosenberg, 2008). In early childhood research, if a constructivist researcher would want to inquire about the meaning of childhood, he/she would know that childhood has different definitions depending on the person conceptualizing about it. As such, he/she would deny the existence of overarching explanations of childhood with one universal set of definitions (Chaille, 2008).

Constructivism, as an epistemological theory, is rooted in two ontological theories: relativism and idealism (Dicken, 2010).

Relativism.

Relativism is a general viewpoint that regards aspects of reality to be *relative* to other entities (Franklin & Nurius, 1998). For example, moral relativism is an ontological viewpoint that regards the reality of morality to be relative to the mind of the individual who rationalizes about it. The reality of morality can be seen to be *relative* to the society in which an individual lives. Because relativism is based on the notion that reality is relative to the mind of the individual thinking about it, this notion can be extended as follows: reality is *non-existent* outside of the mind of the thinker (Franklin & Nurius, 1998).

As relativism is a significant ontological tenet of qualitative research, we can examine its application to qualitative social research that involves children. A relativist account of childhood, for example, would hold that the reality of childhood is relative to the mind of the individual who is rationalizing about it. Primarily, it can be concluded that the reality of childhood *differs* from one person to another. Secondly, as an extension of this relativist perspective, it can be further argued that childhood simply does *not* exist as an objective reality (idealism).

Idealism.

Idealism is an ontological perspective, first appearing in the work of the famous rationalist, Gottfried Wilhelm Leibniz (Aune, 1970; Cottingham, 1988). This viewpoint was presented against another school of thought, known as materialism, whose characteristic features involve the belief in the existence of matter as the only real entity (Carlin, 2009; Cottingham, 1988). Therefore, materialism refutes metaphysical explanations of consciousness and individual realities; according to materialism, consciousness and individual realities are the work of interactions between matters, whose subsistence is real. Leibniz's idealism stands against traditional materialism in that it states that the only entities that truly exist are ideas. Ideas, therefore, are *objectively* existent and are what shape realities. Since there are no ways to substantiate the correspondence of one's ideas with another's, idealism becomes an ontological view which supports the notion that reality does not exist outside of the mind of the thinker (Aune, 1970; Cottingham, 1988; Delanty & Strydom, 2003; Landesman, 2002).

The ontology of childhood, according to an idealist account of reality, is necessarily dependent upon the *individual ideas* about childhood. In other words, the idealist account of childhood states that childhood is not a *mind-independent* objective reality (Chaille, 2008); as such, its existence is not uniform across all minds.

As previously mentioned, the epistemological framework of constructivism lies on the notion that first, reality is relative to the mind of the thinker (relativism) and second, that reality exists as ideas (idealism). As we can see, the ontological tenets of constructivism do not allow for reality to exist outside of the mind of the knower. Given the position of reality as a matter of thought, constructivist accounts of knowledge production and justification would necessarily be concerned with investigation of the human mind.

In the case of social research involving children, a constructivist epistemology would consider it a necessary condition that the study of children involves a thorough examination of their thoughts and experiences. This is so because if we were to create knowledge about childhood, a child's perspective about it is the only source that can give us the knowledge we are looking for (Chaille, 2008; Darbyshire, Shiller & MacDougall, 2005).

Social constructionism

A subset of the constructivist epistemology, known as social constructionism, views knowledge production to occur as a social process; furthermore, it is social interactions that define and shape an individual's knowledge, including knowledge of what is real (Madill & Gough, 2008; Dicken, 2010). The important tenets of constructivism apply here: knowledge is individualistic, mind-dependent, and constructed. However, social constructionism adds another layer to this array of arguments: knowledge is *socially* constructed (Alexander, 2006; Dicken, 2010; Einarsdottir, Dockett & Perry, 2009).

Since according to this position, all knowledge is socially constructed, yet confined to the mind of the individual, *acquisition* of knowledge would be possible through the investigation of the individual. However, another crucial epistemological assumption of social constructionism must be mentioned here: investigation of the personal truth is a *social* act; as such, research is a

social endeavor that *further constructs* knowledge (Asberg, Hummerdal & Dekker, 2011; Dicken, 2010). To elaborate, I will use an example of social research with children. According to constructivism, a child's view of the world is only knowable if the child's views are directly investigated. In doing so, a social researcher would ask the child about his/her perspectives about an aspect of the child's life. However, given the notion that knowledge is not *objectively* existent and that transfer of knowledge is a social act, the research endeavor will help the researcher *construct* an account of the child's views (Freeman & Mathison, 2009). Furthermore, this reconstruction of the child's views is not an objective account of the child's views (this objectivism differs from the epistemological objectivism previously discussed). What that means is that no matter how a social researcher aims to understand a child's views about a matter, he/she would never be able to arrive at a conclusive apprehension of the child's views. The approximation of what the child thinks is the best a social researcher can do. As such, it is the job of the researcher to try and create as close a portrayal of the child's realities as is possible (as it relates to the specific purpose of that research process), even though a complete representation is admittedly impossible. Therefore, qualitative researchers working with children work with the assumption that a child's realities cannot be fully apprehended and represented.

Subjectivism

An inherent characteristic of constructivism is subjectivism. This philosophical stance stands against objectivism (a defining characteristic of positivism/post-positivism) by claiming that subjective awareness of the external world is the closest an individual can get to the reality of the world (Delanty & Strydom, 2003; Rosenberg, 2008). Subjectivism goes hand in hand with constructivism in that it claims that knowledge is never uniform across individuals, but is rather constructed as a result of exposure to the world.

Qualitative pragmatism

Many proponents of qualitative social research argue that qualitative research is by nature a pragmatist mode of induction (Creswell, 2009; Dicken, 2010; Madill & Gough, 2008; Morgon, 2007; Pole, 2007; Slevitch, 2011; Wellington & Szczerbinski, 2007). Pragmatism is the philosophical doctrine that strongly embraces practicality and conscious and continuous awareness of the appropriateness of employed methodologies based on each unique situation (Feilzer, 2010; Morgon, 2007). The reasoning behind the claim that qualitative research is fundamentally pragmatic is that given the philosophical foundations of constructivism, knowledge is constructed and reconstructed through many modalities. As such, it should be expected of the social researcher to try to understand as many of these modalities as possible, through a systematic and comprehensive investigation, using multiple methods, as deemed appropriate by the social researcher (Creswell, 2009; Dicken, 2010).

Even though proponents of qualitative research argue that the employment of different methods in acquiring knowledge regarding a certain social phenomenon is preferred, none of such methodological approaches assume objectivism, instrumentalism, or freedom from values. In other words, such methodological approaches (such as phenomenology, ethnography, discourse analysis, etc.) share no similarities in their philosophical underpinnings to that of quantitative research methodologies. Therefore, even though the affordance of a certain level of freedom is assumed in the qualitative approaches, this freedom does not allow a researcher to epistemologically and ontologically depart from the original research paradigms. These departures, instead, only allow the researcher to walk about in the realm of constructivist and interpretivist paradigms.

There is a different type of pragmatism that argues for a broader focus on practicality, a focus that seeks to depart the social researcher from adherence to traditional philosophical underpinnings of quantitative *or* qualitative research approaches (Feilzer, 2010; Morgon, 2007). This type of pragmatism will be discussed next.

Pragmatism as a Social Research Paradigm

Many philosophers of the social sciences argue that pragmatism in research is an approach that must be embraced and executed (Asberg, Hummerdal & Dekker, 2011; Bernstein, 2010; Duffy & Chenail, 2008; Feilzer, 2010; Harrits, 2011; Johnson & Onwuegbuzie, 2004; Morgon, 2007; Onwuegbuzie & Nancy, 2005; Pole, 2007; Slevitch, 2011; Trifonas, 2009). Pragmatism, as it relates to approaches in social research, is the philosophical doctrine that strongly embraces practicality and conscious and continuous awareness of the appropriateness of methods based on what the situation necessitates (Johnson & Onwuegbuzie, 2004; Onwuegbuzie & Nancy, 2005). To elaborate, proponents of this philosophical tradition argue that research methods drawn from the quantitative design (such as the employment of experiments, correlational studies and surveys) and those taken from the qualitative approach (such as case-studies, ethnographies and phenomenological approaches) are mere tools that are at the disposal of the social researcher (Johnson & Onwuegbuzie, 2004; Wellington & Szczerbinski, 2007). It is, then, the job of the social researcher to employ appropriate methods taken from either category in all or some components of a research study in a structured manner. The resultant research design is known as mixed-methods research, which works by putting the focus of the research project on its goals through constant awareness of ways that would offer the best chances of obtaining answers pertinent to the posed research question (Johnson & Onwuegbuzie, 2004; Wellington & Szczerbinski, 2007). Therefore, researchers who employ this type of research

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design are less concerned about being true to the philosophical foundations of social research, and are more interested in attaining a more comprehensive understanding of the social phenomenon under study than what would be possible through an exclusive adherence to quantitative or qualitative research methodologies.

Research Involving Children

Currently, social research studies that involve children as participants do not fundamentally differ from those that study adults. This is because both the quantitative and qualitative designs are employed in studying children and adults alike. However, in the past few decades, two factors have been identified that differentiate between research with children and research with adults; these two factors are about perceptions of childhood and issues of practicality in research (Dockett, Einarsdottir & Perry, 2009; Pascal & Bertram, 2010; Punch, 2002). Perceptions of childhood as the source of differences in research approaches employed in the study of children or adults arise from the work of sociologists of childhood who claim that the ways children are viewed determine how they are studied (Punch, 2002).

The reason why social research involving children is different from research with adults is related to children's marginalized position in the society (Punch, 2002; Uprichard, 2008). Children are often regarded as "adults in the making" (Uprichard, 2008, p. 303) as opposed to being seen as persons who are constructing their own realities while interacting with the world around them. Children are also seen as needing protection from the world around them (Chaille, 2008; Christensen, 2004; Uprichard, 2008). This raises issues of practicality. Because of our perceptions of children as incapable and in need of protection, ethical guidelines that dictate ways of conducting research that involves children are more stringent than in the case of adults.

Dockett, Einarsdottir, and Perry (2009) identify many ethical reasons that have to be considered when doing research involving children. Primarily, the issues surrounding consent play crucial roles in hindering children's participation in research endeavors. Because children's participation is not possible without officially being allowed by parents or guardians of children, this creates a huge barrier in children's participation in research. Furthermore, in order to seek consent, many researchers are forced to modify their research strategies, which ultimately results in different outcomes. For example, a social researcher, realizing that it is unethical to attempt to gather data about children's opinions regarding a controversial topic (such as on war), might be forced to gather data in a way that does not allow children to fully express their opinions.

Researchers working with children must also be more cautious about their impact on children than if they worked with adults. Usually, children's spaces (such as a kindergarten) are used for research, and the permission for the use of such spaces is not granted by children themselves, but by adult gatekeepers (early childhood educators, teachers, parents, etc.). Finally, given limitations of concepts and language to express them create further barriers in the direct investigation of children and early childhood (Dockett, Einarsdottir, & Perry, 2009; Punch, 2002; Freeman & Mathison, 2009).

The issues of perceptions of childhood and practicality are what cause social research involving children to be different from adults. As discussed, this difference is most significantly observed when judging the genuineness of research findings. Because children are perceived differently, and because social researchers who work with children are faced with more stringent ethical barriers and guidelines, the social study of children and early childhood may not be as robust as the social study of adults. In alleviating this, some researchers suggest that multiple strategies and methodological approaches must be employed – a type of qualitative pragmatism

(Freeman & Mathson, 2009; Punch, 2002). However, given the excessive devotion to one research paradigm as opposed to another in the work of such researchers, such strategies often belong to the same paradigms (constructivism/interpretivism)

Social research *with* or *on* children.

The implications of pragmatism in social research are even more pronounced when children are the subjects of research studies (Dockett, Einarsdottir & Perry, 2009; Einarsdottir, 2007; Lundy, McEvoy & Byrne, 2011). Prior to explicating the reasons for why social research involving children should be more pragmatic in design, it is important to consider the difference between doing research *with* children and conducting research *on* or *about* children.

The main difference between doing research *with* or *on* children comes from a researcher's choice in consistently and consciously involving children in some aspects of the research process (in designing the study, in data gathering, and/or in data analysis) or to use them as subjects only, respectively (Lundy, McEvoy & Byrne, 2011; Mazzoni & Harcourt, 2013). It must be noted that social research with children is not equivalent to qualitative research; similarly, doing research on or about children is not synonymous with quantitative social research. However, social researchers' reasoning behind doing social research *with* children stems from their understanding of the child as an active agent who is in an ever-continuing re-conceptualization process, through which personal realities are constructed and reconstructed. Such researchers engage children in the research process as it is the child whose social construction of reality is under question. The qualitative method gives the researcher the tools necessary to uncover this complexity and to elucidate an understanding of the child based on the way he/she makes meanings of his/her experiences and constructs his/her own social realities

(Blaise, 2009; Einarsdottir, Dockett & Perry, 2009; Johnson & Onwuegbuzie, 2004; Mercer, 2010; Wellington & Szczerbinski, 2007).

Similarly, social researchers whose work is *on* or *about* children identify with an understanding of the child as an individual with traits that can be approximated as universal trends as opposed to socially constructed individual realities. In other words, based on their belief in universality and the objective existence of childhood, these researchers study children from a distance, as outside observers. The suppositions of objectivity, instrumentality, and value freedom associated with the quantitative method are in line with conducting research *on* children (Beneson, Quinn & Stella, 2012; Johnson & Onwuegbuzie, 2004; Wellington & Szczerbinski, 2007).

Contemporary researchers who work with children have proposed ways of involving children in all aspects of a social research process. This includes the proposition of a research question, the data collection process, and even in analysis and examination of collected data (Lundy, McEvoy, & Byrne, 2011; Mazzoni & Harcourt, 2013; Pascal & Bertram, 2009). Most researchers who provide children with such an extent of agency and responsibility regard children and childhood as irreducible social phenomena (Chaille, 2008) and in need of a holistic understanding, made possible by the overt inclusion of children in as many aspects of the research process as possible. In corroborating this view, many researchers have incorporated the views of children in many aspects of their research project. The findings of these researches suggest that children are competent and show the expertise to contribute to many aspects of the research process (Punch, 2002). In addition, according to Dockett and Perry (2006), research that aims to capture the perceptions and experiences of children should use a multitude of approaches, in seeking research approaches that children can use to reflect on their experiences.

Employing different approaches helps in ensuring that children's responses are as genuine as possible: "A combination of techniques can enable the data-generation process to be fun and interesting for the participants as well as effective in generating useful and relevant data." (Punch, 2002, p.377)

Other researchers see children's participation in research as a right of the child. For instance, Lundy, McEvoy, and Byrne (2011) argue that "under the United Nations Convention on the Rights of the Child (UNCRC), children have the right to express their view on all matters affecting them and to have those views given due weight." (p. 714). It must be mentioned that this assumed agency on the part of children would not involve the inclusion of children in the research process compulsorily; rather, the authors argue that children's views must be expressed freely and without pressure. The assumption that it is children's right to be included in some aspects of the research process is perhaps rooted in the belief that listening to children's voices ultimately results in sociopolitical benefits for children (Lundy, McEvoy, & Byrne, 2011; Punch, 2002; Uprichard, 2008).

Conclusion

In this section, I outlined the different features associated with quantitative and qualitative social research, and argued that such features are based on different ontological, epistemological, and methodological assumptions. Further, social research involving children is also influenced by perceptions of childhood and issues of practicality. In the next section of the paper, I will outline the details of the methodological approach I took (SLRs) in examining the research question.

Chapter 3: Methodology

To address the research question, I conducted two systematic literature reviews (SLR). According to Okoli and Schabram (2010), there are three kinds of literature reviews. The most commonly used literature review is one that creates a theoretical foundation for primary research. This review often appears at the beginning of a published article and provides information about the extent of knowledge already available and justification for the current research study. Furthermore, this type of review communicates the significance as well as the shortcomings of previous literature, which further rationalizes the purpose of conducting the intended research project. The second kind of literature review, according to Okoli and Schabram (2010) is one that appears in the theses of graduate students. As well as serving the purposes that a standard literature review serves, this type of a review provides further proof about the student's knowledge of the subject matter and his/her dedication to conducting research with rigor and thoroughness. The third type of literature review for which Okoli and Schabram (2010) provide a thorough description is the systematic literature review. A SLR fundamentally differs from the other kinds of literature reviews in that it "constitutes an original and valuable work of research in and of itself" (p. 1). This is essentially due to a SLR's scope and rigor.

According to Fink (2005), SLRs have many important characteristics. Primarily, SLRs are *systematic,* meaning that they follow a methodological approach that is overtly stated. This is a pre-determined approach, which helps to ensure that the research question is in focus and to minimize diversion. Secondly, such reviews are *explicit* in the depiction of the procedural aspects of the review. Systematic reviews are also *comprehensive*, meaning that they report on an exhaustive search of a certain topic and would have to, by definition, include all relevant

materials. Finally, systematic reviews are *reproducible* in that other researchers would achieve the same results upon following the same approach explicitly delineated by the reviewer. According to Rousseau (2008), the adjective "systematic" is a qualitative adjective, and not a classifying adjective. To elaborate, all systematic reviews have a certain level of *systematicity* in that one SLR can be more or less systematic than another. Therefore, according to this perspective, all reviews are systematic reviews; however, in order to be *most* systematic, a researcher must consistently attend to and report every detail of the review process.

By paying close attention to the specific requirements for conducting a SRL as suggested by Fink (2005), Rousseau (2008), and Okoli and Schabram (2010), I conducted two systematic literature reviews. The first examined the extent to which social researchers who employ *quantitative* research methodologies in their investigation of children and early childhood adhere to the philosophical canons of quantitative research. The second systematic review examined qualitative social researchers' adherence to the philosophical foundations of qualitative research.

According to Fink (2005), Rousseau (2008), and Okoli and Schabram (2010), first and foremost, a reviewer must describe why a SLR was deemed as the most appropriate methodological approach for investigating the topic of interest. Secondly, the protocols and trainings associated with conducting the SLR should be outlined. Third, the author should explicitly describe the details and to provide justification for how the comprehensiveness of the review was ensured. The fourth and the fifth requirements are about identifying and explaining how the author screened for inclusion and exclusion of articles, respectively. Sixth, the author should systematically extract and utilize applicable information from each studied article. As the seventh requirement, the author should synthesize or analyze the extracted information. And finally, the last step requires writing about the findings of the review. Steps one through five will

be discussed in this section of the paper (Methodology). Steps six, seven, and eight will be reported in the Findings section.

Purpose and Justification of Methodology

As noted earlier, the purpose of this paper was to investigate whether social research involving children remains within the framework of the established research paradigms, and to what extent. Given that this purpose necessitates taking on a meta-view, looking down on quantitative and qualitative research studies conducted in the past, it was deemed necessary for me to employ a methodological approach that does not belong to either category. The defining features of a SLR (mentioned above) satisfy this purpose very well. SLRs are conducted on qualitative and qualitative studies alike (Okoli & Schabram, 2010) and are used to produce knowledge by drawing from an exhaustive quantity of published academic articles that focus on a specific topic.

      Limitations of methodology.

In my perspective, there are unique limitations associated with employing SLRs as a methodological approach for the current study. First, SLRs are reductionist in nature. For the purpose of this paper, for example, I used the proposed philosophical tenets of quantitative and qualitative research as a checklist, by assigning a 'yes' or a 'no' to each researcher's adherence to each philosophical tenet. This way of assessing this topic reduces the entire notion of 'adherence to paradigmatic traditions' to a binary notion, and not as something that can be assessed on a continuum (how *much* is an author adherent to a certain philosophy). This makes SLRs more in line with the philosophical tenets of quantitative research, than with qualitative approaches.

Secondly, conducting an SLR that takes into account *published* articles alone would pose a limitation associated with the direct involvement of an editor prior to publication. For example, it might be the case that justification of researchers' adherence to the philosophy of research has been removed from the paper by editors because they view such mentioning as irrelevant and/or useless. It raises the issue about whether or not different results would be achieved if dissertations or theses were the subject of this study, in which case authors are freer to discuss such issues. Finally, the last limitation associated with choosing systematic reviews as the methodological approach for this study is with regard to only including articles written in English. This reduced the possibility of coming across research published in other languages, perhaps rooted in different ways of doing research with closer attention paid to the philosophy of research. This might be especially true in the case of research published in French or German.

These three limitations can pose threats to the reliability and validity of the findings of this study. However, a SLR is still a much better alternative to other methodological approaches because it serves the purpose of this study well, by providing a way through which quantitative and qualitative studies can be assessed in a similar fashion.

Protocols and Training

According to Okoli and Schabram (2010), this step of the process involves establishing protocols prior to conducting the search for a SLR. In addition, this step requires the training of all individuals involved in the process in order to ensure the validity of the findings. The latter part of this step does not apply to this project as the author of the current study was the sole reviewer in this project. However, the former requirement was consistently attended to and will be discussed here.

Search protocols.

Previous SLRs conducted I had conducted in the past, along with the procedural aspects of conducting an SLR proposed by Okoli and Schabram (2010), Fink (2005), and Rousseau (2008) were used as a guide for conducting these reviews. Furthermore, other systematic reviews conducted in different social science disciplines were reviewed for further guidance (Bohanna, Davis, Corr, Priest, & Tan, 2012; Chapman, Buckley, Sheehan, & Schochet, 2013; Cutiva, Vogel, & Burdorf, 2013; Magalhaes, Cordoso, & Missiuna, 2011; Miller, Epsosito-Smythers, Weismoore, & Renshaw, 2013; Savin-Williams, & Vrangalova, 2013; Siddiqi, Tiro, & Shuval, 2011).

Prior to conducting the search, I decided to review three sections of each paper: the Introduction, Methodology, and the Discussion. Preliminary readings of several articles on empirical studies showed that the Introduction frequently included the theoretical frameworks and review of literature which indicated the authors' own worldviews and/or preferences with regard to what is "good" research. The reason for the selection of the Methodology section is self-evident. The reason for the selection of the Discussion section is that the authors' knowledge claims and their use of evidence and arguments are highly dependent on their epistemological and ontological assumptions.

Searching the Literature

This step, according to Okoli and Schabram (2010) involves the explanation of the search procedures and justification for comprehensiveness of the search.

The terms I began with for the literature search were *"Early Childhood", "Quantitative", "Child(ren)"* for the quantitative SLR and *"Early Childhood", "Qualitative", and "Child(ren)"* for the qualitative SLR. These terms were used in "Publication Title", "Document Title",

"Identifier/Key Words", "Journals", "Subject Heading, and "Abstract". I only included peer reviewed articles based on empirical work and excluded meta-analyses or other systematic reviews of previous research. ERIC and PsycInfo were the only two indexes used for both the quantitative and the qualitative SLRs, as I believed these two databases offered a comprehensive collection of research articles pertaining to most social science disciplines. The search was limited to articles published only in the past year (January 1, 2012 to December 31, 2012) that also met the above criteria. This decision was made for reasons of practicality, given the timeframe of this project.

I soon found out that the two predetermined search indexes (ERIC and PsychINFO) do not represent research done in most social science disciplines, but only research done in the disciplines of psychology and education. I then began to use ProQuest as a search engine because it provides access to many different databases, including ERIC and PsycINFO. I further narrowed down the search only to peer-reviewed articles published in the English language.

Another modification was made when I found that the term "Early Childhood" used without quotations around the two words, did not yield studies specifically related to early childhood. Furthermore, unless "Early Childhood" was searched only in the document title, it was one among many age groups discussed in the article.

Quantitative SLR.

When searching for articles for the Quantitative SLR, I found that the word "Quantitative" along with "Early Childhood" produced articles that did not necessarily report on quantitative empirical research. Most quantitative researchers do not actually use the word 'quantitative' in their research articles. Instead, terms such as 'experimental', 'hypothesis', or 'statistical analysis' are more commonly used in such research papers. Used in conjunction with

the term "Early Childhood" the search produced much more relevant research articles. The use of the OR function and the asterisk also helped to ensure the comprehensiveness of the search. When the duplications were removed, the total number of articles remaining was reduced to 164. Out of the 164 relevant articles, 3 were untraceable, reducing the total number of articles to 161. Since not all the research articles produced in the search were available through ProQuest, they were sought through Ryerson University Library & Archives (RULA) and Google Scholar.

According to Okoli and Schabram (2010), the fourth section of a SLR requires for the author to overtly state the requirements for inclusion of articles deemed appropriate for the SLR. "…this step requires that the reviewer be explicit about what studies were considered for reviews, and which ones were eliminated without further examination" (p.7). The fifth section (Quality Appraisal) must include explanations about how the qualities of articles were judged, and hence, how the author decides to exclude articles based on their quality. I decided to combine these two steps into one for the following reasons: a) the purpose of this paper is to include *all* articles published in the specified timeframe, and b) the ProQuest database provided the necessary tools to focus the search narrowly but also fully. It was, therefore, unnecessary to use multiple inclusionary and exclusionary steps at this stage.

Given the purpose of this paper, only *empirical* studies that included children under the age of eight as participants (the definition of early childhood, predetermined by the author) were sought in this review. Furthermore, the author was only interested in quantitative research studies. The next step of the process involved screening articles according to the following requirements. The primary factor considered for inclusion was whether or not the authors had used quantitative methodologies and not qualitative or mixed-methods approaches or that the studies were not meta-analyses, SLRs, theoretical papers, or other non-empirical papers. There

were 3 qualitative studies, 3 mixed-methods studies, 3 systematic reviews, 1 meta-analysis, and 6 theoretical papers. This reduced the total number of articles to 145. The next reducing factor was the type of participants that were used in these studies. This step reduced the resulting number of articles to be included in the SLR considerably. Out of the remaining 145 articles, 66 were studies that involved participants other than children under the age of eight (e.g. parents, educators, adolescents, etc.). The final number of articles remaining for a more thorough review was reduced to 74. The details of the inclusion and the exclusion steps can be found in Appendix A, in Table 1.

Qualitative SLR.

The qualitative search was more complex. Upon the review of some qualitative research articles, it became clear that researchers who employ qualitative methodologies do not necessarily use the word "qualitative" in their articles. Instead the use of other terms such as subjectivism, discourse, discursive, narrative, phenomenology, phenomenological, ethnographic, ethnography, constructivism, social constructionism, grounded theory, and action research were observed. As such, the final search parameters was: ti("early childhood") AND (qualitative OR subjectivis* OR discourse OR discursive OR narrative OR phenomenolog* OR ethnograph* OR constructivis* OR constructionis* OR "grounded theory" OR "action research") from January 1, 2012 to December 31, 2012, with the "Peer Reviewed", "Articles", and "English" functions activated. This resulted in 118 articles. When the duplications were removed, the total number of articles remaining was reduced to 84. Out of the 84 relevant articles, 4 were untraceable, reducing the total number of articles to 80. Therefore, the number of articles found for the qualitative SLR was less than half the number of articles found for the quantitative SLR.

As for the quantitative SLR, I used ProQuest, RULA and Google Scholar for the search. I looked particularly for research articles that reported on qualitative studies conducted with children under the age of eight. When I excluded mixed methods studies, as well as SLRs, discourse analyses, and theoretical papers, the total number of articles was reduced to 54. Just like the quantitative SLR, the most significant reduction in the number of articles occurred when the participants in each of the remaining studies were considered. In this process, 40 articles were removed from this database and 14 articles remained for a more thorough analysis. The details of the inclusion and the exclusion steps can be found in Appendix A, in Table 2.

Chapter 4: Findings

In conducting SLRs, the eight steps suggested by Fink (2005), Rousseau (2008), and Koli and Schabram (2010) ensure the systematicity, explicitness, comprehensiveness, and reproducibility of the SLR. In this section of the paper, the results of steps six, seven and eight will be reported. As previously mentioned, in step six, a reviewer should systematically extract and utilize applicable information from each reviewed study. In step seven, the author should synthesize or analyze the extracted information. And finally, the last step involves writing about the findings of the review. Steps six and seven were conducted through a thorough examination of the resulting articles (74 quantitative and 14 qualitative articles). These results are provided in Tables 3, 4, 5, and 6 (see Appendices B and C) and explained more thoroughly in this section.

Quantitative SLR Findings.

On the component of reductionism.

Reductionism is an important tenet of the positivist/post-positivist paradigms. The reductionist assumption regarding the nature of social phenomena is the assumption that all phenomena are nothing but the sum of their individual parts (Aune, 1970; Hay, 2009). If a phenomenon is not fundamentally reduced to its constituents, a causative link cannot be made between this variable and other social and/or natural variables. This is so because any constituting factors of this phenomenon can be responsible for causing the other variable (Frankfort-Nachmias & Nachmias, 2008; Wellington & Sczerbinski, 2007). For example, a child's cognitive growth can be regarded as a phenomenon that *causes* a child to succeed in school. Cognitive growth can be assumed to include emotional growth, interpersonal abilities, and intellect as its basic elements. If a social researcher draws the conclusion that a child's

cognitive growth *causes* his/her success in school, further analysis would have to show which, if not all, of its constituents are responsible for this.

It is clear from the example about cognitive growth that reductionism can be conceived as an infinite, and as such, illogical, requirement. For example, the rudimentary units of cognitive growth, stated above as emotional growth, interpersonal abilities, and intellect, can each be further reduced to their own constituents. Furthermore, researchers work with the *assumption* that the true constituents of cognitive growth are the three more basic units. Depending on one's theoretical stance, it could even be the case that an assumed constituent of a variable itself constitutes the variable. For example, it may be assumed that emotional growth is a constituent of cognitive growth *or* that cognitive growth is a constituent of emotional growth. The stance a researcher takes depends on a theoretical framework that can (and does) change in the face of newer theoretical frameworks (Delanty & Strydom, 2003).

The complexity that is associated with reductionism as a philosophical tenet of quantitative research made it extremely difficult to judge researchers' adherence to it. To look for whether or not reductionism was a present philosophical assumption in the work of such researchers, I looked through the introduction, analysis, and discussion sections of each study. Operational definitions and a theoretical framework that had provided support for reducing the phenomenon (variable) to its basic units (and the nature of those units) were deemed enough to assume the existence of reductionism in the work of such authors. Out of the 74 studies reviewed, 40 studies did not provide sufficient support to be considered reductionist in their explanations of their variables.

On the component of falsification.

Falsification was the philosophical assumption to which the least number of authors adhered. Out of the 74 articles studied, only 7 showed an explicit adherence to the theory of falsification in their data analysis. Falsifiability is the notion that scientific hypotheses should be tested to be proved *wrong* as opposed to being proved *right* (Delanty & Strydom, 2003; Frankfort-Nachmias & Nachmias, 2008). This is because no matter how many cases support a certain claim, the claim can never be said to be true; that claim can be refuted with a single case that stands against it. Furthermore, since only falsifiable questions are regarded as scientific questions, only such questions are to be investigated in quantitative research approaches. Lastly, falsifiability requires that alternative hypotheses be given due weight in research analysis. This is often done through social scientists' attempt to refute a "null hypothesis" which is a hypothetical stance stating that the hypothesis set forth at the outset of a study is wrong. If the null hypothesis is supported, the alternative hypothesis (H_1) or the original hypothesis is proved incorrect (Delanty & Strydom, 2003; Rosenberg, 2008; Wellington & Szczerbinski, 2007).

For the purpose of examining researchers' adherences to the theory of falsification, I looked for instances where only falsifiable questions were asked, statistical falsification (H_1 supported and H_0 refuted) was presented, and where researchers actively considered the proposed causative link from a falsifiable stance. The last requirement, simultaneously present with the other two requirements, was observed in only 7 studies. Falsification necessitates an active consideration of alternative explanatory causes of why the dependent variable had occurred. Therefore, it was deemed necessary that authors explicitly declare their provision of utmost care for exclusion of alternative hypotheses in the explanation of their findings. As such, statistical

consideration of the falsifiability theory was not deemed enough as reason for the refusal to accept alternative hypotheses.

On the component of parsimony.

In quantitative research, it is assumed that among competing theories and/or hypotheses, the one with the least number of assumptions and/or steps is more likely to be the most correct explanation (Hay, 2009; Rosenberg, 2008). In short, it is assumed that the simplest explanation is the most correct explanation. Often, parsimony is said to be a characteristic of scientific theory formation (Hay, 2009); however, the need for the provision of parsimonious explanations in interpretation of data is just as important (Frankfort-Nachmias & Nachmias, 2008; Wellington & Szcerbinski, 2007). The theory of parsimony is related to reductionism in that the requirement of parsimony necessitates that causal links be drawn with the least number of assumptions (most reduced). For instance, let us assume that the cognitive growth of a child is regarded as a multifaceted psychological construct (with the three constituents mentioned above). In this case, the explanation of a child's success in school, if explained by *any* of the three constituents, is said to be more parsimonious than cognitive growth, which is regarded to be a complex construct with multiple components.

In assessing researchers' adherence to this philosophical assumption, I did not consider parsimony in the theoretical frameworks used by each author, since the development of theories was not the focus of this paper. Instead, the interpretation of data was investigated in order to examine the nature of explanations and their relations with alternative (perhaps more parsimonious) explanations. In the 74 articles reviewed, only 29 authors adhered to this philosophical tenet of quantitative research.

On the component of objectivism.

Objectivism is a philosophical stance regarding the accessibility of knowledge and knowledge production. According to this view, it is indeed possible for knowledge to exist outside of the knowing agent, the knower. Reality and truth, according to this position, are first, mind-independent, and second, knowable through the use of appropriate means and instruments (Hay, 2009; Johnson & Onwugbuzie, 2004). In the study of early childhood, objectivism would involve the view of childhood as an objectively defined characterization attributed to children.

Clearly, the use of the scientific method itself can be seen as affiliation with the philosophical concept of objectivism; however, for the purpose of this paper, I extensively and cautiously sought for words that would denote authors' adherence to this philosophical tenet. It was observed that many researchers did not provide objective definitions of variables, techniques, measurement tools, etc. Instead, they viewed their own definition of variables and the employed methodological approaches based on their preferences and conceptual frameworks. Out of the 74 articles studied, 21 researchers did not completely adhere to objectivism.

On the component of instrumentalism.

Instrumentalism is an important aspect of the positivist tradition and underlies the very basis of causation in quantitative research. Primarily, instrumentalism refers to the belief that it is in fact possible to formulate theories about social phenomena derived exclusively from research findings. Therefore, this assumption (or requirement) rejects axiological accounts (explanations regarding human value systems) of social research employing the scientific method. Furthermore, instrumentalism is a position regarding causation due to the manipulation of one variable and the observation of change created in another (Hay, 2009; Delanty & Strydom, 2003).

In assessing researchers' adherence to this assumption, I looked for cases where causative links where proposed between variables. Only 2 researchers failed to present grounds to be included in this category.

On the component of value freedom.

Closely related to objectivism and instrumentalism, this aspect of positivism/post-positivism involves the assumption that a social scientist is able to (and in fact, he/she ought to) arrive at objective social knowledge since the scientific method provides a deductive way of explaining social phenomena (deduction is drawing individual cases from general premises – a logically valid mode of reasoning). Furthermore, it is believed that it is possible for the social researcher to stay neutral and to not incorporate personal, cultural, ethical, and other ideological factors in their investigation of social truths (Delanty & Strydom, 2003; Madill & Gough, 2008). In the social study of early childhood, this aspect of positivism can be translated to mean that an adult researcher can objectively arrive at true knowledge about the child and childhood if he/she stays neutral and does not incorporate personal beliefs in their research endeavors.

Those who argue against the possibility of remaining free from personal values posit that the formation of research questions and the choice of methodological approaches themselves involve human value systems (Madill & Gough, 2008). For example, choosing a quantitative approach itself is a value-ridden decision in that a researcher, by choosing this approach, shows that he/she *values* it more than competing approaches. For the purpose of this review, I did not look for value freedom in research questions or methodology, but only in interpretation of collected data. As such, authors' own descriptions of why their findings would have been different if they had used different theoretical frameworks, methodological approaches, number of participants, and tools for analysis (e.g. statistical tests) were assesed. In this assessment, it

was seen that 31 researchers did not completely adhere to this philosophical assumption of social research.

On the component of language of science.

As previously discussed, according to the work of Wittgenstein, the significance of the need for a verifiable, explicit, accessible and value-free language was deemed imperative in scientific inquiry. This assumption was based on the notion that a hypothetically objective and value-free language of science provides the necessary *means* to truly conceptualize the world as it is, since this type of language has an "isomorphic" relationship with the natural world (Delanty & Strydom, 2003).

For the purpose of this assessment, I simply looked for 'every day' language and/or the use of first-person narrative in any area of the papers. Out of the 74 articles studies, only 3 used this kind of language as opposed to an indirect, third-person narrative (scientific language).

Qualitative SLR Findings.

On the component of subjectivism.

As an important tenet of social research, a subjectivist philosophy must always remind a social researcher that our own perceptions of the world and of ourselves are the only things that we can truly know. By extension, it is expected that a social researcher, in attempting to conceptualize the realities of others, attempts to capture others' views from them as comprehensively as possible (Delanty & Strydom, 2003; Rosenberg, 2008).

For the purpose of assessing qualitative researchers' adherence to this important philosophical tenet of qualitative research, I looked for researchers' *views* about the perceptions of the participants in their studies. It was observed that often, the idea of causation and objectivism were endorsed by researchers working with children, about both the children's

realities, and the external world. Out of the 14 studies reviewed, 5 did not entirely adhere to this philosophical tenet.

On the component of qualitative pragmatism.

In the theoretical foundations section of this paper, it was mentioned that many proponents of qualitative social research argue that qualitative research is by nature a pragmatist mode of induction (Feilzer, 2010; Morgon, 2007). In a qualitative study of early childhood and young children, for instance, it is expected that in order to capture as much about the perceptions, experiences, and realities of children as possible, a social researcher should be pragmatic in their choice of methods. For instance, drawing pictures, story-telling, taking pictures, among other research methods should be used to be able to understand the meaning children associate with a given construct (Punch, 2002).

In assessing researchers' adherence to this tenet of qualitative research, I looked for flexibility in employing multiple approaches as deemed appropriate. Out of the 14 articles reviewed, 12 studies did not show researchers' willing to employ more than one approach in their studies of children. This finding in itself was not enough for me to consider such authors as not affiliating with qualitative pragmatism. Instead, a thorough review of the theoretical frameworks, research questions, and methodological approaches employed by these researchers clearly showed that much more relevant materials would have been found if researchers were more pragmatic in terms of choosing their methodological approaches.

On the component of holism (irreducibility).

Holism, as it pertains to social research, stands against reductionism in regarding social phenomena as naturally irreducible (Dicken, 2010). As a tenet of constructivism as an epistemological framework for social research, holism intrinsically stands against the idea that

any social phenomenon is composite of individual parts, or that the study of those constituents can actually tell us about the big picture. As such, it views phenomena, experiences, and realities as they are, and not as a sum of their parts (Madill & Gough, 2008).

In this review, I looked for instances where researchers suggested that the phenomenon under study can have constituting composites. In one way or another, 7 of the 14 reviewed articles discussed either the social phenomenon under study, or any other aspect of their research endeavor (methodological approaches, theoretical bases, their own conception of social reality, etc.) as reducible. This necessitated an extensive and exhaustive study of all components of the research articles.

On the component of reflectivity.

The component of reflectivity denotes an author's acceptance of the notion that individual realities are socially constructed and are not objectively existent. According to the account of social constructionism presented previously, a research process is a tool that helps a social researcher *construct* an account of reality as opposed to *discover* it (Freeman & Mathison, 2009). For instance, when a social researcher conducts research *with* a child (involves the child in one or more aspects of the research project), he/she *reconstructs* an account of the child's views about a certain social phenomenon. Furthermore, given that the social researcher is involved in all aspects of the project, he/she, by necessity, incorporates his/her views into this construction. Given that the researcher is involved in reconstruction and representation of the views of the child, it is imperative that he/she be reflective about his/her involvement in all aspects of the research. The aim of this reflection is to be able to represent and reconstruct accounts of the child's reality and experiences as genuinely as possible.

For the purpose of testing qualitative social researchers' adherence to this theoretical tenet of qualitative research, I looked for when authors' of the reviewed articles showed clear instances of reflection about their own involvement in the research project. Since reflection involves one's awareness about his/her views, values, and subjective interpretations of others' perspectives, I sought to find researchers' explicit statements about such contributions. It was found that only 3 researchers out of the 14 showed no reflection in their investigation of the social phenomena under study.

On the component of language of inquiry.

In line with notions of subjectivism and reflectivity, social researchers who employ a qualitative approach in their investigation of children should be able to express their awareness of their own involvement in the research project by using language that reflects this involvement. Showing awareness through the use of such language further suggests that a researcher believes that he/she cannot be an objective or neutral outsider, looking *in* at the social phenomena (Creswell, 2009; Wellington & Szczerbinski, 2007).

In this review, I looked for the use of first-person narratives in assessing researchers' adherence to this requirement. Half of the reviewed studies presented were written in first-person narratives and the other half in third-person narratives. Two of the seven researchers who used third-person narratives seemed to acknowledge their involvement in their studies; however, this acknowledgement was again presented in a detached and uninvolved manner.

On the component of exploration and understanding.

The decision to include this as a philosophical tenet of qualitative social research is due to the inclusion of the "instrumentalism" component in the quantitative SLR. Instrumentalism is the view regarding the causative links between social variables; furthermore, this involves the view

that a social research project must involve the manipulation (or change in the values of) a certain variable and observing the resulting change in another variable (Hay, 2009; Delanty & Strydom, 2003). Given that constructivism and social constructionism are the underlying epistemological bases of qualitative research, inferring causation in any form is (or should be) deemed inappropriate in qualitative research. Instead, qualitative research involves the construction of an account of social actors' (children, for instance) realities through reflection and subjective awareness. This would result in research being a tool to explore and to understand the social phenomena, and not to causatively *explain* the occurrence of such phenomena (Creswell, 2009; Frankfort-Nachmias & Nachmias, 2008).

I looked for instances where researchers made causal inferences about the social phenomena under study or any other aspect of their projects. This was done in all sections of the research articles reviewed, and not just the interpretation of findings. In the fourteen studies reviewed, only one discussed the findings by arguing about the causative potential of the phenomena under study.

Other Findings

Aside from findings related to social researchers' adherences to the philosophical tenets of quantitative and qualitative research, I was able to extract information about other aspects of the research studies reviewed. Some of these findings are presented in Tables 3 and 5 and some will be discussed in this section.

Research on or with children.

In total, 88 articles were reviewed for the two SLRs discussed previously. In the 74 quantitative research articles reviewed, only 1 social researcher conducted his research by including children in the study, throught asking about their opinions about subjects that pertained

to them (quantitative variables). On the other hand, out of the 14 articles reviewed in the qualitative SLR, 9 researchers involved the child (or children) in some aspects of the research process. The researchers in the qualitative SLR who involved children in the research process, only included the views of children in data gathering and interpretation of collected data. In other words, children were not consulted about the appropriateness of methodological choices and/or what the employment of such methodologies entailed (research findings).

Social or natural science research.

The reviewed articles for the quantitative SLR reported on studies done in a vast array of disciplines. These included psychology, education, public policy and administration, political science, neuroscience, nursing, public health, geography, etc. By activating the 'Social Science' function on the ProQuest database, it was expected that only peer reviewed journals that publish social science research studies be included. However, upon review of the articles, it was observed that that was not always the case. For many articles, biological variables, such as neuroanatomical processes, were linked to social variables, such as a child's interpersonal skills. However, some studies (8) were entirely outside the social sciences realms. These studies were still included in the database in order for the author to be able to compare natural and social science researchers' adherence to the philosophical bases of the scientific inquiry and quantitative approach, respectively. Interestingly, the only four studies that were able to completely adhere to the philosophical assumptions described above where natural science studies. The other four natural science studies failed to adhere to one or two of the philosophical tenets.

The qualitative research articles reported on studies from many different disciplines as well. However, all 14 studies were social science studies. Only one study completely adhered to all six philosophical tenets of qualitative social research.

Summary of Findings

In this chapter of this paper, the results of the two SLRs were provided. The first SLR was a review of peer-reviewed articles that reported on quantitative studies involving children. The second SLR reviewed peer-reviewed articles reporting on qualitative studies involving children. In both SLRs, I thoroughly reviewed most sections of the included articles in order to examine social researchers' explicit and implicit adherences to the philosophical tenets of their methodological approaches. In the quantitative SLR, it was found that only some natural science studies were able to show their complete adherences to these philosophical assumptions. In the qualitative SLR, only one researcher was able to show complete adherence to all philosophical tenets of qualitative research. In the next chapter of this paper, I will examine what these findings mean and will discuss the implications of pragmatism in view of these findings.

Chapter 5: Discussion

The purpose of this paper was to examine the extent to which social researchers who study children adhere to the philosophical bases of their methodological approaches. Quantitative and Qualitative research were introduced as two dichotomous research approaches whose defining features are shaped by an array of epistemological, ontological, and methodological assumptions. The relationship between each of these assumptions and quantitative or qualitative research was explained. Social research that involves children was then introduced as a special type of social research, with explanations about how it differs from social research involving adults.

The delineations of the differing philosophical underpinnings of quantitative and qualitative research were used as a checklist to examine social researchers' adherence to the philosophy of social research. Two systematic literature reviews (SLR) were conducted for this purpose. For the two SLRs, 74 quantitative research studies and 14 qualitative research studies that involved children under the age of eight were carefully examined. I reviewed each article's introduction, methodology, results/findings, and the discussion sections thoroughly in order to be able to examine researchers' explicit and implicit observance of the philosophical bases of their research approaches.

Quantitative SLR

Seven philosophical tenets of quantitative social research were identified and a SLR was conducted to assess the existence of each in published peer-reviewed articles. The least to most observed philosophical assumption were: falsification, parsimony, reductionism, value freedom, objectivism, language of science and instrumentalism.

Falsification, instrumentalism, and objectivism.

Falsification, or the claim that scientific hypotheses should be tested to be proved wrong in the face of alternative explanations, was the least present philosophical tenet in the work of quantitative researchers. When investigating the reason for this, it became clear that researchers only relied on statistical falsification for this purpose. A researcher must explicitly declare his provision of utmost care for the exclusion of alternative hypotheses when attempting to explain the findings of a research study (Wellington & Szczerbinski, 2007; Rosenberg, 2008). These authors' failure to do so jeopardized the objectivity of their research studies, and made claims of cause and effect unjustifiable. This observation itself lent support to the position that quantitative researchers cannot remain within the research paradigms that give rise to their methodological approaches.

For quantitative research, falsfiability together with parsimony allows social researchers to support their claims regarding how one variable is causatively linked to another (Creswell, 2009; Frankfort-Nachmias & Nachmias, 2008; Wellington & Szczerbinski, 2007). However, given the stringent, yet necessary requirements for falsification I had outlined, it was deemed important for researchers to support their claims in the face of competing alternative explanations. This requirement perhaps sets forth an unreasonable expectation because of the complexity that is associated with phenomena under study in the social sciences. In the reviewed articles, only seven were able to adhere to this requirement of falsification. Out of this seven, four of them were natural science studies (which were included for comparison). Going back to the reasoning behind the differing aims of natural and the social sciences proposed by Rosenberg (2008), we can see why falsification is such a difficult philosophical tenet to which researchers can entirely adhere. As this tenet requires that researchers explicitly outline competing explanations, given

Rosenberg's argument about complexity associated with subjects of the social sciences, it is practically impossible for social researchers to outline *every* possible competing theory when discussing the relevance of their findings.

Instrumentalism, which allows a researcher to conclude, with certainty, that manipulation of the values of one variable is causatively linked with changes in the values of another variable (Delanty & Strydom, 2003), was the most observed philosophical tenet (only 2 researchers did not explicitly declare their observance of this philosophical underpinning of quantitative research). Together with the findings regarding falsification, this finding suggests that social researchers who employ quantitative methodologies are eager to conclude that they have found causal relationships between variables, despite not having met all the required conditions associated with the scientific method.

The interpretation of other findings further lends support to the claim mentioned above. For example, quantitative researchers seem to have the desire to proclaim their objectivity with the use of the language of science (only 3 did not adhere to the scientific language requirement of quantitative research). However, as the relatively large number of non-adherents to the objectivism and value freedom requirements suggests, many researchers were unable to entirely justify their neutral stance with regard to their research endeavors.

Social research *on* or *with* children.

Another important finding of the quantitative SLR was that only one social researcher conducted his research by asking children about their opinions of matters pertinent to the research process (variables, strategies, methodology, or any other aspect of the research process.). Going back to the differing nature of social research involving children and adults, this finding can be attributed to perceptions about childhood and ethical concerns regarding the

involvement of children in the research process. Even though I did not review articles that reported on social studies with adults, which makes comparisons between research with children and adults unwarrantable, such a low prevalence of quantitative social research *with* children is still remarkable. This finding suggests that social researchers who employ quantitative approaches in their study of children subscribe to the view of children as "becomings" and "adults in the making" (Uprichard, 2008), because their views are deemed unreliable and undeveloped. These views, further reinforced by ethical barriers that hinder access to children's genuine responses about matters that pertain to them, results in such researchers' decisions to conduct research *on* or *about* children, and not *with* them (Beneson, Quinn & Stella, 2012; Johnson & Onwuegbuzie, 2004; Wellington & Szczerbinski, 2007.

Qualitative SLR

In the systematic review conducted on qualitative social research studies, subjectivism, qualitative pragmatism, holism, reflectivity, language of inquiry, and researchers' observance of the importance of exploration and understanding were decided as the philosophical tenets of qualitative social research. The observance of qualitative pragmatism was done in the least number of articles, followed by holism and language of inquiry, subjectivism, reflectivity, and exploration and understanding.

Qualitative pragmatism and understanding of early childhood.

According to constructivism and social constructionism, knowledge is constructed and reconstructed through many modalities. As such, a social researcher should try to increase his/her understanding of the phenomenon under question through the study of as many of these modalities as possible. Given that the aim of qualitative research is to capture a holistic explanation of a social phenomenon, an approach to social research that necessitates the

employment of a multitude of strategies serves this function most appropriately. As such, pragmatism in qualitative research means flexibility about and familiarity with multiple strategies and the employment of these strategies as deemed appropriate (Creswell, 2009; Dicken, 2010; Madill & Gough, 2008; Morgon, 2007; Pole, 2007; Slevitch, 2011; Wellington & Szczerbinski, 2007).

When discussing the reasoning behind why perceptions of childhood and ethical reasons are the two most fundamental reasons why social research involving children differs from research involving adults, it was mentioned that the most significant area of concern that arises from these two restrictive factors are the authenticity of responses gathered from children. In other words, the ethical tensions along with perceptions of children as "adults in the making" serve to restrict a social researcher in gathering genuine data about children's own perceptions and experiences. As such, we can see that pragmatism in social research is *especially* crucial when children are the focus of the study. However, the reviewed qualitative studies showed that qualitative pragmatism were the least observed philosophical requirement of social research with children.

This finding further corroborates the position that it is almost impossible to stay within the philosophical constrains of the paradigms that underpin qualitative methodologies. Further investigation about why researchers did not display pragmatism in their approaches brought to light an interesting trend. It was observed that some authors had decided to employ other approaches that would complement their primary approach; however, they were unable to do so due to concerns about the practicality of those approaches. It must be mentioned that the requirement for qualitative pragmatism does not entail that a research be *forced* to employ more than one methodological approach in their investigations. Rather, it is believed that a

comprehensive number of strategies should be considered in order for findings to best reflect the attitudes, experiences, perceptions, and realities of studied individuals (Creswell, 2009; Dicken, 2010). In this SLR, it was observed that researchers were unable to expand on their strategies due to factors that relate to issues of practicality and ethical concerns. As such, this observation interestingly showed why social research with children differs from adults, and also that pragmatism as a qualitative requirement of social research with children does not always work.

It was, however, evident that for the most part, social researchers who adopted qualitative strategies in their investigations did not infer causation about the phenomena under study. This was evident based on the finding that only one researcher implied causation, and as such, perceived the purpose of her research as that of explanation as opposed to understanding. It must be noted that the examination of the tenet of 'exploration and understanding' was only done in the *purpose* of these studies and not in any other aspects of the research process. Especially in the literature review and theoretical section of each paper, most authors explained the phenomena under question as being *shaped by* or *arise from* other factors. Even though such assertions can be regarded as instances where causation is presumed, their occurrences were not incorporated in the findings of the SLRs.

Social research *on* or *with* children.

In the 14 reviewed articles, 5 were research *about* children and by definition, did not incorporate the views of children in any aspect of the research process. Again, by considering how and why social research involving children and research involving adults differ, we can see how even social researchers who use qualitative approaches are more inclined to do research *on* children as opposed to *with* them. Given that constructivism and social constructionism are the underlying epistemological bases of qualitative research, the aim of qualitative research is

understood as the understanding of different accounts of realities and subjective awareness of individuals studied (Creswell, 2009; Slevitch, 2011). This would suggest that all individuals who use qualitative approaches in their investigations would at least have *some* affinity with the idea that they have to incorporate perspectives of the studied agents (children or adults) in their investigations.

According to the qualitative SLR, however, this was not the case. Many researchers, knowing the importance of the construction of accounts of realities of the child, still conducted their research *on* children. Further investigation about such studies elucidated the reason for this trend. Most significantly, the reason for such researchers' choice of doing their research as outsiders and without much interaction with children was due to their assumptions about children as somewhat incapable in providing genuine responses. As such, we can see that perceptions of childhood, again, was the underlying cause for the abandonment of approaches that would require a researcher to include children in some aspects of the research process.

Summary

As previously mentioned, the purpose of this study was to systematically examine recent empirical research to figure out how far researchers working with children follow research traditions based on paradigmatic thinking; why are some reasons for their choices; and how their research decision may impact future research with/on children.

The two systematic reviews showed that there is an inevitable departure from underlying philosophical bases of social research involving children, whether quantitative or qualitative research methodologies are employed. This observation allowed for the conclusion that strict devotion to the philosophy of social research is perhaps impossible. Because such strict views about the significance of the justification of knowledge through the observance of philosophical

frameworks cannot be achieved, I believe that instead, focus must be placed on what the *purpose* of any individual research study is. In other words, researchers should be more concerned with what their research aims to provide than what they can and cannot do due to philosophical constraints. In doing so, a new paradigm should be incorporated in the work of social researchers who study children. This paradigm, known as pragmatism, allows a social researcher to alternate between methodologies as the research situation necessitates, without being concerned about adherence to philosophical issues and in turn, justification of knowledge produced.

Pragmatism as a Replacing Paradigm

Pragmatism was introduced in the theoretical foundations section of this paper as a philosophical doctrine that strongly embraces practicality and conscious and continuous awareness of the appropriateness of methodologies based on the unique requirements of each research endeavor (Feilzer, 2010; Morgon, 2007). Additionally, this doctrine recognizes methodologies drawn from quantitative and qualitative approaches (such as experiments, ethnographies, surveys, and case studies) as mere tools that are at the disposal of the social researcher (Johnson & Onwuegbuzie, 2004; Wellington & Szczerbinski, 2007). This philosophical paradigm, as it pertains to social research, would consider it a responsibility of a social researcher to employ appropriate methodologies taken from either category in all or some components of a research study in a structured manner (Feilzer, 2010).

It must be noted that philosophical debates surrounding social research would not end as a result of pragmatism (Johnson & Onwuegbuzie, 2004). For example, in the case of deducing causations about the occurrence of social phenomena, the falsification requirement seems to be a requirement extremely difficult for social researchers to be observant of. Pragmatism would not offer a solution for this dilemma. Rather, pragmatism is the view that the purpose of social

research must be the priority of a social researcher, and not justification of knowledge produced (Aune, 1970; Morgan, 2007). Because the purpose of social research is often multifaceted and the nature of social phenomena are complex, more can be known about them if they are approached from multiple directions as opposed to when they are studied with one view in mind. It must be noted that pragmatism does not entail a compulsory adoption of multiple methods (mixed-method research); rather, this view allows the researcher to decide how the purpose of the research can be achieved: through the employment of quantitative approaches, qualitative strategies, or a combination of the two (Pole, 2007; Morgan, 2007).

Pragmatism as a research paradigm may seem to create an inescapable logical anomaly, and this is with regard to pragmatism being a philosophical doctrine that imposes dos and don'ts to the social researcher. The two SLRs have shown that in employing either quantitative or qualitative approaches in the social study of children, it is nearly impossible for social researchers to adhere to the traditional philosophical paradigms of social research. As such, it was suggested that excessive devotion to philosophy of social research should be avoided as such strict adherences are impossible, and even unnecessary. Then how can we justify the replacement of such philosophies with pragmatism, given that pragmatism itself is a philosophical doctrine? In other words, if devotion to *philosophy* of social research is the issue we would want to avoid, how can pragmatism as a *philosophy* of social research be any different?

The most satisfactory answer may be that what should be considered is not the abandonment of research philosophies altogether, but only philosophical assumptions that set forth unnecessary and impossible to observe requirements (Harrits, 2011; Johnson & Onwuegbuzie, 2004). Therefore, by substituting the traditional research paradigms with that of

pragmatism, I contend that the link between philosophy and methodology is one that cannot, and should not, be dissolved.

Pragmatism in early childhood research.

As discussed previously, the issue of pragmatism is especially useful for social researchers who work with children. The significance of qualitative pragmatism was discussed in length and it was argued that its benefits are in allowing a social researcher to gather as much and as genuine responses from participants as possible. However, qualitative pragmatism involves two main shortcomings that can be alleviated with the employment of an entirely pragmatic research paradigm. Primarily, given that qualitative pragmatism only helps researchers who affiliate with a constructivist account of social reality, qualitative pragmatism is useless for those whose main research objective is the provision of causal explanations about social phenomena. For example, social researchers who are interested in *explaining* certain behaviors of children through observations of their behavior would have no need for qualitative approaches to social research, such as ethnographic research, narrative analysis, etc. Therefore, qualitative pragmatism only serves the purpose of offering different *understandings* of children, and not the *explanation* of early childhood phenomena.

Secondly, as was observed in the qualitative SLR, not many social researchers were able to adhere to the philosophical tenet of qualitative pragmatism in their social research studies. Especially in the case of children, qualitative research, as a set of approaches in the investigation of thoughts, realities, perceptions, and experiences, can be considered as more ethically controversial than quantitative approaches (Dockett, Einarsdottir & Perry, 2009). For example, it is less likely for social researchers to be able to get ethical approval in examining children's perceptions of "inappropriate" subjects (such as war, sexuality, etc.). In such cases, being an

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outsider looking in at the child's performances may pose fewer ethical tensions. Given this notion, pragmatism as a research paradigm somewhat alleviates the issues regarding ethics as it allows the researcher to employ whatever strategy works best (or is even feasible) given these constraints.

In short, pragmatism as a guiding research paradigm supersedes the type of pragmatism that exists in qualitative research as it allows a researcher to examine children in attempts to understand social phenomena that pertain to them, and to perhaps infer causative links between such phenomena. Also, pragmatism gives more options to social researchers who work with children, given the unique ethical issues surrounding social research involving children.

Implications of the Current Study

The implications of the current study have been discussed throughout this paper. To reiterate, this study was able to provide grounds for why pragmatism is an appropriate social research paradigm, especially in the study of children. Pragmatism offers the social researcher a certain degree of freedom in selecting research methodologies; this freedom does not exist with the traditional research paradigms of quantitative and qualitative social research. A pragmatic approach to social research involving children could be a valuable way in alleviating ethical and social concerns regarding this type of social research. Primarily, this approach achieves this goal by allowing a researcher to select strategies that are considered less ethically controversial depending on the sociopolitical context in which the research is taking place. Furthermore, a pragmatic paradigm results in research findings that supersedes (in quantity and quality) what can be achieved when employing quantitative or qualitative social research strategies exclusively. This is obtained through a conscious consideration of what the goals of each specific

research study are, and provides the researcher access to alternative ways of achieving such goals.

Limitations of the Current Study

The primary limitation of the current study is with regard to the extent to which the two SLRs can be reliable ways in assessing researchers' adherence to the philosophical bases of social research. Aside from the three previously mentioned limitations that exist in conducting SLRs in the Methodology section of this paper, another important limitation is with regard to the subjectivity associated with assessing researchers' adherence to the philosophical tenets of social research. For example, where in one place, I had regarded a researcher's descriptions of social variables as reductionist, others may not have come to this conclusion. However, this ambiguity associated with the assessment of researchers' adherences to social research paradigms can itself be regarded as lending support to the main claim of this paper. This ambiguity and subjectivism corroborate the notion that strict devotion to philosophy of social research is impossible.

Another limitation of this study is that even though, through the examination of their historical and theoretical significance, I attempted to explicitly delineate the philosophical underpinnings of qualitative and quantitative social research, these delineations may not have been complete. My experiences in creating the philosophical frameworks for quantitative and qualitative social research showed that such frameworks are not universally agreed-upon *facts*. Rather, these are speculations made by philosophers of science, historians, and sociologists and much disagreement exist between them.

Finally, given the scope of this paper, and the amount of time designated for the completion of this paper, issues might have arisen that jeopardized the comprehensiveness of the SLRs. To elaborate, it is possible that there were other research articles published in the decided

timeframe (the year 2012) that involved young children; however, I relied on the results of two to three different searches in the ProQuest database, which may not have brought forward those articles. If other databases were consulted, it is possible that more studied could have been brought to my attention. Again, given the amount of time necessary for thoroughly examining each and every article, and for writing this paper, it was practically impossible to consult any more research articles for the purpose of the two systematic reviews.

Chapter 6: Summary

The current study was conducted to examine to what extent social researchers who study children can be observant of the philosophical assumptions underlying the research approaches they undertake. For this purpose, I outlined the important tenets of quantitative and qualitative social research. These tenets were each examined individually through the provision of a historical account of the origin of modern science and social science, and the development of positivism/post-positivism and constructivism as social research paradigms. These tenets were said to include reductionism, falsification, parsimony, objectivism, instrumentalism, value freedom, and language of science for quantitative social research, and subjectivism, qualitative pragmatism, holism (irreducibility), reflectivity, language of inquiry, and exploration and understanding for qualitative social research. Subsequently, I outlined the differential features of doing social research that involves children and research that involves adults. As the literature suggests, these differences have roots in perceptions of children and childhood, and issues of practicality, mainly that of ethics and ethical tensions (Einarsdottir, 2007; Punch, 2002).

I then conducted two systematic literature reviews (SLR) in order to assess the presence of these philosophical assumptions in quantitative and qualitative social research studies published in the past year. The first systematic literature review, which was concerned with social researchers who employ quantitative research approaches, involved a thorough review of 74 articles published in multiple social science disciplines. The second SLR, being concerned with researchers who work with qualitative approaches, resulted in a thorough review of 14 qualitative social research articles. The scope of both SLRs were reduced by removing mixed-methods research studies, meta-analyses and other systematic reviews, theoretical papers, and

studies conducted with participants over the age of 8. Furthermore, only peer-reviewed articles published in English, in the year 2012 were studied.

The findings of the quantitative SLR suggested that social researchers who use quantitative approaches in their study of children and early childhood are primarily unable to adhere to the falsification requirement of quantitative social research. Such researchers' further inability in being observant of parsimony, objectivism, and value freedom and their eagerness to adhere to instrumentalism resulted in the conclusion that quantitative social researchers are prone to deduct causation, when in reality, such deductions may not be justifiable. The findings of the qualitative SLR suggested that qualitative social researchers are primarily unable to be pragmatic in the strategies they partake when studying young children. The reason for this was sought; it was discovered that more often than not, practical reasons were the reasons for why qualitative researchers were unable to go beyond singular strategies. Research *on* or *about* children was mostly done by researchers who employed quantitative approaches, while most qualitative researchers did their researchers *with* children. Going beyond possible epistemological reasons for this observation, I concluded that perceptions of childhood and ethical concerns play decisive roles in researchers' decision to do their research *on* or *with* children.

The findings of the study were seen to be in line with the notion that strict adherences to the philosophical underpinnings of quantitative and qualitative social research, especially social research involving children, are nearly impossible. Complexity of social phenomena and issues of practicality (ethical concerns and tensions) were seen to be what causes social researchers who study children to depart from the underlying bases of their research approaches. In alleviating concerns about justification that arise from such departures, I suggest that pragmatism should be a replacing social research paradigm. Being pragmatic when doing social research

involving children means researchers are given a certain level of freedom with regard to their choice of methodologies without being overly concerned about adhering to strict philosophical requirements of the traditional approaches in social research.

Implications and Recommendations

In this paper, I was able to show that philosophical justification of knowledge gained through social research that involves children should not be the ultimate goal of research. Instead, given that it is nearly impossible to be observant of all philosophical requirements that underpin quantitative and qualitative research, researchers should focus on the purpose of their research projects instead. Furthermore, researchers should be conscious and self-reflective in three key areas: their perceptions of children, their adherence to key tenets of the paradigms within which they are working, and consideration of feasibility of remaining within such paradigms. Being aware and reflective about these issues can result in vast shifts from our current state of knowledge about children, to a place where we can produce more practical and beneficial knowledge about them.

References

Alexander, H.A. (2006). A view from somewhere: Explaining the paradigms of educational research. *Journal of Philosophy of Education, 40*(2), 205-221.

Asberg, R., Hummerdal, D., & Dekker, S. (2011). There are no qualitative methods – nor quantitative for that matter: The misleading rhetoric of the qualitative-quantitative argument. *Theoretical Issues in Ergonomics Science, 12*(5), 408-415.

Aune, B. (1970). *Rationalism, empiricism, and pragmatism.* Clinton, MA: Colonial Press Inc.

Beneson, J.F., Quinn, A., & Stella, S. (2012). Boys affiliate more than girls with a familiar same-sex peer. *Journal of Experimental Child Psychology, 113*, 587-593.

Bernstein, R.J. (2010). *The pragmatic turn.* Malden, MA: Polity Press.

Blaise, M. (2009). "What a girl wants, what a girl needs": Responding to sex, gender, and sexuality in the early childhood classroom. *Journal of Research in Childhood Education, 23*(4), 450-460.

Bohanna, I., Davis, E., Corr, L, Priest, N., & Tan, H. (2012). Family day care in Australia: A systematic review of research (1996-2010). *Australasian Journal of Early Childhood, 37*(4), 138-146.

Carlin, L. (2009). *The empiricists: A guide for the perplexed.* New York, NY: Continuum International Publishing Group.

Chaille, C. (2008). *Constructivism across the curriculum in early childhood classrooms: Big ideas as inspiration.* Boston, MA: Pearson Education, Inc.

Chapman, R.L., Buckley, L., Sheehan, M., & Schochet, I. (2013). School-based programs for increasing connectedness and reducing risk behavior: A systematic review. *Educational Psychology Review, 25*, 95-114.

Christensen, P.H. (2004). Children's participation in ethnographic research: Issues of power and representation. *Children and Society, 18*(2), 165-176.

Cottingham, J. (1988). *A history of western philosophy: 4. The rationalists.* Oxford, England: Oxford University Press.

Creswell, J.W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Thousand Oakes, California: Sage Publications, Inc.

Crumley II, J.S. (2009). *Introduction to epistemology* (2nd Ed.). Toronto, ON: Broadview Press.

Cutiva, L.C.C., Vogel, I., & Burdorf, A. (2013). Voice disorders in teachers and their association with work-related factors: A systematic review. *Journal of Communication Disorders, 46*, 143-155.

Darbyshire, P., Schiller, W., & MacDougall, C. (2005). Extending new paradigm childhood research: Meeting the challenges of including younger children. *Early Child Development and Care, 175*(6), 467-472.

Delanty, G., & Strydom, P. (Eds.). (2003). *Philosophies of social science: The classic and contemporary readings.* Maidenhead, Berkshire: McGraw-Hill Education.

Dicken, P. (2010). *Constructive Empiricism.* New York, NY: Palgrave Macmillan.

Dockett, S., Einarsdottir, J., & Perry, B. (2009). Researching with children: Ethical tensions. *Early Childhood Research, 7*(3), 283-298.

Duffy, M., & Chenail, R.J. (2008). Values in qualitative and quantitative research. *Counselling and Values, 53*, 22-38.

Einarsdottir, J. (2007). Research with children: Methodological and ethical challenges. *European Early Childhood Education Research Journal, 15*(2), 197-211.

Einarsdottir, J., Dockett, S., & Perry, B. (2009). Making meaning: Children's perspectives expressed through drawings. *Early Child Development and Care, 179*(2), 217-232.

Feilzer, M.Y. (2010). Doing mixed methods research pragmatically: Implications for the rediscovery of pragmatism as a research paradigm. *Journal of Mixed Methods Research, 4*(1), 6-16.

Fink, A. (2005). *Conducting Research Literature Reviews: From the Internet to Paper* (2nd ed.). Thousand Oaks, California: Sage Publications.

Frankfort-Nachmias, C., & Nachmias, D. (2008). *Research methods in the social sciences* (7th ed.). New York, NY: Worth Publishers.

Franklin, C., & Nurius, P.S. (1998). *Constructivism in practice: Methods and challenges.* Milwaukee, WI: Families International Inc.

Freeman, M. & Mathison, S. (2009). Ethical challenges in social constructivist research with children. *Researching children's experiences* (pp. 69-83). New York, NY: The Guildoford Press.

Haggis, T. (2008). 'Knowledge must be contextual': Some possible implications of complexity and dynamic systems theories for educational research. *Educational Philosophy and Theory, 40*(1), 158-176.

Hay, C. (2009). *The theory of knowledge and the rise of modern science.* Cambridge, UK: Lutterworth Press.

Harrits, G.S. (2011). More than method?: A discussion of paradigm differences within mixed methods research. *Journal of Mixed Methods Research, 5*(2), 150-166.

Johnson, R.B., & Onwuegbuzie, A.J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher, 33*(7), 14-26.

Landesman, C. (2002). *Skepticism: The central issues.* Malden, MA: Blackwell Publishers Ltd.

Lundy, L., McEvoy, L., & Byrne, B. (2011). Working with young children as co-researchers: An approach informed by the United Nations Convention on the Rights of the Child. *Early Childhood and Development, 22*(5), 714-736.

Madill, A., & Gough, B. (2008). Qualitative research and its place in psychological science. *Psychological Methods, 13*(3), 254-271.

Magalhaes, L.C., Cardoso, A.A., & Missiuna, C. (2011). Activities and participation in children with developmental coordination disorder: A systematic review. *Research in Developmental Disabilities, 38*, 1309-1316.

Mazzoni, V., & Harcourt, D. (2013). An international experience with children: Moving forward on the idea of children's participation. *Qualitative Research,* 1-17. doi: 10.1177/1468794112468470

Mercer, N. (2010). The analysis of classroom talk: Methods and methodologies. *British Journal of Educational Psychology, 80*, 1-14.

Miller, A.B., Epsosito-Smythers, C., Weismoore, J.T., & Renshaw, K.D. (2013). The relation between child maltreatment and adolescent suicidal behavior: A systematic review and critical examination of the literature. *Clinical Child and Family Psychology Review, 16*, 146-172.

Morgan, D.L. (2007). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research, 1*(1), 48-76.

Nimmo, J.W. & Park, S. (2009). Engaging early childhood teachers in the thinking and practice of inquiry: Collaborative research mentorship as a tool for shifting teacher identity. *Journal of Early Childhood Teacher Education, 30*, 93-104.

Okoli, C., & Schabram, K. (2010). "A guide to conducting a systematic literature review of information systems research," *Sprouts: Working Papers on Information Systems, 10*(26). Retrieved from: http://sprouts.aisnet.org/10-26

Onwuegbuzie, A.J., & Nancy, L.L. (2005). On becoming a pragmatic researcher: The importance of combining quantitative and qualitative research methodologies. *International Journal of Research Methodology, 8*(5), 375-387.

Paley, J. (2005). Error and objectivity: Cognitive illusions and qualitative research. *Nursing Philosophy, 6*, 196-209.

Pascal, C., Bertram, T. (2009). Listening to young citizens: the struggle to make real a participatory paradigm in research with young children. *European Early Childhood Education Research Journal, 17*(2), 249-262.

Pascal, C., & Bertram, T. (2012). Praxis, ethics and power: developing praxeology as a participatory paradigm for early childhood research. *European Early Childhood Education Research Journal, 20*(4), 477-492.

Pole, K. (2007). Mixed method designs: A review of strategies for blending quantitative and qualitative methodologies. *Mid-Western Educational Researcher, 20*(4), 1-4.

Punch, S. (2002). Research with children: The same or different from research with adults? *Childhood, 9*(3), 321-341.

Rosenberg, A. (2008). *Philosophy of social science* (3rd ed.). Boulder, CO: Westview Press.

Rousseau, D.M., Manning, J., & Denyer, D. (2008). Evidence in management and organizational science: Assembling the field's full weight of scientific knowledge through syntheses. *SSRN eLibrary.* Retrieved from http://papers.ssrn.com/so13/papers.cfm?abstract_id=1309606

Savin-Williams, R.C., & Vrangalova, Z. (2013). Mostly heterosexual as a distinct sexual orientation group: A systematic review of the empirical evidence. *Developmental Review, 33*, 58-88.

Schiler, W., & Einarsodottir, J. (2007). Special issues: Listening to young children's voices in research – changing perspectivs/changing relationships. *Early Childhood Development and Care, 179*(2), 125-130.

Siddiqi, Z., Tiro, J.A., & Shuval, K. (2011). Understanding impediments and enablers to physical activity among African American adults: A systematic review of qualitative studies. *Health Education Research, 26*(6), 1010-1024.

Slevitch, L. (2011). Qualitative and quantitative methodologies compared: Ontological and epistemological perspectives. *Journal of Quality Assurance in Hospitality & Tourism, 12*, 73-81.

Toomela, A. (2011). Travel into a fairy land: A critique of modern qualitative and mixed methods psychologies. *Integrative Psychological and Behavioural Science, 45*, 21-47.

Trifonas, P.P. (2009). Deconstructing research: Paradigm lost. *International Journal of Research & Methods in Education, 32*(2), 297-308.

Turner, S., & Roth, P.A. (Eds.). (2003). *The Blackwell guide to the philosophy of the social sciences.* Malden, MA: Blackwell Publishing Ltd.

Uprichard, E. (2008) 'Children as Being and Becomings': Children, childhood and temporality. *Children and Society, 22*(4), 303-313.

Wellington, J., & Szczerbinski, M. (2007). *Research methods for the social sciences.* New York, NY: Continuum International Publishing Group.

References (Quantitative SLR)

Al Mamun, A., O'Callaghan, F., Scott, J., Heussler, H., O'Callaghan, M., Najman, J., & Williams, G. (2012). Continuity and discontinuity of trouble sleeping behaviors from early childhood to young adulthood in a large Australian community-based-birth cohort study. *Sleep Medicine, 13*, 1301-1306.

Baghdadli, A., Assouline, B., Sonie, S., Pernon, E., Darrou, C., Michelon, C., Picot, M., Aussilloux, C., & Pry, R. (2012). Developmental trajectories of adaptive behaviors from early childhood to adolescence in a cohort of 152 children with autism spectrum disorders. *Journal of Autism Developmental Disorders, 42*, 1314-1325.

Bagherian, A., & Asadikaram, G. (2012). Comparison of some salivary characteristics between children with and without early childhood caries. *Indian Journal of Dental Research, 23*(5), 628-632.

Brotman, L.M., Dawson-McClure, S., Huang, K., Theise, R., Kamboukos, D., Wang, J., Petkova, E., & Ogedegbe, G. (2012). Early childhood family intervention and long-term obesity prevention among high-risk minority youth. *Pediatrics, 129*(3), 621-628.

Chen, X., Zhang, G., Chen, H., & Li, D. (2012). Performance on delay tasks in early childhood predicted socioemotional and school adjustment nine years later: a longitudinal study in Chinese children. *International Perspectives in Psychology: Research, Practice, Consultation, 1*(1), 3-14.

Chivers, P., Parker, H., Bulsara, M., Beilin, L., & Hands, B. (2012). Parental and early childhood influences on adolescent obesity: A longitudinal study. *Early Child Development and Care, 182*(8), 1071-1087.

Comer, J.S., Puliafico, A.C., Aschenbrand, S.G., McKnight, K., Robin, J.A., Goldfine, M.E., Albano, A.M. (2012). A pilot feasibility evaluation of the CALM program for anxiety disorder in early childhood. *Journal of Anxiety Disorders, 26*, 40-49.

Crowe, L.M., Catroppa, C., Babl, F.E., & Anderson, V. (2012). Intellectual, behavioral, and social outcomes of accidental traumatic brain injury in early childhood. *Pediatrics, 129*(2), 262-268.

Cuevas, K., Hubble, M., & Bell, M.A. (2012). Early childhood predictors of post-kindergarten executive function: Behavior, parent report, and psychophysiology. *Early Education and Development, 23*, 59-73.

Delaney, L., & Doyle, O. (2012). Socioeconomic differences in early childhood time preferences. *Journal of Economic Psychology, 33*, 237-247.

Deoni, S.C.L., Dean III, D.C., O'Muircheartaigh, J., Dirks, H., & Jerskey, B.A. (2012). Investigating white matter development in infancy and early childhood using myelin water faction and relaxation time mapping. *NeuroImage, 63*, 1038-1053.

DiYanni, C., Nini, D., Rheel, W., & Livelli, A. (2012). 'I won't trust you if I think you're trying to deceive me': Relations between selective trust, theory of mind, and imitation in early childhood. *Journal of Cognition and Development, 13*(3), 354-371.

Durmus, B., Ay, I., Duijts, I., Moll, H.A., Hokken-Koelega, A.C.S., Raat, H., Hofman, A., Steegers, E.A.P., & Jaddoe, V.W.V. (2012). Infant diet and subcutaneous fat mass in early childhood: The generation R study. *European Journal of Clinical Nutrition, 66*, 253-260.

Faith, M.S., Pietrobelli, A., Heo, M., Keller, K.L., Heymsfield, S.B., & Allison, D.B. (2012). A twin study of self-regulatory eating in early childhood: Estimates of genetic and environmental influence, and measurement considerations. *International Journal of Obesity, 36*, 931-937.

Ferguson, S.A., Ward, W.L., Paule, M.G., Hall, R.W., & Anand, K.J.S. (2012). A pilot study of preemptive morphine analgesia in preterm neonates: Effects on head circumference, social behavior, and response latencies in early childhood. *Neurotoxicology and Teratology, 34*, 47-55.

Fitzpatrick, C., PAgani, L.S., Barnett, T.A. (2012). Early childhood television viewing predicts explosive leg strength and waist circumference by middle childhood. *International Journal of Behavioral Nutrition and Physical Activity, 9*(87), 1-6.

Froehlich-Gildhoff, K., & Roennau-Boese, M. (2012). Prevention of exclusion: The promotion of resilience in early childhood institutions in disadvantaged areas. *Journal of Public Health, 20*, 131-139.

Froehlich-Gildhoff, K., & Roennau-Boese, M. (2012). The promotion of mental health in early childhood institutions (ECI) under a person-centred perspective. *Hellenic Journal of Psychology, 9*, 255-277.

Gartstein, M.A. Putnam, S.P., & Rothbart, M.K. (2012). Etiology of preschool behavior problems: contribution of temperament attributes in early childhood. *Infant Mental Health Journal, 33*(2), 197-211.

Getz, K.D., Janulewicz, P.A., Rowe, S., Weinberg, J.M., Winter, M.R., Martin, B.R... & Aschengrau, A. (2012). Parental and early childhood exposure to tetrachloroethylene and adult vision. *Environmental Health Perspectives, 120*(9), 1327-1332.

Giannoni, P.P., & Kass, P.H. (2012). Predictors of developmental outcomes of high-risk and developmentally delayed infants and children enrolled in a state early childhood intervention program. *Infants & Young Children, 25*(3), 244-264.

Gibbons, T.E., Patil, S.N., Frem, J.C., Smith, C., Wakwe, J., & Swearingen, C.J. (2012). Non-IgE-mediated cow milk allergy is linked to early childhood clusters of commonly seen illnesses: A pilot study. *Clinical Pediatrics, 51*(4), 337-344.

Gillespie-Lynch, K., Sepeta, L., Wang, Y., Marshall, S., Gomez, L., Sigman, M., & Hutman, T. (2012). Early childhood predictors of the social competence of adults with autism. *Journal of Autism Developmental Disorder, 42*, 161-174.

Gubbels, J.S., Kremers, SP.J., Stafleu, A., Goldbohm, R.A., deVaries, N.K., & Thijs, C. (2012). Clustering of energy balance-related behaviors in 5-year-old children: Lifestyle patterns and their longitudinal association with weight status development in early childhood. *International Journal of Behavioral Nutrition and Physical Activity, 9*(77), 1-10.

Guy, J., Rogers, M., Cornish, K. (2012). Developmental changes in visual and auditory inhibition in early childhood. *Infant and Child Development, 21*, 521-536.

Habibov, N. (2012). Early child care and education attendance in Central Asia. *Children and Youth Services Review, 34*, 798-806

Hanson, J.L., Chung, M.K., Avants, B.B., Rudolph, K.D., Shirtcliff, E.A., Gee, J.C., Davidson, R.J., & Pollak, S.D. (2012). Structural variations in prefrontal cortex mediate the relationship between early childhood stress and spatial working memory. *The Journal of Neuroscience, 32*(23), 7917-7925.

Henn., B.C., Schnaas, L., Ettinger, A.S., Schwartz, J., Lamadrid-Figueroa, H., Hernandez-Avila, M., Amarasiriwardena, C., Hu, H., Bellinger, D.C., Wright, R.O., & Tellez-Rojo, M.M.

(2012). Associations of early childhood manganese and lead coexposure with neurodevelopment. *Environmental Health Perspectives, 120*(1), 126-131.

Herrmann, P.A., Medin, D.L., & Waxman, S.R. (2012). When humans become animals: Development of the animal category in early childhood. *Cognition, 122*, 74-79.

Hillemeier, M.M., Lanza, S.T., Landale, N.S., & Opropesa, R.S. (2012). Measuring early childhood health and health disparities: A new approach. *Maternal and Child Health Journal*. doi: 10.1007/s10995-012-1205-6

Jansen, P.W., Roza, S.J., Jadoe, V.W.V., Mackenbach, J.D., Raat, H., Hofman, A., Verhulst, F.C., & Tiemeier, H. (2012). Children's eating behavior, feeding practices of partenst and weight problems in early childhood: Results from the population-based generation R study. *International Journal of Behavioral Nutrition and Physical Activity, 9*(130), 1-11.

Kavcic, T., Podlesek, A., Zupancic, M. (2012). The role of early childhood personality in the developmental course of social adjustment. *International Journal of Behavioral Development, 36*(3), 215-225.

Kenney, M.K. (2012). Child, family, and neighborhood associations with parent and peer interactive play during early childhood. *Maternal and Child Health Journal, 16*, S88-S101.

Lambert, J.M., Bloom, S.E., & Irvin, J. (2012). Trial-based functional analysis and functional communication training in an early childhood setting. *Journal of Applied Behavior Analysis, 45*(3), 579-584.

Leavell, A.S., Tamis-LeMonda, C.S., Ruble, D.N., & Zosuls, K.M., & Cabrera, N.J. (2012). African American, white and Latino fathers' activities with their sons and daughters in early childhood. *Sex Roles, 66*, 53-65.

Lee, E. (2012). The relationship between approaches to learning and academic achievement among kindergarten students: An analysis using early childhood longitudinal study kindergarten students (ECLS-K). *International Journal of Arts & Sciences, 5*(5), 305-313.

Lekhal, R. (2012). Do type of childcare and age of entry predict behavior problems during early childhood? Results from a large Norwegian longitudinal study. *International Journal of Behavioral Development, 36*(3), 197-204.

Luby, J.L., Barch, D.M., Belden, A., Gaffrey, M.S., Tilman, R., Babb, C., Nishino, T., Suzuki, H., & Botteron, K., N. (2012). Maternal support in early childhood predicts larger hippocampal volumes at school age. *Proceedings of the National Academy of Science, 109*(8), 2854-2859.

Martin, A.B., Vyavaharkar, M., Vechusio, C., & Kirby, H. (2012). Rural-urban differences in dental service utilization among an early childhood population enrolled in South Carolina Medicaid. *Maternal Child Health Journal, 16*, 203-211.

Melchior, M., Chastang, J., de Lauzon, B., Galera, C., Saurel-Cubizolles, M., Larroque, B., & the EDEN Mother-Child Cohort Study Group. (2012). Maternal depression, socioeconomic position, and temperament in early childhood: The EDEN mother-child cohort. *Journal of Affective Disorders, 137*, 165-169.

Meldrum, R.C., Young, J.T.N., Hay, C., & Flexon, J.L. (2012). Does self-control influence maternal attachment? A reciprocal effects analysis from early childhood through middle adolescence. *Journal of Quantitative Criminology, 28*, 673-699.

Mischo, C., Wahl, S., Strohmer, J., Hendler, J. (2012). Knowledge orientations of prospective early childhood teachers: A study of students' scientific versus subjective orientations in

teacher education courses in Germany. *Journal of Early Childhood Teacher Education, 33*, 144-162.

Morgan, P.L., Farkas, G., Hillemeier, M.M., & Maczuga, S. (2012). Minority children disproportionately represented in early intervention and early childhood special education? *Educational Researcher, 41*(9), 339-351.

Navas, P., Verdugo, M.A., Arias, B., & Gomez, L.E. (2012). Development of an instrument for diagnosing significant limitations in adaptive behavior in early childhood. *Research in Developmental Disabilities, 33*, 1551-1559.

Pahl, K.M., Barrett, P.M., & Gullo, M.J. (2012). Examining potential risk factors for anxiety in early childhood. *Journal of Anxiety Disorders, 26*, 311-320.

Paulsen, D.J., Carter, R.M., Platt, M.L., Huettel, S.A., & Brannon, E.M. (2012). Neurocognitive development of risk aversion from early childhood to adulthood. *Frontiers in Human Neuroscience, 5*, 1-17.

Pidamale, R., B. S., Thomas, A., & Jose, T. (2012). Genetic sensitivity to bitter taste of 6-n propylthiouracil: A useful diagnostic aid to detect early childhood caries in pre-school children. *Indian Journal of Human Genetics, 18*(1), 101-105.

Postert, C., Averbeck-Holocher, M., Achtergarde, S., Muller, J.M., & Furniss, T. (2012). Regulatory disorders in early childhood: Correlates in child behavior, parent-child relationship, and parental mental health. *Infant Mental Health Journal, 33*(2), 173-186.

Rao, N., Sun, J., Pearson, V., Pearson, E., Liu, H., Constas, M.A., & Engle, P.L. (2012). Is something better than nothing? An evaluation of early childhood programs in Cambodia. *Child Development, 83*(3), 864-876.

Raynes-Greenow, C.H., Hadfield, R.M., Cistulli, P.A., Bowen, J., Allen, H., & Roberts, C.L. (2012). Sleep apnea in early childhood associated with preterm birth but not small for gestational age: A population-based record linkage study. *Sleep, 35*(11), 1475-1480.

Robinson, L.E., Webster, E.K., Logan, S.W., Lucas, W.A., & Barber, L.T. (2012). Teaching practices that promote motor skills in early childhood settings. *Early Childhood Education Journal, 40*, 79-86.

Rye, J., & Barfeld, J.S. (2012). Household food insecurity during childhood and subsequent health status: The early childhood longitudinal study – kindergarten cohort. *American Journal of Public Health, 102*(11), e50-e55.

Sacker, A., & Kelly, Y.J. (2012). Ethnic differences in growth in early childhood: An investigation of two potential mechanisms. *European Journal of Public Health, 22*(2), 197-203.

Saudino, K.J. (2012). Sources of continuity and change in activity level in early childhood. *Child Development, 83*(1), 266-281.

Schmeer, K.K. (2012). Early childhood economic disadvantage and the health of Hispanic children. *Social Science & Medicine, 75*, 1523-1530.

Schmeer, K.K. (2012). Family structure and obesity in early childhood. *Social Science Research, 41*, 820-832.

Shinohara, R., Sugisawa, Y., Tong, L., Tanaka, E., Watanabe, T., Onda, Y... & Anme, T. (2012). Influence of maternal praise on developmental trajectories of early childhood social competence. *Creative Education, 3*(4), 533-539.

Simmering, V.R. (2012). The development of visual working memory capacity during early childhood. *Journal of Experimental Child Psychology, 111*, 685-707.

Skotara, N., Salden, U., Kugow, M., Hanel-Faulhaber, B., & Roder, B. (2012). The influence of language deprivation in early childhood on L2 processing: An ERP comparison of deaf native signers and deaf signers with a delayed language acquisition. *BMC Neuroscience, 13*(44), 1-14.

Snell-Bergeon, J.K., Barriga, K., Smith, J., Norris, J.M., Dong, F., Rewers, M., Baron, A.E. (2012). Early childhood infections and the risk of islet autoimmunity. *Diabetes Care, 35*(12), 2553-2558.

Snyder, F.J., Roberts, Y.H., Crusto, C.A., Connell, C.M., Griffin, A., Finley, M.K... & Kaufman, J.S. (2012). Exposure to traumatic events and the behavioral health of children enrolled in an early childhood system of care. *Journal of Traumatic Stress, 25*, 700-704.

Strait, D.L., Parbery-Clark, A., Hittner, E., & Kraus, N. (2012). Musical training during early childhood enhances the neural encoding of speech in noise. *Brain & Language, 123*, 191-201.

Suglia, S.F., Duarte, C.S., Chambers, E.C., & Boynton-Jarrett, R. (2012). Cumulative social risk and obesity in early childhood. *Pediatrics, 129*(5), 1173-1179.

Suway, J.G., Degnan, K.A., Sussman, A.L., Fox, N.A. (2012). The relations among theory of mind, behavioral inhibition, and peer interactions in early childhood. *Social Development, 21*(2), 331-342.

Tucker-Drob, E.M., & Harden, K.P. (2012). Early childhood cognitive development and parental cognitive stimulation: Evidence for reciprocal gene-environment transactions. *Developmental Science, 15*(2), 250-259.

Tucker-Drob, E.M., & Harden, K.P. (2012). Learning motivation mediates gene-by-socioeconomic status interaction on mathematics achievement in early childhood. *Learning and Individual Difference, 22*, 37-45.

Veldhuis, L., Vogel, I., Renders, C.M., van Rossem, L., Oenema, A., HiraSing, R.A., & Raat, H. (2012). Behavioral risk factors for overweight in early childhood; the 'be active, eat right' study. *International Journal of Behavioral Nutrition and Physical Activity, 9*(77), 1-7.

Wakschlang, L.S., Choi, S.W., Carter, A.S., Hullsiek, H., Burns, J., McCarthy, K... & Briggs-Gowan, M.J. (2012). Defining the developmental parameters of temper loss in early childhood: Implications for developmental psychopathology. *The Journal of Child Psychology and Psychiatry, 53*(11), 1099-1108.

Waller, R., Gardner, F., Hyde, L.W., Shaw, D.S., Dishion, T.J., & Wilson, M.N. (2012). Do harsh and positive parenting predict parent reports of deceitful-callous behavior in early childhood? *The Journal of Child Psychology and Psychiatry, 53*(9), 946-953.

Walz, N.C., Yeates, K.O., Taylor, H.G., Stancin, T., & Wade, S.L. (2012). Emerging narrative discourse skills 18 months after traumatic brain injury in early childhood. *Journal of Neuropsychology, 6*, 143-160.

Wang, W., Yan, H., Zeng, I., Chengs, Y., Wang, D., & Li, Q. (2012). No effect of maternal micronutrient supplementation on early childhood growth in rural western China: 30 month follow-up evaluation of a double blind, cluster randomized controlled trial. *European Journal of Clinical Nutrition, 66*, 261-268.

Waterman, C., McDermott, P.A., Fantuzzo, J.W., & Gadsden, V.L. (2012). The matter of assessor variance in early childhood education – or whose score is it anyway? *Early Childhood Research Quarterly, 27*, 46-54.

Weden, M.M., Brownell, P., & Rendall, M.S. (2012). Prenatal, perinatal, early life, and sociodemographic factors underlying racial differences in the likelihood of high body mass index in early childhood. *American Journal of Public Health, 102*(11), 2057-2067.

Whitehouse, A.J.O., Mattes, E., Maybery, M.T., Sawyer, M.G., Jacoby, P., Keelan, J.A., & Hickey, M. (2012). Sex-specific assotionas between umbilical cord blood testosterone levels and language delay in early childhood. *The Journal of Child Psychology and Psychiatry, 53*(7), 726-734.

William, M.E., Park, S., Anaya, A., Pergugini, S.M., Rao, S., Neece, C.L., & Rafeedie, J. (2012). Linking infants and toddlers in foster care to early childhood mental health services. *Children and Youth Services Review, 34*, 838-844.

Willoughby, M.T., Wirth, R.J., & Blair, C.B. (2012). Executive function in early childhood: Longitudinal measurement invariance and developmental change. *Psychological Assessment, 24*(2), 418-431.

Wilson, S., & Durbin, C.E. (2012). Dyadic parent-child interaction during early childhood: Contributions of parental and child personality traits. *Journal of Personality, 80*(5), 1313-1338.

Wilson, S., & Durbin, C.E. (2012). Parental personality disorder symptoms are associated with dysfunctional parent-child interactions during early childhood: A Multilevel modeling analysis. *Personality Disorders: Theory, Research, and Treatment, 3*(1), 55-65.

Zask, A., Barnett, L.M., Rose, L., Brooks, L.O., Molyneux, M., Hughes, D... & Salmon, J. (2012). Three year follow-up of an early childhood intervention: Is movement skill sustained? *International Journal of Behavioral Nutrition and Physical Activity, 9*(127), 1-9.

Zeng, G., Fu, P., May, H., Lopez, B., Suarez-Morales, L., Voelkle, M.C... & Boruch, R.F. (2012). America's youngest kindergarteners' elevated levels of internalizing problems at school entry and beyond: Evidence from the early childhood longitudinal study. *School Mental Health, 4*, 129-142.

Ziol-Guest, K.M., Duncan, G.J., Kalil, A., & Boyce, W.T. (2012). Early childhood poverty, immune-mediated disease processes, and adult productivity. *Proceedings of the National Academy of Sciences, 109*(2), 17289-17293.

References (Qualitative SLR)

Aubrey, C., Ghent, K., & Kania, E. (2012). Enhancing thinking skills in early childhood. *International Journal of Early Years Education, 20*(4), 332-348.

Bentley, D. F. (2012). "Rights are the words for being fair": Multicultural practice in the early childhood classroom. *Early Childhood Education Journal, 40*, 195-202.

Drummond, M. (2012). Boys' bodies in early childhood. *Australian Journal of Early Childhood, 37*(4), 107-114.

Drummond, M., & Drummond, C. (2012). Boys and their teeth: A qualitative investigation of boys oral health in early childhood. *Journal of Child Health Care, 16*(3), 284-292.

Kaartinen, S., & Kumpulainen, K. (2012). The emergence of mathematizing as a culture of participation in the early childhood classroom. *European Early Childhood Education Research Journal, 20*(2), 263-281.

Koops, L.H. (2012). 'Now can I watch my video?': Exploring musical play through video sharing and social networking in an early childhood music class. *Research Studies in Music Education, 34*(1), 15-28.

McKie, B.K., Butty, J.M., & Green, R.D. (2012). Reading, reasoning, and literacy: Strategies for early childhood education from the analysis of classroom observations. *Early Childhood Education Journal, 40*, 55-61.

Park, J.M., Rahman, O., Murphy, T.K., & Storch, E.A. (2012). Early childhood trichotillomania: Initial considerations on phenomenology, treatment, and future directions. *Infant Mental Health Journal, 33*(2), 163-172.

Ritchie, J. (2012). Early childhood education as a site of ecocentric counter-colonial endeavour in Aotearoa New Zealand. *Contemporary Issues in Early Childhood, 13*(2), 86-98.

Seele, C. (2012). Ethnicity and early childhood: An ethnographic approach to children's ethnifying practices in peer interactions at preschool. *International Journal of Early Childhood, 44*, 307-325.

Siry, C., Ziegler, G., & Max, C. (2012). "Doing science" through discourse-in-interaction: Young children's science investigations at the early childhood level. *Science Education, 96*, 311-336.

Smith, S.C. (2012). Cultural relay in early childhood education: Methods of teaching school behavior to low-income children. *Urban Review, 44*, 571-588.

Sumsion, J., & Goodfellow, J. 'Looking and listening-in': a methodological approach to generating insights into infants' experiences of early childhood education and care settings. *European Early Childhood Education Research Journal, 20*(3), 313-327.

Wallerstedt, C., & Pramling, N. (2012). Conceptualising early childhood arts education: The cultivation of synesthetic transductions skills. *International Journal of Early Childhood, 44*, 127-139.

Appendix A: Practical Screens for Quantitative and Qualitative SLRs

Table 1 – Practical Screen for Quantitative SLR

Reason for Removal from Database	*n* – Number of Articles Removed
Untraceable articles	3
Qualitative studies	3
Mixed-methods studies	3
SLRs and meta-analyses	4
Theoretical papers	6
Unsuitable participants	66
Total number of articles removed from database	85

Table 2 – Practical Screen for Qualitative SLR

Reason for Removal from Database	*n* – Number of Articles Removed
Untraceable articles	4
Quantitative studies	8
Mixed-methods studies	4
SLRs	4
Theoretical papers	10
Unsuitable participants	40
Total number of articles removed from database	70

Appendix B: Quantitative and Qualitative SLR Findings

Table 3 – Quantitative SLR Findings

Author	Participants N/ n girls	Age Group (in years)	Reductionism	Falsification	Parsimony	Objectivism	Instrumentalism	Value Freedom	Language of Science (+/-)	Research on or with
1) Al Mamun	3184	5, 14, 21	-	-	-	+	+	-	+	On
2) Baghdadli	152/ 27 girls	3 – 17	+	-	-	+	+	+	+	On
3) Bagherian	90/ 35 girls	3 – 5	+	-	+	+	-	+	+	On
4) Brotman	186/ 40 girls	4	-	-	-	+	+	-	+	On
5) Chen	175	2, 11	-	-	-	+	+	-	+	On
6) Chivers	1403/ 674 girls	1 – 14	+	-	-	+	+	-	+	On
7) Comer	9/ 6 girls	4 – 8	-	-	-	-	+	-	+	On
8) Crowe	3/ 2 girls	3, 4	-	-	-	-	+	-	+	On
9) Cuevas	64/ 29 girls	4 – 5	-	-	-	+	+	-	+	On
10) Delaney	18819 (long)	3	-	-	-	+	+	-	+	On
11) Deoni	153/ 67 girls	0 - 5	+	+	+	+	+	+	+	On
12) DiYanni	93/ 50 girls	3-5	-	-	-	-	+	-	+	On
13) Durmus	779	0 – 2	+	-	+	+	+	+	+	On
14) Faith	69	4 – 7	-	-	-	+	+	-	+	On

15) Ferguson	19/ 7 girls	5 – 7	+	-	-	+	+	-	+	On
16) Fitzpatrick	1314	0 – 4	+	-	-	+	+	-	+	On
17) Gartstein	361/ 181 girls	0 – 1	-	-	-	-	+	-	+	On
18) Giannoni	8987	3	+	-	-	-	+	+	+	On
19) Gibbons	84	0 – 2	+	+	+	+	+	+	+	On
20) Gillespie-Lynch	20/ 0 girls	~3 - ~26	-	-	+	+	+	+	+	On
21) Gubbels	2074	5 – 8	-	-	-	+	+	-	+	On
22) Guy	68/ 34 girls	3 – 6	+	-	+	+	+	+	+	On
23) Habibov	6222	4 – 5	+	+	+	+	+	+	+	On
24) Henn	455	1 – 2	+	-	+	+	+	+	+	On
25) Herrmann	55/ 25 girls	3 – 6	+	-	-	-	+	+	-	On
26) Hillemeier	8800	0 – 4	-	+	+	+	+	+	+	On
27) Jansen	4987	4	-	-	-	+	+	-	+	On
28) Kavcic	340/ 158 girls	3 – 6	+	-	-	-	+	+	+	On
29) Kenney	22797	1 – 5	-	-	-	-	+	+	+	On
30) Lambert	3/ 2 girls		-	-	-	-	+	-	+	With
31) Leavell	426/ 204 girls	2 – 4	-	-	+	+	+	+	+	On
32) Lee	17565/8616 girls	5 (M)	+	-	+	+	+	+	+	On
33) Lekhal	75271	3	+	-	-	+	+	+	+	On

34) Luby	92	3 – 13	+	-	-	+	+	-	+	On
35) Martin	95489/ 46431 girls	0 – 4	+	-	+	+	+	+	+	On
36) Melchoir	1903	0 – 12	-	-	-	+	+	-	+	On
37) Meldrum	1526	4 – 15	-	-	+	+	+	+	+	On
38) Morgan	7950	4	+	-	+	+	+	+	+	On
39) Navas	388	4 – 8	-	-	-	-	+	-	+	On
40) Pahl	236/ 116	4 – 6	-	-	-	+	+	+	+	On
41) Paulsen	14/ 6 girls	3 – 5	-	-	-	-	+	-	+	On
42) Pidamale	1364	5 – 15	-	-	+	+	+	+	+	On
43) Postert	162/ 47 girls	~3 - ~5	-	-	+	+	+	+	+	On
44) Rao	880/ 484 girls	5	-	+	-	-	+	-	+	On
45) Raynes-Greenow	398961	2 – 6	+	-	-	+	+	+	+	On
46) Robinson	14/ 6 girls	3 – 5	+	-	+	+	+	+	+	On
47) Rye	7326	3 – 14	-	-	-	-	+	+	+	On
48) Sacker	13955	0 – 5	+	+	+	+	+	+	+	On
49) Saudino	608	2, 3	-	-	+	+	+	-	+	On
50) Schmeer (a)	1084	5	-	-	-	-	+	-	+	On
51) Schmeer (b)	1538	3, 5	+	-	-	+	+	+	+	On
52) Shinohara	226	1 – 3	-	-	-	-	+	+	+	On

53) Simmering	56	3 – 7	+	-	-	+	+	+	+	On
54) Snell-Bergeon	1729	0	+	+	+	+	+	+	+	On
55) Snyder	184/ 46 girls	~3	-	-	-	+	+	-	+	On
56) Strait	31	7 – 13	+	-	+	+	+	+	+	On
57) Suglia	1605	1 – 5	+	-	-	+	+	+	+	On
58) Suway	239/ 127 girls	2 – 3	-	-	-	+	+	-	+	On
59) Tucker-Drob (a)	1300/ 637 girls	2 – 4	-	-	-	-	+	-	+	On
60) Tucker-Drob (b)	1300/ 637 girls	4	-	-	-	-	+	-	+	On
61) Veldhuis	7505	5	+	-	+	+	+	+	+	On
62) Wakschlang	1490/ 730 girls	3 – 5	-	-	+	-	+	+	+	On
63) Waller	731/ 358 girls	2	-	-	-	+	+	-	+	On
64) Walz	206	3 - 6	-	-	-	-	+	+	+	On
65) Wang	1388	0 – 2	+	-	+	+	+	+	+	On
66) Waterman	526/ 268 girls	3 – 5	+	-	+	+	+	-	+	On
67) Weden	3300	4 – 5	+	-	+	+	+	+	+	On
68) Whitehouse	767/ 372 girls	1, 2, 3	+	-	+	+	+	+	+	On
69) William	432/ 199 girls	1	+	-	-	+	+	+	+	On
70) Willoughby	1292	0 – 5	-	-	+	-	+	+	+	On

Author	Participants N/ n girls	Age Group (in years)	-	-	-	-	-	-	Research
71) Wilson (a)	145/ 68 girls	3 – 6	-	-	-	+	-	-	-	On
72) Wilson (b)	145/ 68 girls	3 – 6	-	-	-	+	+	-	-	On
73) Zask	220, 340	4 – 8	-	-	+	-	+	+	+	On
74) Zeng	9796	3 – 10	+	-	-	+	+	-	+	On

Table 4 – Qualitative SLR Findings

Author	Participants N/ n girls	Age Group (in years)	Adherence to Philosophical Bases							Research on or with
			Subjectivism (+/-)	Qualitative Pragmatism (+/-)	Holism (Irreducibility) (+/-)	Reflectivity (+/-)	Language of Inquiry (+/-)	Exploration & Understanding (+/-)		
1) Aubrey	N/A - Program Analysis	3 – 7	+	-	-	+	-	-		On
2) Bentley	Not mentioned	EC Classroom	+	-	+	+	+	+		With
3) Drummond (a)	33/ 0 girls	5 – 7	-	-	-	+	-	+		With
4) Drummond (b)	33/ 0 girls	5 – 7	-	-	+	+	+	+		With
5) Kaartinen	11/ 8 girls	3	+	-	+	+	-	+		With
6) Koops	10	2 – 4	+	-	+	+	+	+		With
7) McKie	Program Evaluation	Not mentioned	-	-	+	-	-	+		On
8) Park	3 (Cases)	1 – 2	-	-	-	-	-	+		On
9) Ritchie	Not mentioned	EC Classroom	+	-	+	+	+	+		With

10) Seele	22	4 – 6	+	+	+	+	+	+	With
11) Siry	29	4 – 6	+	-	-	+	+	+	With
12) Smith	40	3 – 5	-	-	-	+	-	+	On
13) Sumsion	1/ 0 girls	1	+	+	-	-	-	+	On
14) Wallerstedt	15	6 – 8	+	-	-	+	+	+	With

Appendix C: Authors' Adherences to the Philosophical Tenets of Social Research

Table 5 – Quantitative SLR: Authors' Adherences to Philosophical Assumptions of Quantitative Social Research Involving Children

Philosophical Assumption	*n* – Number of Authors NOT Adhering to Philosophy
Reductionism	40
Falsification	67
Parsimony	45
Objectivism	21
Instrumentalism	2
Value Freedom	31
Language of Science	3

Table 6 – Qualitative SLR: Authors' Adherences to Philosophical Assumptions of Qualitative Social Research Involving Children

Philosophical Assumption	*n* – Number of Authors NOT Adhering to Philosophy
Subjectivism	5
Qualitative Pragmatism	12
Holism (Irreducibility)	7
Reflectivity	3
Language	7
Exploration and Understanding	1