TEACHERS' PERCEPTIONS OF THE FACTORS THAT INFLUENCE STUDENT ACHIEVEMENT: A DESCRIPTIVE STUDY

A thesis presented to the faculty of the Western Carolina University in partial fulfillment of the requirements for the degree of Specialist in School Psychology.

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April 2015

ACKNOWLEDGEMENTS

I would like to thank my committee chair, committee members, and cohort for their assistance and encouragement. In particular, I would like to thank Dr. Candace Boan-Lenzo for nudging me to always do better, be better, and look deeper for better understanding.

I also extend sincere thanks to the following people, without whom this thesis would not have been possible: Tammi Nowack, Katie Tamagno, and Julienne Desrosiers. Lastly, I offer my warmest regards and thanks to my mother for her continued support.

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ABSTRACT

TEACHERS' PERCEPTIONS OF THE FACTORS THAT INFLUENCE STUDENT ACHIEVEMENT: A DESCRIPTIVE STUDY

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A substantial amount of research analyzing student academic achievement has been conducted throughout the years. Hattie (2009) synthesized over 800 meta-analyses related to achievement. He organized this information into six broad groups that may influence student achievement: Contributions of the Teacher, Contributions of the Curriculum, Contributions of the Teaching Approaches, Contributions of the Child, Contributions of the Home, and Contributions of the School. While this knowledge is significant, there is no indication that this evidence is being used in the schools and classrooms. Hattie expressed concerns about the gap between scientific evidence and practice in the schools.

The overarching purpose of conducting this research was to gather information about what teachers perceive to be the factors that influence student achievement. Teachers have a significant opportunity to influence student achievement. Thus, it is important for their perceptions to align with research findings. When teachers' perceptions align with the research findings, students may be educated in the most effective manner possible.

For this study, participants were solicited from school districts that were willing to participate in a web-based survey to measure perceptions of factors that influence student academic achievement. Participants in this study included teachers working with elementary

through high school students. There was even distribution of the participants who teach each grade level, with most participants having obtained either a Bachelor's Degree or a Master's Degree. The majority of the participants were female, veteran teachers that provide regular education services in traditional public schools. The sample had a disproportionate number of participants in rural communities, with only a handful of nationally certified teachers.

The online survey provider, Qualtrics, was used to create a survey for this research. The Teachers' Perceptions of the Factors that Influence Student Achievement Survey (see Appendix G) is a survey that was designed to gauge teachers' perspectives regarding the factors that influence student academic achievement. The survey first provided participants with an overview of the survey questions, information about informed consent, and whom to contact if they had any questions about the survey results. The survey gathered information on demographics, perceptions of the influence of each factor within the six broad categories, and rankings of most important to least important factor within each group.

The information gathered through this study suggests that teachers may not be aware of the current research findings regarding the factors that may impact student academic achievement. Results of this study suggested that teachers tend to evaluate most factors to impact student achievement in a positive direction.

INTRODUCTION

Academic achievement is the extent to which a student achieves established educational goals. It is most commonly measured by standardized tests, curriculum based assessments, and grade point average (Perozzi, Rainey, & Wahlquist, 2003; Romney, 2003). In educational research, academic achievement is often examined with regard to reading, writing, and math skills. Academic achievement is important because it impacts the functioning of individuals, communities and society as a whole. Research has demonstrated positive correlations between academic achievement and income (Baum & Ma, 2007; The NHHEAF Network Organizations, 2013), health (Cutler & Lleras-Muney, 2007; The NHHEAF Network Organizations, 2013), life expectancy (Cutler & Lleras-Muney, 2007; The NHHEAF Network Organizations, 2013), superior decision-making (The NHHEAF Network Organizations, 2013), civic participation (voting, volunteer work, charitable giving) (Baum & Ma, 2007; Smith & Holcombe, 2011; The NHHEAF Network Organizations, 2013), tax revenue (Smith & Holcombe, 2011; The NHHEAF Network Organizations, 2013), and the quality of life of offspring ((The NHHEAF Network Organizations, 2013). Negative correlations have been established between academic achievement and unemployment rates (Baum & Ma, 2007; Rosengren, 2013; Smith & Holcombe, 2011; The NHHEAF Network Organizations, 2013), poverty (Smith & Holcombe, 2011), smoking (Baum & Ma, 2007; Smith & Holcombe, 2011), obesity (Smith & Holcombe, 2011), and incarceration rates (Smith & Holcombe, 2011; The NHHEAF Network Organizations, 2013).

Substantial research has been conducted on the factors that impact academic achievement (e.g., Blatchford, Bassett, & Brown, 2011; Clark, Gleason, Tuttle, Silverberg, & Mathematica, 2011; Deke, Dragoset, Bogen, Gill, & National Center for Education Evaluation and Regional

Assistance, 2012; Epps, 2010; Heller, National Center for Education Evaluation and,Regional Assistance, & Regional Educational, 2012; Hemyari, et al., 2013; Huang, 2013; Kulo & Bodzin, 2013; Merritt et al., 2011; Nicotera, Mendiburo, & Berends, 2010). These factors are important because they provide us with information that can be used to improve schools. Hattie (2009) reviewed over 800 meta-analyses related to academic achievement, and was able to categorize the factors that have been studied into the following groups: (1) Contributions from the Teacher, (2) Contributions from the Curriculum, (3) Contributions from Teaching Approaches, (4) Contributions from the Child, (5) Contributions from the Home, and (6) Contributions from the School. As a result of his comprehensive approach to evaluating the extant literature, we have a better understanding of what actually impacts student learning. However, we do not have a clear picture of whether teachers recognize the importance of these factors as they relate to student achievement. The purpose of this study is to examine teachers' perceptions of how important each variable identified by Hattie is with regard to student achievement outcomes.

LITERATURE REVIEW

Over 800 meta-analyses have examined factors that impact academic achievement (Hattie, 2009). Hattie grouped the factors that were identified in previous research into the six aforementioned categories. He also took steps to synthesize the data collected in the meta-analyses to make it more comprehensible and accessible for educators. One of his goals was to decrease the gap between findings in research and practices in schools. While his book was published 4 years ago, we still do not have a sense of what teachers' perceive to be the most important factors influencing student achievement. The subsequent review of the literature will (1) discuss Hattie's methodology for synthesizing and evaluating the magnitude of factors that influence academic achievement, (2) examine Hattie's results with regard to each of the six categories, in the order of declining effect size, and (3) explore the scant research on teachers' perceptions with regard to the importance of variables within each of the six categories.

A Method for Examining the Research on Academic Achievement

Hattie (2009) took several steps to synthesize the data collected in the 800 meta-analyses in practical and intelligible manner. One of the first steps was to simplify effect size into a more easily understood measure. Hattie did this by using the *common language effect* (CLE) size indicator. The *common language effect* size indicator was created by McGraw and Wong (1992) as an alternative way of considering an effect size (as cited in Hattie, 2009), in which "the probability that a score sampled from one distribution will be greater than a score sampled from some other distribution," (p. 8). Hattie uses the example of the average height of men and women. When chosen at random, the height of one male and the height of one female, the effect size is Cohen's $d = 2.0$. This converts into a common language estimate (CLE) of 92%, which

means that in 92 % of the drawings of random pairs, the male will have a greater height than the female. In reference to the factors to be discussed related to student academic achievement, this would mean that the CLE is the rate at which the factor influences academic achievement. Hattie uses the example of homework and academic achievement. Homework has a CLE of 21%. This means that in 21 out of 100 times, "introducing homework into schools will make a positive difference, or 21% of the students will gain in achievement compared to those not having homework" (p. 8).

The next step Hattie (2009) took was to create a hinge-point or benchmark for comparing each effect size or CLE. This hinge point acts an indicator of the real-world differences, because the effect sizes in education studies tend to be positive and give the appearance that everything that we do in classrooms works. Previous educational research has demonstrated that small effect sizes (d = 0.0 to 0.15) can be attributed to simple maturation of the students (Cahan & Davis, 1987 as cited in Hattie, 2009). Hattie identifies small effect sizes (d=0.15 and lower) to be educationally harmful since they indicate no achievement beyond that of intellectual maturation (without any schooling). Further, small to medium effect sizes (d=0.20 to 0.40) are what teachers typically achieve in an academic year. Hattie identified a medium to large effect size (d=0.40 or greater) as the hinge-point for a variable to have had an above average impact on academic achievement. He refers to effect sizes at or above the hinge point as the *zone of desired effects*. Both the *common language estimate* (CLE) and hinge-point will be used throughout the discussion of the literature. The next sections will examine the impact of factors within six categories on academic achievement and research on teachers' perceptions of the importance of factors within each category.

Contributions from the Teacher

The Contributions from the Teacher group is comprised of characteristics of the teacher that have been examined in relation to academic achievement (Hattie, 2009). This group includes teacher-student relationships, professional development, expectations, teacher training programs, teacher subject matter knowledge, quality of teaching, not labeling students, and teacher clarity. (See Appendix A for *d* and CLE values.)

Teacher-student relationships. Based on his review of the meta-analyses, Hattie (2009) determined that the influence of teacher-student relationships on academic achievement was in *the zone of desired* effects (d = 0.72; CLE = 51%). However, it appears that teachers might not be aware of importance of their interpersonal relationship with students as it relates to academic achievement. Bishop, Berryman, and Richardson (2002, as cited in Hattie, 2009) and found that while students, parents, and principals identified student-teacher relationship as having a significant impact on student academic achievement, teachers did not identify the importance of teacher-student relationships in student achievement.

Professional development. Hattie (2009) found that the influence of the professional development of teachers on student achievement to be in *the zone of desired effects* (*d* = 0.62; CLE = 44%). A review of the literature established that teachers believed that professional development related to personal and school goals would have a significant impact on academic achievement (Scholastic & The Bill & Melinda Gates Foundation, 2012).

Expectations. Expectations refer to the expectations teachers' have regarding student ability and skills. Hattie (2009) determined based on his review of the meta-analyses, that the influence of teacher expectations on student achievement was in *the zone of desired effects* (*d* = 0.43; CLE = 31%). Studies have shown that, of the teachers surveyed, 86-96% of teachers

thought that having high expectations for all students would have a significant positive impact on achievement (Love, 2010; Scholastic & The Bill & Melinda Gates Foundation, 2012).

Teacher training programs. To analyze the influence of teacher training programs, Hattie (2009) organized the meta-analyses into the categories of microteaching (d = 0.88; *CLE* = 62%), teacher effects (d = 0.32; *CLE* = 23%), and teacher training (d = 0.11; *CLE* = 8%). His synthesis of the findings suggested the microteaching, a practice where student-teachers are videotaped teaching a small group of students, and then the recording is reviewed and discussed, influences academic achievement in *the zone of desired effects*. Several studies examining teachers' perceptions of microteaching have indicated that teachers believe microteaching is a useful tool for their development as teachers (e.g., He & Yan, 2011; Kilic, 2010; McLaury, 2011; Mergler & Tangen, 2010). Hattie (2009) found teacher effects, such as personality characteristics, and teacher training to fall below the *zone of desired effects*.

Teacher subject matter knowledge. After reviewing all of the relevant research, Hattie (2009) determined teacher subject matter knowledge was not within the *zone of desired effects* (d= 0.09, CLE 6%). Both prominent education researchers (e.g., Darling-Hammond, 2006) and teachers believe that subject matter knowledge is important with regard to student achievement (Scholastic & The Bill & Melinda Gates Foundation, 2012). Approximately 75% of the teachers surveyed in one study reported that an assessment of the teacher's content-area knowledge should contribute to the measure of their teacher performance, and about 64% also stated that the assessment of their content-area knowledge should occur more often than it currently does in their school system (Scholastic & The Bill & Melinda Gates Foundation, 2012).

Quality of teaching. The quality of teaching was defined by Hattie (2009) as student perception of the quality of instruction. He found that the quality of teaching influences academic achievement in *the zone of desired effects* ($d = 0.44$; CLE = 31%).

Not labeling students. Not labeling students refers to the decision to not classify students with disabilities. The non-labeling movement is based on the position that "disabled children pass through cognitive developmental stages in an identical manner but differ in rate and the upper limit of development" (Hattie, 2009, p. 125). After a thorough review of the previous research, Hattie concluded that the influence of not labeling students on student academic achievement was in *the zone of desired effects* ($d = 0.61$; CLE = 43%). This means that students who are not identified as having a disability and do not receive subsequent special education services have higher achievement outcomes than those that do get classified and receive special education services.

Teacher clarity. Hattie (2009) defined teacher clarity as the teacher clearly "communicating the intentions of the lessons and the notions of what success means for these intentions" (p. 125). He determined that the influence of teacher clarity on student achievement was in *the zone of desired effects* ($d = 0.75$; CLE = 53%). No studies have directly assessed teachers' perceptions about how microteaching, teacher effects, teacher training programs, teacher subject matter knowledge, quality of teaching (as perceived by the students), not labeling students, or teacher clarity specifically impact student achievement.

Summary of teacher contributions. Hattie (2009) identified the following teacher variables to influence student achievement in the *zone of desired effect*: microteaching, student-quality of teaching, teacher relationships, professional development, expectations, not labeling students, and teacher clarity. He found teacher effects and teacher training to have no significant

impact on student achievement. Few studies have examined whether teachers perceive any of these factors to impact student achievement.

Contributions from the Curriculum

The Contributions from the Curriculum group is comprised of characteristics of the curriculum that have been examined in relation to academic achievement (Hattie, 2009). This group includes mathematics programs, writing programs, reading programs, science programs, social skills programs, tactile stimulation programs, play programs, drama/arts programs, career education programs, integrated curriculum programs, perceptual motor programs, values and moral education programs, and specific curriculum programs. Research has shown that 89% of teachers believed that having high quality curriculum and curriculum that went beyond what is tested on standardized tests would have a significant impact on academic achievement (Scholastic & The Bill & Melinda Gates Foundation, 2012). Teachers also believed that curriculum that clearly lays out the scope and sequence of what should be taught would also have a significant impact on student academic achievement. (See Appendix B for *d* and CLE values.)

Mathematics programs. When analyzing the mathematics programs data, Hattie (2009) also examined the use of calculators. While he found the influence of mathematics programs on achievement to be in *the zone of desired effects* ($d = 0.45$; CLE = 32%), the same was not evident for the use of calculators, which fell below *the zone of desired effects* ($d = 0.27$; CLE = 19%). A review of relevant literature showed that teachers participating in the MetLife survey expressed the belief that offering core reading, writing, and math skills would improve academic achievement (Love, 2010).

Writing programs. Based on his synthesis, Hattie (2009) determined that writing programs influence academic achievement in *the zone of desired effects* ($d = 0.44$; CLE = 31%).

Reading programs. To analyze the influence of reading programs, Hattie (2009) organized the meta-analyses into the categories of vocabulary programs (d = 0.67; *CLE* = 47%), repeated reading (d = 0.67; *CLE* = 47%), phonics instruction (d = 0.60; *CLE* = 43%), comprehension programs (d = 0.58; *CLE* = 41%), visual-perception (d = 0.55; *CLE* = 39%), second/third chance (d = 0.50; *CLE* = 35%), exposure to reading (d = 0.36; *CLE* = 25%), sentence combining (d = 0.15; *CLE* = 10%), and whole language (d = 0.06; *CLE* = 4%).

Hattie (2009) found that vocabulary programs, repeated reading, phonics instruction, comprehension programs, visual-perception, and second/third chance programs influenced student academic achievement in *the zone of desired effects*. Hattie stated that, "Repeated reading consists of re-reading a short and meaningful passage until satisfactory level of fluency is reached" (p. 135). Phonics instruction teaches students the alphabetic code of letters and letter sounds and how to apply this code to read words. Visual-perception programs are designed to teach student how to organize and interpret letters on a page. Second/third chance programs are programs design to teach students whose reading ability is below grade level the reading skills needed to reach the appropriate grade level.

Hattie's (2009) synthesis of the findings suggested that exposure to reading, sentence combining, and whole language programs influence academic achievement below *the zone of desired effects*. Exposure to reading includes parents reading with their children, teachers reading to their students, and volunteers reading to students. Hattie defined sentence combining as " an instructional strategy that requires student s to combine one or more sentences into one compound, complex, or compound-complex sentence" (p. 134). Whole language reading programs use the concept of gathering the meaning of words from the words around them when presented in a certain context. Using this approach, one is able to figure out what a word means

based on how it is used in a sentence. Hattie discovered that most of the research related to sentence combining and whole language reading programs to be vague and conflicting. While teachers in a survey expressed the belief that offering core reading skills would improve academic achievement (Love, 2010), no research has examined teacher perceptions regarding how specific reading programs impact student academic achievement.

Science programs, social skills programs, tactile stimulation programs, and play programs. Hattie's (2009) synthesis of the meta-analyses findings suggested that science programs (d = 0.40; *CLE* = 29%), social skills programs (d = 0.40; *CLE* = 27%), tactile stimulation programs (d = 0.58; *CLE* = 41%), and play programs (d = 0.50; *CLE* = 35%) influence academic achievement in *the zone of desired effects***.** Tactile stimulation programs use sensory enrichment or stimulation to encourage development. Play programs focus on allowing children to learn through the act of playing.

Drama/Arts programs, career education programs, integrated curricula programs, perceptual motor programs, and values and moral education programs. Through his synthesis Hattie (2009) determined that drama and arts programs (d = 0.35; CLE = 25%), career education programs (d = 0.38; CLE = 27%), integrated curricula programs (d = 0.39; CLE = 28%), perceptual motor programs (d = 0.08; CLE = 6%), and values and moral education programs (d = 0.24; CLE = 17%) influence academic achievement below *the zone of desired effects*. Integrated curricula programs focus on integrating lessons to promote students making connections across subjects. Hattie (2009) defined perceptual motor programs as programs that "include teaching in visual and figure and ground discrimination, visual motor abilities, visual spatial perception, and balance and body awareness," (p. 153). No studies were available which examined teachers' view regarding the impact of science programs, social skills programs, tactile

stimulation programs, play programs, drama/arts programs, career education programs, integrated curriculum programs, perceptual motor programs, or values and morals programs on academic achievement.

Specific curriculum programs. To analyze the influence of specific curricula programs, Hattie (2009) organized the meta-analyses into the categories of creativity programs (d = 0.65; *CLE* = 47%), outdoor/adventure programs (d = 0.52; *CLE* = 37%), and bilingual programs (d = 0.37; *CLE* = 26%), and extra-curricular programs (d = 0.17; *CLE* =12%). His synthesis of the findings suggested creativity programs and outdoor/adventure programs influence academic achievement in *the zone of desired effects*. Creativity programs, which focus on training, practicing, and encouragement to use creative skills to foster creative thinking, Bilingual programs and extra-curricular programs were found by Hattie (2009) to influence academic achievement below *the zone of desired effects*. While significant research has been conducted on the influence of these specific curriculum programs on academic achievement, no research has addressed teachers' perspectives regarding these influences on student achievement.

Summary of curriculum contributions. Hattie (2009) identified the following curriculum variables to influence student achievement in the *zone of desired effect*: vocabulary programs, repeated reading, phonics instruction, comprehension programs, visual-perception programs, second/third chance programs, writing programs, mathematics programs, science programs, social skills programs, tactile stimulation programs, play programs, creativity programs, and outdoor/adventure programs. He found exposure to reading, sentence combining programs, whole language programs, drama/arts programs, values and moral education programs, career education programs, integrated curricula programs, perceptual motor programs, bilingual programs, and extra-curricular programs to have no significant impact on student

achievement. Few studies have examined whether teachers perceive any of these factors to impact student achievement.

Contributions from the Teaching Approaches

The Contributions from the Teaching Approaches group is comprised of characteristics of methods of teaching that have been examined in relation to academic achievement (Hattie, 2009). This group includes strategies emphasizing learning intentions, success criteria, feedback, student perspectives in learning, and student meta-cognitive and self-regulated learning; implementations emphasizing teaching strategies and school-wide teaching strategies; and implementations using technology and out of school learning. (See Appendix C for *d* and CLE values.)

Strategies emphasizing learning intentions. Learning intentions are the knowledge, skills, attitudes, and values that teachers want students to gain with each lesson or unit (Hattie, 2009). To analyze the influence of strategies emphasizing learning intentions, Hattie organized the meta-analyses into the categories of goals ($d = 0.56$; $CLE = 40\%$), concept mapping ($d = 0.57$; $CLE = 40\%$), behavioral objectives and advance organizers ($d = 0.41$; $CLE = 29\%$), and learning hierarchies ($d = 0.19$; $CLE = 13\%$). Hattie determined that goals, the setting of appropriately challenging goals for students, influence student achievement in *the zone of desired effects*.

Hattie (2009) also concluded that concept mapping, "the development of graphical representations of the conceptual structure of the content to be learnt" (p. 168), influences academic achievement in *the zone of desired effects*. Both educational researchers (e.g., Akay, Kaya, & Kilic, 2012; Emmanuel, 2013; Miandoab, Mostafaei, & Ghaderi, 2012) and teachers agreed that concept mapping has a positive impact on student achievement (Malesza, 2001).

Behavioral objectives and advance organizers were found to influence student achievement in *the zone of desired effects* as well. Behavioral objectives refer to statements of abilities that student should have as a result of instruction. Advance organizers aid students in organizing and interpreting new instruction by linking old information with the new information. Dated research indicated teachers are undecided in their view of whether behavioral objectives influence student achievement (Frey, 1973).

Based on his synthesis, Hattie (2009) concluded that learning hierarchies, learning structures where the first skills taught support future learning, influence student academic achievement below *the zone of desired effects*. Research addressing teachers' perspectives of the influence of setting challenging goals, advance organizers, or learning hierarchies has yet to be conducted.

Strategies emphasizing success criteria. Success criteria relates to teachers making it clear to students what criteria will be used to determine the students' success. To analyze the influence of strategies emphasizing success criteria, Hattie (2009) organized the meta-analyses into the categories of mastery learning ($d = 0.58$; *CLE* =41%), worked examples ($d = 0.57$; *CLE* = 40%), and Keller's Personalized System of Instruction ($d = 0.53$; *CLE* = 37%). He determined that each of these strategies emphasizing success criteria influenced student academic achievement in *zone of desired effects*. Mastery learning is a strategy where students must master (usually with 80-90% accuracy as the defining criteria) material in a given level before they can move on to the next level (Motamedi). With mastery learning, students are provided frequent feedback during each level. Worked examples are a strategy where students are given example problems and shown how to perform the steps needed to reach the solution. Keller's Personalized System of Instruction is "a form of programmed instruction that employs a highly

structured, student-centered approach to course design that emphasizes self-pacing and mastery" (p. 171). No research has been completed to analyze teachers' perceptions regarding the influence of each of these strategies on student achievement.

Strategies emphasizing feedback. To analyze the influence of strategies emphasizing feedback, Hattie (2009) organized the meta-analyses into the categories of providing formative evaluation of programs (d = 0.90; *CLE* = 64%), feedback (d = 0.73; *CLE* = 52%), questioning (d = 0.46; *CLE* = 32%), frequent testing/effects of testing (d = 0.34; *CLE* = 24%), teaching test taking and coaching (d = 0.22; *CLE* = 16%), and teacher immediacy (d = 0.16; *CLE* = 8%). Hattie determined that the strategies of providing formative evaluation of programs, feedback, and questioning each influence student academic achievement in *the zone of desired effects.* However, frequent testing/effects of testing, teaching test taking and coaching, and teacher immediacy were each found to influence student academic achievement below *the zone of desired effects.*

Providing formative evaluation of programs consists of providing teachers information about how well they are doing in achieving the learning intentions they have set for their students so that the teachers can adapt their teaching as needed. For Hattie's synthesis, he referred to feedback as both feedback that teachers provide to students and feedback that teachers receive from their students. Questioning refers to teachers asking their students questions to lead them in the acquisition of knowledge. Frequent testing and effects of testing refer to how often tests are given to measure student achievement and the effects of testing on student achievement. Teaching test taking and coaching refers to "test preparation activities carried out in order to improve test scores" (p.179). Teacher immediacy refers to the teacher's "immediacy and closeness of responses to the students" (p. 183).

While research specifically related to teachers' perceptions on the influences of providing formative evaluation of programs, feedback, questioning, frequent testing/effects of testing, teaching test taking and coaching, and teacher immediacy on student achievement could not be found, more general research has been conducted. Teachers participating in the Primary Sources 2012 survey rated the following forms of assessment as very important to absolutely essential in measuring student achievement: formative, ongoing assessments (92%); class participation (90%); performance on class assignments (91%); final exams (44%); district-required tests (30%); state-required tests (28%); and tests from textbooks (26%) (Scholastic & The Bill & Melinda Gates Foundation, 2012). The results also indicated that only 26% of teachers perceived standardized tests to accurately represent the abilities of their students.

Strategies emphasizing student perspectives in learning. To analyze the influence of strategies emphasizing student perspectives in learning, Hattie (2009) organized the meta-analyses into the categories of spaced versus massed practice (d = 0.71; *CLE* = N/A), peer tutoring (d = 0.55; *CLE* = 39%), time on task (d = 0.38; *CLE* = 27%), and mentoring (d = 0.15; *CLE* = 11%). Through his synthesis, Hattie (2009) determined that spaced practice and peer tutoring influence student achievement in *the zone of desired effects.* Spaced practice refers to the practice of a task that completed at spaced intervals rather than in one lengthy interval. Hattie concluded that time on task and mentoring influence student achievement below *the zone of desired effects.*

Time on task refers to the time that a student is engaged in completing a task. Mentoring is a form of tutoring involving an older individual providing tutoring to a younger individual. No studies have analyzed teachers' perception of the influence spaced versus massed practice, peer tutoring, time-on-task, or mentoring on student achievement.

Strategies emphasizing student meta-cognitive and self-regulated learning. To analyze the influence of strategies emphasizing student meta-cognitive and self-regulated learning, Hattie (2009) organized the meta-analyses into the categories of meta-cognitive strategies ($d = 0.69$; *CLE* = 49%), self-verbalization and self-questioning ($d = 0.64$; *CLE* = 45%), study skills ($d = 0.59$; *CLE* = 41%), matching style of learning ($d = 0.41$; *CLE* = 29%), individualized instruction ($d = 0.23$; *CLE* = 16%), aptitude-treatment interactions ($d = 0.19$; *CLE* = 14%), and student control over learning ($d = 0.04$; *CLE* = 5%). Based on his synthesis, Hattie determined that meta-cognitive strategies, self-verbalization and self-questioning, study skills, and matching style of learning influence student achievement in *the zone of desired effects*. Meta-cognitive strategies refer to teaching higher-order thinking strategies. Self-verbalization or self-questioning involves applying a strategy where a student asks themselves questions to reason through difficult problems (e.g., "What is likely to happen next in the story?") or to remember important rules for approaching tasks (e.g., "Did I remember to put a punctuation at the end of my sentence?"). Study skills strategies programs focus on improving student learning using interventions outside of the prescribed teacher lessons. The strategy of matching the style of learning involves aligning teaching practices with the dominant style of learning for a given subject.

Individualized instruction, aptitude-treatment interactions, and student control over learning were determined to influence student achievement below *the zone of desired effects* (Hattie, 2009.) Aptitude-treatment interactions involves altering the instruction based on the type of student, such as placing a child with lower intellectual ability into a highly structured academic curriculum. Student control over learning refers to the amount of choice and control a student has over his or her learning. While no research has studied teachers' perspectives

regarding this influence on student achievement, offering students a choice in the educational process has become a popular idea in schools to improve the motivation of students (Miller, 2012; Patall, Cooper, & Wynn, 2010). Studies have not examined teachers' views regarding the influence of meta-cognitive strategies, study skills, individualized instruction, or aptitude-treatment interactions on student achievement.

Implementations emphasizing teaching strategies. To analyze the influence of implementations emphasizing teaching strategies, Hattie (2009) organized the meta-analyses into the categories of reciprocal teaching ($d = 0.74$; *CLE* = 52%), problem-solving teaching ($d = 0.61$; *CLE* = 43%), teaching strategies ($d = 0.60$; *CLE* = 42%), cooperative vs. individualistic learning ($d = 0.59$; *CLE* = 42%), direct instruction ($d = 0.59$; *CLE* = 41%), cooperative vs. competitive learning ($d = 0.54$; *CLE* = 39%), cooperative learning ($d = 0.41$; *CLE* = 29%), adjunct aids ($d = 0.37$; *CLE* = 26%), inductive teaching ($d = 0.33$; *CLE* = 23%), inquiry-based teaching ($d = 0.31$; *CLE* = 22%), competitive vs. individualistic learning ($d = 0.24$; *CLE* = 17%), and problem-based learning ($d = 0.15$; *CLE* = 11%). Based on his synthesis, Hattie determined that reciprocal teaching, problem-solving teaching, teaching strategies, cooperative vs. individualistic learning, direct instruction, cooperative vs. competitive learning, and cooperative learning each influenced student achievement in *the zone of desired effects.*

Reciprocal teaching is an instructional method in which students are taught to use cognitive strategies to promote learning (Hattie, 2009). These strategies involve learning to summarize, question, clarify, and predict as you are handling educational material (Palinscar & Brown, 1984). Hattie defined problem-solving teaching as involving "the act of defining or determining the cause of the problem" or "identifying, prioritizing, and selecting alternatives for a solution" or "using multiple perspectives to uncover the issues related to a particular problem,

designing an intervention plan, and then evaluating the out come" (p. 210). Teaching strategies are the different methods of teaching that are used by teachers.

When discussing cooperative versus individualistic learning, Hattie (2009) was comparing methods in which students work together to complete a task with methods in which students work individually to complete a task. Hattie defined direct instruction as involving the teacher setting learning intentions and success criteria and making them clear to students, demonstrating the intentions and success criteria, evaluating the students understanding, and tying the information together by retelling it in a manner of closure.

When Hattie (2009) discusses cooperative versus competitive learning, he was comparing the method of students working together on a task to the method of students competing against each other when completing a task. However, research has demonstrated that many teachers value cooperative learning while recognizing difficulties with implementing it in the classroom (Gillies & Boyle, 2010; Sharan, 2010).

Hattie (2009) found that adjunct aids, inductive teaching, inquiry-based teaching, competitive versus individualistic learning, and problem-based learning influenced student achievement below *the zone of desired effects.* As defined by Elen (2006) adjunct aids are "instructional interventions inserted in textbooks in view of supporting learners to process the information" (p. 17). This includes things such as figures or tables that are designed to present information in the text in a different manner. Inquiry-based teaching involves developing challenging situations in which students are asked to observe and question phenomena, pose explanations, conduct experiments, analyze data, draw conclusion, and build models.

Competitive versus individualistic learning compares learning methods in which students work on a task individually to the method in which students work on a task individually while

competing with classmates (Hattie, 2009). Problem-based learning is a teaching method where authentic problems are used to promote the acquisition of required knowledge and problem solving skills. No research has analyzed teachers' perceptions of the influence of reciprocal teaching, problem-solving teaching, teaching strategies, cooperative vs. individualistic learning, direct instruction, cooperative vs. competitive learning, cooperative learning, adjunct aids, inductive teaching, inquiry-based teaching, competitive vs. individualistic learning, and problem-based learning on student academic achievement.

Implementations emphasizing school-wide teaching strategies. To analyze the influence of implementations that emphasize school-wide teaching strategies, Hattie (2009) organized the meta-analyses into the categories of comprehensive interventions for learning disabled students (d = 0.77; *CLE* = 54%), special college programs (d = 0.24; *CLE* = 17%), comprehensive teaching reforms (d = 0.22; *CLE* = 15%), and co-teaching/team teaching (d = 0.19; *CLE* = 13%). Based on his synthesis, Hattie determined that comprehensive interventions for learning disabled students influenced student achievement in *the zone of desired effects*. While no studies have specifically assessed teacher's perceptions regarding the influence of these interventions on student achievement, research has examined teacher dispositional variables that predict how they view working with students with learning disabilities (e.g., Elik, Wiener, & Corkum, 2010; Talmor, Reitin, & Feigin 2005).

Hattie (2009) concluded that special college programs, comprehensive teaching reforms, and co-teaching/team teaching each influenced student achievement below *the zone of desired effects*. No studies have examined teachers' perceptions about the influence of these three factors on student achievement. Special college programs refer to college remediation programs.

Comprehensive teaching reforms are aimed at improving teaching. Co-teaching/team teaching is where two or more teachers working together to deliver instruction.

Implementations using technology. To analyze the influence of implementations using technologies, Hattie (2009) organized the meta-analyses into the categories of interactive video methods ($d = 0.52$; *CLE* = 36%), computer-assisted instruction ($d = 0.37$; *CLE* = 27%), simulations ($d = 0.33$; *CLE* = 23%), programmed instruction ($d = 0.24$; *CLE* = 17%), visual/audio-visual methods ($d = 0.22$; *CLE* = 16%), and web-based learning ($d = 0.18$; *CLE* = 12%). Literature indicated 87 percent of teachers believed that having up-to-date technology that is well integrated into the classroom would have a significant impact on improving academic achievement. Also in a 2012 survey, of the veteran teachers, 88% believed that well-integrated technology can have a substantial influence on student academic achievement (Scholastic & The Bill & Melinda Gates Foundation, 2012). Teachers participating in a survey also agreed, stating that keeping pace with technology and related social changes would have an impact on improving academic achievement (Love, 2010).

Hattie (2009) determined that interactive video methods that combine video and computer-based instructional techniques influenced student achievement in *the zone of desired effects*. No research has specifically examined the views of teachers regarding the influence of interactive video methods on student achievement. However, several teachers in addition to the state of Idaho have started adding Khan Academy videos and YouTube videos of themselves teaching into their teaching strategies due to the positive results they are seeing in their students (Ash, 2013; Graham & Walker, 2013; Kronholz, 2012).

Based on his synthesis, Hattie (2009) concluded that computer-assisted instruction, simulations, programmed instruction, visual/audio-visual methods, and web-based learning each

impacted student achievement below *the zone of desired effects.* No studies have examined teachers' perceptions about the influence of these four factors on student achievement. Computer-assisted instruction refers to the use of computers to assist in the instruction of students. Simulations are representations of actual scenarios and outcomes. Programmed instruction refers to "presenting new subject matter to students in graded sequence of controlled steps" (p. 231, Hattie, 2009). Visual/audio-visual methods involve using variety of visual and audio media as part of classroom instruction. Web-based learning is the use of the World Wide Web in instruction.

Implementations using out of school learning. To analyze the influence of implementations using out of school learning, Hattie (2009) organized the meta-analyses into the categories of homework ($d = 0.29$; $CLE = 21\%$), home-school programs ($d = 0.16$; $CLE = 11\%$), and distance education ($d = 0.09$; $CLE = 6\%$). He determined that each of these influenced student academic achievement below *the zone of desired effects.* Homework has been reported to have a positive impact on student achievement (Gustafsson, 2013; Zhu & Leung, 2012) and teachers agree with these findings (Hong, Wan, & Peng, 2011; Shahzada, et.al., 2011). However, teachers have been reported to view homework as a simple reward for working, not a method for learning (Vatterott, 2011). Home-school programs involve the use of technology to build connections between the home and school in the students learning. These programs include the use of laptops, desktops, and software used in both the home and school settings. Distance learning involves students receiving instruction from the teacher via some form of media and the student completing assignments outside of the standard school setting. No research has discussed the perceptions of teachers regarding the influence of home-school programs or distance learning on student achievement.

Summary of teaching approaches contributions. Hattie (2009) identified the following teaching approaches variables to influence student achievement in the *zone of desired effect*: goals, concept mapping, behavioral objectives and advance organizers, of mastery learning, worked examples, Keller's Personalized System of Instruction, providing formative evaluation of programs, feedback, questioning, spaced versus massed practice, peer tutoring, meta-cognitive strategies, self-verbalization and self-questioning, study skills, matching style of learning, reciprocal teaching, problem-solving teaching, teaching strategies, cooperative vs. individualistic learning, direct instruction, cooperative vs. competitive learning, cooperative learning, comprehensive interventions for learning disabled students, and interactive video methods. He found learning hierarchies, frequent testing/effects of testing, teaching test taking and coaching, teacher immediacy, time on task, mentoring, individualized instruction, aptitude-treatment interactions, student control over learning, adjunct aids, inductive teaching, inquiry-based teaching, competitive versus individualistic learning, problem-based learning, special college programs, comprehensive teaching reforms, co-teaching/team teaching, computer-assisted instruction, simulations, programmed instruction, visual/audio-visual methods, and web-based learning to have no significant impact on student achievement. Few studies have examined whether teachers perceive any of these factors to impact student achievement.

Contributions from the Child

The Contributions from the Child group is comprised of characteristics of the child that have been examined in relation to academic achievement (Hattie, 2009). This group includes background information, attitudes and dispositions, physical influences, and preschool experiences. (See Appendix D for *d* and CLE values.)

Background information. To analyze the influence of background information, Hattie (2009) organized the meta-analyses into the categories of self-reported grades (d = 1.44; *CLE* = 102%), Piagetian programs (d = 1.28; *CLE* = 91%), prior achievement (d = 0.67; *CLE* = 48%), creativity (d = 0.35; *CLE* = 25%), and lack of academic success. Through his synthesis Hattie determined that self-reported grades, Piagetian programs, and prior achievement each influence student achievement in *the zone of desired effects*. Self reported grades are "students' estimates of their own performance" (p. 43). Piagetian programs are programs in which the type of instruction is adapted to the Piagetian stage of the students.

Teachers have often used a student's prior achievement to set their expectations for the student (de Boer, Bosker, van der Werf, 2010). A review of the literature available showed that teachers believed that they could be more effective in teaching a student when the student's prior achievement is higher (Chong, Klassen, Huan, Wong, & Kates, 2010). Studies have also shown that some teachers view students' intellectual abilities as fixed, while others view students' abilities as incremental. Because intellectual ability can be linked to prior achievement, teachers' views regarding intellectual ability can also affect their view of efficacy related to teaching students. For example, teachers who view intellectual ability as fixed often reported lower efficacy (Daniels & Shumow, 2003).

Hattie (2009) concluded that creativity influences academic achievement below *the zone of desired effects.* He found confounding variables when attempting to analyze the meta-analyses related to lack of academic success. Hattie cited the following studies related to lack of academic achievement. While studies like Kavale & Nye (1985), McLinden (1988), and Rush (1992) showed that achievement was the main distinction between special education and non-special education, studies also showed that emotional and behavioral disabilities can have a negative

impact on achievement (Kavale and Nye, 1985; Sabornie, Cullinan, Obsorne, & Brock, 2005; Conrad, 2007; Hattie, Biggs, & Purdie, 1996). Therefore, the influence of lack of academic success on academic achievement could not be determined. This may explain the lack of research examining teachers' perspectives regarding the influence of the previous lack of academic success on student achievement. No research has been conducted analyzing teachers' view regarding the impact of self-reported grades, Piagetian programs, or creativity on student achievement.

Attitudes and dispositions. To analyze the influence of attitudes and dispositions, Hattie (2009) organized the meta-analyses into the categories of motivation (d = 0.48; *CLE* = 34%); concentration, persistence, and engagement (d = 0.48; *CLE* = 34%); self-concept (d = 0.43; *CLE* = 30%); reducing anxiety (d = 0.40; *CLE* = 28%); attitude to mathematics and science (d = 0.36; *CLE* = 26%); and personality influences (d = 0.19; *CLE* = 14%). He determined that motivation; concentration, persistence, and engagement; self-concept; and reducing anxiety each influenced student achievement in *the zone of desired effects*.

Motivation refers to a student's desire to complete assignments and achieve academic goals. Teachers from a survey expressed the belief that if students felt responsible for their own education, achievement would be improved. These teachers reported that only 42% of students seem to embody this sense of responsibility (Love, 2010). Teachers also have often determined their expectation for the students based on the students' perceived motivation (de Boer, Bosker, & van der Werf, 2010). Educational researchers are constantly analyzing way to motivate students (Girmus, 2012; Fitch, 2013).

Self-concept is the student's perceptions of his or her own abilities and attributes. Hattie found that teachers believed that students who achieve more academically have higher self-

concept and that it is part of a teacher's role to help the students to feel good about themselves (Hattie, 2009).

Hattie concluded that attitude to mathematics and science and personality influences each influenced achievement below *the zone of desired effects.* Personality influences refer to the personalities of the students as they impact student performance. Studies have revealed that some teachers believed that personality characteristics of students have a significant impact on their development (Daniels & Shumow, 2003; de Boer, Bosker, & van der Werf, 2010). This development could correlate to academic achievement and would therefore imply that teachers believe that personality characteristics have a significant impact on academic achievement. No research has analyzed teachers' views regarding the influence of concentration, persistence, engagement, reducing student anxiety, or attitude to mathematics and science on student achievement

Physical influences. To analyze the influence of physical influences, Hattie (2009) organized the meta-analyses into the categories of drug interventions (d = 0.33; *CLE* = 24%); positive view of ethnicity (d = 0.32; *CLE* = 23%); exercise and relaxation (d = 0.28; *CLE* = 20%); illness (d = 0.23; *CLE* = 16%); pre-term birth weight (d = 0.54; *CLE* = 14%); gender (d = 0.12; *CLE* = 9%); and diet interventions (d = 0.12; *CLE* = 8%). He determined that each of these physical influences influenced student achievement below *the zone of desired effects.* Drug interventions refer to the use of medications prescribed to students to manage the behavioral and attentions problems associated with disorders such as ADHD. Though medication has been shown to be effective (Faraone & Buitelaar, 2010), teachers remain inadequately informed about ADHD and the role of medication in treatment (Akram, Thomson, Boyter, & McLarty, 2009;

Anderson, Watt, Noble, & Shanley, 2012; Moldavsky & Sayal, 2013; Placebo effect observed in adults interacting with children with ADHD, 2009).

For Hattie's (2009) research, positive view of ethnicity referred to students' having a positive view regarding their own ethnicity. Illness refers to the chronic illnesses of students. Pre-term birth weight refers to the birth weight of students who were born premature. In regard to teachers' views on the impact of gender and ethnicity on academic achievement, Daniels & Shumow (2003) found that prospective teachers interpret ethnic and gender differences in academic achievement to be the result of broader social influences. Diet interventions refer to dietary alterations aimed at improving student achievement. Studies have not examined teachers' perspective regarding the influence of positive view of ethnicity, exercise and relaxation, illness, pre-term birth weight, or diet interventions on student achievement.

Preschool experiences. To analyze the influence of preschool experiences, Hattie (2009) organized the meta-analyses into the categories of early interventions ($d = 0.47$; $CLE = 33\%$) and preschool programs ($d = 0.45$; $CLE = 32\%$). He determined that both early interventions and preschool programs each influenced student achievement in *the zone of desired effects.* For Hattie's research early interventions were the interventions implemented with preschoolers. Preschool programs refer to the participation or enrollment of students in preschool programs. No research has examined the views of teachers related to the influence of early interventions or preschool programs on student achievement.

Summary of child contributions. Hattie (2009) identified the following child variables to influence student achievement in the *zone of desired effect*: self-reported grades; Piagetian programs; prior achievement; motivation; concentration, persistence, and engagement; self-concept; reducing anxiety; early interventions; and preschool programs. He found creativity;

attitude to mathematics and science; personality influences; drug interventions; positive view of ethnicity; exercise and relaxation; illness; pre-term birth weight; gender; and diet interventions to have no significant impact on student achievement. Few studies have examined whether teachers perceive any of these factors to impact student achievement.

Contributions of the Home

The Contributions from the Home group is comprised of characteristics of the home that have been examined in relation to academic achievement (Hattie, 2009). This group includes socioeconomic status, welfare policies, family structure, and home environment. (See Appendix E for *d* and CLE values.)

Socioeconomic status. The results of Hattie's (2009) synthesis of the meta-analyses suggested that socioeconomics status influences academic achievement in *the zone of desired effects* (*d* = 0. 57; CLE = 40%).

Welfare policies. Hattie (2009) determined that welfare policies, whether a student's family receives welfare or not, influences student achievement below *the zone of desired effects* (*d* = -0.12; CLE = -8%). Welfare policies refer to families who receive welfare support. These policies actually had a negative impact on student achievement.

Family structure. Family structure refers to characteristics of the students' family structure. Hattie (2009) included the attributes such as single and two-parent families, resident and non-resident fathers, divorce, adopted and non-adopted children, only and non-only children, and maternal employment. Overall, Hattie determined that family structure influences student academic achievement below *the zone of desired effects* (*d* = 0.17; CLE = 12%). Research concerning the perspectives of teachers on the influence of socioeconomic status, welfare policies, or family structure on student achievement has not been completed.

Home environment. To analyze the influence of home environment, Hattie (2009) organized the meta-analyses into the categories of parental involvement in learning (d = 0.51; *CLE* = 36%); home visiting (d = 0.29; *CLE* = 20%); and television (d = -0.18; *CLE* = -12%). Based on his synthesis, Hattie (2009) determined that parent involvement in learning influences student achievement in *the zone of desired effects.* A review of the available literature showed that American teachers are more likely to emphasize the importance of the family environment on academic achievement than innate ability (Daniels & Shumow, 2003). This literature also indicated that most kindergarten teachers ascribe developmental skills or deficits to environmental or maturational influences. Because teachers believe there is a strong impact of the family environment on student achievement, they are often quite pessimistic about their ability to counteract negative influences of the home environment.

Studies also established that 98% of teachers think family involvement and support would improve student achievement (Scholastic & The Bill & Melinda Gates Foundation, 2012). They believed that strengthening the parent and school ties are needed in order to achieve this (Love, 2010). The literature has also shown that though teachers acknowledge the importance of parental involvement in student academic achievement, they have reservations about this due to concern that the parents may interfere with the child's schooling (Daniels & Shumow, 2003). They found that teachers want parents to monitor homework without completing for the students, and help the teacher with handling misbehavior and by volunteering in the classroom. They also discovered that teachers did not want parents to question their authority with regard to teaching approaches and curriculum

Research has shown that teachers acknowledge other barriers related to successful home-school relations (Daniels & Shumow, 2003). Teachers reported that the lack of family

involvement might be due to the parents not being able to take time off from work due to financial difficulties (Scholastic & The Bill & Melinda Gates Foundation, 2012). Although they acknowledge this, teachers still continue to place the majority of the responsibility of communication on the students' parents or family. Other studies showed that teachers stereotype their views of minority families in relation to parent involvement. They assume that these parents will be apathetic and unresponsive regarding their child's needs and difficulties (Daniels & Shumow, 2003).

Home visiting involves teachers or school personnel visiting the home of students. Hattie (2009) found that home visiting influences student academic achievement below *the zone of desired effects*. While research has not examined teachers' view regarding this influence, teachers have reported that home visits help them to build important relationships with their students' families (Meyer, Mann, & Becker, 2011; Schlessman, 2013) and bring a multi-cultural environment to their classrooms (Lin & Bates, 2010; Meyer, Mann, & Becker, 2011). Through his synthesis Hattie (2009) also determined that television influenced student achievement below *the zone of desired effects* and actually negatively impacted student achievement. No research has assessed teacher's perceptions about the influence of television on student achievement.

Summary of home contributions. Hattie (2009) identified the following home variables to influence student achievement in the *zone of desired effect*: socioeconomic status and parental involvement. He found welfare policies, family structure, home visiting, and television to have no significant impact on student achievement. Few studies have examined whether teachers perceive any of these factors to impact student achievement.

Contributions from the School

The Contributions from the School group is comprised of characteristics of the school that have been examined in relation to academic achievement (Hattie, 2009). This group includes attributes of the schools, school compositional effects, leadership, classroom compositional effects, school curriculum effects, and classroom influences. (See Appendix F for *d* and CLE values.)

Attributes of the school. To analyze the influence of attributes of the school, Hattie (2009) organized the meta-analyses into the categories of finances ($d = 0.23$; $CLE = 16\%$) and types of schools. The category of types of schools was further broken down in more narrow groups of desegregation ($d = 0.28$; $CLE = 20\%$), religious schools ($d = 0.23$; $CLE = 16\%$), summer schools ($d = 0.23$; $CLE = 16\%$), charter schools ($d = 0.20$; $CLE = 14\%$), and college halls of residence ($d = 0.05$; $CLE = 3\%$).

Hattie (2009) determined that finances, the monetary resources available to a school and its students, influenced student academic achievement below *the zone of desired effects.* Literature has shown that only 25-26 percent of teachers believe that monetary rewards for teachers based on either individual performance or school-wide performance would have a strong impact on academic achievement (Scholastic & The Bill & Melinda Gates Foundation, 2012). However, teachers did note a need for tangible resources for students with behavioral issues, gifted students, students living in poverty, special education students, and ELL students in order to improve academic achievement (Scholastic & The Bill & Melinda Gates Foundation, 2012).

Each type of school was found by Hattie (2009) to influence student achievement below *the zone of desired effects*. Desegregation refers to schools that are not racially segregated. Religious schools are private schools run by a religious body. Summer schools refer to

supplementary and remedial educational instruction provided to students during the summer. Charter schools are publically funded independent schools established under a charter with a local or national authority. For Hattie's research, college halls of residence referred to whether a student lives in a college residence hall. No research has been conducted examining teachers' perspectives of the impact of the types of schools, summer school, or living in a residence hall have on student achievement.

School compositional effects. To analyze the influence of school compositional effects, Hattie (2009) organized the meta-analyses into the categories of school size (d = 0.43; *CLE* = 30%), out-of-school curriculum experiences (d = 0.09; *CLE* = 6%), summer vacation (d = -0.09; *CLE* = -6%) and mobility (d = -0.34; *CLE* = -24%). He determined that the school size, the number of students attending the school, influenced student achievement in *the zone of desired effects*. Research has not examined teachers' perceptions of the influence of school size on student achievement.

Based on his synthesis, Hattie (2009) concluded that out-of-school curriculum experiences, students' educational experiences outside of school, influence student academic achievement below *the zone of desired effects*. Teachers participating in a survey expressed the belief that having opportunities for learning outside of the classroom and school would improve academic achievement (Love, 2010). Summer vacation was also found to influence student achievement below *the zone of desired effects* and negatively impact student achievement. In relation to summer vacation, only 31 percent of the teachers surveyed thought that having a longer school year would have a positive impact on improving academic achievement (Scholastic & The Bill & Melinda Gates Foundation, 2012). Hattie also found that mobility, how frequently students' change schools, influenced student achievement below *the* zone *of desired*

effects and negatively impacted student achievement. While teachers understand that children usually do not have a choice in the matter of changing schools frequently, these students are often seen as an inconvenience to the teachers (Costley, 2012).

Leadership. Leadership refers to the instructional and transformational leadership of the principals and other leaders of a school. Hattie (2009) determined that leadership influenced student academic achievement below *the zone of desired effects* (d = 0.36; CLE = 25%). Research indicated that leadership has a significant positive impact on student achievement (Miller, Goddard, Goddard, Larsen & Jacob, 2010; Soehner & Ryan, 2011). In regards to leadership within the school, roughly 91 percent of the teachers surveyed believed that having effective and engaged principals and building-level leaders would have a positive impact on student academic achievement (Scholastic & The Bill & Melinda Gates Foundation, 2012). Additionally, 67 percent of teachers thought greater collaboration between school leaders and teachers would have a significant impact on improving student academic achievement (Love, 2010).

Classroom compositional effects. To analyze the influence of classroom compositional effects, Hattie (2009) organized the meta-analyses into the categories of small-group learning (d = 0.49; *CLE* = 34%), mainstreaming (d = 0.28; *CLE* = 19%), class size (d = 0.21; *CLE* = 15%), within-class grouping (d = 0.16; *CLE* = 11%), ability grouping (d = 0.12; *CLE* = 9%), multi-grade/multi-age classes (d = 0.04; *CLE* = 3%), open vs. traditional (d = 0.01; *CLE* = 0%), retention (d = -0.16; *CLE* = -11%), and single-sex classes. He determined that small-group learning influenced student achievement in *the zone of desired effects.*

Hattie (2009) also found that mainstreaming, class size, within-class grouping, ability grouping, multi-grade/multi-age classes, open versus traditional, and retention each influence

student achievement below *the zone of desired effects*. Retention actually had a negative impact on student academic achievement. Mainstreaming refers to placing students with learning disabilities in regular education classrooms to provide the least restrictive environment for the students. However, researchers have not specifically studied teachers' perceptions of the influence of small-group learning or mainstreaming on student achievement.

Teachers participating in one study stated that smaller class sizes would improve achievement. These teachers reported that they would ideally have only 20 students in their classes, but the current class average is 23 students. However, the teachers believed that only after reaching 27 students in their classrooms would academic achievement be negatively impacted (Scholastic & The Bill & Melinda Gates Foundation, 2012).

No studies have examined teachers' perceptions about the influence of the following five factors on student achievement: within-class grouping, ability grouping, multi-grade/multi-age classes, open versus traditional, and retention. Within-class grouping involves teachers placing students into groups within the class based on their abilities. Ability grouping refers to the assignment of students to classes based on their abilities. Multi-grade and multi-age classes are comprised of students of multiple different grades and ages in the same class. Open versus traditional refers to an individualized and flexible form of instruction using manipulative materials rather than the traditionally structured form of instruction. Hattie (2009) defined retention as "the practice of not promoting students up a grade level in school" (p. 97). Not only did retention fall below *the zone of desired effects*, it also had a negative impact on student achievement.

Hattie (2009) was unable to determine the effect of single-sex classes on achievement. This is because, based on the meta-analyses reviewed; any effects related to achievement were

due to either the gender of the teacher or teacher expectations. This may explain the lack of research regarding teachers' perspectives of the influence of single-sex classes on student achievement.

School curriculum effects. To analyze the influence of school curriculum effects, Hattie (2009) organized the meta-analyses into the categories of acceleration (d = 0.88; *CLE* = 62%), enrichment (d = 0.39; *CLE* = 28%), and ability grouping for gifted students (d = 0.30; *CLE* = 21%). Hattie determined that acceleration influences student achievement in *the zone of desired effects.* Acceleration is a program designed to allow student to accelerate through the curriculum in order to work on tasks that match their abilities.

Based on his synthesis, Hattie (2009) concluded that enrichment and ability grouping for gifted students each influenced student achievement below *the zone of desired effects*. He defined enrichment as involving "activities meant to broaden the educational lives of some group of students" (p. 101). Ability grouping for gifted students refers to the practice of assigning students to classes based on their giftedness in order to provide them with a more challenging curriculum. Research has not examined teachers' perspectives regarding the influence of acceleration, enrichment, or ability grouping for gifted students on student achievement.

Classroom influences. To analyze the influence of classroom influences, Hattie (2009) organized the meta-analyses into the categories of group cohesion (d = 0.53; *CLE* = 38%), peer influences (d = 0.53; *CLE* = 37%), classroom management (d = 0.52; *CLE* = 37%), and decreasing disruptive behavior (d = 0.34; *CLE* = 24%). He determined that group cohesion, peer influences, and classroom management each influence student achievement in *the zone of desired effects.* Group cohesion is "the sense that all (teachers and students) are working towards positive learning gains" (p. 103). Finally, Hattie (2009) determined that decreasing disruptive

behavior influenced student achievement below *the zone of desired effects.* Research has not explicitly analyzed teachers' perspectives related to the influence of group cohesion, peer influences, classroom management, or decreasing disruptive behavior on student academic achievement.

Summary of school contributions. Hattie (2009) identified the following school variables to influence student achievement in the *zone of desired effect*: finances, school size, small-group learning, acceleration, group cohesion, peer influences, and classroom management. He found desegregation, religious schools, summer schools, charter schools, and college halls of residence, out-of-school curriculum experiences, summer vacation, mobility, leadership, mainstreaming, class size, within-class grouping, ability grouping, multi-grade/multi-age classes, open vs. traditional, retention, enrichment, ability grouping for gifted students, and decreasing disruptive behavior to have no significant impact on student achievement. Few studies have examined whether teachers perceive any of these factors to impact student achievement.

STATEMENT OF PURPOSE

A substantial amount of research analyzing student academic achievement has been conducted throughout the years. Hattie (2009) synthesized over 800 meta-analyses related to achievement. He organized this information into six broad groups that may influence student achievement: Contributions of the Teacher, Contributions of the Curriculum, Contributions of the Teaching Approaches, Contributions of the Child, Contributions of the Home, and Contributions of the School.

He discovered that the Contributions of the Teacher, including teacher training programs, teacher subject matter knowledge, quality of teaching, teacher-student relationships, professional development, expectations, not labeling students, and teacher clarity, had the most significant impact (d = 0.49; CLE = 35%) on student achievement (Hattie, 2009). Contributions of the Curriculum, including reading programs, writing programs, drama/arts programs, mathematics programs, science programs, values and moral education programs, social skills programs, career education programs, integrated curricula programs, perceptual motor programs, tactile stimulation programs, play programs, and specific curricula programs, had the second greatest impact (d = 0.45; CLE = 32%) on student achievement. Contributions of the Teaching Approaches, including strategies emphasizing learning intentions, strategies emphasizing success criteria, strategies emphasizing feedback, strategies emphasizing student perspectives in learning, strategies emphasizing student meta-cognitive/self-regulated learning, implementations emphasizing teaching strategies, implementations that emphasize school-wide teaching strategies, implementations using technology, and implementations using out of school learning, had the third greatest impact (d = 0.42; CLE = 30%) on student achievement. Contributions of the Child, including background, attitudes and dispositions, physical influences, and preschool

experiences, had the fourth greatest impact (d = 0.40; CLE = 29%) on student achievement. Contributions of the Home, including socioeconomic status, welfare policies, family structure, and home environment, had the fifth greatest impact (d = 0.31; CLE = 22%) on student achievement. Finally, Contributions of the School, including attributes of schools, school compositional effects, classroom compositional effects, curricula for gifted students, and classroom influences, had the least impact (d = 0.23; CLE = 16%) on student achievement (See Table 1 below).

Table 1: Hattie's Overall Findings

Hattie's Overall Findings	Cohen's d	CLE
Contributions from the Teacher	**0.49**	**35%**
Contributions from the Curriculum	**0.45**	**32%**
Contributions from the Teaching Approaches	**0.42**	**30%**
Contributions from the Child	**0.40**	**29%**
Contributions from the Home	**0.31**	**22%**
Contributions from the School	**0.23**	**16%**

While this knowledge is significant, there is no indication that this evidence is being used in the schools and classrooms. Hattie (2009) expressed concerns about the gap between scientific evidence and practice in the schools.

The overarching purpose of conducting this research was to gather information about what teachers perceive to be the factors that influence student achievement. Teachers have a significant opportunity to influence student achievement. Thus, it is important for their perceptions to align with research findings. When teachers' perceptions align with the research findings, students may be educated in the most effective manner possible.

The following research questions were explored in this descriptive study. Each research question was evaluated separately for the 6 broad categories (Contributions of the Teacher,

Contributions of the Curriculum, Contributions of the Teaching Approaches, Contributions of the Child, Contributions of the Home, and Contributions of the School), resulting in

1. What percentage of teachers perceive each factor falling within the *zone of desired effects* (Hattie, 2009) as being moderately or strongly positive in influencing student achievement?
2. What percentage of teachers perceive each factor falling below the *zone of desired effects* (Hattie, 2009) as being moderately or strongly positive in influencing student achievement?
3. What percentage of teachers perceive each factor falling within the *zone of desired effects* (Hattie, 2009) as having no impact on student achievement?
4. What percentage of teachers perceive each factor falling below the *zone of desired effects* (Hattie, 2009) as having no impact student achievement?
5. What percentage of teachers perceive each factor falling within the *zone of desired effects* (Hattie, 2009) as being slightly, moderately or strongly negative in influencing student achievement?
6. What percentage of teachers perceive each factor falling below the *zone of desired effects* (Hattie, 2009) as being slightly, moderately or strongly negative in influencing student achievement?
7. What broad categories are ranked as the top 2 with regard to influencing student achievement?
8. What broad categories are ranked as the bottom 2 with regard to influencing student achievement?

METHODS

Participants

For this study, participants were solicited from school districts that were willing to participate in a web-based survey to measure perceptions of factors that influence student academic achievement. Participants included teachers working with elementary through high school students. Requests to complete the survey were sent to a total of 266 teachers. 105 teachers completed some of the survey. A response rate of 40% or higher was identified as an acceptable level for this survey based on recent findings that suggest this rate produces reliable data (Kramer, Schmalenberg, Brewer, Verran, & Keller-Unger, 2009). The response rate for this study was 40%.

Participants included 105 current teachers. 87% (N=91) of the sample was female while 13% (N=14) of the sample was male. The majority (52%, N=55) of the participants had 10 or more years of experience. 13% (N=14) of the sample had 0-3 years of teaching experience, 12% (N=13) had 4-6 years of teaching experience, and 22% (N=23) had 7-9 years of teaching experience. The participants were evenly divided with regard to grade taught: 30% (N=32) worked with PK- 2, 35% (N=37) worked with 3-5, 34% (N=36) worked with 6-8, and 35% (N=37) worked with 9-12. For the grades taught, the participants were asked to select all of the categories that apply. The majority (79%, N=83) of the participants provide regular education services, while 12% (N=13) provide special education services, and 9% (N=9) provide specialized instructional program services. The majority (79%, N=83) of the participants teach in a traditional public school; while 3% (N=3) teach in a charter school, 5% (N=5) teach in a private school, 7% (N=7) teach in a religious school, 3% (N=3) teach in an alternative public

school, 2% (N=2) teach in an early college school, 1% (N=1) teach in a lottery-funded pre-kindergarten program at a private child development center, and 1% (N=1) teach in a different (unspecified) type of school. The majority (79%, N=83) of the participants' schools are located in a rural community, while 15% (N=16) are located in a suburban community, and 6% (N=6) are located in an urban community. The highest degree completed by the majority (52%, N=54) of the participants was a Bachelor's Degree. 44% (N=46) completed a Master's Degree, 4% (N=4) completed a Specialist Degree, and 1% (N=1) completed a Doctoral Degree. The majority (84%, N=88) of the participants are not Nationally Certified Teachers, while 16% (N=17) are Nationally Certified Teachers. 65% (N=68) of the participants were not familiar with Hattie's Visible Learning research, 1% (N=1) was familiar with Hattie's Visible Learning research, 34% (N = 36) did not respond to this question.

Materials

The online survey provider, Qualtrics, was used to create a survey for this research. The Teachers' Perceptions of the Factors that Influence Student Achievement Survey (see Appendix G) is a survey that was designed to gauge teachers' perspectives regarding the factors that influence student academic achievement. The survey first provided participants with an overview of the survey questions, information about informed consent, and whom to contact if they had any questions about the survey results. The survey gathered information on demographics, perceptions of the influence of each factor within the six broad categories, and rankings of most important to least important factor within each group. The following subheadings will describe each of these in more detail.

Demographic information. Demographic information was gathered to help describe the sample in the study. Participants were asked to identify their sex, how many years of experience

they have in teaching, what grades they teach, what type of educational services they provide (e.g., Regular Education, Special Education, Specialized Instruction Program), what type of school they teach in, highest degree they hold, type of community their school serves, and whether they have national certification.

Perceptions of influence. Participants were asked to rate how strongly they perceive each of the factors discussed by Hattie (2009) with regard to its influence on student achievement. The factors were grouped within the 6 broad categories (Contributions of the Teacher, Contributions of the Curriculum, Contributions of the Teaching Approaches, Contributions of the Child, Contributions of the Home, and Contributions of the School) and included a brief definition to increase the likelihood that participants are conceptualizing the factor in the way that it was discussed in the literature review. A seven-point Likert-style rating system (1=Strongly Negative, 2=Moderately Negative, 3=Slightly Negative, 4=No Influence, 5= Slightly Positive, 6=Moderately Positive, and 7=Strongly Positive) was used for each item, with participants responding to "the influence of each type of…has on student academic achievement".

Perceptions of rankings. Participants were asked to rank each factor within the 6 broad categories (Contributions of the Teacher, Contributions of the Curriculum, Contributions of the Teaching Approaches, Contributions of the Child, Contributions of the Home, and Contributions of the School) with regard to importance of the factor in influencing academic student achievement. They had a list of each factor within a category and were able to drag the ranking that they believe should correspond to the factor.

Procedure

Institutional Review Board (IRB) approval was obtained for the pilot survey and the descriptive research by submitting a research protocol, copy of the Qualtrics survey, and a copy of the informed consent form to the Western Carolina University Institutional Review Board. A pilot survey was completed by graduate school psychology and clinical psychology majors at Western Carolina University, to evaluate the survey with regard to readability, flow, and ease of understanding. Time required to complete the survey was also monitored during the pilot survey. Results of the pilot study revealed that the common completion time was between 13 and 31 minutes. Participants reported that the questions and rating system were easily understood. The participants also reported that survey was longer than many other surveys they had completed. However, all of the participants reported completing the survey in one sitting. Within the contributions from the school section of the study, the types of schools were omitted from the survey completed by the participants.

School districts in the Southeast were contacted with regard to their willingness to participate in the survey. One school district and one private religious school agreed to participate in the survey. The survey was then sent out electronically to all teachers within participating school districts. The researcher directly sent out the survey to participants within the school district, while the headmaster sent out the survey to participants within the private religious school. Informed consent was obtained prior to participants viewing any survey questions. (See Appendix G). While participants were given ample time to fill out and return the survey, a deadline was provided to both encourage completion of the survey and to allow time to compile the data. The participants were given 3 months to complete the survey and were able to re-open the survey as needed. Reminder emails were sent to teachers of participating school districts 1 week and 3 days prior to the deadline. As an incentive for teachers to complete the

survey, participants that completed the survey had the opportunity enter a monthly drawing for a Walmart Gift card for the month in which they completed the survey. The gift card value for the first month of the study was $50, with a $25 value of gift cards for each subsequent month for the remainder of the study.

RESULTS

Descriptive analyses were used to examine teachers' perceptions regarding the impact of each factor on student achievement. Descriptive summary statistics were tabulated for all responses within each of the 6 categories. Ranking data was collapsed across participants to identify the top 5 and bottom 5 factors within each of the 6 categories. Because the attrition rate for the survey was relatively high, 105 started the survey but only 68 individuals completed the final item, preliminary analysis examined demographic differences between starters and finishers to see if there were significant differences between the groups. There was not a statistically significant difference between starters/finishers with regard to sex ($c^2 = 1.41$, $p = 0.23$), highest degree completed ($c^2 = 2.29$, $p = 0.52$), national certification ($c^2 = 0.57$, $p = 0.45$), years of experience ($c^2 = 0.42$, $p = 0.94$), educational services provided ($c^2 = 0.9$, $p = 0.64$), type of school ($c^2 = 8.36$, $p = 0.08$), or type of community ($c^2 = 0.77$, $p = 0.68$).

Contributions of the Teacher

Between 76-77 of the participants completed each item within the contributions of the teacher portion of the survey. Hattie (2009) found the following contributions to impact student achievement within the *zone of desired effects*: Microteaching ($d = 0.88$; *CLE* = 62%), Teacher Clarity ($d = 0.75$; CLE = 53%), Teacher-student Relationships (d = 0.72; CLE = 51%), Professional Development ($d = 0.62$; CLE = 44%), Not Labeling Students ($d = 0.61$; CLE = 43%), Quality of Teaching ($d = 0.44$; CLE = 31%), and Expectations ($d = 0.43$; CLE = 31%). The majority of the participants agreed with Hattie's findings for most of these contributions. 100% of participants rated Teacher Clarity and Expectations as being Slightly Positive to Strongly Positive. 98.7% of participants rated Teacher Training Programs, Teacher-Student

Relationships, Professional Development, and Quality of Teaching as being Slightly Positive to Strongly Positive. Microteaching (33.8%) and Not Labeling Students (23.4%) were the only contribution areas that had a fair number of participants rating the effect as either negative or having no influence. (See Table 2 below).

Table 2: Contributions from the Teacher Within the Zone of Desired Effects

Contributions from the Teacher	**N**	**Negative**	**No Influence**	**Slightly Positive**	**Moderately Positive**	**Strongly Positive**
Teacher Training Programs	**77**	**1.3%**	**0%**	**22.1%**	**24.7%**	**51.9%**
Microteaching	77	10.4%	23.4%	28.5%	22.1%	15.6%
Teacher Clarity	**77**	**0%**	**0%**	**6.5%**	**19.5%**	**74%**
Teacher-Student Relationships	**77**	**0%**	**1.3%**	**5.2%**	**24.7%**	**68.8%**
Professional Development	**76**	**0%**	**1.3%**	**21.1%**	**28.9%**	**48.7%**
Not Labeling Students	**77**	**13%**	**10.4%**	**19.4%**	**18.2%**	**39%**
Quality of Teaching	**77**	**0%**	**1.3%**	**9.1%**	**22.1%**	**67.5%**
Expectations	**76**	**0%**	**0%**	**10.5%**	**31.6%**	**57.9%**

Hattie (2009) found the following contributions to impact student achievement below the *zone of desired effects*: Teacher Effects ($d = 0.32$; *CLE* = 23%), Teacher Training ($d = 0.11$; *CLE* = 8%), and Teacher Subject Matter Knowledge ($d = 0.09$, CLE 6%). The majority of the participants' views did not align with Hattie's findings for these contributions. 100% of participants rated Teacher Subject Matter Knowledge as being Slightly Positive to Strongly Positive. 98.7% of participants rated Teacher Training Programs as being Slightly Positive to Strongly Positive. 97.4% of participants rated Teacher Training as being Slightly Positive to Strongly Positive. 90.9% of participants rated Teacher Effects as being Slightly Positive to Strongly Positive. (See Table 3 below).

Table 3: Contributions from the Teacher Below the Zone of Desired Effects

Contributions from the Teacher	N	Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Teacher Training Programs	**77**	**1.3%**	**0%**	**22.1%**	**24.7%**	**51.9%**
Teacher Effects	77	1.3%	7.8%	20.8%	29.9%	40.3%
Teacher Training	77	1.3%	1.3%	14.3%	26.0%	57.1%
Teacher Subject Matter Knowledge	**77**	**0%**	**0%**	**9.1%**	**18.2%**	**72.7%**

Overall, the majority of the participants rated each contribution from the teacher as having some level of positive influence on student academic achievement. While this resulted in their views aligning with Hattie's (2009) findings related to the contributions that impact student achievement within the *zone of desired effects*, it also resulted in a discrepancy between participants views and Hattie's findings regarding the contributions that impact student achievement below the *zone of desired effects.*

Contributions of the Curriculum

Between 81-87 of the participants completed each item within the contributions of the curriculum portion of the survey. Hattie (2009) found the following contributions to impact student achievement within the *zone of desired effects*: Vocabulary Programs (d = 0.67; *CLE* = 47%), Repeated Reading (d = 0.67; *CLE* = 47%), Phonics Instruction (d = 0.60; *CLE* = 43%), Comprehension Programs (d = 0.58; *CLE* = 41%), Visual-Perception (d = 0.55; *CLE* = 39%), Second/Third Chance (d = 0.50; *CLE* = 35%), Creativity Programs (d = 0.65; *CLE* = 47%), Tactile Stimulation Programs (d = 0.58; *CLE* = 41%), Outdoor/Adventure Programs (d = 0.52; *CLE* = 37%), Play Programs (d = 0.50; *CLE* = 35%), Writing Programs (d = 0.44; CLE = 31%), Science Programs (d = 0.40; *CLE* = 29%), Mathematics Programs (d = 0.45; CLE = 32%), and Social Skills Programs (d = 0.40; *CLE* = 27%).

The majority of the participants agreed with Hattie's (2009) findings for most of these contributions. Tactile Stimulation Programs (17.2%) and Play Programs (17.2%) were the only contribution areas that had a fair number of participants rating the effect as either negative or having no influence. All of the other programs were rated by 92.6% to 100% of the participants as being Slightly Positive to Strongly Positive.

Table 4: Contributions from the Curriculum Within the Zone of Desired Effects

Contributions from the Curriculum	**N**	**Negative**	**No Influence**	**Slightly Positive**	**Moderately Positive**	**Strongly Positive**
Reading Programs	**87**	**2.3%**	**1.2%**	**3.4%**	**31%**	**62.1%**
Vocabulary Programs	83	0%	0%	16.9%	31.3%	51.8%
Repeated Reading	82	0%	1.2%	24.4%	43.9%	30.5%
Phonics Instruction	83	0%	1.2%	10.8%	36.2%	51.8%
Comprehension Programs	83	1.2%	0%	10.8%	31.3%	56.6%
Visual-Perception	83	0%	4.8%	31.3%	38.6%	25.3%
Second/Third Chance	83	2.4%	3.6%	22.9%	28.9%	42.2%
Specific Curricula Programs	**81**	**0%**	**7.4%**	**28.4%**	**38.3%**	**25.9%**
Creativity Programs	83	2.4%	1.2%	19.2%	38.6%	38.6%
Outdoor/Adventure Programs	83	0%	6%	30.1%	43.4%	20.5%
Tactile Stimulation Programs	**87**	**4.6%**	**12.6%**	**24.2%**	**39.1%**	**19.5%**
Play Programs	**87**	**3.4%**	**13.8%**	**28.8%**	**19.5%**	**34.5%**
Writing Programs	**86**	**0%**	**1.2%**	**15.1%**	**34.9%**	**48.8%**
Science Programs	**87**	**1.2%**	**0%**	**10.3%**	**37.9%**	**50.6%**
Mathematics Programs	**86**	**4.7%**	**0%**	**9.3%**	**36%**	**50%**
Social Skills Programs	**87**	**2.3%**	**0%**	**16.1%**	**36.8%**	**44.8%**

Hattie (2009) found the following contributions to impact student achievement below the *zone of desired effects*: Exposure to Reading (d = 0.36; *CLE* = 25%), Sentence Combining (d = 0.15; *CLE* = 10%), Whole Language (d = 0.06; *CLE* = 4%), Bilingual Programs (d = 0.37; *CLE* = 26%), Extra-curricular Programs (d = 0.17; *CLE* =12%), Use of Calculators (d = 0.27; CLE = 19%), Integrated Curricula Programs (d = 0.39; CLE = 28%), Career Education Programs (d =

0.38; CLE = 27%), Drama/Arts Programs (*d* = 0.35; CLE = 25%), Values/Morals Education Programs (*d* = 0.24; CLE = 17%), and Perceptual-Motor Programs (*d* = 0.08; CLE = 6%).

The majority of the participants' views did not align with Hattie's (2009) findings for these contributions. Use of Calculators (26.5%), Bilingual Programs (18.1%) and Perceptual-Motor Programs (14.9%) were the only contribution areas that had a fair number of participants rating the effect as either negative or having no influence. All of the other programs were rated by 90.8% to 98.8% of the participants as being Slightly Positive to Strongly Positive (See Table 5 below).

Table 5: Contributions from the Curriculum Below the Zone of Desired Effects

Contributions from the Curriculum	**N**	**Negative**	**No Influence**	**Slightly Positive**	**Moderately Positive**	**Strongly Positive**
Reading Programs						
Exposure to Reading	83	0%	1.2%	6%	15.7%	77.1%
Sentence Combining	83	1.2%	7.2%	27.7%	41%	22.9%
Whole Language	83	4.8%	2.4%	12%	42.2%	38.6%
Specific Curricula Programs						
Bilingual Programs	83	4.8%	13.3%	24.1%	37.3%	20.5%
Extra-curricular Programs	83	1.2%	2.4%	25.3%	37.4%	33.7%
Mathematics Programs						
Use of Calculators	83	18.1%	8.4%	24.1%	41%	8.4%
Integrated Curricula Programs	**87**	**3.5%**	**1.1%**	**11.5%**	**28.7%**	**55.2%**
Career Education Programs	**87**	**1.2%**	**4.6%**	**21.8%**	**35.6%**	**36.8%**
Drama/Arts Programs	**87**	**0%**	**3.4%**	**19.5%**	**37.9%**	**39.1%**
Values/Morals Education Programs	**87**	**2.3%**	**6.9%**	**16.1%**	**37.9%**	**36.8%**
Perceptual-motor Programs	**87**	**2.3%**	**12.6%**	**33.3%**	**30%**	**21.8%**

Overall, the majority of the participants rated each contribution from the curriculum as having some level of positive influence on student academic achievement. While this resulted in their views aligning with Hattie's (2009) findings related to the contributions that impact student

achievement within the *zone of desired effects*, it also resulted in a discrepancy between participants views and Hattie's findings regarding the contributions that impact student achievement below the *zone of desired effects.*

Contributions of the Teaching Approaches

Between 70-76 of the participants completed each item within the contributions of the teaching approaches portion of the survey. Hattie (2009) found the following contributions to impact student achievement within the *zone of desired effects*: Concept Mapping (*d* = 0.57; *CLE* = 40%), Goals (*d* = 0.56; *CLE* = 40%), Behavioral Objectives/Advanced Organizers (*d* = 0.41; *CLE* = 29%), Mastery Learning (*d* = 0.58; *CLE* =41%), Worked Examples (*d* = 0.57; *CLE* = 40%), Keller's PSI (*d* = 0.53; *CLE* = 37%), Providing Formative Evaluation (*d* = 0.90; *CLE* = 64%), Feedback (*d* = 0.73; *CLE* = 52%), Questioning (*d* = 0.46; *CLE* = 32%), Spaced vs. Massed Practice (*d* = 0.71; *CLE* = N/A), Peer Tutoring (*d* = 0.55; *CLE* = 39%), Meta-cognitive Strategies (*d* = 0.69; *CLE* = 49%), Self-verbalization/Self-questioning (*d* = 0.64; *CLE* = 45%), Study Skills (*d* = 0.59; *CLE* = 41%), Matching Style of Learning (*d* = 0.41; *CLE* = 29%), Reciprocal Teaching (*d* = 0.74; *CLE* = 52%), Problem-Solving Teaching (*d* = 0.61; *CLE* = 43%), Teaching Strategies (*d* = 0.60; *CLE* = 42%), Cooperative vs. Individualistic Learning (*d* = 0.59; *CLE* = 42%), Direct Instruction (*d* = 0.59; *CLE* = 41%), Cooperative vs. Competitive Learning (*d* = 0.54; *CLE* = 39%), Cooperative Learning (*d* = 0.41; *CLE* = 29%), Comprehensive Interventions for Learning Disabled Students (*d* = 0.77; *CLE* = 54%), and Interactive Video Methods (*d* = 0.52; *CLE* = 36%).

The majority of the participants agreed with Hattie's (2009) findings for contributions. Keller's PSI (38.6%) was the only contribution area that had a fair number of participants rating the effect as either negative or having no influence. All of the other contribution areas were

rated by 85.5% to 99.1% of the participants as being Slightly Positive to Strongly Positive (See Table 6 below).

Table 6: Contributions from the Teaching Approaches Within the Zone of Desired Effects

Contributions from the Teaching Approaches	N	Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Strategies Emphasizing Learning Intentions	**76**	**1.3%**	**3.9%**	**30.4%**	**35.5%**	**28.9%**
Concept Mapping	72	0%	11.1%	30.6%	38.9%	19.4%
Goals	72	0%	1.4%	15.3%	31.9%	51.4%
Behavioral Objectives/Advanced Organizers	73	1.4%	11%	28.7%	32.9%	26%
Strategies Emphasizing Success Criteria	**76**	**0%**	**14.5%**	**27.6%**	**30.3%**	**27.6%**
Mastery Learning	71	1.4%	8.5%	23.9%	43.7%	22.5%
Worked Examples	71	1.4%	9.9%	26.7%	31%	31%
Keller's PSI	70	5.7%	32.9%	21.4%	27.1%	12.9%
Strategies Emphasizing Feedback	**76**	**2.6%**	**6.6%**	**26.3%**	**31.6%**	**32.9%**
Providing Formative Evaluation	73	5.5%	5.5%	37%	34.2%	17.8%
Feedback	73	1.5%	2.7%	21.9%	30.1%	43.8%
Questioning	74	0%	1.4%	20.2%	31.1%	47.3%
Strategies Emphasizing Student Perspectives in Learning	**75**	**1.3%**	**4%**	**32%**	**37.4%**	**25.3%**
Spaced vs. Massed Practice	72	2.8%	6.9%	36.1%	36.1%	18.1%
Peer Tutoring	72	5.6%	4.2%	26.4%	44.4%	19.4%
Strategies Emphasizing Student Meta-cognitive/Self-regulated Learning	**76**	**2.6%**	**7.9%**	**27.6%**	**38.2%**	**23.7%**
Meta-cognitive Strategies	72	0%	2.9%	19.4%	33.3%	44.4%
Self-verbalization/Self-questioning	72	1.4%	6.9%	26.4%	41.7%	23.6%
Study Skills	72	0%	8.3%	12.5%	36.1%	43.1%
Matching Style of Learning	71	4.2%	4.2%	32.5%	21.1%	38%

Implementations Emphasizing Teaching Strategies	75	2.7%	1.3%	26.7%	37.3%	32%
Reciprocal Teaching	72	2.8%	4.2%	22.1%	40.3%	30.6%
Problem-Solving Teaching	73	1.4%	1.4%	19.1%	32.9%	45.2%
Teaching Strategies	74	0%	1.4%	9.4%	29.7%	59.5%
Cooperative vs. Individualistic Learning	74	6.8%	4.1%	40.5%	31.1%	17.6%
Direct Instruction	74	2.7%	5.4%	17.6%	33.8%	40.5%
Cooperative vs. Competitive Learning	73	1.4%	5.5%	34.2%	32.9%	26%
Cooperative Learning	74	2.7%	4.1%	20.2%	44.6%	28.4%
Implementations that Emphasize School-wide Teaching Strategies	**76**	**3.9%**	**6.6%**	**26.3%**	**31.6%**	**31.6%**
Comprehensive Interventions for Learning Disabled Students	76	1.3%	0%	15.8%	36.8%	46.1%
Implementations Using Technology	**76**	**0%**	**3.9%**	**22.4%**	**35.5%**	**38.2%**
Interactive Video Methods	74	5.4%	5.4%	27%	35.2%	27%

Hattie (2009) found the following contributions to impact student achievement below the *zone of desired effects*: Learning Hierarchies ($d = 0.19$; *CLE* = 13%), Frequency or Effects of Testing ($d = 0.34$; *CLE* = 24%), Teaching Test Taking or Coaching ($d = 0.22$; *CLE* = 16%), Teacher Immediacy ($d = 0.16$; *CLE* = 8%), Time on Task ($d = 0.38$; *CLE* = 27%), Mentoring ($d = 0.15$; *CLE* = 11%), Individualized Instruction ($d = 0.23$; *CLE* = 16%), Aptitude-Treatment Interactions ($d = 0.19$; *CLE* = 14%), Student Control Over Learning ($d = 0.04$; *CLE* = 5%), Adjunct Aids ($d = 0.37$; *CLE* = 26%), Inductive Teaching ($d = 0.33$; *CLE* = 23%), Inquiry-based Teaching ($d = 0.31$; *CLE* = 22%), Competitive vs. Individualistic Learning ($d = 0.24$; *CLE* = 17%), Problem-based Learning ($d = 0.15$; *CLE* = 11%), Special College Programs ($d = 0.24$;

CLE = 17%), Comprehensive Teaching Reforms (*d* = 0.22; *CLE* = 15%), Co-teaching/Team Teaching (*d* = 0.19; *CLE* = 13%), Computer-assisted Instruction (*d* = 0.37; *CLE* = 27%), Simulations (*d* = 0.33; *CLE* = 23%), Programmed Instruction (*d* = 0.24; *CLE* = 17%), Visual/Audio-visual Methods (*d* = 0.22; *CLE* = 16%), Web-based Learning, Homework (*d* = 0.18; *CLE* = 12%), Home-school Programs (*d* = 0.16; *CLE* = 11%), and Distance Education (*d* = 0.09; *CLE* = 6%).

The majority of the participants' views did not align with Hattie's (2009) findings for these contributions. Frequency or Effects of Testing (41.1%), Teaching Test Taking and Coaching (23.2%), Competitive vs. Individualistic Learning (35.2%), Homework (25.7%), Home-School Programs (39.2%) and Distance Education (41.9%) were the only contribution areas that had a fair number of participants rating the effect as either negative or having no influence. All of the other contribution areas were rated by 82.4% to 98.6% of the participants as being Slightly Positive to Strongly Positive (See Table 7 below).

Table 7: Contributions from the Teaching Approaches Below the Zone of Desired Effects

Contributions from the Teaching Approaches	**N**	**Negative**	**No Influence**	**Slightly Positive**	**Moderately Positive**	**Strongly Positive**
Strategies Emphasizing Learning Intentions	**76**	**1.3%**	**3.9%**	**30.4%**	**35.5%**	**28.9%**
Learning Hierarchies	73	0%	11%	20.5%	26%	42.5%
Strategies Emphasizing Feedback	**76**	**2.6%**	**6.6%**	**26.3%**	**31.6%**	**32.9%**
Frequency or Effects of Testing	73	37%	4.1%	30.1%	17.8%	11%
Teaching Test Taking and Coaching	73	16.4%	6.8%	24.8%	30.1%	21.9%
Teacher Immediacy	74	2.7%	5.4%	24.3%	36.5%	31.1%

Strategies Emphasizing Student Perspectives in Learning	**75**	**1.3%**	**4%**	**32%**	**37.4%**	**25.3%**
Time on Task	72	0%	4.2%	18.0%	26.4%	51.4%
Mentoring	72	0%	1.4%	26.3%	41.7%	30.6%
Strategies Emphasizing Student Meta-cognitive/Self-regulated Learning	**76**	**2.6%**	**7.9%**	**27.6%**	**38.2%**	**23.7%**
Individualized Instruction	72	2.8%	4.2%	23.6%	33.3%	36.1%
Aptitude-Treatment Interactions	72	1.4%	11.1%	29.2%	31.9%	26.4%
Student Control Over Learning	72	5.6%	5.6%	34.7%	34.7%	19.4%
Implementations Emphasizing Teaching Strategies	75	2.7%	1.3%	26.7%	37.3%	32%
Adjunct Aids	74	0%	10.8%	36.5%	31.1%	21.6%
Inductive Teaching	74	1.4%	12.2%	24.2%	36.5%	25.7%
Inquiry-Based Teaching	74	2.7%	4.1%	16.2%	29.7%	47.3%
Competitive vs. Individualistic Learning	74	25.7%	9.5%	24.2%	33.8%	6.8%
Problem-Based Learning	73	1.4%	1.4%	16.4%	35.6%	45.2%
Implementations that Emphasize School-wide Teaching Strategies	**76**	**3.9%**	**6.6%**	**26.3%**	**31.6%**	**31.6%**
Special College Programs	76	2.6%	9.2%	34.2%	32.9%	21.1%
Comprehensive Teaching Reforms	76	9.2%	7.9%	29%	26.3%	27.6%
Co-teaching/Team Teaching	75	4%	9.3%	28%	28%	30.7%
Implementations Using Technology	**76**	**0%**	**3.9%**	**22.4%**	**35.5%**	**38.2%**
Computer-assisted Instruction	74	13.5%	4.1%	32.4%	32.4%	17.6%
Simulations	74	2.7%	5.4%	33.8%	31.1%	27%
Programmed Instruction	74	5.4%	9.5%	32.4%	36.5%	16.2%

Visual/Audio-visual Methods	74	0%	1.4%	21.6%	28.4%	48.6%
Web-based Learning	74	4.1%	5.4%	27%	35.1%	28.4%
Implementations Using Out of School Learning	**76**	**5.3%**	**9.2%**	**36.8%**	**27.6%**	**21.1%**
Homework	74	14.9%	10.8%	31.1%	24.3%	18.9%
Home-school Programs	74	31.1%	8.1%	28.4%	21.6%	10.8%
Distance Education	74	25.7%	16.2%	31.1%	18.9%	8.1%

Overall, the majority of the participants rated each contribution from the curriculum as having some level of positive influence on student academic achievement. While this resulted in their views aligning with Hattie's (2009) findings related to the contributions that impact student achievement within the *zone of desired effects*, it also resulted in a discrepancy between participants views and Hattie's findings regarding the contributions that impact student achievement below the *zone of desired effects.*

Contributions of the Child

Between 76-81 of the participants completed each item within the contributions of the child portion of the survey. Hattie (2009) found the following contributions to impact student achievement within the *zone of desired effects*: Self-Reported Grades (d = 1.44; *CLE* = 102%), Piagetian Programs (d = 0.1.28; *CLE* = 91%), Prior Achievement (d = 0.67; *CLE* = 48%), Motivation (d = 0.48; *CLE* = 34%); Concentration, Persistence, and Engagement (d = 0.48; *CLE* = 34%); Self-concept (d = 0.43; *CLE* = 30%); Reducing anxiety (d = 0.40; *CLE* = 28%), Pre-Term Birth Weight (d = 0.54; *CLE* = 14%), Early Interventions (d = 0.47; *CLE* = 33%) and Preschool Programs (d = 0.45; *CLE* = 32%). The majority of the participants agreed with Hattie's findings for these contributions, except for in regards to pre-term birth weight. Pre-Term Birth Weight (71%), Piagetian Programs (39.8%), and Self-Reported Grades (25.3%) were the

only contribution areas that had a fair number of participants rating the effect as either negative or having no influence. All of the other contribution areas were rated by 81.3% to 96.2% of the participants as being Slightly Positive to Strongly Positive (See Table 8 below).

Table 8: Contributions from the Child Within the Zone of Desired Effects

Contributions from the Child	**N**	**Negative**	**No Influence**	**Slightly Positive**	**Moderately Positive**	**Strongly Positive**
Background	**81**	**6.2%**	**11.1%**	**29.6%**	**27.2%**	**25.9%**
Self-reported grades	79	6.3%	19%	34.2%	27.8%	12.7%
Piagetian programs	78	2.6%	37.2%	37.2%	12.8%	10.2%
Prior Achievement	78	6.4%	5.1%	23.1%	34.6%	30.8%
Attitudes and Dispositions	**81**	**7.4%**	**1.2%**	**9.9%**	**23.5%**	**58%**
Motivation	80	3.7%	1.3%	1.3%	15%	78.7%
Concentration/ persistence/ engagement	80	2.5%	3.8%	6.2%	26.2%	61.3%
Self-concept	79	1.3%	3.8%	11.4%	31.6%	51.9%
Reducing Anxiety	79	0%	3.8%	15.2%	35.4%	45.6%
Physical Influences	**80**	**11.2%**	**7.5%**	**21.3%**	**27.5%**	**32.5%**
Pre-term birth weight	76	26.3%	44.7%	8%	10.5%	10.5%
Preschool Experiences	**81**	**0%**	**4.9%**	**28.4%**	**24.7%**	**42%**
Early Intervention	78	0%	5.1%	19.2%	28.2%	47.5%
Preschool Programs	78	0%	5.1%	25.6%	24.4%	44.9%

Hattie (2009) found the following contributions to impact student achievement below the *zone of desired effects*: Creativity ($d = 0.35$; *CLE* = 25%), Attitude to Mathematics and Science ($d = 0.36$; *CLE* = 26%), Personality Influences ($d = 0.19$; *CLE* = 14%), Drug Interventions ($d = 0.33$; *CLE* = 24%), Positive View of Ethnicity ($d = 0.32$; *CLE* = 23%), Exercise and Relaxation ($d = 0.28$; *CLE* = 20%), Illness ($d = 0.23$; *CLE* = 16%), Gender ($d = 0.12$; *CLE* = 9%); and Diet Interventions ($d = 0.12$; *CLE* = 8%). The majority of the participants' views contradicted Hattie's findings for most of these contributions, except for their views related to the contributions of illness and gender. Illness (63.6%), Gender (64.9%), and Diet (26.9%) were the only contribution areas that had a fair number of participants rating the effect as either negative or

having no influence. All of the other contribution areas were rated by 84.7% to 96.2% of the participants as being Slightly Positive to Strongly Positive (See Table 9 below).

Table 9: Contributions from the Child Below the Zone of Desired Effects

Contributions from the Child	N	Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Background	**81**	**6.2%**	**11.1%**	**29.6%**	**27.2%**	**25.9%**
Creativity	79	0%	3.8%	25.3%	29.1%	41.8%
Attitudes and Dispositions	**81**	**7.4%**	**1.2%**	**9.9%**	**23.5%**	**58%**
Attitude to Mathematics/Science	80	7.5%	3.8%	13.7%	33.8%	41.2%
Personality	80	1.3%	5%	18.7%	40%	35%
Physical Influences	**80**	**11.3%**	**7.5%**	**21.2%**	**27.5%**	**32.5%**
Drugs	78	5.1%	5.1%	28.2%	36%	25.6%
Positive view of Ethnicity	78	2.6%	12.8%	29.4%	23.1%	32.1%
Exercise/relaxation	78	2.6%	5.1%	18%	39.7%	34.6%
Illness	77	61%	2.6%	5.2%	15.6%	15.6%
Gender	77	3.9%	61%	14.3%	13%	7.8%
Diet	78	6.4%	20.5%	30.8%	28.2%	14.1%

Overall, the majority of the participants rated each contribution from the home, except for illness and gender, as having some level of positive influence on student academic achievement. While this resulted in their views aligning with Hattie's (2009) findings related to the contributions that impact student achievement within the *zone of desired effects*, it also resulted in a discrepancy between participants views and Hattie's findings regarding the contributions that impact student achievement below the *zone of desired effects.* However, the participants' views regarding illness and gender aligned with Hattie's findings.

Contributions of the Home

Between 81-83 of the participants completed each item within the contributions of the home portion of the survey. Hattie (2009) found the following contributions to impact student

achievement within the *zone of desired effects*: Socioeconomic Status (*d* = 0. 57; CLE = 40%), Home Environment (*d* = 0.57; *CLE* = 40%), and Parent Involvement (*d* = 0.51; *CLE* = 36%). The majority of the participants agreed with Hattie's findings for these contributions. Regarding socioeconomic status, 70.1% rated socioeconomic as having a slightly positive to strongly positive influence on student achievement. For parent involvement, 100% rated parent involvement as having a slightly positive to strongly positive influence on student achievement (See Table 10 below).

Table 10: Contributions from the Home Within the Zone of Desired Effects

Contributions from the Home	**N**	**Negative**	**No Influence**	**Slightly Positive**	**Moderately Positive**	**Strongly Positive**
Socioeconomic Status	**81**	**12.4%**	**2.5%**	**16%**	**29.6%**	**39.5%**
Home Environment	**83**	**3.6%**	**0%**	**4.8%**	**13.3%**	**78.3%**
Parental Involvement	82	0%	0%	2.4%	12.2%	85.4%

Hattie (2009) found the following contributions to impact student achievement below the *zone of desired effects*: Home Visiting (*d* = 0.29; *CLE* = 20%) and Family Structure (*d* = 0.17; CLE = 12%). He also found Television (*d* = -0.18; *CLE* = -12%) and Welfare Policies (*d* = -0.12; CLE = -8%) to not only be below the *zone of desired effects* but also negatively impact student academic achievement. The majority of the participants' views aligned with Hattie's findings for television, but their views contradicted Hattie's findings for home visiting, family structure, welfare policies. For home visiting, 30.5% rated home visiting as having a negative impact or no influence on student achievement, 69.5% rated as slightly positive to strongly positive impact on student achievement. Regarding television, 71.9% rated television as having a negative impact or no influence on student achievement, 28% rated as slightly positive to strongly positive impact on student achievement. For family structure, 3.6% rated family as having a negative impact or

no influence on student achievement, 96.4% rated as slightly positive to strongly positive impact on student achievement. Regarding welfare policies, 34.2% rated welfare policies as having a negative impact or no influence on student achievement, 65.8% rated as slightly positive to strongly positive impact on student achievement. (See Table 11 below).

Table 11: Contributions from the Home Below the Zone of Desired Effects

Contributions from the Home	**N**	**Negative**	**No Influence**	**Slightly Positive**	**Moderately Positive**	**Strongly Positive**
Home Environment						
Home Visiting	82	2.4%	28.1%	25.6%	26.8%	17.1%
Television	82	64.6%	7.3%	14.6%	6.2%	7.3%
Family Structure	**83**	**2.4%**	**1.2%**	**3.6%**	**18.1%**	**74.7%**
Welfare Policies	**82**	**23.2%**	**11%**	**15.9%**	**20.7%**	**29.2%**

Overall, the majority of the participants rated each contribution from the home, except for television, as having some level of positive influence on student academic achievement. While this resulted in their views aligning with Hattie's (2009) findings related to the contributions that impact student achievement within the *zone of desired effects*, it also resulted in a discrepancy between participants views and Hattie's findings regarding the contributions that impact student achievement below the *zone of desired effects* and those that negatively impact student academic achievement. However, the participants' views regarding television aligned with Hattie's findings.

Contributions of the School

Between 80-82 of the participants completed each item within the contributions of the school portion of the survey. Hattie (2009) found the following contributions to impact student achievement within the *zone of desired effects*: School Size (d = 0.43; *CLE* = 30%), Small-Group Learning (d = 0.49; *CLE* = 34%), Acceleration (d = 0.88; *CLE* = 62%), Group Cohesion (d =

0.53; *CLE* = 38%), Peer Influences (*d* = 0.53; *CLE* = 37%), and Classroom Management (*d* = 0.52; *CLE* = 37%). The majority of the participants agreed with Hattie's findings for these contributions. School Size (43.2%) was the only contribution area that had a fair number of participants rating the effect as either negative or having no influence. All of the other contribution areas were rated by 91.4% to 100% of the participants as being Slightly Positive to Strongly Positive (See Table 12 below).

Table 12: Contributions from the School Within the Zone of Desired Effects

Contributions from the School	**N**	**Negative**	**No Influence**	**Slightly Positive**	**Moderately Positive**	**Strongly Positive**
School Composition Effects	**82**	**3.7%**	**4.9%**	**20.7%**	**31.7%**	**39%**
School Size	81	14.8%	28.4%	16%	23.5%	17.3%
Classroom Composition Effects	**82**	**0%**	**0%**	**4.9%**	**32.9%**	**62.2%**
Small Group Learning	80	1.3%	0%	20%	33.7%	45%
School Curriculum Effects	**82**	**2.4%**	**2.4%**	**14.7%**	**41.5%**	**39%**
Acceleration	81	3.7%	3.7%	17.3%	45.7%	29.6%
Classroom Influences	**82**	**1.2%**	**0%**	**4.9%**	**35.4%**	**58.5%**
Group Cohesion	81	0%	0%	11.1%	16%	72.9%
Classroom Management	81	0%	0%	6.2%	17.3%	76.5%
Peer Influences	81	4.9%	0%	9.9%	30.9%	54.3%

Hattie found the following contributions to impact student achievement below the *zone of desired effects*: Finances (*d* = 0.23; *CLE* = 16%), Out-of-School Curriculum Experiences (*d* = 0.09; *CLE* = 6%), Leadership (*d* = 0.36; CLE = 25%), Mainstreaming (*d* = 0.28; *CLE* = 19%), Class Size (*d* = 0.21; *CLE* = 15%), Within-Class Grouping (*d* = 0.16; *CLE* = 11%), Ability Grouping (*d* = 0.12; *CLE* = 9%), Multi-grade/Multi-age Classes (*d* = 0.04; *CLE* = 3%), Open vs. Traditional (*d* = 0.01; *CLE* = 0%), single-sex classes, Enrichment (*d* = 0.39; *CLE* = 28%), Ability Grouping for Gifted Students (*d* = 0.30; *CLE* = 21%), and Decreasing Disruptive Behavior (*d* = 0.34; *CLE* = 24%). He also found Summer Vacation (*d* = -0.09; *CLE* = -6%),

Mobility (*d* = -0.34; *CLE* = -24%), and retention (*d* = -0.16; *CLE* = -11%) to not only be below the *zone of desired effects* but also negatively impact student academic achievement. Within the contributions from the school section, the types of schools were omitted from the survey completed by the participants. The majority of the participants' views aligned with Hattie's findings for summer vacation, mobility, and multi-grade/age classes, but their views contradicted Hattie's findings for most of the contributions of the school. Summer Vacation (51.8%), Mobility (71.6%), Multi-Grade/Multi-Age Classes (64.2%), Ability Grouping (21%), Open vs. Traditional (32%) and Retention (35.8%) were the only contribution areas that had a fair number of participants rating the effect as either negative or having no influence. All of the other contribution areas were rated by 85.2% to 100% of the participants as being Slightly Positive to Strongly Positive (See Table 13 below).

Table 13: Contributions from the School Below the Zone of Desired Effects

Contributions from the School	**N**	**Negative**	**No Influence**	**Slightly Positive**	**Moderately Positive**	**Strongly Positive**
Attributes of the Schools	**82**	**2.4%**	**1.2%**	**29.4%**	**34.1%**	**32.9%**
Finances	82	8.5%	3.7%	24.4%	34.1%	29.3%
School Composition Effects	**82**	**3.7%**	**4.9%**	**20.7%**	**31.7%**	**39%**
Principals/School Leaders	81	2.5%	0%	13.6%	35.8%	48.1%
Out of School Experiences	81	1.2%	2.5%	24.7%	43.2%	28.4%
Summer Vacation	81	35.8%	16%	17.3%	17.3%	13.6%
Mobility	81	67.9%	3.7%	3.7%	6.2%	18.5%
Classroom Composition Effects	**82**	**0%**	**0%**	**4.9%**	**32.9%**	**62.2%**
Mainstreaming	81	27.2%	3.7%	29.6%	29.6%	9.9%
Class Size	81	13.6%	0%	9.9%	7.4%	69.1%
Within-class grouping	81	13.6%	1.2%	37%	18.6%	29.6%
Ability Grouping	81	18.5%	2.5%	21%	35.8%	22.2%
Multi-grade/age classes	81	48.2%	16%	21%	11.1%	3.7%
Open vs. Traditional	81	16%	16%	29.6%	23.6%	14.8%
Retention	81	25.9%	9.9%	34.6%	9.9%	19.7%
School Curriculum Effects	**82**	**2.4%**	**2.4%**	**14.7%**	**41.5%**	**39%**
Enrichment	81	1.2%	0%	13.6%	43.2%	42%

Ability grouping for gifted students	81	6.2%	1.2%	22.2%	40.7%	29.7%
Classroom Influences	**82**	**1.2%**	**0%**	**4.9%**	**35.4%**	**58.5%**
Decreasing Disruptive Behavior	81	0%	0%	3.7%	16.1%	80.2%

Overall, the majority of the participants rated each contribution from the home, except for summer vacation, mobility, and multi-grade/age classes, as having some level of positive influence on student academic achievement. While this resulted in their views aligning with Hattie's (2009) findings related to the contributions that impact student achievement within the *zone of desired effects*, it also resulted in a discrepancy between participants' views and Hattie's findings regarding the contributions that impact student achievement below the *zone of desired effects* and those that negatively impact student academic achievement. However, the participants' views regarding summer vacation, mobility, and multi-grade/age classes aligned with Hattie's findings.

Categories of Contributions

Participants were asked to rank order the overall categories for each group of contributions. The overall categories that were ranked as the top two categories of contributions to have the greatest positive influence on student achievement were collapsed into one category. This was also done with the overall categories ranked as the bottom two categories, having the least influence or greatest negative impact on student achievement. The majority of the participants rated the contributions of the child and the contributions of the home as having the greatest positive impact on student achievement. This contradicts Hattie's (2009) findings, which found the contributions from the teacher and the contributions from the curriculum to have the greatest positive influence on student achievement. The majority of the participants rated the

contributions of the curriculum and the contributions of the school as having the least or greatest negative impact on student achievement. The participants' ratings of the contributions of the school are consistent with Hattie's findings. However, as previously mentioned Hattie found that the contributions of the curriculum to have on of the greatest positive influences on student achievement. Hattie found that the contributions of the school and the contributions of the home to have the least positive impact on student achievement (See Table 14 below).

Table 14: Rankings of the Categories of Contributions

	Total N	Ranked #5 or #6	Ranked #4	Ranked #3	Ranked #1 or #2
Contributions from the Teacher	**68**	**5.9%**	**25%**	**23.5%**	**45.6%**
Contributions from the Curriculum	**68**	**63.2%**	**19.1%**	**10.3%**	**7.4%**
Contributions from the Teaching Approaches	**68**	**38.2%**	**17.7%**	**23.5%**	**20.6%**
Contributions from the Child	**68**	**13.2%**	**7.4%**	**14.7%**	**64.7%**
Contributions from the Home	**68**	**20.6%**	**7.4%**	**14.7%**	**57.3%**
Contributions from the School	**68**	**58.8%**	**23.5%**	**13.3%**	**4.4%**

DISCUSSION

The purpose of this study was to gather information about what teachers perceive to be the factors that influence student achievement. Teachers have a significant opportunity to influence student achievement, thus, it is important for their perceptions to align with research findings. When teachers' perceptions align with the research findings, students may be educated in the most effective manner possible. A substantial amount of research analyzing student academic achievement has been conducted throughout the years. Hattie (2009) synthesized over 800 meta-analyses related to achievement in an effort for this information to be more easily disseminated throughout the public. While this knowledge is significant, there is no indication that it is recognized in the schools and classrooms. Hattie expressed concerns about the gap between scientific evidence and practice in the schools. Therefore, this study was a preliminary attempt to examine the legitimacy of Hattie's concern.

Participants in this study included teachers working with elementary through high school students. There was even distribution of the participants who teach each grade level, with most participants having obtained either a Bachelor's Degree or a Master's Degree. The majority of the participants were female, veteran teachers that provide regular education services in traditional public schools. The sample had a disproportionate number of participants in rural communities, with only a handful of nationally certified teachers.

Contributions from the Teacher

For the majority of the factors that Hattie (2009) determined to be within the *zone of desired effects*, most of the participants rated these factors as moderately to strongly positive in their influence on student achievement. Only one factor, Microteaching (37.7%), was rated by

the less than 50% of the participants as moderately to strongly positive in their influence of student achievement. Microteaching involves videotaping student-teachers teaching a small group of students, and then reviewing and discussing the recording. Not only did several participants identify microteaching as having no influence, 10.4% of the sample actually identified it as having a negative influence on student achievement.

For the all of the factors that Hattie (2009) determined to be below the *zone of desired effects*, the majority of the participants rated these factors as moderately to strongly positive in their influence of student achievement. Only two factors, Teacher Effects (7.8%) and Teacher Training (1.3%), were rated by any of the participants as having no influence on student achievement. Teacher Effects (1.3%) and Teacher Training (1.3%) were also the only factors rated by any of the participants as having a negative influence on student achievement.

This information shows that the majority of the participants' views align with Hattie's (2009) research with regard to most of the factors within the *zone of desired effects*. However, it is important to note that the participants' rated almost every factor as having a positive influence on student achievement, regardless of whether the factor truly fell within or below the *zone of desired effects* based on Hattie's research. This indicates that teachers may not correctly discern which factors truly influence student an achievement in a significantly positive manner.

Contributions from the Curriculum

For all of the factors that Hattie (2009) determined to be within the *zone of desired effects*, the majority of the participants rated these factors as moderately to strongly positive in their influence of student achievement. Only 0.9% to 13.8% of the participants rated any factor as having not influence on student achievement. Merely 1.1% to 4.6% of the participants rated any factor as having a negative influence on student achievement.

For the majority of the factors that Hattie (2009) determined to be below the *zone of desired effects*, the majority of the participants rated these factors as moderately to strongly positive in their influence on student achievement. Only 1.1% to 13.3% of the participants rated a factor as having no influence on student achievement. 1.1% to 18.1% of the participants rated a factor as having a negative influence on student achievement.

This information shows that the majority of the participants' views are congruent with Hattie's (2009) research with regard to most of the factors that influence student achievement within the *zone of desired effects,* but incongruent regarding the factors that influence student achievement below the *zone of desired effects*. Again, this may indicate that teachers do not correctly discern which factors truly influence student achievement in a significantly positive manner. They believe that all of the curriculum factors positively influence student achievement.

Contributions from the Teaching Approaches

For the majority of the factors that Hattie (2009) determined to be within the *zone of desired effects*, most of the participants rated these factors as moderately to strongly positive in their influence of student achievement. Only one factor, Keller's PSI (40%), was rated by less than 50% of the participants as moderately to strongly positive in its influence of student achievement. Keller' PSI (32.9%) was the only factor rated by a fair amount of the participants to have no influence on student achievement. All other factors were rated by 14.5% or less of the participants as having no influence on student achievement. None of the factors were rated by more than 6.8% of the participants as having a negative impact on student achievement.

For the majority of the factors that Hattie (2009) determined to be below the *zone of desired effects*, the majority of the participants rated these factors as moderately to strongly positive in their influence of student achievement. Five factors, Frequency or Effects of Testing

(28.8%), Competitive vs. Individualistic Learning (40.6%), Homework (43.2%), Home-School Programs (32.4%), and Distance Education (27%), were rated by less than 50% of the participants as moderately to strongly positive in their influence of student achievement. Only 0.9% to 16.2% of the participants rated a factor as having no influence on student achievement. Four factors were rated by a substantial portion of the participants as having a negative influence on student achievement: Frequency or Effects of Testing (37%), Competitive vs. Individualistic Learning (25.7%), Home-School Programs (31.1%), and Distance Education (25.7%).

Overall, this information shows that the majority of the participants' views are congruent with Hattie's (2009) research with regard to most of the factors that influence student achievement within the *zone of desired effects,* but incongruent regarding the factors that influence student achievement below the *zone of desired effects*. However, the participants' views regarding the factors that influence student achievement within the *zone of desired effects* were less congruent with Hattie's findings than they were when examining the contributions from the teacher and the curriculum. Again, this may indicate that teachers do not correctly discern which factors truly influence student achievement in a significantly positive manner. Conversely, the variation in the distribution of the ratings regarding some of the factors below the *zone of desired effects* shows that more teachers were uncertain about these factors than in contributions from the teacher and the curriculum.

Contributions from the Child

For most of the factors that Hattie (2009) determined to be within the *zone of desired effects*, the majority of the participants rated these factors as moderately to strongly positive in their influence of student achievement. However, less than 50% of the participants rated Self-Reported Grades (40.5%), Piagetian Programs (23.1%), and Pre-Term Birth Weight (21%) as

moderately to strongly positive in their influence of student achievement. These factors also received the highest rating for having no influence on student achievement: Self-Reported Grades (19%), Piagetian Programs (37.2%), and Pre-Term Birth Weight (44.7%). All of the other factors were rated by 5.1% or less of the participants as having no influence on student achievement. Pre-Term Birth Weight (26.3%) was the only factor rated by a substantial portion of the participants as having a negative influence on student achievement. The other factors were rated by 6.4% or less of the participants as having a negative impact on student achievement.

For the majority of the factors that Hattie determined to be below the *zone of desired effects*, the majority of the participants rated these factors as moderately to strongly positive in their influence of student achievement. Only three factors, Illness (31.2%), Gender (20.8%), and Diet (42.3%), were rated by less than 50% of the participants as moderately to strongly positive in their influence on student achievement. Gender (61%) and Diet (20.5%) were the only factors to be rated by a significant portion of the participants as having no influence on student achievement. Illness (61%) was the only factor to be rated by a substantial percentage of the participants as negatively influencing student achievement.

Overall, the information gathered in this portion of the study showed that the participants opinions were inconsistently congruent or incongruent with Hattie's (2009) findings regarding both the factors that influence student achievement within the *zone of desired effects* and the factors that influence student achievement below the *zone of desired effects*. The variation in the distribution of the ratings regarding several of the factors within the contributions from the child shows that more teachers were uncertain about these factors than in previously discussed categories of contributions.

Contributions from the Home

For all of the factors that Hattie (2009) determined to be within the *zone of desired effects*, the majority of the participants rated these factors as moderately to strongly positive in their influence of student achievement. Socioeconomic Status was the only factor to be rated as having no influence (2.5%) or a negative influence (12.3%) on student achievement.

For the factors that Hattie (2009) determined to be below the *zone of desired effects*, Family Structure was the only factory to be rated by the majority (92.8%) of the participants as moderately to strongly positive in its influence of student achievement. Home Visiting was rated by only 43.9% of the participants as moderately to strongly positive in its influence of student achievement. Home visiting was rated by 28.1% of the participants as having no influence, while only 1.2% rated Family Structure as having no influence on student achievement. Both, Home Visiting and Family Structure were rated by 2.4% of the participants as having a negative influence on student achievement.

For the factors that Hattie (2009) determined to be not only below the *zone of desired effects*, but also to have a negative influence on student achievement, the majority (64.6%) of the participants rated television as having a negative impact on student achievement. However, only 23.2% rated Welfare Policies as having a negative impact on student achievement. 49.9% of the participants rated Welfare Policies as having a moderately to strongly positive influence on student achievement. 7.3% to 11% of the participants rated Television and Welfare Policies as having no influence on student achievement.

Data collected from this section of the study, shows that the participants views aligned with Hattie's (2009) findings regarding the factors within the *zone of desired effects*, inconsistently aligned with his findings regarding the factors below the *zone of desired effects,* and inconsistently aligned with his findings regarding the factors that negatively influence

student achievement. Consistent with the findings regarding the previous categories of contributions, information in this category of contributions may indicate that teachers do not correctly discern which factors truly influence student achievement in a significantly positive manner, a significantly negatively manner, or do not have any significant influence.

Contributions from the School

For most of the factors that Hattie (2009) determined to be within the *zone of desired effects*, the majority of the participants rated these factors as moderately to strongly positive in their influence of student achievement. School size (40.8%) was the only factor to be rated by less than 50% of the participants as moderately to strongly positive in its influence of student achievement. This factor was also the only factor to be rated by a fair portion of the participants as having no influence (28.4%) or a negative influence (14.8%) on student achievement.

For the majority of the factors that Hattie determined to be below the *zone of desired effects*, the majority of the participants rated these factors as moderately to strongly positive in their influence of student achievement. Only four factors, Mainstreaming (39.5%), Within-Class Grouping (48.1%), Multi-Grade/Multi-Age Classes (14.8%), and Open vs. Traditional Classes (38.3%), were rated by less than 50% of the participants as moderately to strongly positive in their influence of student achievement. Multi-Grade/Multi-Age Classes (16%) and Open vs. Traditional Classes (16%) were the only factors to be rated by a substantial number of participants as having no influence on student achievement. Multi-Grade/Multi-Age Classes (48.1%) and Mainstreaming (27.2%) were the only factors to be rated by a significant number of participants as having a negative influence on student achievement.

For the factors that Hattie determined to be not only below the *zone of desired effects*, but also to have a negative influence on student achievement, a significant number of the participants

also rated these factors as having a negative influence on student achievement: Summer Vacation (35.8%), Mobility (67.9%), and Retention (25.9%). 3.7% to 16% of the participants rated these factors as having no influence. However, another substantial number of the participants rated these factors as having a moderately to strongly positive influence on student achievement: Summer Vacation (30.9%), Mobility (24.7%), and Retention (29.7%).

Information obtained from this portion of the study, shows that the participants views inconsistently aligned with Hattie's (2009) findings regarding the factors within the *zone of desired effects*, factors below the *zone of desired effects,* and factors that negatively influence student achievement. Congruent with the findings regarding the previous categories of contributions, information in this category of contributions may indicate that teachers do not correctly discern which factors truly influence student achievement in a significantly positive manner, a significantly negatively manner, or do not have any significant influence.

Categories Ranked as the Top 2 with Regard to Influence on Student Achievement

The contributions of the child (64.7%) and the contributions of the home (57.3%) were ranked by the participants as having the greatest positive influence on student achievement. These ratings are inconsistent with Hattie's (2009) finding, which stated that the contributions of the teacher and the contributions of the curriculum had the greatest positive influence on student achievement, while contributions of the home was shown to have the second least influence on student achievement. This may suggest that teachers tend to over-value the importance of child and home factors with regard to academic achievement, while they may under-value the importance of their own contributions as well as those of the curriculum.

Categories Ranked as the Bottom 2 with Regard to Influence on Student Achievement

The contribution of the curriculum (63.2%) and the contributions of the school (58.8%) were ranked by the participants as having the least or most negative influence on student achievement. The ratings of the contributions of the school are consistent with Hattie's (2009) finding, which stated that the contributions of the school had the least influence on student achievement. The contributions of the home had the second least influence on student achievement according to Hattie's findings. However, the ratings for the contributions of the curriculum are opposite of Hattie's findings, which placed contributions of the curriculum as the second greatest positive influence on student achievement. This may suggest that participants fail to recognize the importance of the curriculum that is offered within their school as it impacts student achievement. This is particularly concerning that the curriculum category was one in which participants identified all factors to be moderately or strongly related to academic achievement.

Practical Implications

The information gathered through this study suggests that teachers may not be aware of the current research findings regarding the factors that may impact student academic achievement. Results of this study suggested that teachers tend to evaluate most factors to impact student achievement in a positive direction.

One interesting finding was that only one participant was familiar with Hattie's (2009) work. This is surprising given that Times Educational Supplement (TES) has discussed Hattie's work for several years, calling him "possibly the world's most influential education academic" and having "the ear of governments everywhere." TES has called his work "teaching's Holy Grail" (Evans, 2014; Mansel, 2009). Hattie has also participated in several TED Talks (Fishwick, 2011; Meyrick, 2011). It would be expected that more educators, through continuing

professional development and readings, would have encountered Hattie's work on *Visible Learning*.

Teachers cannot be expected to use evidence-based practices and adjust the ways in which they instruct without access to and knowledge of current research findings related to student achievement. Therefore, research must be made readily available for teachers and written in a concise and practical manner taking into account the time constraints faced by most teachers. Professional development activities may need to focus on empirical research or integrating scientifically validated practice into the field. Otherwise, it may be hard to see these professionals accessing the high quality findings produced by educational researchers.

The data also indicated that the participants were inconsistent in their ability to discern between the effectiveness of the factors that influence student achievement. They tended to evaluate most things as having a positive impact on student achievement. Teachers need to be informed in how to evaluate the effectiveness of teaching approaches, classroom strategies, and interventions. As Hattie (2009) discussed in his book, the data may appear as if everything we do will make a positive impact, however it is important to consider the extent to which each approach is effective. If a student makes the same growth, as he or she would be expected to make on his or her own as a result of maturity, then the teaching approach, classroom strategy, or intervention is only minimally effective or completely ineffective. Therefore, a different strategy should be selected. It is necessary for teachers to be able to distinguish between levels of effectiveness for teaching approaches, classroom strategies, and interventions in order to provide student with the most effective learning environment. Teachers should act as scientists who reflect on their own practices and effectiveness in the classroom.

LIMITATIONS

Unfortunately, this study had a low response rate of only 40%. The attrition was relatively high with a rate of 36%. The survey was somewhat lengthy, which was necessary to gather the targeted information. However, this may have negatively impacted the response rate and attrition rate. Additionally, the majority of the participants were regular education teachers (79%), having ten or more years of experience (52.4%), teaching in traditional public schools (79%) and located in rural communities (79%). This may limit the generalization of results to teachers who provide other services, have less experience, or teach in a different type of school located in a different type of community.

Additionally, since this is a descriptive research study, the information gathered is limited to only describing the opinions of teachers. While this enables the information to be represented in a meaningful way, it does not allow for further conclusions to be drawn regarding other areas such as how teacher's developed their opinions, if their opinions have changed overtime, or how these opinions impact their teaching practices.

DIRECTION FOR FUTURE RESEARCH

This study could be improved in several ways. The research study could be broken into several sections. This would allow for more detailed information to be gathered within each factor examined. Adding an open-ended component to the survey, would allow teachers to more freely express their thoughts regarding each factor. Teachers could also be asked how they made their decision regarding the effectiveness of each factor, which would provide further insight into the thoughts considered by each teacher. Finally, including a scale that allowed for more complex analysis would also improve this study.

Future research should focus on helping teachers gain knowledge regarding efficacy research. This is essential in order to create the most effective learning environment for students. Methods for aiding teachers in the practical application and implementation of this information into their daily instructional practices should also be investigated. Researchers should consider things such as how do we make sure that teachers at all levels of experience have access to the most current educational outcomes research.

Because school districts have a history of impulsive practices in adopting new curricula every few years, it may also be important to examine ways to remove the negative bias many teachers may have adopted due to past experience with new techniques and instructional practices. It may also be prudent to have committees in schools that examine the evidence on different curricular materials. This will be crucial in order for teachers to "buy-in" to the research findings. It would also be beneficial to require companies to publish all efficacy studies with their products rather than only those that demonstrate positive outcomes to help ensure consumers are fully informed.

Due to the results of this study, the tendency for teachers to overly inflate the influence of home and child contributions should also be examined. This could be a diffusion of responsibility. Teachers may be biased, seeing themselves as less culpable for the poor educational outcomes of their students. They may have also formed these opinions regarding the influence of home and child contributions due to a small number of negative personal experiences related to these types of contributions. The teachers may have then over generalized these personal experiences to be improperly representative of all situations related to the contributions or the home and child.

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APPENDIX A

Contributions from the Teacher	Cohen's *d*	*CLE*
	0.49	***35%***
Teacher Training Programs		
Microteaching	0.88	62%
Teacher Effects	0.32	23%
Teacher Training	0.11	8%
Teacher Clarity	**0.75**	**53%**
Teacher-student Relationships	**0.72**	**51%**
Professional Development	**0.62**	**44%**
Not Labeling Students	**0.61**	**43%**
Quality of Teaching	**0.44**	**31%**
Expectations	**0.43**	**31%**
Teacher Subject Matter Knowledge	**0.09**	**6%**

APPENDIX B

Contributions from the Curriculum	**Cohen's *d***	***CLE***
	0.45	***32%***
Reading Programs		
Vocabulary Programs	0.67	47%
Repeated Reading	0.67	47%
Phonics Instruction	0.60	43%
Comprehension Programs	0.58	41%
Visual-Perception	0.55	39%
Second/Third Chance	0.50	35%
Exposure to Reading	0.36	25%
Sentence Combining	0.15	10%
Whole Language	0.06	4%
Specific Curricula Programs		
Creativity Programs	0.65	47%
Outdoor/Adventure Programs	0.52	37%
Bilingual Programs	0.37	26%
Extra-curricular Programs	0.17	12%
Tactile Stimulation Programs	**0.58**	**41%**
Play Programs	**0.50**	**35%**
Writing Programs	**0.44**	**31%**
Science Programs	**0.40**	**29%**
Mathematics Programs	**0.45**	**32%**
Use of Calculators	0.27	19%
Integrated Curricula Programs	**0.39**	**28%**
Social Skills Programs	**0.40**	**27%**
Career Interventions	**0.38**	**27%**
Drama/Arts Programs	**0.35**	**25%**
Values/Morals Education Programs	**0.24**	**17%**
Perceptual-motor Programs	**0.08**	**6%**

APPENDIX C

Contributions from the Teaching Approaches	Cohen's *d*	*CLE*
	0.42	***30%***
Strategies Emphasizing Learning Intentions		
Concept Mapping	0.57	40%
Goals	0.56	40%
Behavioral Objectives/Advanced Organizers	0.41	29%
Learning Hierarchies	0.19	13%
Strategies Emphasizing Success Criteria		
Mastery Learning	0.58	41%
Worked Examples	0.57	40%
Keller's PSI	0.53	37%
Strategies Emphasizing Feedback		
Providing Formative Evaluation	0.90	64%
Feedback	0.73	52%
Questioning	0.46	32%
Frequency or Effects of Testing	0.34	24%
Teaching Test Taking and Coaching	0.22	16%
Teacher Immediacy	0.16	8%
Strategies Emphasizing Student Perspectives in Learning		
Spaced vs. Massed Practice	0.71	-
Peer Tutoring	0.55	39%
Time on Task	0.38	27%
Mentoring	0.15	11%
Strategies Emphasizing Student Meta-cognitive/Self-regulated Learning		
Meta-cognitive Strategies	0.69	49%
Self-verbalization/Self-questioning	0.64	45%
Study Skills	0.59	41%
Matching Style of Learning	0.41	29%
Individualized Instruction	0.23	16%
Aptitude-Treatment Interactions	0.19	14%
Student Control Over Learning	0.04	5%
Implementations that Emphasize School-wide Teaching Strategies		
Comprehensive Interventions for Learning Disabled Students	0.77	54%
Special College Programs	0.24	17%
Comprehensive Teaching Reforms	0.22	15%
Co-teaching/Team Teaching	0.19	13%
Implementations Using Technology		
Interactive Video Methods	0.52	36%

Computer-assisted Instruction	0.37	27%
Simulations	0.33	23%
Programmed Instruction	0.24	17%
Visual/Audio-visual Methods	0.22	16%
Web-based Learning	0.18	12%
Implementations Using Out of School Learning		
Homework	0.29	21%
Home-school Programs	0.16	11%
Distance Education	0.09	6%

APPENDIX D

Contributions from the Child	**Cohen's *d***	***CLE***
	0.40	***29%***
Background		
Self-reported grades	1.44	102%
Piagetian programs	1.28	91%
Prior Achievement	0.67	48%
Creativity	0.35	25%
Attitudes and Dispositions		
Motivation	0.48	34%
Concentration/persistence/engagement	0.48	34%
Self-concept	0.43	30%
Reducing Anxiety	0.40	28%
Attitude to Mathematics/Science	0.36	26%
Personality	0.19	14%
Physical Influences		
Drugs	0.33	24%
Positive view of Ethnicity	0.32	23%
Exercise/relaxation	0.28	20%
Illness	0.23	16%
Pre-term birth weight	0.54	14%
Gender	0.12	9%
Diet	0.12	8%
Preschool Experiences		
Early Intervention	0.47	33%
Preschool Programs	0.45	32%

APPENDIX E

Contributions from the Home	**Cohen's *d***	***CLE***
	0.31	***22%***
Socioeconomic Status	**0.57**	**40%**
Home Environment	**0.57**	**40%**
Parental Involvement	0.51	36%
Home Visiting	0.29	20%
Television	-.018	-12%
Family Structure	**0.17**	**12%**
Welfare Policies	**-0.12**	**-8%**

APPENDIX F

Contributions from the School	Cohen's *d*	*CLE*
	0.23	***16%***
Attributes of the Schools		
Finances	0.23	16%
Types of School		
Desegregation	0.28	20%
Religious Schools	0.23	16%
Summer Schools	0.23	16%
Charter Schools	0.20	14%
College halls of residence	0.05	3%
School Composition Effects		
School Size	0.43	30%
Principals/School Leaders	0.36	25%
Out of School Experiences	0.09	6%
Summer Vacation	-0.09	-6%
Mobility	-0.34	-24%
Classroom Composition Effects		
Small Group Learning	0.49	34%
Mainstreaming	0.28	19%
Class Size	0.21	15%
Within-class grouping	0.16	11%
Ability Grouping	0.12	9%
Multi-grade/age classes	0.04	3%
Open vs. Traditional	0.01	0%
Retention	-0.16	-11%
School Curriculum Effects		
Acceleration	0.88	62%
Enrichment	0.39	28%
Ability grouping for gifted students	0.30	21%
Classroom Influences		
Classroom Cohesion	0.53	38%
Classroom Management	0.52	37%
Peer Influences	0.53	37%
Decreasing Disruptive Behavior	0.34	24%

APPENDIX G

Influences on Student Achievement
The following survey will ask you various questions about your school environment and your views regarding the factors that may influence student academic achievement. Your participation is strictly voluntary and you may stop at any time. Your responses are anonymous and will be used to gain a better understanding the perceptions of teachers regarding the factors that may influence student academic achievement. If you have questions about this survey or the results obtained, please contact school psychology graduate student Erica Pollock (enpollock@email.wcu.edu) or Dr. Candace Boan-Lenzo (cboan@email.wcu.edu) of Western Carolina University. By clicking continue, you are consenting to participate in this study.

Select your sex:

- ❍ Male
- ❍ Female

How many years of experience in teaching do you have?

- ❍ 0-3
- ❍ 4-6
- ❍ 6-9
- ❍ 10+

What grades do you teach? (Check all that apply)

- ☐ PK-2
- ☐ 3-5
- ☐ 6-8
- ☐ 9-12

What type of educational services do you provided?

- ❍ Regular Education
- ❍ Special Education
- ❍ Specialized Instructional Program (e.g., Title I, Gifted, etc...)

What type of school do you teach in?

- ❍ Traditional Public
- ❍ Charter
- ❍ Private
- ❍ Religious
- ❍ Other _____

What is the highest degree you have completed?

- ❍ High School Diploma/GED
- ❍ Associate's Degree
- ❍ Bachelor's Degree
- ❍ Master's Degree
- ❍ Specialist Degree
- ❍ Doctorate Degree
- ❍ Other: _____

What type of community is your school located in:

- ❍ Urban
- ❍ Suburban
- ❍ Rural

Are you a Nationally Certified Teacher?

- ❍ Yes
- ❍ No

Contribution of the Curriculum: Please rate the influence each type of curriculum programs has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Career Education Programs (programs that involve activities and experiences designed to increase knowledge of occupations, training paths, job-search skills and decision-making strategies that include the integration of work, family, leisure, and community roles)	¢	¢	¢	¢	¢	¢	¢
Drama/Arts Programs(programs designed to teach students to	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
appreciate the arts through participating in theatrical performances or creating works of art)							
Integrated Curricula Programs (programs which focus on integrating lessons to promote students making connections across subjects)	¢	¢	¢	¢	¢	¢	¢
Mathematics Programs (programs designed teach students foundational and higher level concepts of computation and operations)	¢	¢	¢	¢	¢	¢	¢
Perceptual Motor Programs (programs that include teaching in visual and figure and ground discrimination, visual motor abilities, visual spatial perception, and balance and body awareness)	¢	¢	¢	¢	¢	¢	¢
Play Programs (programs that focus on allowing children to learn through the act	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
of playing)							
Reading Programs (programs that teach students reading abilities)	¢	¢	¢	¢	¢	¢	¢
Science Programs (teach students scientific facts, theories, applications, and analytic and processing skills)	¢	¢	¢	¢	¢	¢	¢
Social Skills Programs (programs designed to teach students social appropriateness, social problem solving, self-control, and social perspective training)	¢	¢	¢	¢	¢	¢	¢
Specific Curriculum Programs	¢	¢	¢	¢	¢	¢	¢
Tactile Stimulation Programs (programs that use sensory enrichment or stimulation to encourage development)	¢	¢	¢	¢	¢	¢	¢
Values and Moral Education Programs (programs that provide character education)	¢	¢	¢	¢	¢	¢	¢
Writing Programs	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
(programs designed to teach students how to plan, draft, revise and edit compositions)							

Reading Programs: Please rate the influence each reading program has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Comprehension Programs(programs designed to teach students how to identify and understand the information communicated to them through written text)	¢	¢	¢	¢	¢	¢	¢
Exposure to Reading(including parents reading with their children, teachers reading to their students, and volunteers reading to students)	¢	¢	¢	¢	¢	¢	¢
Phonics Instruction(teaches students the alphabetic code of letters and letter sounds and how to apply this code to read words)	¢	¢	¢	¢	¢	¢	¢
Repeated Reading (consists of	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
re-reading a short and meaningful passage until satisfactory level of fluency is reached)							
Second/Third Chance(programs design to teach students whose reading ability is below grade level the reading skills needed to reach the appropriate grade level)	¢	¢	¢	¢	¢	¢	¢
Sentence Combining (an instructional strategy that requires students to combine one or more sentences into one compound, complex, or compound-complex sentence)	¢	¢	¢	¢	¢	¢	¢
Visual-Perception Programs (programs designed to teach student how to organize and interpret letter on a page)	¢	¢	¢	¢	¢	¢	¢
Vocabulary Programs(programs designed to teach students the meaning of words)	¢	¢	¢	¢	¢	¢	¢
Whole Language (program	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
s using the concept of gathering the meaning of words from the words around them when presented in a certain context)							

Specific Curricula Programs: Please rate the influence each curriculum program has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Postive	Moderately Positive	Strongly Positive
Creativity Programs(programs that focus on training, practicing, and encouragement to use creative skills to foster creative thinking)	¢	¢	¢	¢	¢	¢	¢
Bilingual Programs (where two languages are used in instruction)	¢	¢	¢	¢	¢	¢	¢
Extra-Curricular Programs(programs not affiliated with educational school programs)	¢	¢	¢	¢	¢	¢	¢
Outdoor/Adventure Programs (these programs teach ecology and survival principals)	¢	¢	¢	¢	¢	¢	¢

Use of Calculators: Please rate the influence the use of calculators has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
The Use of Calculators	¢	¢	¢	¢	¢	¢	¢

Contributions from the Home: Please rate the influence each contribution from the home has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Family Structure(characteristics of the students' family structure)	¢	¢	¢	¢	¢	¢	¢
Home Environment(including home visiting, parental involvement in learning, television)	¢	¢	¢	¢	¢	¢	¢
Socioeconomic Status	¢	¢	¢	¢	¢	¢	¢
Welfare Policies (whether a student's family receives welfare or not)	¢	¢	¢	¢	¢	¢	¢

Home Environment: Please rate the influence each attribute of the home environment has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Home Visiting (involves teachers or school personnel visiting the home of students)	¢	¢	¢	¢	¢	¢	¢
Parental Involvement in Learning (refers to	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
the involvement of parents in the process of educating their child)							
Television (students watching the television)	¢	¢	¢	¢	¢	¢	¢

Contributions from the School: Please rate the influence each contribution from the school has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Postive	Moderately Positive	Strongly Positive
Attributes of the Schools(including school finances and the type of school)	¢	¢	¢	¢	¢	¢	¢
Classroom Compositional Effects (including small-group learning, mainstreaming, class size, within-class grouping, ability grouping, multi-grade/multi-age classes, open vs. traditional, retention, and single-sex classes)	¢	¢	¢	¢	¢	¢	¢
Classroom Influences(includes group cohesion, peer influences, classroom management, and decreasing	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Postive	Moderately Positive	Strongly Positive
disruptive behavior)							
Leadership (the instructional and transformational leadership of the principals and other leaders of a school)	¢	¢	¢	¢	¢	¢	¢
School Compositional Effects (school size, out-of-school curriculum experiences, summer vacation, and mobility)	¢	¢	¢	¢	¢	¢	¢
School Curriculum Effects(acceleration, enrichment, and ability grouping for gifted students)	¢	¢	¢	¢	¢	¢	¢

Attributes of the School: Please rate the influence finances have on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Finances	¢	¢	¢	¢	¢	¢	¢

Classroom Compositional Effects: Please rate the influence each classroom compositional effect has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Ability Grouping (the assignment of students to classes	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
based on their abilities)							
Class Size (the number of students in a given class)	¢	¢	¢	¢	¢	¢	¢
Mainstreaming (refers to placing students with learning disabilities in regular education classrooms to provide the least restrictive environment for the students)	¢	¢	¢	¢	¢	¢	¢
Multi-grade/Multi-age Classes (classes with students of multiple different grades and ages in the same class)	¢	¢	¢	¢	¢	¢	¢
Open vs. Traditional (refers to an individualized and flexible form of instruction using manipulative materials rather than the traditionally structured form of instruction)	¢	¢	¢	¢	¢	¢	¢
Retention (the practice of not promoting students up a grade level in school)	¢	¢	¢	¢	¢	¢	¢
Single-Sex Classes(classes composed of student of single sex; i.e.,	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
classes of only male students, classes of only female students)							
Small-Group Learning(where students are assigned to work in a small group to complete a task)	¢	¢	¢	¢	¢	¢	¢
Within-Class Grouping(involves teachers placing students into groups within the class based on their abilities)	¢	¢	¢	¢	¢	¢	¢

Classroom Influences: Please rate the influence each classroom influence has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Classroom Management(the strategies a teacher uses to maintain a classroom environment conducive to learning)	¢	¢	¢	¢	¢	¢	¢
Decreasing Disruptive Behavior (decreasing disruptive student behavior in the classroom)	¢	¢	¢	¢	¢	¢	¢
Group Cohesion (the sense	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
that all (teachers and students) are working towards positive learning gains)							
Peer Influences (refer to how a student's peers may influence the students' academic performance)	¢	¢	¢	¢	¢	¢	¢

School Compositional Effects: Please rate the influence each school compositional effect has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Mobility (how frequently students' change schools)	¢	¢	¢	¢	¢	¢	¢
Out-of-School Curriculum Experiences (students' educational experiences outside of school)	¢	¢	¢	¢	¢	¢	¢
School Size (the number of students attending the school)	¢	¢	¢	¢	¢	¢	¢
Summer Vacation (the time in which students do not attend school in the summer months)	¢	¢	¢	¢	¢	¢	¢

School Curriculum Effects : Please rate the influence each school curriculum effect has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Ability Grouping for Gifted Students (the practice of assigning students to classes based on their giftedness in order to provide them with a more challenging curriculum)	¢	¢	¢	¢	¢	¢	¢
Acceleration (a program designed to allow student to accelerate through the curriculum in order to work on tasks that match their abilities)	¢	¢	¢	¢	¢	¢	¢
Enrichment (activities meant to broaden the educational lives of some group of students)	¢	¢	¢	¢	¢	¢	¢

Contributions from the Student: Please rate the influence each contribution from the student has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Positive	No Influence	Slightly Postive	Moderately Positive	Strongly Positive
Attitudes and Dispositions (includes motivation; concentration, persistence, and engagement; self-concept; reducing anxiety; attitude to mathematics and science; and personality	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Positive	No Influence	Slightly Postive	Moderately Positive	Strongly Positive
influences)							
Background Information (includes self-reported grades, Piagetian programs, prior achievement, creativity, and lack of academic success)	¢	¢	¢	¢	¢	¢	¢
Physical Influences (including drug interventions; positive view of ethnicity; exercise and relaxation; illness; pre-term birth weight; gender; and diet interventions)	¢	¢	¢	¢	¢	¢	¢
Preschool Experiences (includes early interventions and preschool programs)	¢	¢	¢	¢	¢	¢	¢

Attitudes and Dispositions: Please rate the influence each attitude and disposition has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Postive	Moderately Positive	Strongly Positive
Attitude to Mathematics and Science (students' attitudes to the educational subjects of mathematics and science)	¢	¢	¢	¢	¢	¢	¢
Concentration, Persistence, and	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Postive	Moderately Positive	Strongly Positive
Engagement (the concentration, persistence, and engagement students' of student when completing their educational careers)							
Motivation (a student's desire to complete assignments and achieve academic goals)	¢	¢	¢	¢	¢	¢	¢
Personality Influences (the personalities of the students)	¢	¢	¢	¢	¢	¢	¢
Reducing Anxiety (reducing the students' anxiety in the school setting)	¢	¢	¢	¢	¢	¢	¢
Self-Concept (the students' perceptions of their own abilities and attributes)	¢	¢	¢	¢	¢	¢	¢

Background Information: Please rate the influence each aspect of the student's background has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Creativity (the creativity a student brings to his or her educational career)	¢	¢	¢	¢	¢	¢	¢
Lack of Academic Success (a student's lack of	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
success in their prior educational experiences)							
Piagetian Programs (programs in which the type of instruction is adapted to the Piagetian stage of the students)	¢	¢	¢	¢	¢	¢	¢
Prior Achievement (students' prior academic achievement throughout their educational careers)	¢	¢	¢	¢	¢	¢	¢
Self-Reported Grades (students' estimates of their own performance)	¢	¢	¢	¢	¢	¢	¢

Physical Influences: Please rate the influence each physical attribute has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Postive
Diet Interventions (dietary alterations aimed at improving student achievement)	¢	¢	¢	¢	¢	¢	¢
Drug Interventions (the use of medications prescribed to students to manage the behavioral and	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Postive
attentions problems associated with disorders such as ADHD)							
Exercise and Relaxation(student participation in physical exercise and relaxation techniques)	¢	¢	¢	¢	¢	¢	¢
Gender (the anatomical sex of students)	¢	¢	¢	¢	¢	¢	¢
Illness (chronic illnesses of students)	¢	¢	¢	¢	¢	¢	¢
Positive View of Ethnicity(students' having a positive view regarding their own ethnicity)	¢	¢	¢	¢	¢	¢	¢
Pre-Term Birth Weight (the birth weight of students who were born premature)	¢	¢	¢	¢	¢	¢	¢

Preschool Experiences: Please rate the influence each preschool experience has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Early Interventions (the interventions implemented with preschoolers)	¢	¢	¢	¢	¢	¢	¢
Preschool Programs (the participation or	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
enrollment of students in preschool programs)							

Contribution from the Teacher: Please rate the influence each contribution from the teacher has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Expectations (the expectations teachers' have regarding student ability and skills)	¢	¢	¢	¢	¢	¢	¢
Not Labeling Students(refers to the labeling of mentally disabled and non-mentally disabled students)	¢	¢	¢	¢	¢	¢	¢
Professional Development(the continuation of learning related to current one's occupation)	¢	¢	¢	¢	¢	¢	¢
Quality of Teaching (the quality of teaching as perceived by the students)	¢	¢	¢	¢	¢	¢	¢
Teacher Clarity (the teacher clearly communicating the intentions of the lessons and the notions of what success means for these intentions)	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Teacher-Student Relationships (the relationships between the teachers and the students)	¢	¢	¢	¢	¢	¢	¢
Teacher Subject Matter Knowledge (the teachers' knowledge about the subject they teach)	¢	¢	¢	¢	¢	¢	¢
Teacher Training Programs(include micro-teaching, teacher effects, and teacher training)	¢	¢	¢	¢	¢	¢	¢

Teacher Training Programs: Please rate the influence each aspect of teacher training programs has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Microteaching (a practice where student-teachers are videotaped teaching a small group of students, and then the recording is reviewed and discussed)	¢	¢	¢	¢	¢	¢	¢
Teacher Effects(personality characteristics of teachers)	¢	¢	¢	¢	¢	¢	¢
Teacher Training (the education of the teacher)	¢	¢	¢	¢	¢	¢	¢

Contributions from the Teaching Approaches: Please rate the influence each contribution from the teaching approaches has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Postiive	Moderately Positive	Strongly Positive
Implementations That Emphasize School-wide Teaching Strategies(includes comprehensive interventions for learning disabled students, special college programs, comprehensive teaching reforms, and co-teaching/team teaching)	¢	¢	¢	¢	¢	¢	¢
Implementations Emphasizing Teaching Strategies (includes reciprocal teaching, problem-solving teaching, teaching strategies, cooperative vs. individualistic learning, direct instruction, cooperative vs. competitive learning, cooperative learning, adjunct aids, inductive teaching, inquiry-based teaching, competitive vs. individualistic learning, and problem-based learning)	¢	¢	¢	¢	¢	¢	¢
Implementations	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Postiive	Moderately Positive	Strongly Positive
Using Out of School Learning(includes homework, home-school programs, and distance education)							
Implementations Using Technology (includes interactive video methods, computer-assisted instruction, simulations, programmed instruction, visual/audio-visual methods, and web-based learning)	¢	¢	¢	¢	¢	¢	¢
Strategies Emphasizing Feedback (includes providing formative evaluation of programs, feedback, questioning, frequent testing/effects of testing, teaching test taking and coaching, and teacher immediacy)	¢	¢	¢	¢	¢	¢	¢
Strategies Emphasizing Learning Intentions(includes goals, concept mapping, behavioral objectives and advance organizers, and learning hierarchies)	¢	¢	¢	¢	¢	¢	¢
Strategies	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Postiive	Moderately Positive	Strongly Positive
Emphasizing Student Meta-Cognitive and Self-Regulated Learning(includes meta-cognitive strategies, self-verbalization and self-questioning, study skills, matching style of learning, individualized instruction, aptitude-treatment interactions, and student control over learning)							
Strategies Emphasizing Student Perspectives in Learning (includes spaced vs. massed practice, peer tutoring, time on task, and mentoring)	¢	¢	¢	¢	¢	¢	¢
Strategies Emphasizing Success Criteria (includes mastery learning, worked examples, and Keller's Personalized System of Instruction)	¢	¢	¢	¢	¢	¢	¢

Implementations That Emphasize School-wide Teaching Strategies: Please rate the influence each implementation has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Comprehensive Interventions for Learning Disabled Students(interventions designed to aid learning disabled students in their learning)	¢	¢	¢	¢	¢	¢	¢
Comprehensive Teaching Reforms (reforms aimed at improving teaching)	¢	¢	¢	¢	¢	¢	¢
Co-teaching/Team teaching(two or more teachers working together to deliver instruction)	¢	¢	¢	¢	¢	¢	¢
Special College Programs(college remediation programs)	¢	¢	¢	¢	¢	¢	¢

Implementations Emphasizing Teaching Strategies: Please rate the influence each implementation has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strong Positively
Adjunct Aids (instructional interventions inserted in textbooks in view of supporting learners to process the information)	¢	¢	¢	¢	¢	¢	¢
Competitive vs. Individualistic Learning(students	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positively
competing against each other when completing tasks rather than students simply completely tasks individually)							
Cooperative Learning(students working together to complete tasks)	¢	¢	¢	¢	¢	¢	¢
Cooperative vs. Competitive Learning (the method of students working together on a task rather than the method of students competing against each other when completing a task)	¢	¢	¢	¢	¢	¢	¢
Cooperative vs. Individualistic Learning (the method of student working together to complete task rather than the method of students completing tasks individually)	¢	¢	¢	¢	¢	¢	¢
Direct Instruction (the teacher setting learning intentions and success criteria and making them clear	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strong Positively
to students, demonstrating the intentions and success criteria, evaluating the students understanding, and tying the information together by retelling it in a manner of closure)							
Inductive Teaching(teaching specific information and then generalizing that information)	¢	¢	¢	¢	¢	¢	¢
Inquiry-Based Teaching(involves developing challenging situations in which students are asked to observe and question phenomena, pose explanations, conduct experiments, analyze data, draw conclusion, and build models)	¢	¢	¢	¢	¢	¢	¢
Problem-Based Learning (a teaching method where authentic problems are used to promote the acquisition of required	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strong Positively
knowledge and problem solving skills)							
Problem-Solving Teaching(the act of defining or determining the cause the problem or identifying, prioritizing, and selecting alternatives for a solution or using multiple perspectives to uncover the issues related to a particular problem, designing an intervention plan, and then evaluating the out come)	¢	¢	¢	¢	¢	¢	¢
Reciprocal Teaching (an instructional method in which students are taught to use cognitive strategies to promote learning)	¢	¢	¢	¢	¢	¢	¢
Teaching Strategies (the different methods of teaching that are used by teachers)	¢	¢	¢	¢	¢	¢	¢

Implementations Using Out of School Learning: Please rate the influence each implementation has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Distance Education(involves students receiving instruction from the teacher via some form of media and the student completing assignments outside of the standard school setting)	¢	¢	¢	¢	¢	¢	¢
Homework (the practice of instruction learned in school completed in the home setting)	¢	¢	¢	¢	¢	¢	¢
Home-School Programs(Programs involving the use of technology to build connections between the home and school in the students learning. These programs include the use of laptops, desktops, and software used in both the home and school settings.)	¢	¢	¢	¢	¢	¢	¢

Implementations Using Technology: Please rate the influence each implementation has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Computer-Assisted Instruction (the use of computers to assist in the instruction of students)	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Interactive Video Methods(the use of a combination of computer-assisted instruction and video technology as an instructional media for teaching)	¢	¢	¢	¢	¢	¢	¢
Programmed Instruction(presenting new subject matter to students in graded sequence of controlled steps)	¢	¢	¢	¢	¢	¢	¢
Simulations(representations of actual scenarios and outcomes)	¢	¢	¢	¢	¢	¢	¢
Visual/Audio-visual Methods (using variety of visual and audio media as part of classroom instruction)	¢	¢	¢	¢	¢	¢	¢
Web-Based Learning (the use of the world wide web in instruction)	¢	¢	¢	¢	¢	¢	¢

Strategies Emphasizing Feedback: Please rate the influence each strategy has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Feedback (both feedback that teachers provide to students and feedback that teachers receive from	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
their students)							
Frequent Testing/Effects of Testing (how often tests are given to measure student achievement and the effects of testing on student achievement)	¢	¢	¢	¢	¢	¢	¢
Providing Formative Evaluation of Programs(providing teachers information about how well they are doing in achieving the learning intentions they have set for their students so that the teachers can adapt their teaching as needed)	¢	¢	¢	¢	¢	¢	¢
Questioning (teachers asking their students questions)	¢	¢	¢	¢	¢	¢	¢
Teaching Test Taking and Coaching (test preparation activities carried out in order to improve test scores)	¢	¢	¢	¢	¢	¢	¢
Teacher Immediacy (the teacher's immediacy and closeness of responses to the students)	¢	¢	¢	¢	¢	¢	¢

Strategies Emphasizing Learning Intentions: Please rate the influence each strategy has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Behavioral Objectives and Advance Organizers(Behavioral objectives refer to statements of abilities that student should have as a result of instruction. Advance organizers aid students in organizing and interpret new forthcoming instruction by linking old information with new information.)	¢	¢	¢	¢	¢	¢	¢
Concept Mapping (the development of graphical representations of the conceptual structure of the content to be learnt)	¢	¢	¢	¢	¢	¢	¢
Learning Hierarchies(learning structures where the first skills taught support future learning)	¢	¢	¢	¢	¢	¢	¢
Goals (the setting of appropriately challenging goals for students)	¢	¢	¢	¢	¢	¢	¢

Strategies Emphasizing Student Meta-Cognitive and Self-Regulated Learning: Please rate the influence each strategy has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Aptitude-Treatment Interactions (the altering of instruction based on the type of student)	¢	¢	¢	¢	¢	¢	¢
Individualized Instruction(the adaption of instruction based on individual student interests and past experiences)	¢	¢	¢	¢	¢	¢	¢
Matching Style of Learning(aligning teaching practices with the dominant style of learning)	¢	¢	¢	¢	¢	¢	¢
Meta-cognitive Strategies(higher-order thinking strategies)	¢	¢	¢	¢	¢	¢	¢
Self-verbalization and Self-questioning (a form of self-regulation)	¢	¢	¢	¢	¢	¢	¢
Student Control Over Learning (the amount of choice and control a student has over his or her learning)	¢	¢	¢	¢	¢	¢	¢
Study Skills (programs to improve student	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
learning using interventions outside of the prescribed teacher lessons)							

Strategies Emphasizing Student Perspectives in Learning: Please rate the influence each strategy has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Mentoring (a form of tutoring involving an older individual providing tutoring to a younger individual)	¢	¢	¢	¢	¢	¢	¢
Peer Tutoring (tutoring that students receive from their peers)	¢	¢	¢	¢	¢	¢	¢
Spaced vs. Massed Practice (practice of a task that completed at spaced intervals rather than one lengthy interval)	¢	¢	¢	¢	¢	¢	¢
Time on Task (the time that a student is engaged in completing a task)	¢	¢	¢	¢	¢	¢	¢

Strategies Emphasizing Success Criteria: Please rate the influence each strategy has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Keller's	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Personalized System of Instruction (a form of programmed instruction that employs a highly structured, student-centered approach to course design that emphasizes self-pacing and mastery)							
Mastery Learning (a strategy, which focuses on feedback, where a level of performance is establish that the students must achieve before moving on to the next lesson)	¢	¢	¢	¢	¢	¢	¢
Worked Examples (a strategy where students are given example problems and shown how to preform the steps needed to reach the solution)	¢	¢	¢	¢	¢	¢	¢

Contributions That May Influence Student Achievement: Please rate the influence each type of contributions has on student academic achievement.

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Contributions of the	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
Child (including background, attitudes and dispositions, physical influences, and preschool experiences)							
Contributions of the Curriculum (including reading programs, writing programs, drama/arts programs, mathematics programs, science programs, values and moral education programs, social skills programs, career education programs, integrated curricula programs, perceptual motor programs, tactile stimulation programs, play programs, and specific curricula programs)	¢	¢	¢	¢	¢	¢	¢
Contributions of the Home (including socioeconomic status, welfare policies, family structure, and home environment)	¢	¢	¢	¢	¢	¢	¢
Contributions of the School (including attributes of schools, school compositional effects, classroom compositional effects, curricula for gifted students, and	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
classroom influences)							
Contributions of the Teaching Approaches (including strategies emphasizing learning intentions, strategies emphasizing success criteria, strategies emphasizing feedback, strategies emphasizing student perspectives in learning, strategies emphasizing student meta-cognitive/self-regulated learning, implementations emphasizing teaching strategies, implementations that emphasize school-wide teaching strategies, implementations using technology, and implementations using out of school learning)	¢	¢	¢	¢	¢	¢	¢
Contributions of the Teacher (including teacher training programs, teacher subject matter knowledge, quality of teaching, teacher-student relationships, professional development, expectations, not labeling students, and	¢	¢	¢	¢	¢	¢	¢

	Strongly Negative	Moderately Negative	Slightly Negative	No Influence	Slightly Positive	Moderately Positive	Strongly Positive
teacher clarity)							