Early Development Instrument and Grade One Reading in School District 70 (Alberni)

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May 2013
Abstract

This current study intended to examine if there was a relationship between early school readiness levels, as measured by the Early Development Instrument (EDI), specifically in the domain of Language and Cognitive Development, and Grade One spring reading Benchmarks in School District #70. This quantitative study used pre-existing, published data and analyzed the Kindergarten EDI scores of School District #70 in 2008-09 and 2009-10 to determine if a relationship existed between the Kindergarten EDI scores, specifically within the domain of Language and Cognitive Development and Grade One spring reading benchmarks in 2009-10 and 2010-11. The results from the study revealed that levels of vulnerability in the domain of Language and Cognitive development is not a reliable predictor of success on Grade One spring reading Benchmarks. Therefore, vulnerability in the domain of Language and Cognitive development is not a good predictor of success on Grade One spring reading Benchmarks.
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Chapter 1: Problem To Be Investigated

The purpose of the current study was to add to the existing knowledge regarding the importance of a child’s readiness to learn upon entering Kindergarten. The current study sought to investigate if there was a relationship between Early Development Instrument (EDI) scores, specifically in the domain of Language and Cognitive development, in School District #70 (Alberni) and spring Grade One reading Benchmarks. It was assumed that if a relationship did exist, then the data from this study would allow teachers, administrators and the network of early learning stakeholders in the Alberni Valley to plan accordingly to meet the needs of early learners.

The motivation to embark on the current study came from the current researcher’s experiences and observations as a Kindergarten teacher and her beliefs in the importance of school readiness. Additionally, the current researcher was motivated by research found in, 15 by 15: A Comprehensive Policy Framework for Early Human Capital Investment in BC (Kershaw, Anderson, Warburton & Hertzman, 2009), which outlines the social and economic risks of not investing in early learning.

Justification of the Study

Multiple studies have proven that investments in early childhood education produce quality long term results, academically, socially and economically. Chan (2010) reported that Nobel Prize winning economist James Heckman has shown that investing in early childhood education, “gets the most bang for the buck, with a return of $6 for every dollar spent” (p. 1). Additionally, investing in early childhood education will result in a
20 percent growth in Canada’s GDP in sixty years (Chan, 2010). Governments choose their priorities when it comes to spending and advocates of early childhood education point out that investing in young children, “can yield economic returns that make it a good investment relative to other uses of society’s resources” (Kees-Taylor, Gibbs, & Slate, 2000, p. 192). While the costs of investing in quality early childhood education are substantial, advocates state that, “the costs- both to children and our economy- of not taking action are much greater” (Austin, 2010, p. 1). Stated differently, “Government can spend less now, or more later” (Human Early Learning Partnership [HELP], 2010, p. 3).

Considering the high consequences to the economy and society if government does not adequately invest in early childhood education, it is important to understand some important statistics regarding the levels of school readiness of BC children. In an article from Chan (2010) reported that 30% of BC children were considered vulnerable upon school entry. The BC government has recognized that these levels of vulnerability are unacceptable and in response have committed to reducing BC’s rate of early vulnerability to 15% by fiscal year 2015 (HELP, 2010).

One of the most important reasons to invest in early childhood education, is because brain science has proven that the timespan from birth to age six is the most crucial developmental stage of human life. Hertzman and Irwin (2007) argue that, “the early years are considered to be the most important developmental phase throughout the lifespan,” because, “the nurturant qualities of the environments to which children are exposed in their earliest years literally ‘sculpt’ the developing brain” (p. 6). It is argued that interventions later in life, such as investments in high schools, post-secondary institutions and job skills training programs aren’t nearly as effective because as Chan
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(2010) has argued, “they ignore the biological reality that the human brain is the most malleable during the early years” (p. 2). For these reasons, it is important for society to understand that the best investments are in early childhood education.

In recent years the BC government has moved to universal full day Kindergarten with the hopes of reducing levels of vulnerability. While this is definitely a step in the right direction, research has proven that it is not enough because, while the years from birth to age six are extremely important, the years from birth to age three are the, “densest time of brain development” (HELP, 2010). What this means is that by the time children enter kindergarten, the most important phase of development has already passed. Dubno (2010), argues that, “research shows that the achievement gap starts early, before children enter school. By the time they enter Kindergarten, children from low income families are typically 12-14 months below national norms in language and pre-reading skills” (p. 1). Clearly, this means that investments should be made in children before they are eligible to enter Kindergarten and pre-schools.

Investing in the years before children enter Kindergarten is important because research has proven that it sets children on a pathway towards success in later grades. Romano, Babchishin, Pagani and Kohen (2010) have found that, “school-entry math, reading, and attention skills were significant predictors of later achievement in first and third grade” (p. 996). In addition to early academic skills, the early acquisition of strong social skills can also set children on a pathway for success in later grades. It is stated by Romano et al. (2010) that, “behavioral outcomes in the early years are particularly important not only for future behavioral competencies and mental health, but also for predicting future school achievement and outcomes” (p. 996). Romano et al. also
described how children with strong social skills can use these skills to their academic advantage: “for instance, social skills may allow children to elicit aid from teachers and peers to the benefit of their learning, whereas behavioral problems may reduce the chance of receiving such help” (p. 996).

It is clear that there is a strong correlation between early learning skills and success in later grades. Additionally, research has affirmed that early learning skills have a direct impact on high school graduation rates. Pagani, Fitzpatrick, Archambault and Janosz (2010) have found that early struggles in school lead to increased levels of dropout. Pagani et al. stated that, “the process leading to high school dropout by age 20 can be judiciously traced to kindergarten. In fact, child characteristics in kindergarten predict successful transitions in the early grades, which significantly forecast academic attainment by age 22” (p. 984).

Strong early learning skills can also set children on a trajectory for success that extends beyond high school graduation. It is argued by Lloyd and Hertzman (2009) that, “early child development (ECD)- the development of physical, social-emotional, and language-cognitive capacities in the early years- is a foundation of health, well-being, learning, and behavior across the life course,” and that, “ECD is now recognized as a social determinant of health,” according to the World Health Organization (Lloyd & Hertzman, 2009, p. 111). Additionally, it is argued by Dubno (2010) that, “in addition to gains with respect to academic performance and high school graduation, research shows investments in high quality early childhood programs can result in significant savings with respect to decreases in special education use, grade retention, juvenile and adult crime, and welfare dependency” (p. 1). Hetzman and Irwin (2007) further illustrated the
dangers of not investing in early childhood education when they stated, “we know that many adult health problems: obesity, mental health (depression), heart disease, high blood pressure, non-insulin dependent diabetes, as well as literacy and numeracy skills, have their roots in the early years” (p. 1). Cleary, these facts illustrate the life long consequences, both positive and negative, that are associated with early childhood education.

Many studies have found that having good school readiness skills at Kindergarten entry can set students up on a trajectory of success. It is noted by Duncan et al. (2007) that:

A child who enters kindergarten with rudimentary academic skills may be poised to learn from formal reading and mathematics instruction, receive positive reinforcement from the teacher, or be placed in a higher ability group that facilitates the acquisition of additional skills. Similarly, a child who can pay attention, inhibit impulsive behavior, and relate appropriately to adults and peers may be able to take advantage of the learning opportunities in the classroom, thus more easily mastering reading and math concepts taught in elementary school. For these reasons, the skills children possess when entering school might result in different achievement patterns in later life. If achievement at older ages is the product of a sequential process of skill acquisition, then strengthening skills prior to school entry might lead children to master more advanced skills at an earlier age and perhaps even increase their ultimate level of achievement (p. 1429).

While this quote clearly outlines the manner in which Kindergarten school readiness skills can result in positive academic trajectories, many other researchers have
highlighted how a lack of school readiness skills can set students up on negative trajectories characterized by poor achievement. It is argued by Geoffrey et al. (2010) that students who lack school readiness skills in Kindergarten, “follow a trajectory of poor academic achievement” (p. 1359). Additionally, students who have low levels of school readiness often come from low SES backgrounds and can have their problems compounded. It is argued by Gregory and Rimm-Kaufman (2008) that, “early childhood poverty can set students on negative achievement trajectories with few opportunities for deflections toward higher achievement” (p. 500). Considering the long lasting academic impacts low levels of Kindergarten readiness can have on student achievement, it is clear that every attempt to improve kindergarten readiness skills should be made.

Perhaps the most convincing reason why school readiness is important is because research has proven that students who start behind their peers early in their education tend to stay behind and have limited opportunities to catch up. As Dubno (2010) stated bluntly, “children who start behind, stay behind” (p. 1) She further went on to describe that research has proven that, “if a child is not reading on grade level by third grade, he or she will have a difficult time keeping up in later grades” (Dubno, 2010, p. 1). Morris, Bloodgood and Perney (2003) reiterated this point when they stated, “many children struggle with learning to read in first grade and, once they fall behind, have difficulty catching up with their peers” (p. 93). Additionally, research has proven that not only do students with low levels of school readiness have difficulty catching up with their peers, this achievement gap tends to widen as students progress through school. Gregory (2008) argues that, “higher risk 4-year olds experienced a downward trend in GPAs across their years in schooling” (p. 502) Overall, because students with low levels of school readiness
start behind and tend to stay behind their peers throughout their educational careers. Glazzard (1979) has argued that early intervention is the most, “efficient and economic use of a teacher’s and a child’s time than a program of remediation later” (p. 55).

Considering the overall importance school readiness skills play in the long term success of students, the researcher of the present study wanted to understand if there was a relationship between low levels of school readiness, as measured by the EDI and Grade One reading benchmark in School District #70 (Alberni). In 2008-09, 25.74% of students in School District #70 were considered vulnerable on at least one EDI domain (“Human Early Learning Partnership,” n.d.). While there is a growing awareness of the importance of addressing school readiness, there were no studies that specifically addressed if a relationship existed between School District #70’s EDI scores, in the domain of Language and Cognitive development and spring Grade One reading Benchmarks. The justification for focusing on spring Grade One reading benchmarks was that the majority of kindergarten students would likely attend Grade One at the same school where they attended Kindergarten, thus making students easier to track.

Due to the overall costs of not addressing early vulnerabilities, it is necessary to understand if EDI scores in School District #70 had any relationship to Grade One success, in terms of reading, as evidenced by Benchmark scores. If a relationship did exist, the relationship could reveal that students who are considered vulnerable according to the EDI in Kindergarten catch up by Grade One or it could reveal that students who are considered vulnerable in Kindergarten tend to stay behind their peers in Grade One.
Research Question and Hypotheses

Based on 2010 provincial EDI scores, it has been established that only 71% of BC children arrive at Kindergarten meeting all of the developmental benchmarks they need to thrive both now and in the future (HELP, 2010). Therefore, the research question of this study was: is there a relationship between early school readiness levels, as measured by the EDI, specifically in the domain of Language and Cognitive Development, and Grade One spring reading Benchmarks in School District #70? Based on research conducted in other jurisdictions, the researcher hypothesized that students who were considered vulnerable in Kindergarten would continue to lag behind their peers in Grade One.

Definition of Terms

The Early Development Instrument (EDI) is defined as a population-based early child development assessment tool developed by Drs. Dan Offord and Magdalena Janus used to measure the state of children’s development in Kindergarten. The EDI is a checklist that Kindergarten teachers complete for each child in their class. It is a holistic measure of children’s development across five areas: physical health and well-being; social competence; emotional maturity; language and cognitive development; and communication skills (Kershaw et al., 2009).

School readiness is defined as a child’s readiness to learn upon entering Kindergarten as measured by EDI scores.

Grade One Benchmarks are defined as a teacher administered reading assessment that provides a reading score. The score is used to measures changes in student reading
when compared to previous times during the year. A year end score of 14 is considered meeting expectations for Grade One. (School District #70 (Alberni) Achievement Contract, 2012).

School District #70 (Alberni) is a small school district located on the west side of Vancouver Island, British Columbia, Canada.

**Brief Overview of Study**

The purpose of the current study was to examine if there was a relationship between early school readiness levels, as measured by the EDI, specifically in the domain of Language and Cognitive Development, and Grade One spring reading Benchmarks in School District #70? Therefore, the current study analyzed the Kindergarten EDI scores of School District #70 in 2008-09 and 2009-10 to determine if a relationship exists between the Kindergarten EDI scores, specifically within the domain of Language and Cognitive Development, and Grade One reading benchmarks in 2009-10 and 2010-11. The purpose of this study was twofold: to add to the existing knowledge regarding the importance of Kindergarten school readiness; and to determine if there was a relationship between Kindergarten EDI scores, specifically in the area of Language and Cognitive Development in School District #70 and Grade One reading benchmarks in the same district. The data from this study was analyzed for trends as two cohorts of students progressed from Kindergarten to Grade One.
Chapter Two: Background and Review of Related Literature

Stuber and Patrick (2010) used a case study approach to determine the skills and assets children bring with them to kindergarten. The three year study allowed the authors to determine if children’s Kindergarten scores correlated to their grade three literacy and math scores. Data was collected by having Kindergarten teachers use the Kansas Early Learning Inventory (KELI) to observe a random sample of their students during the first nine weeks of school and again in the late spring. In total 5,073 children in 232 kindergarten classrooms in Kansas participated in the study over the course of three years (Stuber & Patrick, 2010). The KELI measured children in nine domains: physical development, social-emotional development, symbolic development, general knowledge, oral language, written language, math concepts, attentive behavior, and work habits (Stuber and Patrick, 2010). Kindergarten teachers were asked to rate children in these domains using three developmental categories: delayed, developing and developed (Stuber & Patrick, 2010). Additionally, other data was collected from the parents of the children in the study to determine effective parent/home practices (Stuber & Patrick, 2010).

The large sample size and longevity of the study allowed the researchers to develop strong evidence to support their thesis. By tabulating the results of the 5,073 students, the researchers were able to conclude that those students who had high levels of school readiness in terms of literacy skills, were also able to maintain these skills in grade three literacy assessments (Stuber & Patrick, 2010).

While this study had many strengths, there were also some limitations. Most
notably the lack of definitions given by the researchers regarding the nine domains the
students were assessed upon opened the research to contamination by the subjective
opinions of each individual teacher. For example, the classification of students into the
categories delayed, developing and developed was entirely subject to the teachers’
personal experience, opinion and varying school environments.

The study also encompassed feedback from parents regarding school readiness,
however the researchers admitted openly that more analysis was needed to make a
stronger case for the nature of parent involvement in early learning (Stuber & Patrick,
2010). Additionally, the researchers failed to included the number parents used in the
study, the questions parents were asked and the general methodology surrounding their
parental research.

This study relates well to my research because the KELI assessment is similar to
the Early Development Instrument (EDI) in that both instruments assess students in a
holistic manner to determine their level of school readiness. Overall, the study by Stuber
and Patrick (2010) has made me aware of the limitations of such instruments, as well as
their benefits.

The study conducted by the Oregon Department of Education (1997) investigated
the level of school readiness in Oregon’s Kindergarten children. In this study school
readiness was measured by teacher surveys which were distributed in the fall of 1997.
The study had kindergarten teachers assess their students in six developmental domains:
Physical well being, Language usage, Approaches toward learning, Cognition and
general knowledge, Motor development, and Social and emotional development (ODE,
1997). Surveys were sent to 1,141 public school Kindergarten teachers and 245 private
school teachers. There was a 63% return rate of surveys (ODE, 1997). The results were tabulated to give overall kindergarten school readiness statistics for the entire state. Additionally, the results were also broken down to provide percentages of students who were meeting and not meeting readiness indicators in each domain by county.

The key findings of this study include that 48.2% of Kindergarten teachers believed that children’s readiness was about the same as it was five years prior to the study (ODE, 1997). The study also outlined the disparity in school readiness levels between public and private school children with 43.7% of children attending public schools reported as not meeting one or more of the readiness areas, compared to 29.2% of private school children (ODE, 1997). Finally, the study also highlighted differences in school readiness between male and female students.

The large sample size of the Oregon Department of Education’s (ODE, 1997) study provided a broad perspective of the overall level of school readiness of the kindergarten children it studied. Additionally, this study was diverse in that it assessed the levels of kindergarten school readiness in both public and private school students. It was reported that responses came from 717 public school teachers and 154 private school teachers, for an overall return rate of 63% (ODE, 1997). The fact that the study was explicit about the exact number of surveys sent out and surveys completed gives the reader confidence to draw positive conclusions regarding the validity of the study.

Although the study was transparent in the number of surveys sent out and the number completed, there were also some limitations to the study. The study was based solely on kindergarten teacher responses to a survey sent out by the Oregon Department of Education. While the reader was made aware of the six domains outlined in the survey,
the reader was never provided a copy of the survey, nor the criteria teachers were asked to score students with. The fact that the study was based on teacher surveys means that the results are subjective based on each individual teacher’s experience, opinions and school culture. Additionally, the fact that scoring criteria were not explicitly stated in the study means that teachers may have been forced to create their own scoring criteria. Finally, it needs to be taken into consideration that potentially only a certain type of teacher responds to surveys at all. This could seriously skew the results in that many of the teachers who didn’t respond could have impacted the results in an unknown way.

Overall, the Oregon Department of Education’s (1997) study relates to my research project as it highlights one of the major limitations of surveying, in that many teachers may not respond to surveys. Additionally, this study made me aware of the distinct differences in school readiness levels between public and private school students. This fact, while not surprising, has made me aware of the need to decide whether or not I want to include private school readiness levels in my research.

The study conducted by KSI Research (KSI International Research Inc., 2003) was part of a national research initiative on early childhood development. The comprehensive study focused on Abbotsford, British Columbia and aimed to provide that community with information that would allow them to make informed decisions regarding best policies and appropriate programs for families with young children (KSI, 2003). The comprehensive report was derived from two main sources: The National Longitudinal Survey of Children (NLSCY), KSI Research International (2003) and the Early Development Instrument (EDI). The EDI portion of the study was conducted using a checklist requiring teachers to score their Kindergarten students in five domains: Physical
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health and well-being, Social competence, Emotional health and maturity, Language and cognitive development, and Communication skills and General knowledge (KSI, 2003).

The EDI sample size was large, considering that teachers of all Kindergarten children attending public schools in Abbotsford and four out of five independent schools completed the EDI (2003). Once completed, Abbotsford’s EDI scores were compared to a larger EDI sample of roughly 28,250 children drawn from six other selected communities: Hampton, New Brunswick; Montreal, Quebec; Mississauga-Dixie-Bloor, Ontario; Niagra Falls, Ontario; South Eastman, Manitoba; and Saskatoon, Saskatchewan (KSI, 2003). The second instrument, the NLSCY, conducted surveys of 420 Abbotsford kindergarten children, drawn from a random sample, as well as their parents. The children completed assessments and were measured for outcomes such as behavior, vocabulary and number knowledge. The surveyed parents were asked to provide information such as their social and economic backgrounds, their children’s activities, general health and community involvement (KSI, 2003). Once the NLSCY was completed, the Abbotsford scores were compared to national data, as the NLSCY questionnaire is used across the country (KSI, 2003). Through multiple statistical analyses, the study concluded that the children of Abbotsford are fortunate, meaning that children in that community have reasonably strong overall development and the community’s strengths were its strong social support and well-functioning families (KSI, 2003). Despite these strengths it was also noted that there remained room for improvement, particularly in the areas of receptive language and hyperactivity in children (KSI, 2003). The study noted that children with low levels of receptive language and hyperactivity have an increased risk for low school achievement and if these children are
concentrated in certain classrooms and schools, then the risks associated with poor development are further increased (KSI, 2003).

By using both the EDI and NLSCY to derive the data used in this study, the researchers were better able to show generalized trends in the community they were studying. Additionally, the EDI and NLSCY have been used nationally which allowed the Abbotsford scores to be compared to national averages to substantiate Abbotsford’s kindergarten school readiness levels. Finally, the study outlined in detail aspects of both the EDI and NLSCY survey, which allows the reader make their own interpretation about the validity of each instrument.

There were also a few limitations to this study. One of the key factors to the study was the reliance on how teachers rated students on the EDI. The obvious limitation is that how a teacher rates a student is completely subject to a particular teacher’s opinions, biases and school culture. Additionally, the NLSCY survey of parents could be problematic as parents may under or over report aspects of their lives such as their social and economic background, community involvement and general levels of health.

The study conducted by KSI Research International (2003) is relevant to my research because a significant portion of the data collected in the study was derived through the EDI. Overall, this study allowed me to better understand the usefulness of the EDI as an indicator of school readiness.

The study conducted by California researcher Smith (2005) identified the fact that many parents struggle to determine whether their child is ready for Kindergarten or if they should delay entrance by a year. Smith reasons that this dilemma occurs because the only standard guideline that has been provided by schools to parents for determining
readiness is the child’s age (Smith, 2005). As a Kindergarten teacher and a parent of four children, anecdotally speaking, Smith reported that parents of children with late birthdays often delay entry reasoning that their child’s late birth date will put them at a disadvantage when compared to their peers (Smith, 2005). Identifying the fact that exclusively using age to determine school readiness is not always an accurate indicator of a child’s readiness, Smith identified that a “concise list of readiness skills,” should be created in consultation with Kindergarten teachers to guide parents and teachers when deciding if a child is ready for kindergarten (Smith, 2005).

To create this list of readiness skills, Smith (2005) designed a qualitative study that surveyed Kindergarten teachers to determine what skills they felt were the most important indicators of Kindergarten readiness. The Kindergarten teachers were asked to complete a six question survey, with three of the questions being open ended.

To conduct her research, Smith sent surveys to 25 Kindergarten teachers in her suburban California school district and 22 of the 25 Kindergarten teachers completed and returned the surveys. All of the Kindergarten teachers surveyed taught in the same school district as Smith. It was reported by Smith that the subjects taught in a primarily homogenous population of predominately white, middle class families (Smith, 2005).

The results of this study produced a Top Five List of what Smith’s colleagues determined to be the most important indicators of Kindergarten readiness. The list found the following to be the most important:

1. Ability to listen/pay attention for 15 to 20 minutes
2. Respect/get along with peers
3. Ability to follow 1 to 3 step directions
4. Demonstrate appropriate classroom behavior (e.g. follow rules, respect teacher)

5. Demonstrate personal responsibility/communicate personal needs (Smith, 2005).

Overall, the results of the study produced a useful list for parents and teachers to use when determining if a child is ready to enter Kindergarten. Interestingly, the top five list showed the most important skills needed for Kindergarten were not academic, but rather related mostly to social and emotional skills. As stated by Smith, “From this information one can infer that teachers believe that the academics can be taught if the social readiness is in place” (Smith, 2005, p. 32).

While the study by Smith (2005) was extremely useful in advancing knowledge on the topic of Kindergarten readiness, it must also be acknowledged that there were several limitations to the study. Most notably, the small sample size of the study was a major threat to the validity of the study. While the return rate of surveys was extremely high it must be acknowledged that 22 surveys is an extremely small sample size. Additionally, if 100% of the teachers surveyed participated, they may have influenced the results in an unknown way. Also, the fact that Smith teaches in the same district where she conducted her research may have influenced individual teachers’ responses and decision to participate. Finally, the fact that all of the survey participants taught in the same district that serviced a suburban, middle-class and homogenous population likely influenced their responses. While this study was extremely worthwhile, its results would have been more meaningful if it encompassed more than one district and more than one socio-economic group.

Overall, the study by Smith (2005) relates to my research project because it addresses the issue of Kindergarten readiness. While California’s Kindergarten cut-off
date of December 2 is almost a month earlier than BC’s and even though California has a much more rigorous academic Kindergarten curriculum than BC, the study was still relevant because it attempted to create a consensus on what skills are most relevant for Kindergarten readiness.

The main problem being addressed in the study by Li, D’Angiulli and Kendal (2007) was whether using the EDI for children from Culturally and Linguistically Diverse backgrounds (CALD) yields meaningful results. The authors focused their study on Canada and Australia, two countries with high Aboriginal populations. The authors argued that children from CALD backgrounds scored significantly lower on the EDI because the EDI fails to take into account cultural differences (Li et al., 2007).

Specifically, Li et al. (2007), argued that CALD children scored the poorest in the areas of language and cognitive development, and general knowledge and communication skills. Li reasoned that these scores were reflective of cultural differences not addressed within the EDI as a tool or within its implementation (Li et al., 2007).

Li clearly stated that this paper was written with three goals in mind: 1) to identify the limitations of the EDI as a universal screening tool, particularly with regard to children from culturally and linguistically diverse backgrounds (CALD); 2) to alert readers to the potential negative implications of the current EDI for communities and society, and  3) to recommend ways for improvement so that the EDI will become a valid and culturally appropriate screening tool for monitoring early development in CALD children (Li et al., 2007, p. 221).

While this was not an empirical study, it was still very relevant to my research as it was one of the few papers that openly questioned the validity and use of the EDI. Given
the popularity and widespread use of the EDI, it is interesting that so few scholars are questioning its use. According to Li et. al. (2007), “the reliability and validity of the EDI has never been formally established in a peer-reviewed journal article” (p. 225).

The main results of this study revealed that the EDI puts students from CALD backgrounds at a disadvantage when compared to their non-CALD peers. Li et. al. (2007) claimed that the EDI was not sensitive to linguistic diversity among children and argued that, “the use of English alone is not adequate for assessing the language ability and communication skills of minority children because minority children may speak their native language very well” (p. 226). Additionally, Li et. al., (2007) attacked the EDI’s lack of sensitivity to cultural diversity, specifically in the general knowledge and communication skills domain which asks questions about a child’s ability to communicate his or her needs in a socially acceptable manner. Li et. al., (2007) also pointed out that what is considered socially acceptable in schools and the community is a social construct. For example, in Western culture being open and assertive is an indicator of good communication skills, while Asian and Muslim cultures encourage shyness and reservation and would characterize openness and assertiveness as a sign of ignorance. Overall, Li et. al., (2007) argued that the EDI’s lack of cultural sensitivity may have caused teachers completing the EDI to interpret cultural differences as evidence of poor communication skills and general knowledge.

Overall, I believe the arguments made by Li are thought provoking and that this study achieved one of its main goals of making readers aware of the potential limitations of the EDI in regard to children from CALD backgrounds. While this study was thought provoking, it would have been more meaningful if the author had more statistical
evidence, rather than relying predominately on theory.

The study entitled, *15 by 15: A Comprehensive Policy Framework for Early Human Capital Investment in BC*, by Kershaw, Anderson, Warburton and Hertzman, (2009), was prepared for the Business Council of British Columbia and the study analyzed the data on the economic benefits of investing in early learning. The authors argued that BC’s economy will soon face a human capital problem because 29% of children in this province are vulnerable before they attend Kindergarten (Kershaw et. al., 2009). The authors went to great lengths to outline why early childhood vulnerability is not only a social problem, it is also bad for the economy. They argued that the current vulnerability rate signals a brain drain that will dramatically deplete our future stock of human capital and that this depletion will cause BC to forgo 20% in GDP growth over the next 60 years (Kershaw et. al., 2009). They further cautioned that, “unnecessary early vulnerability in BC costs the provincial economy a sum of money that is ten times the total provincial debt load” (Kershaw et. al., 2009, p. 1). In addition, they stated that because a growing body of research is emerging on the topic of early development, there is an emerging consensus from economists that, “the most cost-effective human capital interventions occur among young children” (Kershaw et. al., 2009, p. 1).

In response to the economic consequences that our province could potentially face if early vulnerability is not immediately and adequately addressed, the authors reported that the provincial government set a lofty goal of reducing BC’s early vulnerability rate from 29% to 15 % by fiscal year 2015 (Kershaw et. al., 2009). In response to this goal, the authors of this study outlined six recommendations on how the BC government can achieve these goals:
1. Build on early childhood education and care (ECE) services
2. Build on income support policies to reduce child and family poverty
3. Build on maternity and parental leave, by working with the federal government
4. Build on existing employment standards
5. Build on health, pregnancy and parenting supports
6. Build on the work of local ECD coalitions in community planning (Kershaw et. al., 2009, p.22)

While the data used in this study was derived from numerous sources, such as Statistics Canada and UNICEF, the most important data on vulnerability was obtained through the provincial EDI results. The subjects involved in the EDI are of course Kindergarten students and their levels of vulnerability were calculated based on their teachers’ perceptions of their levels of school readiness. The data was obtained annually through the EDI. Overall, the study by Kershaw et. al., (2009) makes an important contribution to advancing knowledge on the importance of reducing early childhood vulnerability because it clearly outlines the economic risks of not addressing early childhood vulnerability and because it makes practical recommendations on how to proactively address vulnerability.

The only flaw I saw with this study was that it did not address or acknowledge any cultural components when making recommendations on how to reduce early childhood vulnerability. The authors made the assumption that injecting funds into reducing early childhood vulnerability would be successful regardless of the specific cultural conditions of each community. While it may be probable that injecting funds into the majority of communities will yield desired results, it cannot be guaranteed that all communities will
necessarily respond in the same manner due to their cultural differences.

Overall, Kershaw et. al.’s (2009) study relates to my research project because it outlines the importance of early childhood development and also highlights the costs to society, both socially and economically, if vulnerability is not addressed. Most importantly, this study goes the extra step and makes practical recommendations on how we can reduce vulnerability in our province.
Chapter 3: Procedures and Methods

Research Design

The current study compared pre-existing school district and EDI data to explore, to what extent, if any, do Kindergarten EDI scores, specifically in the area of Language and Cognitive Development, predict success on Grade One spring reading benchmark scores in School District #70 (Alberni), British Columbia. The current study analyzed the existing relationship between two variables: EDI scores in School District #70 (Alberni) and the spring Grade One reading benchmarks for the same district. The relationship between the two variables was studied over a two year period to better substantiate any findings and to determine if a trend existed between the two variables. Therefore, this study examined the relationship between the 2008-09 EDI scores and the 2009-10 Grade One reading benchmarks; and the 2009-10 EDI scores and the 2010-11 Grade One reading benchmarks. The relationship between the scores were examined to determine if vulnerability in the domain of Language and Cognitive Development, as evidenced from EDI scores, could predict low scores on Grade One spring reading Benchmarks.

Sample

The data for this study was drawn from pre-existing sources from a particular population. The sample did not necessarily represent all students in Kindergarten in School District #70 in a given year, because some Kindergarten students may not have had their EDI scores submitted and some Grade One students may not have had their benchmarks completed or reported. Instead the data for this study represented all students
whose data was reported. The students whose data was reported represented a wide variety of backgrounds including those with special needs, First Nations students and students living in poverty. Because the researcher was analyzing pre-existing, published data, the researcher did not have to obtain consent from participants, as the School District had previously obtained the necessary consent. Further, the data examined by the researcher did not identify individual students or schools in any way; the identities of the students and schools were protected throughout the study.

**Instrumentation**

The two instruments used for this study were the Kindergarten EDI and Grade One reading benchmark. The Early Development Instrument (EDI) is defined as a population-based early child development assessment tool developed by Drs. Dan Offord and Magdalena Janus used to measure the state of children’s development in Kindergarten. The EDI is a checklist that Kindergarten teachers complete for each child in their class. It is a holistic measure of children’s development across five areas: physical health and well-being; social competence; emotional maturity; language and cognitive development; and communication skills (Kershaw et al., 2009). Grade One reading benchmarks are determined through a teacher administrated reading assessment that yields a benchmark of a student’s reading ability. Because both the EDI scores and the Grade One reading benchmarks for School District #70 were both pre-existing, published data, the researcher made a written request to School District #70 and was granted the EDI reports. To obtain the Grade One reading Benchmark scores the researcher accessed School District #70’s Achievement Contract which is available to the public on the School District’s website.
Data from both reports was in quantitative form. Due to the holistic nature of the EDI and the fact that it measures five domains of development, the researcher chose to narrow the study and focus only on the domain of Language and Cognitive Development.

The data from this study was analyzed by taking each individual school’s EDI scores for the 2008-09 school year and comparing them to their 2009-10 Grade One spring reading benchmarks to determine if there was a relationship between the two sets of data. The process was then repeated by examining the 2009-10 EDI scores for each individual school and comparing them to their 2010-11 spring Grade One reading Benchmark scores. Additionally, the entire district’s 2008-09 EDI scores were compared to their 2009-10 spring Grade One reading benchmarks and the same process was repeated for the following year using the 2009-10 EDI scores and the 2010-11 spring Grade One reading benchmarks. The data was analyzed over two years to better substantiate potential trends that might have been found in any given year. Throughout the process individual students or schools were never identified throughout the course of this study.

Procedures

The study commenced in the spring of 2012 after the researcher was granted approval by the Superintendent of School District #70 (Alberni) to conduct research in the Alberni district. The researcher made a written request to School District #70 to obtain the district’s Kindergarten EDI reports for the years of 2007-08, 2008-09 and 2009-10. Additionally, permission was granted to use the Grade One reading benchmarks for the following years: 2008-09, 2009-10 and 2010-11. Because the researcher was
analyzing pre-existing, published data the Research Board at Vancouver Island University determined that the researcher did not have to obtain ethics approval because the School District had previously obtained the necessary consent from participants. Upon completion of the study, the School District’s EDI reports were stored for five years and then destroyed. Because the Grade One reading benchmarks scores were publicly published as part of the School District’s Achievement Contract, the researcher, as well as the general public had access to this data. Therefore, it was not necessary for the researcher to destroy the Grade One reading benchmark scores.

Validity

Although every attempt was made to eliminate or minimize threats to the validity of this study, some threats still remained. First, the EDI scores were created when classroom Kindergarten teachers filled out questionnaires based on their perception of each individual student’s level of school readiness. Even though Kindergarten teachers received training on how to complete the surveys, it is still possible that data collector characteristics could have influenced the scores because the teachers came from a variety of backgrounds in terms of gender, age, ethnicity and teaching experience. For this reason, data collector characteristics could have affected the nature of the data obtained for the EDI. Additionally, the researcher could not guarantee that the same population was being compared, as some students may have moved, some may not have had their benchmarks collected or reported and some may not have had their EDI data reported.
Chapter 4: Results

The purpose of the current study was to add to the existing knowledge regarding the importance of a child’s readiness to learn upon entering Kindergarten. The current study sought to investigate if there was a relationship between EDI scores, specifically in the domain of Language and Cognitive development, in School District #70 (Alberni) and spring Grade One reading Benchmarks. To determine if a cohort of student’s who have low EDI scores in the domain of Language and Cognitive development have low Grade One spring reading Benchmarks a year later in Grade One, the current researcher analyzed the following sets of data from School District #70: EDI scores in the domain of Language and Cognitive development in 2008-09 and 2009-10 and Spring Grade One reading Benchmarks in 2009-10 and 2010-11.

In 2008-09 the Human Early Learning Partnership (HELP) received a total of 202 EDI questionnaires from School District #70, with 3 questionnaires missing for a total of 199 valid questionnaires. In 2009-10, HELP received 260 EDI questionnaires from School District #70, again with 3 questionnaires missing for a total of 257 valid questionnaires.

In 2009-10, 223 Grade One students had their Benchmark reading scores reported on the school district’s Achievement Contract. While in 2010-11, 252 students had their Benchmark reading scores reported on the school district’s Achievement Contract.

Table 1 shows the current researcher’s results for School District #70’s EDI scores in the domain of Language and Cognitive development for 2008-09 and 2009-10. As
EDI and School Readiness

well, Table 1 also shows the current researcher’s results for School District #70’s spring Grade One reading Benchmarks for 2009-10 and 2010-11. Table 2 shows EDI scores (in the domain of Language and Cognitive development) for 2008-09 and 2009-10, broken down by individual school. Table 2 also shows spring Grade One reading Benchmarks, broken down by individual school.

Table 1: EDI And Benchmark Results For School District #70 2008-2011

<table>
<thead>
<tr>
<th></th>
<th>2008-09</th>
<th>2009-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDI</td>
<td>n= 199</td>
<td>n= 257</td>
</tr>
<tr>
<td></td>
<td>15.42%</td>
<td>21.57%</td>
</tr>
<tr>
<td>Benchmark</td>
<td>n= 223</td>
<td>n= 252</td>
</tr>
<tr>
<td></td>
<td>63.7%</td>
<td>60.3%</td>
</tr>
</tbody>
</table>

n= sample size

EDI and Benchmark results for SD 70 from 2008-2011. EDI scores (in the domain of Language and Cognitive Development) are shown as percentages of students not meeting expectations. Benchmarks scores shown as percentages of students not meeting Grade One reading expectations.
Table 2: EDI and Benchmark Scores Of Individual School District #70 Schools 2008-2011

<table>
<thead>
<tr>
<th>School 1</th>
<th>School 2</th>
<th>School 3</th>
<th>School 4</th>
<th>School 5</th>
<th>School 6</th>
<th>School 7</th>
<th>School 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDI</td>
<td>0.00</td>
<td>15.90</td>
<td>22.20</td>
<td>42.86</td>
<td>9.52</td>
<td>22.20</td>
<td>11.11</td>
</tr>
<tr>
<td>Benchmark</td>
<td>33.40</td>
<td>80.00</td>
<td>66.70</td>
<td>86.70</td>
<td>33.30</td>
<td>55.90</td>
<td>64.30</td>
</tr>
</tbody>
</table>

2008-09 and 2009-10 EDI and Benchmark results for elementary schools in SD 70. Shown as a percentage of students not meeting expectations by school.
Analysis of Table 1

The 2008-08 EDI scores in the domain of Language and Cognitive development revealed that 15.42% of students were considered vulnerable in this domain. Meanwhile the 2009-10 EDI scores in the domain of Language and Cognitive development revealed that 21.57% of students were considered vulnerable in this domain.

The Benchmark scores for 2009-10 show that 223 students had their Benchmark reading scores reported on the school district’s Achievement Contract. The data revealed that of the 223 students tested, 142 students or 63.7% were not meeting expectations.

The Benchmark scores for 2010-11 show that 252 students had their Benchmark reading scores reported on the school district’s Achievement Contract. The data revealed that of the 252 students tested, 152 students or 60.3% were not meeting expectations.

This data reveals that having a low number of students who are considered vulnerable in the domain of Language and Cognitive development does not translate into a low number of students who are not meeting Grade One reading expectations. In 2008-09, only 15.42% of Kindergarten students were considered vulnerable in the domain of Language and Cognitive development. However, a year later of the same cohort of students, now in Grade One, 63.7% of students were not meeting spring Grade One reading expectations.

The data that accompanies the second cohort of students as they transitioned from Kindergarten to Grade One revealed a similar trend that also indicates that having a low number of students who are considered vulnerable in the domain of Language and Cognitive development does not translate into a low number of students who are not meeting spring Grade One reading expectations. In 2009-10, only 21.57% of
Kindergarten students were considered vulnerable in the domain of Language and Cognitive development. However, a year later in 2010-201, the spring Grade One reading Benchmarks of this same cohort of students revealed that 60.3% of these students were not meeting reading expectations.

Overall, the data from the current researcher’s study reveals that having low levels of vulnerability in EDI scores in the domain of Language and Cognitive development is not a good predictor of success on Grade One spring reading Benchmarks.

**Analysis of Table Two**

In Table Two the EDI results for the domain of Language and Cognitive development and spring Grade One reading benchmarks are broken down by individual school. Eight elementary schools had their data analyzed and the data revealed that in all schools, except one, low levels of vulnerability in the domain of Language and Cognitive development does not predict success on Grade One spring reading benchmarks. In fact, the data revealed that in all cases, except one, the percentage of students not meeting Grade One spring reading benchmarks was significantly higher than the percentage who were considered vulnerable in the domain of Language and Cognitive development. These results are interesting because EDI results are intended to measure vulnerability in Kindergarten and it is expected that students who start behind their peers tend to stay behind their peers. However, these scores indicate that the percentage of students who are considered vulnerable in Kindergarten does not remain consistent, nor do these students tend to ‘catch up’ by Grade One. Instead these results reveal that the percentage of students not meeting reading expectations by Grade One is significantly higher than the
percentage who were considered vulnerable in Kindergarten. This trend is consistent in seven out of the eight schools analyzed. Overall, this data reveals that the percentage of students who are considered vulnerable in the domain of Language and Cognitive development in Kindergarten is not an accurate predictor of success a year later on spring Grade One reading benchmarks. Below the eight schools are analyzed individually:

**School One**

At School One in 2008-09, only 0% of Kindergarten students were considered vulnerable in the domain of Language and Cognitive development. Yet a year later, the same cohort’s benchmark scores in Grade One revealed that 33.40% were not meeting spring Grade One reading expectations. This data reveals that 33.40% more students were considered vulnerable by Grade One, in terms of their reading.

The trend continued with the second cohort of students. In 2009-10, only 15.90% of Kindergarten students were considered vulnerable in the domain of Language and Cognitive development. Yet a year later, the same cohort’s benchmark scores in Grade One revealed that 80.00% were not meeting spring Grade One reading expectations. This data reveals that 64.10% more students were considered vulnerable by Grade One, in terms of their reading.

**School Two**

At School Two in 2008-09, only 22.20% of Kindergarten students were considered vulnerable in the domain of Language and Cognitive development. Yet a year later, the same cohort’s benchmark scores in Grade One revealed that 66.70% were not meeting
spring Grade One reading expectations. This data reveals that 44.50% more students were considered vulnerable by Grade One, in terms of their reading.

The trend continued with the second cohort of students. In 2009-10, only 42.86% of Kindergarten students were considered vulnerable in the domain of Language and Cognitive development. Yet a year later, the same cohort’s benchmark scores in Grade One revealed that 86.70% were not meeting spring Grade One reading expectations. This data reveals that 43.84% more students were considered vulnerable by Grade One, in terms of their reading.

**School Three**

At School Three in 2008-09, only 33.30% of Kindergarten students were considered vulnerable in the domain of Language and Cognitive development. Yet a year later, the same cohort’s benchmark scores in Grade One revealed that 9.52% were not meeting spring Grade One reading expectations. This data reveals that there was a decrease in vulnerability by Grade One, meaning that many of the students who were considered vulnerable in Kindergarten in the domain of Language and Cognitive development caught up in terms of their reading skills by Grade One.

For the second cohort of students, in 2009-10, only 22.20% of Kindergarten students were considered vulnerable in the domain of Language and Cognitive development. Yet a year later, the same cohort’s benchmark scores in Grade One revealed that 55.90% were not meeting spring Grade One reading expectations. This data reveals that 33.70% more students were considered vulnerable by Grade One, in terms of their reading.
**School Four**

At School Four in 2008-09, only 11.11% of Kindergarten students were considered vulnerable in the domain of Language and Cognitive development. Yet a year later, the same cohort’s benchmark scores in Grade One revealed that 64.3% were not meeting spring Grade One reading expectations. This data reveals that 53.19% more students were considered vulnerable by Grade One, in terms of their reading.

The trend continued with the second cohort of students. In 2009-10, only 10.00% of Kindergarten students were considered vulnerable in the domain of Language and Cognitive development. Yet a year later, the same cohort’s benchmark scores in Grade One revealed that 35.1% were not meeting spring Grade One reading expectations. This data reveals that 25.1% more students were considered vulnerable by Grade One, in terms of their reading.

**School Five**

At School Five in 2008-09, only 26.32% of Kindergarten students were considered vulnerable in the domain of Language and Cognitive development. Yet a year later, the same cohort’s benchmark scores in Grade One revealed that 74.30% were not meeting spring Grade One reading expectations. This data reveals that 47.98% more students were considered vulnerable by Grade One, in terms of their reading.

The trend continued with the second cohort of students. In 2009-10, only 19.51% of Kindergarten students were considered vulnerable in the domain of Language and Cognitive development. Yet a year later, the same cohort’s benchmark scores in Grade
One revealed that 63.60% were not meeting spring Grade One reading expectations. This data reveals that 43.79% more students were considered vulnerable by Grade One, in terms of their reading.

**School Six**

School Six followed a similar pattern to the above mentioned schools. In 2008-09, only 6.67% of Kindergarten students were considered vulnerable in the domain of Language and Cognitive development. Yet a year later, the same cohort’s benchmark scores in Grade One revealed that 73.30% were not meeting spring Grade One reading expectations. This data reveals that 66.63% more students were considered vulnerable by Grade One, in terms of their reading.

The trend continued with the second cohort of students. In 2009-10, only 6.67% of Kindergarten students were considered vulnerable in the domain of Language and Cognitive development. Yet a year later, the same cohort’s benchmark scores in Grade One revealed that 26.70% were not meeting spring Grade One reading expectations. This data reveals that 18.37% more students were considered vulnerable by Grade One, in terms of their reading.

**School Seven**

At School Seven in 2008-09, only 20.00% of Kindergarten students were considered vulnerable in the domain of Language and Cognitive development. Yet a year later, the same cohort’s benchmark scores in Grade One revealed that 46.20% were not meeting spring Grade One reading expectations. This data reveals that 26.20% more
students were considered vulnerable by Grade One, in terms of their reading.

The trend continued with the second cohort of students. In 2009-10, only 6.25% of Kindergarten students were considered vulnerable in the domain of Language and Cognitive development. Yet a year later, the same cohort’s benchmark scores in Grade One revealed that 27.80% were not meeting spring Grade One reading expectations. This data reveals that 21.55% more students were considered vulnerable by Grade One, in terms of their reading.

**School Eight**

School Eight was the only exception to the trend found in the other seven schools. Data from 2008-09 reveals that 34.78% of students were considered vulnerable at School Eight in the domain of Language and Cognitive development. A year later in 2009-10, the same cohort’s spring Grade One reading benchmarks revealed that 32% of students were not meeting reading expectations. These statistics reveal that 2.78% less students were considered vulnerable by Grade One, as evidence by their spring reading benchmarks, when compared to Kindergarten. A similar trend continued at School Eight with the second cohort of students. In 2009-2010, 48.15% of students were considered vulnerable in the domain of Language and Cognitive development. A year later in 2010-11, the second cohort’s spring Grade One reading benchmarks revealed that 44% of students were not meeting reading expectations. These statistics reveal that 4% less students were considered vulnerable by Grade One, as evidence by their spring reading benchmarks, when compared to Kindergarten. Considering the small percentage difference found between School Eight’s Language and Cognitive development scores
and spring Grade One reading benchmarks in both cohorts (less than 5%) it would be reasonable to suggest that at School Eight EDI scores in the domain of Language and Cognitive Development was a reliable indicator of spring Grade One reading levels.
Chapter 5: Summary and Conclusions

Research Summary

The purpose of the current study was to investigate if there was a relationship between EDI scores, specifically in the domain of Language and Cognitive development, in School District #70 (Alberni) and spring Grade One reading Benchmarks. The personal interest of the current researcher who is a Kindergarten teacher and has observed and wondered about the future of vulnerable students was a motivating factor to create the present study. Additionally, research has proven that children who start behind their peers early in their education tend to stay behind them throughout the school years (KSI Research International, 2003). Therefore, taking these two factors into consideration, the study of whether EDI scores, specifically in the domain of Language and Cognitive development, in School District #70 (Alberni) have a relationship to Grade One reading Benchmarks was examined.

The data for the current study spanned a four year period from 2008 to 2011. The EDI data was collected and analyzed by HELP and the current researcher obtained this information by written request from School District 70. Both sets of Grade One reading Benchmarks were obtained from School District 70’s 2011-12 Achievement Contract. The current researcher did not need to gain consent from the VIU Research Board because both HELP and School District 70 had previously obtained the necessary consent needed to collect this data. Therefore, the current researcher only had to obtain consent from School District #70 to conduct research.

Results of the quantitative data showed that the 2008-09 EDI scores in the domain
of Language and Cognitive development revealed that 15.42% of students were considered vulnerable in this domain and that a year later in Grade One, of this same cohort of students, 63.7% were not meeting spring Grade One reading Benchmarks.

Results of the quantitative data showed that the 2009-10 EDI scores in the domain of Language and Cognitive development revealed that 21.57% of students were considered vulnerable in this domain and that a year later in Grade One, of this same cohort of students, 60.3% were not meeting spring Grade One reading Benchmarks.

This data clearly reveals that having a low number of students who are considered vulnerable in the domain of Language and Cognitive development does not translate into a low number of students who are not meeting Grade One reading expectations. Therefore, vulnerability in the domain of Language and Cognitive development is not a good predictor of success on Grade One spring reading Benchmarks.

**Limitations**

It is important that several limitations are taken into consideration when examining the present study. One of the main limitations of the study is that it tracked only two cohorts of students as the progressed from Kindergarten to Grade One. The current researcher wanted to include a third cohort of students in the present study, however, it was discovered that School District 70 did not participate in the EDI in 2007-08, therefore it was not possible to track three cohorts of students in succession. Overall, the present study was conducted over a relatively short period of time and a longer study would have shown a broader trend of results.

Another limitation was that the present study only tracked a cohort of students as
they transitioned from Kindergarten to Grade One. The study could have been made more meaningful if the students were followed past their Grade One year, perhaps to Grade Four or even Grade Seven where Foundation Skills Assessment (FSA) data may substantiate trends over a longer period of time. A study that followed students over a longer period of time as they progressed through school could reveal if cohorts of vulnerable students tend to catch up or if they remain vulnerable.

Furthermore, the sample was not random as the data of the students analyzed in this study were chosen based on the fact that they attended Kindergarten and Grade One in the district of the present researcher’s place of employment. While the findings of the present study reveal that having a low number of students who are considered vulnerable in the domain of Language and Cognitive development does not translate into a low number of students who are not meeting Grade One reading expectations, the results cannot be generalized to all school districts. Thus, the current study was very limited in its generalizability.

Another limitation of the present study was the fact that EDI scores were created when classroom Kindergarten teachers filled out questionnaires based on their perception of each individual student’s level of school readiness. Even though Kindergarten teachers received training on how to complete the surveys, it is still possible that data collector characteristics could have influenced the scores because the teachers came from a variety of backgrounds in terms of gender, age, ethnicity and teaching experience. For this reason, data collector characteristics could have affected the nature of the data obtained for the EDI.

Additionally, administration of the Benchmark is subjective to data collector
characteristics which could have influenced the scores in an unknown way. Benchmarks are administered at the school level, by classroom teachers, learning assistance teachers and Principals and Vice-Principals. With so much variety in who is administering the Benchmark, combined with what time of day the Benchmark is done, there is a possibility that the Benchmarks are not administered with a high level of consistency which could influence the scores in an unknown way. Finally, it is possible that not all students are given the Benchmark assessment and it is also possible that students who were given the Benchmark did not have their scores reported, resulting in reporting errors. When analyzing the data of a cohort of students with a high percentage of students not meeting Grade One reading expectations, it is important to ask if reading was poor, if reporting was poor, or both?

Another limitation to the present study was that the present researcher could not guarantee that the same sample was being studied as each cohort of students progressed from Kindergarten to Grade One. Throughout the course of the present study, some students may have moved, some may not have had their EDI data reported, and as mentioned previously, some may not have had their benchmarks collected or reported.

The final limitation to this study was that during the period of the present study, there were several literacy intervention programs for Grade One students. These intervention programs affected the ability of the present researcher to correlate the two sets of data, as the interventions likely boosted Grade One literacy levels.

**Recommendations for Policy**

The results of the present study, despite its numerous limitations, reveal that
EDI and School Readiness

vulnerability in the domain of Language and Cognitive development is not a good predictor of success on Grade One spring reading Benchmarks. Therefore, the researcher of the present study recommends that School District 70 not place a heavy emphasis on the results found within the domain of Language and Cognitive development. The results of the present study surprised the present researcher because the results were inconsistent with the vast amounts of research on this topic which argued that students who start behind their peers tend to stay behind their peers. With this information in mind, the researcher of the present study wondered why the results of the present study were not consistent with the widely held notion that students who start behind their peers tend to stay behind their peers. Could it be that the questions teachers were asked to answer based on their perceptions of their students Language and Cognitive abilities were confusing to teachers or that the questions were not specific enough to capture a comprehensive understanding of student abilities in that domain? Or could it be that teachers needed more or better training to interpret the questions in this domain? Or is it that the Domain of Language and Cognitive development is not useful to compare to Grade One reading benchmarks? Perhaps this study would have yielded different results if it had taken a more holistic approach and examined if there was a relationship between overall EDI scores and Grade One spring reading benchmarks. Or perhaps examining a different domain, such as Social Competence or Emotional Maturity would have yielded different results consistent with the belief that students who start behind tend to stay behind their peers.

Given the fact that the results of the present study are inconsistent with the belief that students who start behind their peers tend to stay behind their peers, the best
recommendations for policy that the researcher of the present study can make is that it is important to remember that the EDI is an assessment tool, and more specifically, the domain of Language and Cognitive development provide only a snapshot of student abilities and that no one assessment tool should be used exclusively to measure student abilities. No single assessment tool will ever be perfect; therefore, school districts should strive to use a variety of assessment tools if they are trying to capture a holistic and comprehensive understanding of student assessment.

Recommendations for Further Research

The first recommendation for further research would be to design a study that followed additional cohorts of students as they progressed from Kindergarten to Grade One over an extended period of time. The present study only examined two cohorts of students, therefore it would be interesting to determine if the results found in this study remain consistent over a period of five or ten years.

The second recommendation for further research is to design a study similar to this study, however the new study should focus on multiple districts in British Columbia or even other jurisdictions in the world. A study of this kind would allow researchers to better substantiate any trends found in the present study or to determine if the results found in the present study are unique only to this district or to the years that were studied.

The third recommendation for further research would be to design a long term study that followed cohorts of students as they progressed through their educational careers. Students EDI scores could be analyzed in comparison to their abilities in later primary grades, intermediate, middle school and high school. A long term study such as
this would allow researchers to determine if students who start behind their peers tend to stay behind or if they are able to catch up and if they do indeed catch up, at what grade level does this happen?

The final recommendation for further research is to create a better readiness instrument to be administered at the Kindergarten level that is more likely to accurately predict Grade One reading levels. Creating and implementing a better instrument would be useful as it would allow school districts to have a better understanding of how urgent their literacy needs are at the Kindergarten level.

Conclusion

The present study which explored if there was a relationship between EDI scores, specifically in the domain of Language and Cognitive development, in School District #70 (Alberni) and spring Grade One reading Benchmarks, has revealed that levels of vulnerability in the domain of Language and Cognitive development is not a reliable predictor of success on Grade One spring reading Benchmarks. Therefore, vulnerability in the domain of Language and Cognitive development is not a good predictor of success on Grade One spring reading Benchmarks.

Based on the results of current study, over 60% of Grade One students in school district #70 were not meeting spring Grade One reading expectations in the 2009-10 and 2010-11 school year. Therefore, the present researcher would like to further explore effective interventions at the Pre-Kindergarten, Kindergarten and Grade One levels that help students meet Grade One spring reading expectation.
Reference List


[www.sd70.bc.ca/DistrictOffice/DistrictReports/Achievement%20Contract/SD70%20Achievement%20Contract%202011-12.pdf](http://www.sd70.bc.ca/DistrictOffice/DistrictReports/Achievement%20Contract/SD70%20Achievement%20Contract%202011-12.pdf)