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MASTERS THESIS

Return on Investment for Pre-K and Primary Teacher Training in Meeting Social-Emotional and Cognitive Developmental Needs

Submitted to the Department of International & Comparative Education, American University in Cairo, in partial fulfillment of a Master's Degree.

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Relevance

As of 2012, the US spent more money per pupil on public education than UK, South Korea, Russia, Mexico, Japan, Germany, France, Finland, Canada, Brazil, and Australia, yet scored 10th in Math and 9th Science test scores (USC Rossier Online Staff, 2011). In addition, in 2013, US 15 year-old students did not compare well internationally, coming in 20th in reading (Fensterwald, 2013, para. 5), 23rd in science (para. 4), and 30th in mathematics (para. 3), compared to 64 other industrialized and developing nations (Table 2). However, it has been posited by Carnoy and Rothstein (2013) that since US schools in more affluent areas have less incentive to voluntarily participate in international testing because of less dependency on government subsidies, the average for American achievement on international tests would *per force* be comparatively lower than for many of its foreign counterparts whose test candidate schools often have no choice about participation. Even if this were true, US top scorers on international tests should still be roughly equal in terms of their variance of achievement against comparable countries, but this was not the case for the 2012 PISA (OECD, 2012), and has not been the case since the 60s (Thomas B. Fordham Foundation, 1998; National Commission on Excellence in Education, 1983). Poor international comparisons are not, however, the end of the story, as too many US students today do not perform to grade level on important skills such as science, mathematics, and reading (US Department of Education, 2013), and skills associated with critical thinking (ETS, 2015).

Thus, it seems US educational funds could be spent more wisely, and the working hypothesis of this thesis is that such funding would see better results if there were a greater focus on pre-k to 3rd grade teacher education, as child development experts define early childhood, in relation to brain development and learning, as being from birth to 8 years (Mead, 2012).

Preliminary Literature Review

US Education System Challenges

Achievement. The results of US education funding, as discussed above, are questionable given the questionable results, but this is not a new issue. There was documented concern about math and science skills since, at least, the 1980s (National Commission on Excellence in Education, 1983), and as far back as the 50s (Gonzalez & Kuenzi, 2012). Of particular concern were and are the educational skills associated with critical thinking. A 2015 Educational Testing Service (ETS) report indicates that, when compared to 21 other Organisation for Economic Cooperation and Development (OECD) countries, US ‘millennials’ (born after 1980, & ages 16 to 34 at the time of the study) scored poorly on three measures of critical thinking: a) achieving only better than Italy and Spain among 22 countries in *literacy*; b) achieving last place with Spain and Italy in *numeracy*; and c) ranking last with Poland, Ireland, and the Slovak Republic in *problem solving* (ETS, 2015, p. 4). In today’s globalized world where the kinds of jobs that well-educated students would aspire to are increasingly technology-based and demand proficient writing, reading, and computing, as well as critical thinking skills, no country can afford to fall behind in providing its young citizens with these learning skills and abilities.

However, of at least equal concern as poor performance on international testing is US public school students’ performance at home. A 2013 National Assessment of Educational Progress (NAEP) study revealed that: a) 58% of 4th graders (n = 186,500) and 64% of 8th graders (n = 170,000) scored at *basic* or below (i.e., below grade level) in mathematics; and b) 65% of 4th graders (n = 190,000) and 64% of 8th graders (n = 171,800) scored basic or below in reading (US Department of Education, 2013, p. 3). In 2011 the NAEP found that 33% of 122,000 8th graders scored at a basic level in science (US Department of Education, 2011, p. 3). Naturally, this decline in k to 12 education-associated skills has been reflected in a decline in tertiary level

learning. Arum & Roksa in 2010, for instance, found that among 2300 college and university students studied, ~~that~~ only 55% showed a significant improvement in analytical and critical reasoning scholarship over their freshmen and sophomore years, and ~~that~~ only 64% showed improvement over four years of study (p. 151).

Part of what has happened in US tertiary education is explained by the market model approach to education that has been increasingly at play since the 1990s, to increase revenues in the face of decreasing state subsidies and the simultaneous trend of increased federal subsidies (Department of the Treasury, 2012). As of 2009, the US federal subsidies for tertiary education had reached about 30 billion dollars per year, and that figure is scheduled to increase (Edwards & McCluskey, 2009). Thus, many colleges and universities have increased tuition to make up for lost state subsidies, and feel further empowered by increased federal government subsidies to keep increasing fees. Furthermore, since it is a small part of the budget compared to faculty salaries, many public universities in the US have opted to woo students with a focus on the accoutrement of university environments—including lavish eating halls, fitness centers, and dormitories, which has added even more to student fees. It is argued herein that this is simply a manipulative strategy to get students focused on luxurious study conditions rather than the fact that today's university education is both relatively less rigorous than tertiary education up through the early 70s, and actually less rigorous in terms of the mediocre learning outcomes that too many college graduates evince (as above). The significant grade inflation that has taken place since the 1970s (Rojstaczer & Healy, 2010) is further evidence US universities are simply less rigorous than they need to be in a competitive and globalized world.

Social-Emotional factors.

Early primary and primary education. According to Huffman, Mehlinger, and Kerivan (2000, p. 3), there are three kinds of competence that are associated with potential challenges for children in the first stages of school—these are: a) academic competence; b) social competence; and c) behavioral competence. According to Anderson et al. (2003), US early childhood development programs improve physical, social, emotion, language, and cognitive keenness so that disadvantaged children can enter school ready to learn. This appears to be the case for other countries as well. Nores & Barnett in 2010, in a study of 23 countries using 30 types of interventions for at-risk children, found that “children from different context and countries receive substantial cognitive, behavioral, health and schooling benefits from early childhood interventions. The benefits are sustained over time. Interventions that have an educational or stimulation component evidenced the largest cognitive effect” (p. 271).

The above seems to suggest that only at-risk children would benefit from well-rounded early education programs. However, according to Epstein, Atkins, Cullinan, Kutash, and Weaver, (2008, p. 5), “an estimated one-third of [elementary school] students fail to learn because of psychosocial problems that interfere with their ability to fully attend to and engage in instructional activities.”

Thus, it seems clear that programs targeting the social-emotion, physical, and cognitive development of all school children are well-focused at the early stages of education.

Secondary education. The challenges US students face in secondary school (grades 7 to 12) are several and varied—particularly since adolescence is one of the most difficult periods for young people to survive in general, as in this phase of their lives they are expected to act more like adults, but are often still treated as if they were children. There are several differences from primary school that make secondary school a difficult time for all stakeholders. According to Iriti

and Bickel (2010), these issues include that middle education years (grades 7 to 9), as compared to primary education:

- “Have greater emphasis on teacher control and discipline with fewer opportunities for student decision -making, choice, and self-management;
- Have less personal and positive teacher/student relationships;
- More frequently use practices such as whole class task organization, between classroom ability grouping, and public evaluation of the correctness of work;
- Use higher standards in judging students’ competence and in grading student performance; and,
- Have teachers who feel they are less effective teachers, especially for low ability students, than their elementary counterparts” (p. 7).

In addition, according Eccles (2008), navigation through 8th and 9th grade is particularly crucial as indicated by the fact that about one-third of US drop-outs are seen in or just after 9th grade (as cited by Iriti and Bickel, 2010, p. 7). According to Stringfield, (2000, p. 121), “students drop out of school for four reasons: anonymity or social estrangement; apathy or lack of purpose; failure, especially in ninth grade; and personal problems such as drugs or pregnancy.”

The transition through upper secondary education (10th through 12th grade) is often hampered by high schools that too often see their roles as being limited to standardized test scheduling and providing transcripts (Iriti and Bickel, 2010, p. 7/8).

Thus, it is too often the case that US middle and high schools do not adequately address the significant social-emotional needs of students transitioning from adolescence to young adulthood, which include many societal maturity expectations that are a challenge even in the best of circumstances.

Tertiary education. There is evidence to suggest that apparently soundly prepared students who, for instance, do relatively well on college entrance exams, do not possess requisite skills in the fundamental areas of reading, writing, or computing (Darling & Smith, 2007; Dey, Astin, & Korn, 1991). This thesis author also has direct experience in this unfortunate state of affairs as an instructor at a top 10% US state university in discovering that most sophomore Medical Science students (i.e., pharmacy through MD) could not achieve more than an average mark without significant fundamental guidance in research writing—as to its organization, content, grammar, spelling, sentence structure, and referencing (about 200 students, from 2005 to 2008). However, it is the position of this paper that such poor average performance among US college students is less attributable to intelligence potential than to work ethic, attitude, and social skills. Support for this contention comes from a 2012 study of 20,000 employees from “312 public, private, business, and healthcare organizations,” which indicated that 46% of entry-level hires did not succeed in various jobs past 18 months (Murphy, 2012, p. 2). What is remarkable is that these failures appear to have occurred because of an inability to adapt socially and emotionally, or in a professional manner (Bauerlein, 2013) to the new work setting—and not because of work-related qualifications per se, as illustrated below:

“The study (reported in *Fortune* and *Forbes*) found that 26% of new hires fail because they can’t accept feedback, 23% because they’re unable to understand and manage emotions, 17% because they lack the necessary motivation to excel, 15% because they have the wrong temperament for the job, and only 11% because they lack the necessary technical skills” (Murphy, 2012, p. 2).

The significant skills gap at the college level in the US is logically a reflection of diminished educational efficacy at the k to 12 level. As far back as 1957, when the USSR successfully launched the first artificial satellite, Sputnik, into earth orbit, there were cries from

some educational quarters that US education in math and science was falling significantly behind. Even though there was some lip service paid to this gap, apparently things continued to get worse so that in 1982 a report done by the US Department of Education, called *A Nation at Risk*, evinced concerns about a “rising tide of mediocrity” in American public schools, in terms of knowledge (especially math & science), critical thinking skills, and attitude (US Department of Education, 1983, p. 9). Unfortunately, 25 years later, the same basic education problems persisted, which are described in a report entitled *A Nation Still at Risk* (Thomas B. Fordham Foundation, 1998).

Taken together, the above indicates that the achievement skills gap that exists among too many college students and graduates is associated with a social-emotional maturity or developmental gap.

Social-Emotional and Cognitive Interdependence

Considering the results of US education discussed above, there is reason to believe that educational success in US schools is tied to social-emotional success, and that the latter is best addressed in the early primary stages. That is, there is consistent evidence to suggest that well-rounded preparation of pre-k to 3rd grade teachers impacts students greatly in terms of their future success as students (Mead, 2012). Thus, there are two basic and inter-related pathways through which teachers can prepare students to be more successful learners; one is a focus on cognitive skills and the other is a focus on social-emotional-developmental skills. Of course all effective pre-k to 3rd grade teachers probably consider both aspects—to the degree time and resources allow—in their teaching. What early childhood education teachers may not be fully aware of is that it is a focus on the ‘social brain’ or the social-emotional-development aspect of children that can make a greater difference in a child’s life both socially/emotionally and cognitively (Payton et al., 2008; Ragozzino, Resnik, Utne-O'Brien, & Weissberg, 2003). More

precisely, research has indicated that the social brain is ‘teachable’ (Lieberman, 2012), compared to the ‘cognitive brain’ which requires, not direct training, but the proper conditions for learning (Winne, 1985), which include essentially appropriate-level materials presented in a meta-cognitive manner so as to promote knowledge construction (Piaget, 2001; Bruner, 1977).

Thus, logically speaking, young children are in need of supportive developmental guidance, and this makes them vulnerable both socially/emotionally and cognitively. Indeed, Erikson (1963) contends that children who do not attain proper social-emotional developmental levels at appropriate ages are subject to a whole host of negative emotional responses, which would logically mean that such students (depending on personality and social support network) may be devoting a great deal of energy to coping with emotional dissonance and therefore have less energy to focus on academic learning. Thus, in essence, young children, children, and adolescents are not free to pursue or even be aware of their natural cognitive interests unless they have a proper foundation of developmental guidance, which empowers them in more pro-actively resolving social-emotional issues through awareness of and the action of their own voices (Cook-Sather, 2002).

Thus, given that students logically need explicit social-emotional-developmental training in early primary school in order to be able to engage with more energy and action toward properly designed but implicitly orientated cognitive domains, would it not make more sense to focus educational dollars on improving self-efficacy and self confidence in the early primary years? More precisely, it is the position of this paper that compared to subsidizing, for instance, literacy programs in the US for those who drop out of public schools or who are ‘at-risk’, that a significantly better return on investment (ROI) would be seen by focusing educational funding on the pre-k to 3rd grade in terms of supporting teachers’ preparation to actively and explicitly teach and model social-emotional skills for children in order that these children become more

confident, and thus more competent in provoking their own genetically-determined cognitive abilities into skilled levels of expression as a result of exposure to facilitative cognitive learning atmospheres.

US Educational Funding at Different Levels

Kindergarten through secondary. While no breakdown could be found for the \$545 billion 2015 US education budget by schooling level (Chantrill, 2015, chart), it was determined that the US, as of 2011, spent \$10,958 per primary school student, \$12,338 per middle school student, and \$12,731 per high school student (Center on International Education Benchmarking, 2011, bar graph). By 2014, this discrepancy had widened so that US spending on tertiary education was almost 2.5 times greater than that on primary school spending, and even more compared to pre-primary spending (OECD, 2014, p. 49). It is argued that the return on investment (ROI) would be better if funds for primary school students were equivalent to those for secondary school students, for two major reasons. The first is that better preparation among pre-k to 3rd grade teachers is associated with the greatest impact on school children's future performance in schooling compared to later grade levels (Mead, 2012). An associated second reason is that it is at the pre-k to 3rd grades (and before) that a significant impact can be seen on the social-emotional development of school children, depending on teachers' and parents' abilities to facilitate such development (Payton et al., 2008; Erikson, 1963). Proper social-emotional development, in turn, facilitates better cognitive development (Ragozzino, Resnik, Utne-O'Brien, & Weissberg, 2003). US funding to better prepare pre-k to 3rd teachers to facilitate the social-emotional development of school children would also reduce the necessity for existing (& questionably effective) remedial programs at primary, secondary, tertiary, and post- education

levels because, logically speaking, earlier in their careers more students would be better equipped both socially and cognitively to better succeed in school and beyond.

Colleges and universities. Regardless of the poor results alluded to above, costs associated with US college education have increasingly exceeded median family income since 1982, and by 2012 had far outpaced the average family's fiscal abilities (The College Board, 2012). In reflecting upon this report, Lips (2008) highlights the alarming state of US education (most assuredly true in 2015), which addresses fiscal, social, and learning consequences of having continued mediocrity in American schools. Thus, considering the emotional immaturity level of US college graduates it is argued that among the 21st Century Skills that need to be emphasized in US education, as being a part of critical thinking development, is *citizenship* (Costello, 1995). That is, the concept of *citizenship education* is argued to be a holistic synthesis of emotional, social, and cognitive self-efficacy, and thus to be a vitally important aspect of human development—and these things can be best addressed by strong parenting and well-trained early education teachers.

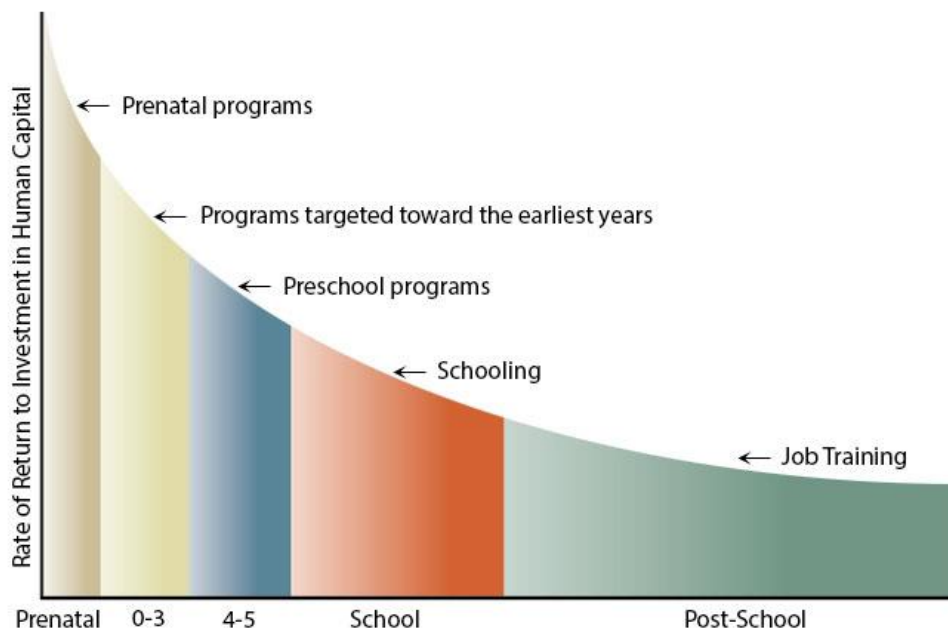
How effectively k-to-college money is being spent in the US is one of the primary questions of this thesis. Tied to this is where educational funds are being spent—meaning at what level, comparatively speaking. The above position indicates that even if one's sole argument were *positivism* (Halfpenny, 1982) or *Human Capital* (Wilson, 2001; Friedman, 1962)—so prevalent in US education's current *modus operandi*—it would still make more sense to focus educational funding on the early years. If one takes the position that education should be one of focused development of the *whole person* (Dewey, 1976) or of teaching for *intellectual virtue* (Paul, 2013), this is in fact complementary evidence to support holistic early childhood and primary school teacher education.

Fiscal Return on Investment across Levels

According to Carneiro and Heckman (2003), considering a constant level of investment, early childhood programs that facilitate pre- and peri- natal development, pre- and early- school physical and social-emotional development have a greater and more sustainable impact on the lives of children than do programs aimed at later primary through tertiary schooling, or even later at job training (see Figure 1).

Figure 1

Return on Investment in Human Capital Relative to Developmental, Educational, and Work Age



Heckman, J.J. (2008a). Retrieved from: http://heckmanequation.org/sites/default/files/F_WhiteHouseSpeech_web.pdf

Data supporting Figure 1 comes from Calder (2014), who indicates that for each dollar spent on high-quality early childhood education (pre-k) programs that there is a \$3 to \$9 savings on future expenditures in the near term, such as reduced parental absenteeism and turnover from work, which translates into greater productivity and lowered training costs (p. 20). Longer term savings that stem from a lowered use of social services or other remediation services include greater child readiness to enter school, better early reading proficiency, better high school

graduation and college attendance rates, and an increased likelihood of entering the workforce (p. 20). These benefits are naturally in counterpoint to a 70% reduction in violent criminal acts and incarceration rates (p. 20). The basic reason why investment in early childhood education has a better Market ROI up through primary school as compared to later in children's lives is that the malleability of brain development due to experience is greatest during the early years, while the at the same time the physiological energy required to enhance neural connections is comparatively lesser (p. 19).

Worldwide, returns on investment for Primary School education average 26.6% for private schools and 18.9% for public schools, which drops significantly in Middle School (17.0% & 13.1%), but for high school while the MROI for public schools drops to 10.8%, it actually increases to 19.0% for private schools (Psacharopoulos & Patrinos, 2004, p. 112). This is logically explained by the supposition that a greater proportion of private school students will successfully enter and complete university after high school graduation, thereby contributing more to their respective societies, as compared to public school students.

Remedial education specifically. As not enough funds are invested in early education or are not focused effectively, remedial programs have been created to fill in the gaps. In 2014, about \$14 billion was allocated to Title 1 of the *No Child Left Behind Program*; the Title 1 provision is intended to assist low socio-economic status (SES) or otherwise at-risk students to achieve proficiency on rigorous state-determined academic achievement benchmarks (Federal Education Budget Project, 2014, para. 1). The problem with Title 1 is that the money is aimed at academic proficiency and not at developing the whole child. That is, many *at-risk* children have significant social-emotional challenges that *tutoring* programs will simply not adequately address.

Regarding other educational funding for US public school students who ‘fall through the gap’, there are a host of remedial programs (Fact Sheets for Afterschool Funding, n.d.), but most of the focus is on reading literacy because reading has long been established as a strong predictor for general life success (Fieste, 2013). However, there is more to the skill of reading than ‘achieving’ it by the 3rd grade. That is, along with mathematical, writing, and critical thinking skills in general, reading is an example of a cognitive skill that requires 8 to 10 years of continuous training in order to become *automatic* (Ericsson, Krampe, & Tesch-Römer, 1993). Thus, it is logical to conclude that without such sustained levels of practice many k to 12 students will never develop reading abilities to their full potential, or worse slide backward into functional *illiteracy* in many academic skill areas, including reading. However, it is argued that such practice would be significantly more effective if students experienced better prepared pre-k and primary school education teachers that could effectively address social-emotional issues—the results of which tend to facilitate cognitive learning outcomes.

In addition, the US was estimated to spend \$4.6 billion on college remediation programs in 2014, which have recently been criticized for excessive costs and poor results (Mitchell, 2014, p. 1), which is made all the more alarming as such programs were already being questioned for efficacy in 1998 when costs were estimated to be about \$1 billion (Saxon & Boylan, 2002, p. 3).

The need for remedial programs that require billions of dollars begs the question of why early childhood programs aren’t also targeting *non-at-risk* children given the current abysmal performance of US schools. That is, taken to its logical conclusion, the above indicates that monies spent on programs that are meant as stop-gaps for students whose academic skills are wanting, are largely a waste of time and resources given that after-school programs or post-high school programs have little chance of making up for age- or developmentally- dependent necessities to practice cognitive skills in a sustainable, sustained, and formal manner from

kindergarten through high school (at least). It may be argued that one of the reasons that remedial programs are less effective, on average, is that many of these students spend years being ignored—for a whole host of reasons—and that this lack of attention toward their social-emotion needs being acknowledged and acted upon produces a deprivation mentality (Freire, 1989), and developmentally associated emotional dissonance (Erikson, 1963). It is argued that the above may be at least somewhat ameliorated by strong social-emotional teacher guidance at the early childhood stage—regardless of socio-economic status, because as John Fitzgerald Kennedy argued in 1963, ‘a rising tide lifts all boats’ (John F. Kennedy Presidential Library and Museum, n.d.). More specifically, the contention of this paper is that US educational funding would be best focused on teacher training at the pre-k to 3rd grade levels so that *all* children would benefit from teachers who know how to facilitate social-emotional development, which then would lead to better cognitive development and readiness.

Gap in the Research

Early et al. (2007) reviewed seven major studies of early childhood care and instruction, and found that “policies focused solely on increasing teachers’ education will not suffice for improving classroom quality or maximizing children’s academic gains....Instead, raising the effectiveness of early childhood education likely will require a broad range of professional development activities and supports targeted toward teachers’ interactions with children” (p. 558). Howes et al. (2008), who studied 2800 randomly selected pupils, in small class sizes, from approximately 700 randomly chosen, US state-subsidized pre-Kindergarten classrooms in 11, states: “Enrollment in pre-K appeared related to gains in academic skills. Children showed larger gains in academic outcomes when they experienced higher-quality instruction or closer teacher–child relationships. Gains were not related to characteristics of the child or program (i.e., ratio, teacher qualifications and program location and length)” (p. 28).

Both studies above relate better educational outcomes to higher quality teacher-child relationships and support the implicit contention of this paper that it is not teacher education *per se* which has a facilitative impact on children's social and academic readiness, but whether that education includes an emphasis on understanding and properly scaffolding social-emotional and therefore cognitive competence. Regarding the Howes et al. (2008) study, part of *higher quality instruction*, for instance, is logically interpreted to include a significant emphasis on building a shared understanding of the educational process through not only modelling and scaffolded hands-on activities (Bruner, 1977) and meta-cognitive stimulation (Flavell, 1979), but also through dialogue and trust (Cook-Sather, 2002).

Recently emphasized terms used for the education that results from teacher social-emotional awareness and connected action are *holistic education* and *educating the whole child*, the process of which is consistent with the cultural-educational values promoted by Vygotsky (1978). However, although this seems to be a very popular trend, as exemplified by Yoder (2014), no actual research has been found into the existence and the impact of explicit teacher training specifically designed to promote social-emotional pedagogically-relevant teaching practices among early childhood educators to examine near term social-emotional development effects and their attendant cognitive development effects (hereafter *Non-market ROI*), and longer term impacts on measureable increases in productivity (hereafter *Market ROI*)—therefore, this is identified as a research gap that will be explored in this thesis.

US Comparison to Finland

While the US case for investing in early childhood teacher education is compelling in and of itself, a brief comparison to Finland, the world's best educational system, with respect to certain axes, is considered useful. According to Hancock (2011, p. 2), Finland spends 30% less on it k to12 students than the US, nonetheless its students have the highest math and science

scores on international tests. Of the Finnish educational reforms reported by Maes (2010), those listed below make Finland significantly different to the US, in ways relevant to this thesis:

- “All teachers are prepared in academic universities. Teachers are highly respected and appreciated in Finland, partly because all teachers need a master’s degree to qualify for a permanent job. And the selection is tough: only 10% of the 5000 applicants each year are accepted to the faculties of education in Finnish universities. Finland improved its public education system not by privatizing its schools or constantly testing its students, but by strengthening the education profession and investing in teacher preparation and support.
- There are no mandatory tests or exams; except for the nationwide National Matriculation Examination, in mother tongue, foreign language, mathematics and social/natural sciences, at the end of the upper-secondary school (from 17-19-year-old) [sic]. Teachers make their own assessment tests, not quoting numeric grades, but using descriptive feedback, no longer comparing students with one another. This helped teachers and students focusing on learning in a fear-free environment, in which creativity and risk-taking are encouraged. Teachers have more real freedom in time planning when they do not need have to focus on annual tests or exams.
- Trusting the schools and teachers is a common feature in Finnish schools. Schools receive full autonomy in developing the daily delivery of education services. The ministry of education always believed that teachers, together with principals, parents and their communities know how to provide the best possible education for their children and youth. Except for guidelines for learning goals and assessment criteria, The National Board of Education (taking care of curriculum development, evaluation of education and professional support for teachers) doesn’t dictate lesson plans or

standardized tests. School [sic]can plan their own curricula to reflect local concerns” (paras. 6, 13, 14).

It seems clear that an overriding principle at work in Finnish educational system success, as reflected in these reforms, is the oft recycled but rarely reified concept of *trust*. The most important stakeholders in any educational system, where trust is a strategic component of success, are the teachers as they interface with students more, educationally speaking, than anyone else. Trust, or a lack thereof, in any organization has cascading effects from the leadership down, and mutually reinforcing effects within inter-personal dynamics. Finnish school boards and principals obviously trust the Finnish-trained teachers they hire and naturally that trust is paid forward to Finnish students, who in turn trust each other and teachers—simple but brilliant.

However, there is another very salient factor that clearly produces sustainably positive effects in the Finnish school system—that only 10% of candidate applicants are accepted to the faculties of education of Finnish universities each academic year. Being a Science Educator, with more than 25 years of university-level teaching experience, and a deep and abiding interest in education as a *profession*, I could not agree more with this standard of admissions. The fact is that few people are actually meant to be teachers. That is, very few have an indefatigable passion to successfully teach students how to discover their authentic selves as social beings through honest dialogue and interaction (Korthagen, 2004), and as students through setting the proper cognitive conditions so that students can confidently discover their academic passions.

The Finnish educational reforms described above simply do not exist in the US. This starts with the fact that 90% of those who apply for teaching faculties in US universities *are accepted* and that teaching is simply not a respected vocation in American society. US teachers are not trusted to reach learning objectives through their own professional judgment and there are

so many exams that teachers are required to administer that many complain about not having time to actually teach what they know, but only teach ‘to the exam’. Thus, the dismal results of the American pre-k to college system, especially since 1990, are anything but a surprise.

Hypothesis

Thus, different lines of evidence suggest that the impact of an early fiscal focus of US educational funding to promote holistically prepared pre-k to 3rd grade teachers would have a greater market and non-market ROI than programs that focus on remediation later in students’ educational and work careers because said early focus would result in more students, on average, being better prepared social-emotionally and thus developmentally, to better engage in cognitive or academic learning as a result of being exposed to sustained facilitative pedagogic atmospheres. It is argued that accurate educational awareness of and action regarding the first causal and then mutually reinforcing relationship between social-emotional and cognitive development in early schooling—through specific teacher preparation—would lead to a result which is greater than the sum of either, and with continued positive, mutually reinforcing, and multiplying effects as children proceed beyond these years through the greater self-efficacy developed through repeated success.

Limitations, perspective, and scope. A number of limiting parameters must be addressed in order to clarify the perspective of this thesis. The scope of this paper is limited to holistic early childhood teacher education; thus, it is clearly understood that:

- a) Other important factors must work in concert with holistic teaching to positively impact the cognitive development of children, such as the home learning environment, parental education, socio-economic status, and the quality of early education (Roseveare, 2011, p. 10).

- b) The effects of holistic teacher training will only be facilitative of emotional and cognitive child development if practiced on an ongoing basis—that is, based on the actual unfolding needs of children rather than on a *pro forma* basis. All education stake holders must understand this reality for significant changes to occur.
- c) Under normal circumstances, holistic teaching can only hope to have very small effects on child development on a daily basis—on average. The more important point, however, is that if holistic teaching becomes a practice, then these will be ongoing and additive effects that slowly, but significantly, build self-esteem and self-efficacy in the early primary school years where the greatest difference can be seen in future satisfaction and performance. This is analogous to changing a ship's path by only a fraction of a degree at the beginning of a journey, which however results in a significantly different destination being reached. A competitive 'sink or swim' atmosphere or one of neglect, on the other hand, will have the opposite impact.
- d) Holistic teacher training is recognized as being most applicable to 'ordinary unhappiness' (Freud & Strachey, 2010), rather than severe and ongoing psychological or physiological conditions that may occur among children.
- e) Holistic teacher training is viewed as a very serious study of childhood development factors that leads to a focus on imbuing the entire process of teaching with *as-needed* scaffolding, rather than a *technique* that is to be used when problems arise.
- f) There is more to success in school and life than academic achievement; thus, holistic early childhood teacher education is seen as bettering the lives of children in general and, therefore, worth the effort.

Methodology

The approach used in this thesis will be pure information research, which seeks to support the hypothesis that a productive line of argument to improve US educational efficacy would be the fiscal targeting of the social-emotional development of young students through holistic early-childhood-education teacher education to thus better enable students to more confidently and competently learn, both in the early years of schooling and beyond. Comparisons to selected other countries will be done along certain axes in order to strengthen the above argument.

Support for a Holistic Model of Teacher Training

Holistic Education Defined

Considering the purpose and focus of this thesis, *holistic education* is defined to be any aspect of a nation's primary / elementary / foundational education that endeavors to balance social-emotional and cognitive developmental needs in order to produce sustainable social and intellectual confidence and competence among its students, and ultimately life success (Heckman, 2008) among its citizens. More precisely, the term 'holistic' is used herein to define a systematic and analytical (Mahon, 2007), but necessarily flexible approach to developing a system of education that is inclusive of the needs of the whole person, rather than a 'make it up as you go along' approach. Focused upon below will be theory-based support for thusly defined holistic approaches to education and early childhood / primary school teacher training, and comparative teacher education standards for selected nations, which reflect a holistic philosophy.

More generally, holistic education has a long history and includes thinkers such as "Rousseau, Emerson, Pestalozzi, Froebel, Krishnamurti, Steiner, Montessori, Jung, Maslow, Rogers, Paul Goodman, John Holt, Ivan Illich, and Paulo Freire" (Forbes, 1996, p. 1), all of whom, in one way or another, saw education as having a goal of improving the whole person. In

part, this educational approach was and continues to be a reaction to the achievement focus in life produced by the Industrial Revolution of the 19th century, and attendant and rapid rise of capitalistic and materialistic values in the 20th and 21st centuries.

Comparative Approaches to Holistic Education

Addressing all the needs of school children—whatever they might be—is not a new idea, for this must occur as common sense to those impassioned by the art and practice of teaching. It is instructive, however, to see the writing of Ruth Mary Weeks in 1931, wherein she states:

“...The second phase of the personality which we must consider in planning a curriculum is our emotional capacity. Thomas Huxley points out that it is sensitivity or the capacity for refined feeling which distinguishes the gentleman from the vulgar boor; and he suggests that emotional practice to develop fineness of feeling is a legitimate half of a liberal education.... But in our schools do we at any point deliberately practice the emotions of our students with a view to their direction and refinement? And is the crudity of popular American music, art, sculpture, dancing, dramatics, literature, and manners not the crudity of emotional inexperience rather than sterility? And is this crudity not a direct consequence of a fear of the emotions which makes us hesitate to educate them?...

Appreciation is not, of course, purely emotional. Students do not love what they cannot understand. What man does not understand, he fears and hates, and for this reason, he has since the beginning of time destroyed his greatest leaders” (p. 11-12).

In contrast to the apparent crudity of awareness regarding the importance of emotional expression in 1931 argued above, in 2015 the US seems to have over-stated the case for the importance of emotions in education. It is well known that from about 1990 forward, the US educational system was festooned with a philosophy of ‘you are special’. However, after 25 years it is also clear that this mono-chromatic approach, which eschewed hard work,

competition, earning rewards, comparison, and judgment, accomplished little beyond temporarily improving some students' self-esteem. That is, while proper support for social-emotion development in early childhood education is essential for facilitated pursuit of cognitive interests, developing a sustainable and healthy social-emotional psychological structure depends upon continual practice at solving academic or non-academic problems through linking facts, critical thinking, and hard work to produce hard-won self-efficacy and agency (see Huitt, 2011; Bandura, 1986; Erikson, 1963) throughout the schooling years.

In the 21st Century, there is much work that supports holistic teacher education, which requires critical examination, some of which appears below. Based on action research in a pre-service elementary teacher education program in Canada, Borowski (2003, p. 51), for instance, concludes that:

“The main reward for teacher educators who embrace and practice holistic education comes from the knowledge that they have had a real impact on the personal and professional development of their students. Yet, their commitment to such an approach is often tempered with emotional strife as alternative approaches to any new process are often met with skepticism and challenges.”

While realizing a personal and professional impact on one's students is a valuable reward, it is important to remember that holistic teacher training must also include a balanced approach to teaching such that an over-dependence on such rewards does not develop, and that a great part of the goal of holistic teaching is in fact the eventual *independence* of students.

Another aspect of holistic teaching trends, not heretofore discussed, is that of holistic assessment, which essentially means combining summative and formative measures to promote the development of more fully-rounded and autonomous students. In the UK, for instance, up through the 90s summative assessment had been a great focus in the lives of primary school

teachers due to the National Curriculum (Boxall, Qualter, & Gilbert, 1999). As of 2002, the UK adopted the *Assess for Learning* program, which seeks to include all stakeholders in the educational process, particularly in primary school (Department for Education [UK], 2008). The stated of this program is that:

- “every child knows how they are doing, and understands what they need to do to improve and how to get there. They get the support they need to be motivated, independent learners on an ambitious trajectory of improvement;
- every teacher is equipped to make well-founded judgements about pupils’ attainment, understands the concepts and principles of progression, and knows how to use their assessment judgements to forward plan, particularly for pupils who are not fulfilling their potential;
- every school has in place structured and systematic assessment systems for making regular, useful, manageable and accurate assessments of pupils, and for tracking their progress;
- every parent and carer knows how their child is doing, what they need to do to improve, and how they can support the child and their teachers” (p. 4).

Obviously, holistic teacher preparation is part of the above UK initiative.

In Singapore, where the educational system has been highly ranked internationally for a number of years, educational leaders have become aware of the public perception that theirs is simply a chase for international test scores, and thus, have adapted to a more holistic approach (Tan, 2012), where teaching, teachers, and student development have greater cultural value. Teacher development and evaluation, for instance, are formative rather than being summative and critical (p. 77):

“For example, under the teaching track, the competency model consists of one core competency - Nurturing the Whole Child - and four other major competency clusters - Cultivating Knowledge, Winning Hearts and Minds, Working with Others, and Knowing Self and Others” (p. 77).

As with UK, Singapore seems to be using a holistic approach to teacher development.

In Finland, the concept of holistic education pervades the educational system. Through nine years of Basic Education (5 to 16 years of age), the aim of teachers is to prepare “lifelong and life wide” pupils, which according to the National Board of Education (2004) means fostering learning skills as well as learning motivation, as cited by Niemi, Toom, and Kallioniemi (2012, p. 71), who elaborate on the holistic nature of Finnish foundation-level education by stating:

“One of the major goals of Finnish basic education is to support the growth and development of every learner, strengthening their operating opportunities and involvement. Learners are seen as individuals whose age and capabilities form the starting points for the provision of education. Learning is defined as being complex, dynamic, linked to human development and embedded within a specific cultural context” (p. 71).

Regarding the US, no mainstream educational system of research- or theory- based applications of holistic education principles could be found. Instead, in 2015, it seems that holistic education in the US is a main *philosophy* in some charter schools, the results of which are supported with scant research (Larrison & VanVooren, 2012), rather than a coherent and balanced approach to education, even though holistic education practices have at least hundreds of years of history (Mahmoudi, Jafari, Nasrabadi, & Liaghatdar, 2012).

More evidence suggesting that holistic teaching is more an idea in the US than a grounded approach to education comes from a website called *Holistic Education, Inc.*, which was copyrighted in 2003. Despite appearances to the contrary, the information on this site is supported with a long list of sound literature sources, which contains theoretical, philosophical, and anecdotal contextualizations of the principles, practices, and outcomes of holistic teaching—nonetheless no actual research on the topic is included. One page of the website answers ‘frequently asked questions’ regarding holistic education. The answers reveal what may be the state of the art for this approach in the US. Part of this page is included below (Holistic Education, n.d., paras 1-9):

“Q: Why didn't I hear about holistic education in my teacher training?”

You almost certainly did hear about it obliquely, but not by this name. "Holistic Education" as a term has only been around for the last 20 years or so, but as a theory and practice it has been around for more than 240 years.

If you heard about the education outlined by Jean-Jacques Rousseau, Heinrich Pestalozzi, or Friedrich Froebel, then you heard something of holistic education. One of the reasons that holistic education is not explored in depth by most teacher training colleges is that the fundamental premises of holistic education are so different to those of mainstream schooling - it would be like having lessons for welding in a wood-working class.

However, holistic education is currently discussed more in teacher training courses as the "crisis" in education increases, and this increases the realization that alternatives to what we have been doing in education need to be found.

Q: How is teaching different in holistic education?

In holistic education there is no curriculum set by "experts" but rather it is developed by the immediate stakeholders—teachers, students, and parents. This ensures that what is

studied is relevant and meaningful. However, this means that teachers must be creative and responsive to the individuality of their students. Teachers in holistic schools cannot simply "deliver" a pre-packaged curriculum, which is a challenge to some teachers but a great joy and inspiration to others.

Classes in holistic schools are necessarily smaller and there is more of an emphasis on the relationship between the teacher and student. When mechanical learning ceases, mechanical behavior (everyone doing the same thing at the same time, sitting in rows, role playing, etc.) becomes less relevant. Without this, relationships are able to be more authentic and behavior more like that in 'real-life' becomes appropriate, so that the differences between life-in-school and life-outside-of-school disappear. This helps students see the relevance of their learning to their lives, and helps generate an attitude of life long [sic] learning. It also helps facilitate the teachers' learning of themselves, their teaching practices, and their students' learning needs.

Q: What happens to the students after they have been to holistic schools?

They continue their education as any other student of their age would. Sometimes they have a different knowledge base than their peers, but this is similar to a student who may have gone to a school in a different country - it provides the student with a different perspective that is usually more of a help than a hindrance. Students from holistic high schools have not, in the past, had difficulty getting into good universities....

Students from holistic elementary or middle schools are often noted as having an easier time adjusting, socially, to public high schools. The difference between what they have learned, in terms of content, is similar to a public-school student who enters the middle or upper grades from a different state that has focused on slightly different standards. In addition, students from holistic elementary schools have "learned how to learn," so

whatever content their public-school peers may have acquired, they are quick to pick up.”

(underscore emphasis added)

This quote serves as a basis for critical comment from this thesis author, who has actually graduated from several programs at one the most highly-regarded teachers colleges in the US, from the 80s to early in the 21st century. I agree that the term holistic education was never used, but the citizenship-based approach of John Dewey (not included in the above quote) was central to our educational studies. The author above claims that no educational experts are necessary for a holistic and effective education, and that alternatively parents, teachers, and students—the central stakeholders—determine what is educationally relevant. However, teachers are, in fact, educational experts, especially if well trained, and vetted through many years of experience. The author above also claims that holistic education teachers in the US do not deliver pre-packed lesson plans to students, but instead craft their lessons on life-relevant areas of need. However, while standard lessons can be disconnected from students’ reality-based needs and therefore less engaging, such lessons are often productively contextualized by experienced teachers, who frequently ask their students to brainstorm on how studying a given aspect of math or science, for instance, might relate to everyday life—and scaffold these discussions with familiar and engaging examples. Many teachers as well, despite what the author above implies, do take into account the teacher-pupil relationship and the social-emotional needs of their students. In addition, contrary to the above author’s implication that US teachers colleges don’t value holistic teaching, the real problem is that very few teachers in the US either have the latitude and / or the ability to be able to approach education in such well-rounded way. Simply put, holistic teaching is very challenging because, as the author above correctly points out, such teachers need to be ever-responsive to human learner and individual needs. Certainly this has been my experience as professional educator of 25 years. A related point, alluded to above, is that holistic teaching

allows for more authentic relationships between teachers and students. However, what needs to be explicitly added is that this approach allows both teachers and students to become more authentically operative in the cognitive realm, not just more confident and aware in the affective realm. Indeed, the author above implies that holistically-trained students tend to succeed at good universities, in part because they have been taught to meta-cognitively reason and in part because they can more easily adapt to new social settings. The above quote also implies that holistic education can be an improvement over traditional approaches because it inspires life-relevant interest in education among more students through a sustained, respect-based teacher-student relationship, but it fails to mention that this requires a great deal of hard work and responsibility for both teachers and students.

Thus, it seems that in the US what is termed ‘holistic education’ is still in a phase of reaction to the orthodoxy of teacher unions and increasingly centralized education authority (Sulzer, 2014), and is seen only in certain private or charter schools—whereas in Finland, a decentralized and educationally coherent form of holistic pedagogy (Tirri, 2011) seems to be enjoying significant success.

Teacher Education Standards

Are there extant teacher education standards that reasonably reflect the holistic approach?

In fact, there are.

Egypt. Egyptian teacher standards, particularly the Second Domain: Learning Strategies and Classroom Management (Standards followed by Indicators as seen below) include cognitive, emotional, and technological elements.

- “First Standard: Utilizing educational strategies that meet students’ needs (Ministry of Education [MOE] Egypt, 2003, p. 75).
 - i. Uses diverse educational experiences suitable to students’ skills and talents.

- ii. Use different strategies to explain concepts, subjects, and to introduce skills.
 - iii. Use open-ended questions to facilitate discussions, which clarify and motivate.
 - iv. Use diverse educational strategies to promote student participation.
 - v. Use technology to improve teaching.”
- “Second Standard: Facilitating effective learning experience (Ministry of Education [MOE] Egypt, 2003, p. 75).
 - i. Teacher provides independent and cooperative learning opportunities.
 - ii. Divides students into groups to promote interaction and learning.
 - iii. Encourages positive interaction and cooperation among students.
 - iv. Assists students in decision-making, time management, and the sound utilization of subjects through learning activities.”
- “Third Standard: Involving students in critical thinking, problem solving, and creativity needs (Ministry of Education [MOE] Egypt, 2003, p. 75, 76).
 - i. Encourages students to apply learning to real life situations.
 - ii. Encourages students to be inquisitive, have initiative, and show creativity.
 - iii. Assists students to make a thorough and critical study of subjects or concepts.
 - iv. Involves students in problem solving activities and encourage different approaches to finding answers.
 - v. Encourage students to formulate and ask critical questions.
 - vi. Helps students analyse content and reach correct inferences.
 - vii. Helps students to reflect on how they are being taught.”
- “Fourth Standard: Providing a climate that promotes justice (Ministry of Education [MOE] Egypt, 2003, p. 76).

- i. Helps students respect each other regardless of their differences.
 - ii. Assures equality and respect in the classroom.
 - iii. Encourages students' achievements and participation without discrimination.
 - iv. Handles inappropriate behavioural in a fair way
- “Fifth Standard: Effective utilization of motivation methods (Ministry of Education [MOE] Egypt, 2003, p. 76).
 - i. Creates a favorable learning and educational climate to encourage classroom interaction.
 - ii. Utilizes effectively tools and equipment available in the classroom.
 - iii. Designs audio-visual aids suitable to the environment, lesson and learners.”
 - “Sixth Standard: Effective time management and limiting time wasted (time on task) (Ministry of Education [MOE] Egypt, 2003, p. 76).
 - i. Teacher achieves lesson objectives during the time limit of the lesson by using time effectively.”

Given the remarkable blend or hybridization of social-emotional and cognitive developmental needs reflected above, what explains the general comments of Egyptian school teachers (i.e., overheard in class discussions of the author's MA program in International & Comparative Education at The American University in Cairo) that they simply don't have time or aren't allowed to devote educational time to many of the above indicators, except *effective time management*? The answer seems to be that Egyptian principals, teachers, students, and parents—many educated in the same public school system—are paralyzed by the decades-old ‘learn, test, and forget’ orthodoxy of Egyptian public education, in which fear of failure rather than full development as a human being is in control. Thus, this is not an issue of awareness, it is an issue of political will.

The United States. American benchmarks for teacher preparation are found in the National Council for Accreditation of Teacher Education standards (NCATE, 2008). The elements of Standard 1 (Candidate Knowledge, Skills, and Professional Dispositions) that are the most relevant to this thesis are paraphrased below.

The target for Standard 1a, Content Knowledge for Teacher Candidates, states that teacher candidates demonstrate their standardized in-depth content knowledge “through inquiry, critical analysis, and synthesis of the subject” (p. 16).

The target for Standard 1b, Pedagogical Content Knowledge and Skills for Teacher Candidates, states that teacher candidates be able to, “Present the content to students in challenging, clear, and compelling ways, using real-world contexts and integrating technology appropriately” (p. 17). In addition, the standard targets candidates in advanced training programs as being able to share their proficiency in educational content knowledge “through leadership and mentoring roles in their schools and communities...[and] understand and address student preconceptions that hinder learning” (p. 17).

The target for Standard 1c, Professional and Pedagogical Knowledge and Skills for Teacher Candidates, states that candidates be able to “develop meaningful learning experiences to facilitate learning for all students...[and] reflect on their practice and make necessary adjustments to enhance student learning” (p. 18), and that teachers “know how students learn and how to make ideas accessible to them...[and] consider school, family, and community contexts in connecting concepts to students’ prior experience and applying the ideas to real-world issues” (p. 18).

The target for Standard 1d, Student Learning for Teacher Candidates, states that candidates be able to “assess and analyze student learning, make appropriate adjustments to

instruction, monitor student learning, and have a positive effect on learning for all students” (p. 19).

The target for Standard 1g, Professional Dispositions for All Candidates, states that candidates be able to “demonstrate classroom behaviors that create caring and supportive learning environments and encourage self-directed learning by all students....[and] recognize when their own professional dispositions may need to be adjusted and are able to develop plans to do so” (p. 20).

Clearly, the US standards above reflect the ethos of holistic teaching and learning as defined in this paper. However, the use of the term ‘target’ means that teacher practices may fall somewhat short of these standards of excellence and still be acceptable. Just as in Egypt, too often the political reality of public teaching in the US overwhelms even the most laudable of educational benchmarks; thus, too often students are not able to experience the full richness of education, which should nourish both the mind and the soul.

Finland. Standards of Finnish Teacher Education that are salient to this thesis include (Schleicher, 2012):

1. Teacher candidates are expected to become familiar with the education knowledge base and human development, and required to write a research-based thesis as the final requirement for a master’s degree, as teachers are expected to engage in intellectual analyses in their classrooms over their careers (p. 39).
2. As teacher schooling in Finland is a shared obligation between teacher education and academic subject faculties, substantial attention is paid toward subject-specific pedagogy for potential primary and upper-grade instructors, and therefore toward instructors gaining specific pedagogical content familiarity (p. 39)..

3. Proficiency in identifying learning difficulties and in adapting tuition to the varying learning needs and preferences of pupils is expected (p. 39).
4. Preparation that includes extensive course work on research-based teaching practices and at least one year of clinical experience in a model school linked with the university, where educational research as well as development and modeling of innovative practices are encouraged (p. 39).
5. Inside university model schools, student-teachers engage in problem-solving cohorts, which engage in a cycle of preparation, action, and evaluation that is reinforced throughout the teacher education platform and is a model for the types of enquiry and critical thinking that are to be disseminated to future public or private school students. The entire Finnish educational scheme is intended to progress via continuous reflection, evaluation, and problem-solving, at all levels of education and society (p. 39).

Although the above standards do not explicitly use the term ‘social-emotional development’, there is evidence to indicate that practicing teachers and students in Finland find holistic education values to be important in their success in the educational system and in life. An empirical study done in 2008, where 19 Finnish secondary school teachers and 37 of their students in two schools were interviewed about holistic education values, found a strong emphasis among teachers and students on the need for social-emotional, moral, and spiritual support to work in harmony with the cognitive aspects of education to promote personal growth (Tirri, 2011, p. 164). Teachers emphasized being able to equip their students with the critical thinking skills necessary to form a world view, which in part comes from mastery of subject-specific conceptual vocabulary (p. 164). The school community was also significantly important to students in both schools, who evinced a need for like-minded schoolmates, but also an

eagerness to expand their world views through religious and scientific dialogue with those who might not share the same opinions (p. 164).

What makes teacher education standards in Finland different than Egypt and the US, for instance, which have holistic and well-rounded standards, is that Finnish teachers actually seem to be able to use them. This is, in part, explained, as alluded to earlier, by the much higher levels of respect for education, teachers, and teaching that exist in the former compared to the latter. Another aspect of Finnish teacher training that makes its system exceptional is the amount of clinical practice required for graduation. One way to look at the advantage of a full year of student-teaching is that these candidates understand a greater connection between classwork and praxis, and get a greater sense of the realities of schools as socially dynamic (Sanchez, 2013) and imperfect communities (Oral, 2013).

Comment. This comparative section on teacher standards was used as part of an evidence-based argument to support investment in holistic early childhood and early primary school teacher education. The above teacher education or preparation standards were found to be holistic in nature and had been logically assumed to be directly reflected in actual teacher training. This is parallel to assuming that the learning outcomes listed in a course syllabus, for instance, are directly reflected in the activities, homework, and assessments of that course (often inconsistently the case). A corollary to the above supposition is that even though student-teachers never or rarely saw a set of teacher standards in my teacher training, that historical reality was thought to be different some years later. Furthermore, given the recent emphasis on better education in many countries, there is no reason to believe that all of the above assumptions were not true. However, it specifically seems to be the case that holistic teacher standards are in reality more of a vague target than a specific process in teacher training in two of the three countries examined. While this result was not unexpected in Egypt's educational system with its

overcrowded classrooms and lack of resources, there is no reason to believe that such would be the case for the US system, with much smaller class sizes and an abundance of resources. It appears that only Finland has the political will to make holistic education more than just a slogan, by ensuring that its holistic teacher standards are, in fact, what educators can actually carry out *before* entering the classroom.

Return on Investment Re-Examined

Using the logic gleaned from a source from 30+ years ago, it seems that very few studies exist even today on the non-market ROI (NROI) effects of educational attainment at any level because these effects are very hard to define and even harder to measure in terms of specific investment and return regarding, for instance, ‘social well-being’ (Haveman & Wolfe, 1984). In fact, a thorough literature review revealed no recent empirical- or theory- based work on social-emotional return on investment in primary school education (or at any level). This is consistent with the fact that Human Capital Theory or Market ROI, however flawed, has not been replaced with a more predictive model, which would accurately take into account non-market variables in the calculation of the value of education (Tan, 2014).

Nevertheless, there has been recent interest in improving the affective component of the primary school experience in Ireland (Grogan, Holland, & O Dea, 2015), which has begun to implement its *Social, Personal and Health Education* (SPHE) curriculum, which is part of a comprehensive inter-agency effort to foster children’s voice and healthy relationships between and among students, teachers, and staff, which are seen as being essential to students’ cognitive and emotional development and to children’s positive experience of school (p. 2). The Irish primary school initiative was, in part, influenced by the empirical work of Clarke, Sixsmith, and Barry (2014), in which a “semi-structured child participatory workshop consisting of three activities, including draw and write technique, feelings activity and group brainstorming, was

used to explore the children's experiences of the [Zippy's Friends] programme and its impact on their coping strategies and emotional literacy skills" (p. 1). Using a qualitative participatory approach in a randomized clustered trial, this study exposed 161 Irish elementary school children from 9 classrooms to the participatory workshop intervention, gathering data at the pre-intervention, interim, and post-intervention phases (p. 1). Positive effects regarding problem-solving and support-seeking strategies in coping behavior in certain problem situations were found for the draw and write intervention (p. 1). The story narrative and active practice (activity) aspects of the workshop were identified by students as supporting their engagement with the programme (p. 1). Common sense leads to the conclusion that primary school students involved in such participatory activities, as a part of their education, would be more engaged in learning as a result of feeling more empowered at the human level (V, 2011). If school children were exposed to such a participative atmosphere throughout their educational careers it is logical to assume that the emotional confidence built would have positive effects on cognitive competence development, and that both aspects would become automatic and mutually reinforcing. Even though emotional range skills as applied to problem-solving, for instance, are unquestionably hard to measure in economic terms, there is every reason to believe that social-competence-building programs, especially beginning in early childhood education as alluded to above, would augment the more measurable academic problem solving skills that lead to greater economic contributions and lowered remediation costs. However, regarding the focus of this thesis, it is logical to conclude that the Irish initiative will not significantly affect primary school students without properly trained teachers.

Conclusions

The hypothesis of this thesis—that money be invested in holistic early childhood and primary teacher training internationally, based on the Return-on-Investment curve—was not

explicitly supported as a result of this literature review. That is, no peer reviewed longitudinal or cross-sectional studies on market-return-on-investment effects of what was termed *holistic* early childhood teacher training were found. Even though there is evidence to suggest that proper social-emotional development tends to facilitate cognitive development, no experimental research appears to have been done to reliably measure this relationship, either in terms of near-term effects on, for instance, achievement, or on long-term effects on overall ability to contribute productively to society. One possible explanation is that there may be ethical boundaries that investigators are unwilling to cross in setting up control groups that are *not* exposed to social-emotional support. A related explanation may be that one prerequisite for such a study would be the determination of a reliable threshold measure for what constitutes a *baseline* level of social-emotional support for young children in order to understand experimentally what *sufficient* and *insufficient* levels of social-emotional support actually specify. Establishing such a baseline seems particularly challenging given the mercurial nature of children's social-emotional experiences as to their significance.

However, outside of the elements discussed above every indicator reviewed, whether fiscally-based (MROI) or theoretically-based (NROI), supported the general contention that pre-school and early primary school students would benefit both emotionally and cognitively, in the near- and long- term, from holistic teacher training.

While Canada, UK, Singapore, and Ireland seem to have embraced holistic education practices, the best indicator of all may be the example of Finland: where holistic teacher training occurs; where holistic teacher training is confirmed before entering the classroom; where education, educators, and learning are highly respected; and where a decentralized and highly successful system of education exists—all of which is largely possible because of the significant

levels of trust, support, transparency, and interaction that exist among and between Finnish teachers, students, parents, and school administrators.

Finally, it cannot be said that investment in early childhood education is not without its detractors. Doyle, Harmon, Heckman, and Tremblay (2009, p. 5), for instance, state that “Interventions are costly to implement, therefore in order to derive the greatest benefits for children, while simultaneously having a high rate of return for investors, further research on the optimal time to intervene is needed.” Based on existing successful programs and neuro-biology, these authors conclude that while pre-k programs are reasonably effective, the greatest return on investment would come from programs aimed at pre- and peri- natal interventions. There are three reasons why this logic is incomplete.

The first is the assumption that humans are only willing to invest in programs that have tangible and significant fiscal rewards. While this may be largely true, there are many examples of people investing their time and resources into children’s early education because an improved quality of life has no price tag.

Secondly, while investments in pre-k and primary school are certainly less efficacious and harder to measure than pre-natal programs in nutrition, for instance, there is no reason to believe that the former would not become significantly less costly over time, as the effects of such programs, including holistic teacher education, would be cumulative over generations, and therefore produce less need for both teacher training and interventions with students, because both sets of individuals would have logically been raised by more holistically-minded parents. Certainly we have seen the opposite effect when exposing US children to the vacuous ‘you are special’ program since the early 90s, which produced a generation of incompetent young people who will undoubtedly be passing along their poor work ethic, poor standards, and lack of knowledge and critical thinking skills to the next generation of Americans—which is part of the

reason for the current US focus on investment in early education. An older example is that of *political correctness*, which is a social movement born in the 80s in the US that has produced a population in which tens of millions of people know virtually nothing about nutrition, cooking, exercise, or child rearing (among many other things) simply because this movement declared that no one should feel uncomfortable in any situation for any reason—even if that meant they become and stay obese for the rest of their lives, or relevant to this thesis, if they have no idea what is good for their children because no one can justly criticize anyone in the US anymore.

A third reason that funding should go beyond pre-natal care and include early childhood and primary school teacher holistic education is that pre-natal care can only help to ensure a *physically healthy child*. That is, while pre-natal care is necessary, it is caregivers and specifically teachers who must do the much-needed work of using healthy interactions to teach the social brain what it needs to know to produce a child who is eager to learn, and therefore a *psychologically healthy child* (Yoshikawa et al., 2013; Maggi et al., 2005)—thus, there should be investment in preparing well-trained teachers to engage in this effort, especially given the extent to which they interact with young students on a daily basis.

In conclusion, the findings of this thesis cumulatively suggest that a society which sustainably and responsibly invests in itself through early education programs in holistic teacher training will see the dividends of that investment in future generations in the form of a generally more capable and satisfied society.

Limitations and Recommendations

This study was limited by time and would have benefitted from more comparisons to other countries in terms of early childhood and primary teacher preparation programs, especially those of developing nations.

Limitations regarding not just the study itself, but the power of its basic findings to create change, involve the history and political will of nations. Regardless of idealistic educational standards, the political will of any nation—as frequently influenced by international entities such as the United Nations, the International Monetary Fund, and the World Bank—will ultimately control the quality of its educational system. Unfortunately for most, the ultimate goal seems to be control over citizens and *test scores* rather than empowerment of citizens and *life scores*. Furthermore, in countries where a long-standing system of focus on cognitive development as reflected in test scores exists, the transition to valuing the development of the whole child or what I have come to consider *Citizenship Education* through holistic teacher preparation and its attendant factors, will probably take many years.

A number of recommendations have been developed as a result of this thesis investigation: a) teacher standards (holistic or otherwise) need to be explicitly tied to teacher *capabilities* before entering the classroom; b) non-market aspects of primary school education ROI will remain elusive, but are worth scientifically pursuing as this is a long-ignored quality-of-life issue; c) more work needs to be done to more precisely discover the mutually reinforcing nature of social-emotional skill building and cognitive capacity development; d) at least as much money, of not more, needs to be spent on pre-primary and primary schooling and teacher preparation as is spent on secondary schooling and teacher education, as the former clearly has a better Market and Non-market ROI; e) high quality pre-primary and primary education must come to be politically regarded by all nations as the best insurance toward their own future existence; and f) the mutually reinforcing effects of social-emotional support and cognitive development support during early education apply not just to disadvantaged children, but should be viewed internationally as an inalienable right of all children by all teacher training programs (Moran, 2007) and educational systems.

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