

ASHESI UNIVERSITY COLLEGE

TEACHERS' KNOWLEDGE AND BELIEFS ABOUT DYSLEXIA:

A SURVEY OF PILOT INCLUSIVE SCHOOLS IN THE EFFUTU DISTRICT

DIANA EWURABENA ABRAHAM

APRIL 2014

ASHESI UNIVERSITY COLLEGE

TEACHERS' KNOWLEDGE AND BELIEFS ABOUT DYSLEXIA:

A SURVEY OF PILOT INCLUSIVE SCHOOLS IN THE EFFUTU DISTRICT

BY

DIANA EWURABENA ABRAHAM

THESIS SUBMITTED TO THE DEPARTMENT OF BUSINESS ADMINISTRATION,
ASHESI UNIVERSITY COLLEGE, IN PARTIAL FUFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF BACHELOR OF SCIENCE DEGREE IN BUSINESS
ADMINISTRATION

APRIL 2014

DECLARATION

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature:

.....

Candidate's Name: Diana Ewurabena Abraham

Date:

I hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by Ashesi University College.

Supervisor's Signature:

.....

Supervisor's Name: Mrs. Rebecca Awuah

Date:

ACKNOWLEDGEMENTS

My gratitude goes to the Almighty God, whose Grace so freely abound throughout the course of this project, whose presence was never too far – especially on the hard days. Also, I would like to express my deepest gratitude to my supervisor, Mrs. Rebecca Awuah, whose patience, kindness relentless support, time and contributions was truly priceless to the completion of this project.

I would also like to thank my parents, Mr. and Mrs. Abraham to whom I owe this opportunity; whose names equally deserve to be on the cover and my siblings, Andria, Susan and Jonathan for spurring me on like only they can. I would like to thank Mr. David Cobbold, of GES, Special Education Unit and my respondents for the time and contributions to this project. Finally, to my friends Maame Boafoa Aidoo, Daniel Sackey, George Donkor and Henry Nii Amarah Olletey for all your love, support and everything in between.

ABSTRACT

In an era where basic education and equal opportunity are perceived human rights, governments and different stakeholders are continually making adjustments to how education is provided for children with dyslexia. Although this global social justice agenda has translated into the Ghanaian educational system, most of the efforts have been towards accommodating traditional disabilities. Consequently, the instructional accommodations needed by children with dyslexia to help remediate the difficulties experienced may not be effectively provided. This research attempts to explore the beliefs that may influence the instructional strategies used on children with dyslexia. Specifically, it investigates teachers' beliefs about dyslexia and explores the extent to which teacher education-specific variables may influence such beliefs.

The scope of the research was confined to the Effutu District, Winneba, where professional development initiatives have been comparatively rife. It focused on pilot inclusive schools in the district. Participating teachers consisted of 40 teachers from 6 out of the 8 pilot inclusive schools in the region. Teacher beliefs and knowledge towards dyslexia was measured using both semi-structured interviews and a 15-item dyslexia scale adapted from the validated Dyslexia Belief Index.

Descriptive analysis revealed that the mean questionnaire score was lower than 48 points, which was the score hypothesized to be indicative of accurate beliefs considerable knowledge about dyslexia. In spite of this, further analysis revealed that teachers in the Effutu district had both misconceptions and accurate beliefs about dyslexia. Another key finding of the study was that special education needs training in dyslexia and in general did not significantly lead to fewer misconceptions; and teachers with Masters in education had a significantly higher mean score than teachers with Diploma in education. The implications of these findings for teaching training initiatives are discussed.

KEYWORDS: dyslexia, specific reading disability, teachers' beliefs, inclusive education

Table of Contents

DECLARATION.....	i
ACKNOWLEDGEMENTS	ii
ABSTRACT.....	iii
CHAPTER ONE: INTRODUCTION.....	1
1. 1 BACKGROUND AND CONTEXT.....	1
1.2 PROBLEM STATEMENT	4
1.3 RESEARCH QUESTION	5
1.4 PURPOSE OF STUDY	5
1.5 SIGNIFICANCE OF STUDY.....	7
1.6 SCOPE OF STUDY.....	7
CHAPTER TWO: LITERATURE REVIEW.....	9
INTRODUCTION.....	9
2.1 DEFINING DYSLEXIA.....	9
2.2 COMMON MISCONCEPTIONS.....	13
CHAPTER THREE: METHODOLOGY.....	15
INTRODUCTION	15
3.1 RESEARCH DESIGN.....	15
3.2 TARGET POPULATION.....	16
3.3 RESEARCH SAMPLE AND SAMPLING PROCEDURE.....	17
3.4 RESEARCH INSTRUMENTS.....	18
3.5 DATA ANALYSIS.....	19
CHAPTER 4: RESULTS AND DISCUSSION.....	21
INTRODUCTION	21
4.1 DESCRIPTIVE ANALYSIS OF QUANTITATIVE DATA	21
4.1.1 ANALYSIS OF DEMOGRAPHIC DATA.....	21
4.1.2 ANALYSIS OF 15-ITEM DYSLEXIA SCALE.....	23
4.2 FINDINGS FROM QUALITATIVE METHODS.....	33
4.2.1 FEELINGS ABOUT HAVING CHILDREN WITH DYSLEXIA IN THEIR CLASSROOM	34
4.2.2 TEACHERS’ CRITERION FOR IDENTIFICATION.....	34

4.2.3 TEACHERS INTERVENTION.....	35
4.2.4 INSTRUCTIONAL MODIFICATIONS USED.....	35
4.3 SUMMARY OF FINDINGS.....	Error! Bookmark not defined.
5.1 CONCLUSIONS AND RECOMMENDATION.....	37
5.2 FUTURE RESEARCH.....	Error! Bookmark not defined.
BIBLIOGARPHY.....	40
APPENDIX A.....	44
DESCRIPTIVE STATISTICS ON SPECIFIC ITEMS.....	44
APPENDIX B.....	45
FREQUENCY AND PERCENTAGES ON SPECIFIC ITEMS.....	45
APPENDIX D.....	57
<i>SAMPLE CONSENT FORM FOR RESPONDENTS.....</i>	58

CHAPTER ONE: INTRODUCTION

1. 1 BACKGROUND AND CONTEXT

In an era where basic education and equal opportunity are perceived human rights, governments and different stakeholders are continually making adjustments to how education is provided for children. This social justice and equity agenda which drives the education of children was formally set in motion in 1994 by the Salamanca Statement which was drafted by the UNESCO. The statement introduced the principle of “inclusive education” and called on all governments as a matter of law to enroll all children in regular classrooms regardless of their disabilities, race or gender (UNESCO, 1994).

The Principle of Inclusive Education recognizes that all children can learn regardless of their disabilities, age, gender, illnesses, race etc. It therefore tasks all nations to make quality education accessible to all children, including those with disabilities and disadvantaged children (Anthony, 2009 cited in Pekeberg, 2012) (Gadagbui, 2008). Specifically, according to the Salamanca Statement on Principles, Policy and Practice in Special Education (1994), inclusive education (IE) is:

The fundamental principle of the inclusive school is that all children should learn together, wherever possible, regardless of any difficulties or differences they may have. Inclusive schools must recognize and respond to the diverse needs of students, accommodating both different styles and rates of learning and ensuring quality education to all through appropriate curricula,

organizational arrangements, teaching strategies, resource use and partnerships with their communities (UNESCO, 1994, pp. 11).

It is this emphasis the principle of inclusion lays on system adjustment, equal opportunity and social justice that makes it different from the principle of “integration” and lauded as a means of achieving the Education For All (EFA) goal. The Government of Ghana, by subscribing to the Salamanca statement, therefore pledged to reform mainstream educational structures, systems and methodologies such that every child will be properly accommodated for in mainstream schools, regardless of their disabilities (Gadagbui, 2008). Further commitments to improving the quality of educational services provided for children with disabilities in Ghana came in the form of other legal provisions such as the Free Compulsory Universal Basic Education (FCUBE) agenda which was enshrined in the 1992 Constitution of Ghana, the Disability Act (Act 715) in 2006, the Education Act (Act 778) in 2008, the UN Convention on the Rights of Persons with Disabilities (CRPD) in 2007 and the Education Strategic Plan 2010- 2020, which was formulated as the guiding principle for the education of children with disabilities.

The first of the preparations made towards implementing inclusive education in Ghana came in the form of the Community-Based Rehabilitation Program which was launched in the 1990’s (Kuyini & Desai, 2007). With this program, new special education courses were added to teacher training colleges with the aim of equipping more teachers with skills required to effectively execute the principles that accompany inclusive education. Additionally teacher education courses at the University of Cape Coast and University of Education, Winneba, increased the number of special education electives at undergraduate and postgraduate levels

and at select Teacher Training Colleges. Other structural adjustments include the piloting of in-service training programs which begun with 40 teachers from 20 Initial Teacher Training Colleges (Kuyini & Mangope, 2011)

Inclusive education was piloted in 2003/2004 in three regions- Eastern, Central and Greater Accra -after certain legal and structural requirements had been put in place. In the years following this pilot implementation, government agencies such as the Ghana Education Service, through its execution of the goals of the Education Strategic Plan, and non-governmental agencies such as the UNESCO, the Voluntary Services Overseas (VSO) and the USAID through their collective efforts towards providing resource and training have made huge strides towards reforming and transforming how children, especially those with disabilities are educated (Gadagbui, 2008).

However, even after 20 years of implementation, inclusive education in Ghana has not fully enjoyed the benefits that proponents promise. Inclusive practices have been plagued by inadequate resources and facilitates, beliefs about disabilities and negative attitudes towards students with disabilities, lack of support and teacher training services, large class sizes, and lack of professional competence to adequately accommodate the needs of students with disabilities (Kuyini & Desai, 2007; Agbenyeba, 2007). Factors such as the teachers' lack of knowledge and negative attitudes towards disabilities have been found to limit the use of effective instructional strategies (Kuyini & Desai, 2007).

It is in this context that this study explores the inclusion of children with dyslexia in regular schools in the Effutu district.

1.2 PROBLEM STATEMENT

The relevance of literacy to the acquisition of other essential competencies and to the effective participation in modern life is undeniable (Ministry of Education, New Zealand). However, specific learning difficulties such as dyslexia reduce the ease with which such competencies are attained. While this is true, a substantial number of studies have in recent years found that early intervention, in the form of effective instructional strategies, can increase the acquisition of literacy-related skills (British Dyslexia Association, 2012; (Torgesen, 2006). Consequently, the educational setting within which children with learning difficulties are taught and the teaching strategies used to remediate the difficulties experienced, have become important.

The teaching strategies that are used to accommodate children's needs are usually informed by the teachers understanding of the child's needs and their assessment of the child's strengths and weaknesses (Bell, McPhillips, & Doveston, 2009) ; Davis & Wilson, 1999; Cummins, Cheek, & Lindsey, 2004)

Expressly, the full inclusion of children with disabilities requires, among other things, teachers understanding of this reading disability and a corresponding knowledge of how to intervene. However, in Ghana, most teacher training and government service efforts have been towards accommodating traditional disabilities. This could be an indication that teachers' understanding of dyslexia and awareness of other forms of learning disabilities is limited. This would affect their assessment of the needs of the children and the quality of instruction children with dyslexia receive in Ghanaian classrooms. It has therefore become relevant to

assess teachers' understanding and conceptualization of dyslexia as it relates to how the needs of children with dyslexia are being accommodated for by the Ghanaian educational system.

1.3 RESEARCH QUESTION

- What do teachers in inclusive school believe about dyslexia
- To what extent do significant differences in knowledge exist among the various subgroups of teachers (general educators and special educations) and what was the relationship teacher knowledge to independent variables such special education needs training in dyslexia, certification in education, and number of professional development courses taken.

With regards to this research question, this study asks the following specifically:

- Is there a significant difference in the beliefs about among the different categories of teachers?
- Is there a significant difference in the beliefs about dyslexia between special educators and general educators?
- Is there a significant difference in the belief about dyslexia between teachers with SEN training in dyslexia and teachers without SEN training in dyslexia?
- Is there a significant difference in the belief about dyslexia between teachers with at least 3 courses in dyslexia and teachers with fewer courses?

1.4 PURPOSE OF STUDY

The aim of this research is to explore teachers' knowledge and understanding of dyslexia. It set out to identify the beliefs and misconceptions teachers' in inclusive schools have about dyslexia as a baseline investigation to assessing the

quality of instruction children with dyslexia receive from regular schools. It also attempts to evaluate the overall inclusion of dyslexic children. It also attempted to study the extent to which teacher training influence teacher knowledge. This study there explores the relationship between teacher knowledge and independent variables such as special education needs training in dyslexia, certification in education, type of educator and number of professional development courses taken. Based on literature, this study makes the following prior hypotheses which would be tested and investigated:

H_1 = All categories of teachers have a significant number of accurate beliefs about dyslexia

H_2 = Different categories of teachers (teachers with Diploma, teachers with Bachelor's teachers and teachers with Master's degree) have significantly different number of misconceptions about dyslexia

H_3 = Teachers with SEN training in dyslexia have significantly fewer misconceptions about dyslexia than teachers without SEN training

H_4 = Special educators have significantly fewer misconceptions about dyslexia than general educators

H_5 = Teachers with at least 4 courses in the field have significantly fewer misconception about dyslexia

1.5 SIGNIFICANCE OF STUDY

The relevance of this research lies in its evaluation of teachers' beliefs and understanding of dyslexia. Considering the current dearth of research on dyslexia and other learning disabilities in the Ghanaian context, this study both contributes to existing knowledge and fills the literature gap by providing insight into how teachers conceptualize dyslexia. This insight would be useful in understanding the misconceptions and beliefs about the dyslexia that influence classroom practice.

Also, the study's evaluation of the relationship between teacher-education variables such as certification in education, in-service and pre-service training in dyslexia and number of professional development course taken and teacher beliefs would be useful to the Department of Special Education, University of Education, Winneba, for identifying weak links in teacher training programs and for redesigning such programs to address misconceptions identified in the research. In a broader scope, this research would also be importance to policymakers for highlighting structural adjustments in the educational system that may need to be made towards the full inclusion of children with dyslexia.

1.6 SCOPE OF STUDY

This research was conducted in 6 inclusive schools in the Effutu district. It included kindergarten through to Primary 4 teachers in selected schools in the district. Although the overarching goal of this research is to study how the needs of children with dyslexia are accommodated for in inclusive schools, the components of such an evaluation are numerous and could not be feasibly captured by in a one-time study. The scope of this research is therefore confined to reviewing only

teachers' beliefs as a baseline investigation into how the needs of children with dyslexia is accommodated for in the Effutu district.

CHAPTER TWO: LITERATURE REVIEW

INTRODUCTION

This research explores teachers' knowledge and beliefs about dyslexia in an attempt to investigate how the needs of dyslexic children are accommodated for in inclusive schools. The purpose of this section is to situate this study in the context of previous research and to establish the justification for this study. It achieves these by examining internationally and locally available scholarly pertinent to this research in an attempt to highlight gaps in previous research on inclusive education in Ghana that this research is seeking to address.

2.1 DEFINING DYSLEXIA

Even after a century of research, dyslexia still remains one of the most controversial topics in the field of developmental neurology, psychology and education (New Zealand Ministry of Education) (Kavale & Forness, 2000; Washburn, Binks-Cantrell, & Joshi, 2013). The controversy is arguably attributable to the fact that the different fields all highlight a slightly different perspective about its characteristics, subtype and causes depending on the casual theory of reference (New Zealand Ministry of Education; Henry, Ganschow, & Miles, 2000 as cited in Wadlington & Wadlington, 2005).

There are three main developmental theories which form the bases of most operational and working definitions of dyslexia and to which most researchers subscribe: the phonological deficit theory, the magnocellular theory and the cerebellar theory. Ramus et. al (2003) explored these leading developmental

theories and investigated their veracity. The phonological theory posits that dyslexics have difficulties with noticing, storing and/or retrieving phonemes (sounds of symbols). Such deficits may be evidenced by difficulties with using the alphabet principle, word decoding, word recognition. The magnocellular theory on the other hand is a unifying theory which proposes that reading difficulties experienced by dyslexics can be explained by visual or auditory deficits. The cerebellar theory suggests that with dyslexics the cerebellum which controls motor skills such speech articulation and overall automaticity is dysfunctional leading to learn alphabetic principle. Results from this research showed that the phonological theory was the strongest explanation. This is because in the research conducted, phonological deficits were present in participants without auditory, visual or motor impairments. Findings from this research therefore converge with findings of other research which accepts phonological deficit theory as the key explanation for the difficulties dyslexic children experience. The phonological deficit theory is therefore a key component of the most definitions of dyslexia.

Apart from defining dyslexia based on the casual theory of reference- that is attempting to establish what it is- a key component of defining dyslexia is attempting to indicate what dyslexia is not. Most definitions identify children with dyslexia and define the reading difficulty by eliminating all the factors that would be expected to explain the difficulties experienced. This process of elimination usually establishes the 'unexpectedness' of the disability. This notion of dyslexia representing an unexpected difficult has maintain constancy across several definitions (Shaywitz, Morris, & Shaywitz, 2008).

In the 1980's, dyslexia was associated with a perceived discrepancy between cognitive capabilities and reading ability. In those times, children with a perceived discrepancy between their pegged mental age (usually measured by a standardized intelligence test) and estimated reading age were labeled dyslexic. Not surprisingly, during the period, IQ achievement discrepancy was a key component of definitions of the period. For instance, the operational definition used by the National Institute of Child Health and Human Development (NICHD) in the USA during the 1980's was:

'If a child's difficulty with reading could not be explained by low intelligence, poor eye sight, poor hearing, inadequate educational opportunities, or any other problem, then the child must be dyslexic.' [as cited in New Zealand Ministry of Education]

In recent years, however this IQ discrepancy criterion for identifying reading disabilities and its associated definitions have been criticized and rejected. Critics argue that this discrepancy-based procedure promotes the wait-to-fail policy (Lyon, 1996). This is because significant discrepancy between cognitive capabilities and reading abilities cannot be detected until about third or fourth grade (age eight or nine). At this point, they argue, the severity of the difficulties the children experience has progressed owing to the lack of intervention. This reduces the effectiveness of remediation efforts. Discovery in the field of research has also indicated that the IQ tests are irrelevant in defining dyslexia (Tunmer & Greaney, 2010) Findings from a number of studies have shown that dyslexia in children with low IQ can be attributed to the same reasons as children with intelligence in the

normal range (Lyon, 1996; Fletcher, Foorman, Shankweiler, & Liberman, 1994; Rose, 2009; Torgesen, 2006).

To reflect the state of knowledge on dyslexia, the NICHD modified its working definition of dyslexia in 2003 to:

'Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary, consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge.'

This new definition captures the neurobiological basis of the reading disability and ties the difficulty experiences to phonological deficits with word recognition and word decoding. The phonological theory is highlighted in this definition is the most robust and widely accepted explanation for the difficulties associated with dyslexia (Fletcher, Foorman, Shankweiler, & Liberman, 1994; Shaywitz, Morris, & Shaywitz, 2008; Snowling M. , 1998). The notion that dyslexia represents an unexpected difficulty maintains constancy across definitions and is so captured by the above highlighted definition (Shaywitz, Morris, & Shaywitz, 2008). It further attempts to highlight the unexpectedness of the difficulty by eliminating exogenous variables such as effective classroom instruction and control for cognitive abilities and. highlights the consequences of the difficulty. The definition is almost holistic

in the sense that it captures the nature, causes, characteristics and consequences of the difficulty in a way that allows it to effectively describe the reading difficulty without tampering with diagnoses. This definition of “dyslexia” by the NICHD has subsequently been adopted the International Dyslexia Association and other state-level agencies in the USA (Washburn, Binks-Cantrell, & Joshi, 2013).

In summary, as indicated above, both the working and operational definitions of dyslexia have over the years changed to reflect current discoveries in research and in our overall conceptualization of this reading disability at the time. For the purposes of this paper the term dyslexia would be used to refer to children who have phonological-based dyslexia or language-based dyslexia such that they have difficulty (in terms fluency and adequacy) learning “to acquire skill in using the alphabetic principle to identify novel” words (Share & Stanovich, 1995 as cited in Torgesen, 2006).

2.2 COMMON MISCONCEPTIONS

Even after 40 years of research and publications about dyslexia, there still exist common misconceptions surrounding this reading disability (Hudson, High, & Al Otaiba, 2007). One of the most common misconceptions about the disability is that it is caused by poor visual insight (Washburn, Binks-Cantrell, & Joshi, 2013; (Williams & Lynch, 2010). Even though there some individuals report having difficulty, there is no evidence to support that such difficulties are associated with dyslexia. Based on this misconception, children’s reversal of letters (when spelling) has also been associated with dyslexia. This misconception may be the most

common. However, research has found that letter reversal is common among beginning readers and writers (Adams, 1990)

Furthermore, it is believed that dyslexia can be outgrown but discovery in the field have indicated that dyslexia is a lifelong condition. In spite of this research supports that evidence-based interventions, when effectively administered, can help remediate the difficulties associated with dyslexia (Shaywitz, Morris, & Shaywitz, 2008), and the key to the success of interventions is early identification (Torgesen, 2006). Such interventions should be in the form of explicit and systematic language instruction that focuses on the phonological awareness (Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998; Moats, Carreker, Davis, Meisel, Spear-Swerling, & Wilson, 2010)

Another misconception is that children with dyslexia have below average intelligence. However research has shown that intelligence is irrelevant to the identification of dyslexia and occurs across children various level intelligence.

These widely accepted beliefs and common misconceptions about dyslexia would be investigated in this research in an attempt to explore the level of understanding teachers in the Effutu region have about dyslexia.

CHAPTER THREE: METHODOLOGY

INTRODUCTION

The primary aim of this study is to examine how teachers in inclusive schools conceptualize dyslexia and their attitude to the inclusion of children with dyslexia. Specifically, it sought to study teachers' knowledge and beliefs about dyslexia as a baseline inquiry in the overall inclusion of children with dyslexia. This research further investigates the extent to which independent variables such as certification in education, general SEN training or specialized training in dyslexia correlate with increased knowledge of the disability. This chapter discusses the methods used in achieving the above-highlighted aims of the research. Areas such as research design, sample and sampling procedure, research techniques and research tools, data analysis methods, scope and limitations of the study will be thoroughly discussed in this chapter.

3.1 RESEARCH DESIGN

This research used both descriptive and exploratory survey design. A descriptive survey design was required because the study set out to provide a current account of teachers' attitudes towards and knowledge about dyslexia. Cohen, Marion & Morrison (2007) explained that descriptive research design is most appropriate when the intention of the researcher is to provide an account of the nature of prevailing conditions and phenomena. Exploratory research design was also appropriate for the purposes of this research because it set out to explore what teachers' attitudes are towards dyslexia and the inclusion of dyslexics specifically,

as opposed to focusing on their attitudes towards inclusion of children with general, as in previous research. Consequently, the study sought insight into teachers' attitude towards the inclusion of dyslexics. This approach allows investigators to "seek new insights and assess phenomena in a new light." (Robson, 2002)

Teachers' beliefs towards dyslexia are intangible, though its effect on the overall classroom experience of dyslexics is very tangible. As a result, although the findings from quantitative research methods may have been sufficient, they may not have been adequate in providing a rounded, reliable view of this complex human construct. Qualitative measures were therefore used, together with the quantitative measures, to explore the subtle aspects of teachers' attitude and beliefs and its implications on the education of dyslexics. According to Cohen, Marion & Morrison (2007), methodological triangulation helps researchers to fully study the complexities of human behaviour by using different methods to explore different facets of the same phenomena. In summary, this research provides an account of the knowledge and understanding of teachers' regarding dyslexia and seeks insight into the inclusion of dyslexic children in the Effutu District using both qualitative and quantitative research methods.

3.2 TARGET POPULATION

The target population for this research comprised all kindergarten through to 4th grade teachers in the eight (8) inclusive schools piloted in the Effutu district in 2003/2004. One of the aims of this research was to study the extent to which Special Educational Needs (SEN) training on dyslexia might lead to a more positive attitude and increased knowledge. The Effutu district was therefore deliberately

chosen because the relatively high SEN training on dyslexia that teachers in the district have received allowed this relationship to be explored. This research also targeted the 8 inclusive schools piloted in 2003/2004 as a basis for studying how far along inclusive practices have come with regards to dyslexia.

3.3 RESEARCH SAMPLE AND SAMPLING PROCEDURE

This research was conducted in the Effutu District in the Central Region and included a sample of 40 teachers from 6 of the 8 pilot inclusive schools in the district. Participating teachers were restricted to those who teach kindergarten through to Primary 4. This is because several studies have indicated that phonic skills are acquired in the first three to four years of schooling as such remedial interventions for struggling readers or children with dyslexia are most effective during those years (Jules, 1988 as cited New Zealand Ministry of Education; Lyon, 1996; Lovett, Bordon, Lacerenza, Benson, & Brackstone, 1994 as cited in Torgensen, 2006). This study therefore focused on the teachers who teach the grade levels at which their instructional strategies may be most effective.

The sampling frame for this research consisted of a list of all pilot inclusive schools in the Effutu district was obtained from the GES regional directorate, Special Education Unit. Schools in the district to the north and south of the University of Education, Winneba, where most of the Special Educational Needs training is coordinated from, were settled to participate in the study

Participating schools were selected using the simple random sampling strategy. In particular, each inclusive school to the north or south of UEW on the list will be entered into Microsoft Excel and assigned a random number. Each of the

numbers by the schools will be sorted and arranged in ascending order. The first 6 schools on the list were selected. In those schools, teachers who fell into the inclusion criteria and were available and willing to participate in the research were randomly recruited to participate in this research.

TABLE 1: SAMPLED PILOT INCLUSIVE SCHOOLS

SCHOOL	NUMBER OF PARTICIPANTS
Don Bosco Catholic Primary Boys	8
Don Bosco Catholic Primary Girls	6
UNIPRA Inclusive Primary School	5
UNIPRA South	5
Methodist Primary A & B	7
Methodist Primary C & D	4

3.4 RESEARCH INSTRUMENTS

Teachers' attitude to and knowledge and beliefs about dyslexia was measured using a three-part survey instrument and a semi-structured interview. The survey was adapted from surveys used in other researches. The survey consisted of 40 total items: ten (10) demographic items, 15 dyslexia-related items and 15 items explicitly tested teachers' attitude to dyslexia. The first section of the questionnaire had the 10 demographic items which sought information on the respondents' background and experience in education as a means of placing their response in context. The second section had 15 items designed to measure teachers' knowledge

and beliefs about dyslexia. The items in that section were adapted from the validated Dyslexia Belief Index (Wadlington & Wadlington, 2005) and modified to fit the purposes of this study. Questions for the semi-structured interview were adapted from the Pathognomonic-Interventionist Teacher Interview Items by (Stanovich & Jordan, 1998).

3.5 DATA ANALYSIS

Both quantitative and qualitative methods were used to analyze the responses of the participants. Content analysis was done on the comments from the semi-structured interviews and the common themes from the five (5) respondents were highlighted as a way providing further information to aid the interpretation of the findings of the quantitative survey. The questionnaire underwent initial descriptive analyses where the frequency counts, percentages and mean of specific independent variables was ascertained. The 15-dyslexia related items were transformed from nominal to interval by scoring or reverse scoring each item, whose response options were in Likert-type format. To each item on the Knowledge about Dyslexia scale, respondents were asked to indicate “probably true”, “probably false”, “definitely true”, and “definitely false”. For statements that are widely accepted to be true, scoring was as follows:

4 = definitely true

3 = probably true

2 = probably false

1 = definitely false

The reverse of this was held for statements that are generally accepted and back by literature to be false.

Quantitative analyses also consisted of one-sample t-tests (mean = 48), three independent two-sample t-tests[two-tailed, at a significance level of .05], one chi-square test and one one-way analysis of variance (ANOVA) with a post hoc comparison using Tukey's HSD [at a significance level of .05]. For some of the tests, the effect sizes were ascertained to determine the magnitude of the difference found. These analyses were done using Statistical Package for Social Science (SPSS, Version 16.0)

CHAPTER 4: RESULTS AND DISCUSSION

INTRODUCTION

To explore teachers' beliefs about dyslexia, this study used both quantitative and qualitative methods. This chapter presents the analyses of data collected from both the questionnaire and the semi-structured interviews on the attitudes to and beliefs of teachers' in the Effutu district about dyslexia. The first section of this chapter presents the analysis of data from the quantitative survey, organized according to the main research questions. The main themes from the semi-structured interview would then be presented as a way of corroborating the finding of the quantitative survey.

4.1 DESCRIPTIVE ANALYSIS OF QUANTITATIVE DATA

4.1.1 ANALYSIS OF DEMOGRAPHIC DATA

Table 2. presents a descriptive statistics demographic data on the 35 respondents which are useful for placing the research in context and for exploring relationships between some of these independent variables (SEN Training, teaching experience, number of professional development courses taken) and the dependents variables (teachers' knowledge).

TABLE 2: DESCRIPTIVE STATISTICS ON RESPONDENTS

DEMOGRAPHIC VARIABLE		FREQUENCY	PERCENTAGE
Gender	Male	8	22.9%
	Female	27	77.1%

Age	No response	1	2.9%
	20 - 25 years	3	8.6%
	26 - 30 years	6	17.1%
	31 - 35 years	9	25.7%
	36 - 40 years	8	22.9%
	41 - 46 years	6	17.1%
	More than 46 years	2	5.7%
Length of Service (teaching experience)	1 -2 years	8	22.9%
	3- 5 years	6	17.1%
	5 - 10 years	10	28.6%
	More than 10 years	11	31.4%
Professional Qualification	Diploma in Education	4	11.4%
	Bachelors in Education	26	74.3%
	Masters' in Education	5	14.3%
SEN Training	Yes	31	88.6%
	No	4	11.4%
SEN Training in Dyslexia	Yes	27	77.1%
	No	4	11.4%
	No response	4	11.4%
Number of SEN Training courses taken	1 - 2 courses	13	37.1%
	3 - 4 courses	7	20%
	More than 4 courses	1	2.9%

	Graduated with a Bachelors or higher in Special education	9	25.7%
	No response	5	14.3%
Prior contact with dyslexics	No response	2	5.7%
	Yes	27	77.1
	No	6	17.1

Source: Field data, March 2014

4.1.2 ANALYSIS OF 15-ITEM DYSLEXIA SCALE

The main purpose of this research was to investigate teachers' beliefs and knowledge about dyslexia. It achieved this aim by using a 15-item scale adapted from the validated Dyslexia Belief Index (DBI). Teachers mean questionnaire score (measured in points) on the 15-dyslexia related items was 41.17 point. This is below the criterion mean score of 48 point (85% of a possible points of 60), which the researcher pegged as representing considerable in dyslexia.

Descriptive Statistics

	N	Mean	Std. Deviation
Total questionnaire score - Knowledge	35	41.1429	4.51235
Valid N (listwise)	35		

Although the average score on the 15-item scale was below the criterion score, the mean scores on specific items indicated that teachers had both accurate knowledge and a significant number of misconceptions about the reading disability. Further descriptive analysis indicated that 97.2% of the teachers believed accurately that dyslexia is a learning disability that affects language processing. 80% also indicated definitely true or probably true to the statement that multisensory instruction is absolutely necessary for pupils with dyslexia to learn. 97.1% believed accurately that "children with dyslexia need more systematic, sequential and explicit reading instruction and 77.2% indicated either "definitely true" or probably true to the statement "individuals with dyslexia have trouble understanding the structure of language.

On the other hand, teachers had a significant number of misconceptions about the learning disability. 82.9% of the teachers indicated "definitely true or probably true to the statement "Seeing letters and words backwards is a major characteristic of dyslexia. This misconception is one of the most common misconceptions about dyslexia and this finding converges with findings of other research in the field (Wadlington & Wadlington, 2005). 77.2% believed falsely that dyslexia can be caused by a literacy-poor home environment/ poor reading instruction.

Also, teachers held the misconception that children with dyslexia have below average intelligence, with 74.3% indicating either definitely true or probably true to this questionnaire item. This finding led the researcher to explore the significance of relationship between the perception that children with dyslexia have below average intelligence and SEN training in dyslexia. Specifically, it explored the extent to

which the perception that children with below average intelligence differed with respect to SEN training in dyslexia.

A Chi-square test was used to cross tabulate SEN Training in dyslexia with the perception that children with dyslexia have below average intelligence. The relevance of this test was to investigate whether teachers with SEN training in dyslexia had this misconception.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.599 ^a	8	.580
Likelihood Ratio	7.805	8	.453
Linear-by-Linear Association	.000	1	1.000
N of Valid Cases	35		

a. 13 cells (86.7%) have expected count less than 5. The minimum expected count is .11.

The Chi-square statistic on SEN training in dyslexia/ Perception that children with dyslexia have below average intelligence was 6.599 and the p-value was 0.580. Since the p-value is greater than 0.05, it can be concluded that there is no statistically significant relationship between SEN training in dyslexia/ Perception that children with dyslexia have below average intelligence.

4.1.3 INFERENCE ANALYSIS OF QUANTITATIVE DATA

H₁ = All categories of teachers have a significant number of accurate beliefs about dyslexia.

One-Sample Test

	Test Value = 48					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Total questionnaire score - Knowledge	-8.987	34	.0005	-6.82857	-8.3727	-5.2845

A one-way sample t-test is used to test whether a sample mean is statistically different from a hypothesized value. In this research, a one-way sample t-test was used to test whether all categories of teachers (special educators, general educators, educators with diploma, educators with masters, educators with bachelors) had a significant number of accurate beliefs about dyslexia was different from "normal", which is defined as 48 points. Output of the test shows the mean questionnaire score of all educators, (41.17 ± 4.5) was lower than the criterion score of 48. This means that there is a difference in the number of accurate beliefs about dyslexia among all educators and this difference is significant [p = 0.005] with a large effect size of [d = 1.519].

H₂ = Different categories of teachers (teachers with diploma, teachers with bachelors teachers and teachers with masters degree) have significantly different number of misconceptions about dyslexia

ANOVA

Total questionnaire score -
Knowledge

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	114.171	2	57.086	3.297	.050
Within Groups	554.000	32	17.312		
Total	668.171	34			

A one-way analysis of variance (ANOVA) was utilized to test whether different categories of educators (educator with diploma, bachelor’s degree, master’s degree) have significantly different levels of understanding about dyslexia. The p-value of the test was 0.05, which is exactly equal to the significance level of 0.05 therefore we accept the null hypothesis It can therefore be concluded that there is a significant difference in the means scores of the three categories of educators. A Tukey’s HSD test, a post hoc comparison, further revealed where the differences existed

POST HOC COMPARISON

Multiple Comparisons

Total questionnaire score -
 Knowledge
 Tukey HSD

(I) Certification in education	(J) Certification in education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Diploma in Education	Bachelor's Degree in Education	-3.00000	2.23472	.383	-8.4915	2.4915
	Masters in Education	-7.00000*	2.79117	.045	13.8589	-.1411
Bachelor's Degree in Education	Diploma in Education	3.00000	2.23472	.383	-2.4915	8.4915
	Masters in Education	-4.00000	2.03184	.136	-8.9930	.9930
Masters in Education	Diploma in Education	7.00000*	2.79117	.045	.1411	13.8589
	Bachelor's Degree in Education	4.00000	2.03184	.136	-9.9930	8.9930

*. The mean difference is significant at the
 0.05 level.

With a mean difference of 7 and a p-value of 0.045, the post hoc test revealed that teachers with Master’s degree in education had significantly better points on the 15 dyslexia-related items than teachers with Diploma in education with a large effect size of 1.68. The difference in the mean scores of teachers with Bachelor’s degree

in education and teachers with Diploma or Masters' degree in education was not significantly different

H₃ = Teachers with SEN training in dyslexia have significantly fewer misconceptions about dyslexia than teachers without SEN training

Group Statistics

	SEN Training (Dyslexia)	N	Mean	Std. Deviation	Std. Error Mean
Total questionnaire score - Knowledge	Yes	27	41.8519	4.80948	.92558
	No	4	38.7500	2.98608	1.49304

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Total questionnaire score - Knowledge	Equal variances assumed	.670	.420	1.244	29	.223	3.10185	2.49347	-1.99787	8.20157
	Equal variances not assumed			1.766	5.653	.131	3.10185	1.75667	-1.26140	7.46510

An independent t-test was used to determine whether a statistically significant difference exists between the mean questionnaire score of teachers with SEN training in dyslexia and teachers without SEN training. Since significance level of the test is 0.42 [$p = 0.42$], which is greater than 0.05, it can be concluded that there is no statistical difference in the mean questionnaire score of teachers with special education needs (SEN) training in dyslexia and teachers without SEN training in dyslexia. The null hypothesis can therefore be rejected and the alternative hypothesis that the teachers with SEN training in dyslexia did not have significantly better scores on the 15 dyslexia related items than teachers without SEN training.

H₄ = Special educators have significantly fewer misconceptions about dyslexia than general educators

Group Statistics

	Type of educators	N	Mean	Std. Deviation	Std. Error Mean
Total questionnaire score - Knowledge	General educators	21	.6782	.06615	.01444
	Special educators	9	.7141	.10507	.03502

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Total questionnaire score - Knowledge	Equal variances assumed	1.578	.219	-1.136	28	.266	-.03587	.03157	-.10055	.02880
	Equal variances not assumed			-.947	10.824	.364	-.03587	.03788	-.11942	.04767

Another independent t-test was used to examine whether a statistically significant difference exists between the mean questionnaire scores of special educators and general educators. The test revealed that special educators did not have significantly fewer misconceptions about dyslexia than general educators. This was inferred because the significance level of the test was 0.22, which is greater than 0.05.

H₅ = Teachers with at least 3 professional development courses in special education had significantly fewer misconceptions

Group Statistics

	Number of professional development courses taken	N	Mean	Std. Deviation	Std. Error Mean
Total questionnaire score - Knowledge	1 - 2 courses in special education	13	41.6154	4.77037	1.32306
	3 - 4 course in special education	17	41.0588	5.01835	1.21713

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Total questionnaire score - Knowledge	Equal variances assumed	.003	.960	.307	28	.761	.55656	1.81036	-3.15179	4.26491
	Equal variances not assumed			.310	26.611	.759	.55656	1.79775	-3.13464	4.24776

A third independent t-test was used to determine whether teachers with at least 3 professional development courses in special education had significantly fewer misconceptions about dyslexia than teachers who had taken fewer courses. Since the p-value of the test was 0.76 [$p = 0.42$], which is greater than 0.05, it can be concluded that there is no statistical difference in the mean questionnaire score of teachers with at least 3 professional development courses in special education and the mean questionnaire score of teachers who had taken fewer courses in special education.

4.2 FINDINGS FROM QUALITATIVE METHODS

A semi-structured interview was conducted to corroborate the findings from the quantitative research. It was also used to study intangible dimensions to teachers' beliefs that the questionnaire may not have picked up. Specifically the interview questions sought to investigate how the beliefs of teachers translate into classroom practices. The main themes under each of the interview questions are highlighted and presented in this section. In order to ascertain if respondent fit the purposes of this reason, the interviewer inquired whether respondents had taught children either perceived to be potentially dyslexic or official diagnosed with dyslexia. Only the five respondents who answered yes to this question were interviewed.

4.2.1 FEELINGS ABOUT HAVING CHILDREN WITH DYSLEXIA IN THEIR CLASSROOM

Majority of respondents had negative attitudes to having children with dyslexia in their classroom with one respondent explaining that:

“It is disturbing because not all of them are like that. And they are many too [referring to potentially dyslexic children]. These children are drawing the good ones back.”

Another respondent summed up her feelings about having potentially dyslexic pupils in their classroom as “frustrating because it increases her workload”.

It can be further inferred that this particular respondent is questioning the place of children with dyslexia in regular classrooms.

4.2.2 TEACHERS’ CRITERION FOR IDENTIFICATION

Teachers were asked to indicate what characteristics they observed in the potentially dyslexic children. The purpose of this question was to explore the construct from which they label the pupils and to investigate teachers’ ability to identify children with dyslexia accurately. Three out of the 5 respondents indicated word reversal as the basis of being concerned about the pupil (s). This finding corroborates the finding of the quantitative research which indicated that teachers associate dyslexia with word (letter) reversal. One of the teachers associated dyslexia with failure to learn when taught, saying:

“Some of them can’t pick up when you teach them, I don’t know what is wrong with them”.

These findings indicate that teachers have misconceptions about dyslexia and additionally expect children to learn how they are taught instead of teaching the pupils how they learn (Exley, 2003). The implications of these findings are studied in the next chapter.

4.2.3 TEACHERS INTERVENTION

Teachers were asked to indicate whom they contacted and where they went to for information when they identified the difficulties the children faced. All interviewees indicated that they did not go anywhere for information neither did they contact. They were then asked if there are resources available to them. 2 of the respondents (from the same school) indicated that there is a government appointed resource teacher they could have contacted.

From this finding, it is clear that teachers’ response to the need of children experiencing reading difficult is passive. A possible explanation is that this is because they believe that the difficulties experienced are child-specific instead of system-specific. From this perspective, they dismiss the children, believing that an intervention would not work and as such they fail to make attempts in that regard.

4.2.4 INSTRUCTIONAL MODIFICATIONS USED

Teachers were asked how exactly they accommodated the needs of children with dyslexia. The recurring theme for this question was that the same instructional

strategies for non-struggling readers were used for the potentially dyslexic children with little modifications. One respondent explained:

“All that I have to do is to stress on certain things while teaching. Because of them the time that I could have used to teach other things is spent on repeating the same things. And you will be worrying the others [referring to non-struggling readers]. It is unfair to them”

It can be established that although the questionnaire responses showed that 97.1% believed accurately that “children with dyslexia need more systematic, sequential and explicit reading instruction, and 80% indicated definitely true or probably true to the statement that multisensory instruction is absolutely necessary for pupils with dyslexia to learn, in practice this did not hold. A possible explanation is that teachers know this from professional development courses taken however cannot practice this due to inadequate resources or failure of such training programs to give teachers an opportunity to simulate what they learn.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATION

5.1 SUMMARY OF FINDINGS

The aim of this research was to explore teachers' knowledge and beliefs about dyslexia. The research found that teachers have both accurate knowledge and a considerable number of misconceptions about dyslexia. Interestingly, teachers in the Effutu district had 2 of the most common misconceptions about dyslexia highlighted in literature a) Word reversal as a criterion for identifying dyslexia (Wadlington & Wadlington, 2005; Hudson, High, & Al Otaiba, 2007) b) Associating dyslexia with below average intelligence.

Another purpose of this research was to explore the extent to which special needs education/training leads to fewer misconceptions about the disability. It was hypothesized that teachers who had undergone training in dyslexia may have had the opportunity to increase their knowledge about the disability. However, it was found that the level of awareness of special educators, teachers with SEN training in special education and teachers with more than 3 professional development courses were not significantly different from that of general educators, teachers without SEN training in dyslexia and teachers with less than 3 professional development courses in special education.

It was however found that teachers with masters in education had significantly fewer misconceptions about dyslexia than teachers with diploma in education. This finding reveals that higher certification in education has a significant impact on the beliefs of teachers

The overarching goal of this research was to investigate how teachers' beliefs translate into the overall classroom experience of children with dyslexia. This was in an attempt to establish how the needs of children with dyslexia are accommodated for in inclusive schools in the Effutu district. The semi-structured interview indicated that teachers showed a considerable amount of passiveness and helplessness, when faced with children with dyslexia. Their self-report indicated negative attitudes towards having potentially dyslexic children in their classrooms. Specifically, children perceived by teachers to be 'dyslexic' received very little instructional modifications, probably influenced by the perception that teaching them is frustrating and they would be best catered for in special classrooms.

5.2 IMPLICATIONS OF FINDINGS OF RESEARCH

It is estimated that dyslexia affects 17%- 20% of the English-speaking population (Wadlington & Wadlington, 2005). Differently put, 1 in five students have difficulty learning to read with accuracy and fluency. This means that the chances of a teacher encountering a potentially dyslexic student are high. In this regard teachers' knowledge about the disability is of paramount importance if the needs of the children are going to be effectively accommodated for. However, findings from this research show that teachers have a significant number of misconceptions about the disability. This means that teachers' assessment of the strengths, weaknesses and needs of the children will be misguided and the quality of education they receive in regular classrooms would be affected.

5.3 RECOMMENDATIONS

As highlighted above, this study found sufficient information to support that all categories of teachers need in-depth training and education on dyslexia. Although these teachers indicated they had undergone special needs education training. This did not appear to correlate with their level of awareness about the causes and characteristics of the disability. A possible explanation for this may be the short-term nature of the training received. As a result, the overall impact of the training is not as significant as intended. It is therefore recommended that teachers receive more intensive, continuous professional development courses, during which teachers would be given the opportunity to simulate what they have learned. (Wadlington, Elliot, & Kirylo, 2008) Wadlington, Elliot, & Kirylo (2008) found significant data to support the positive impact dyslexia simulation has on teachers' awareness of dyslexia.

5.4 FURTHER RESEARCH

The researcher recommends that this research be replicated with larger sample sizes for both inclusive and mainstream schools in other geographical areas. Additionally, future investigations could explore the effectiveness of teachers' beliefs on the school performance of children with dyslexia. This will provide insight into how exactly beliefs such as "children with dyslexia have below average intelligence" affect children with dyslexia in Ghana.

BIBLIOGRAPHY

Adams, M. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: MIT Press.

Avramidis, E., Bayliss, P., & Burden, R. (2010). A Survey into Mainstream Teachers' Attitudes Towards the Inclusion of Children with Special Educational Needs in the Ordinary School in Local Education Authority. *Journal of Experimental Educational Psychology* , 191 - 211.

Bell, S., McPhillips, T., & Doveston, M. (2009). How do teachers in Ireland and England conceptualise dyslexia? *Journal of Research in Reading* , 171-192.

Cohen, L., Marion, L., & Morrison, K. (2007). *Research Methods in Education*. Madison Avenue, NY: Routledge.

Cummins, C., Cheek, E., & Lindsay, J. D. (2004). The relationship between teachers' literacy beliefs and their instructional practices: A brief review of literature for teacher education. *E-Journal of Teaching & Learning in Diverse Settings* , 175 - 188.

Cunningham, A. E., Zibulsky, J., Stanovich, K. E., & Stanovich, P. J. (2009). How Teachers Would Spend Their Time Teaching Language Arts: The Mismatch Between Self-Reported and Best Practices. *Journal of Disabilities* , 418 - 430.

Davis, M. M., & Wilson, E. K. (1999). A Title 1 teacher's beliefs, decision-making and instruction at the third and seventh grade levels. *Reading Research and Instruction* , 290-299.

Exley, S. (2003). The effectiveness of teaching strategies for students with dyslexia based on their preferred learning styles. *British Journal of Special Education* , 213-220.

Fletcher, J., Foorman, B., Shankweiler, D. K., & Liberman, I. S. (1994). Cognitive profiles of reading disability: comparisons of discrepancy and low achievement definitions. *Journal of Education and Psychology* , 66- 71.

Foorman, B. R., & Torgesen, J. (2001). Critical Elements of Classroom and Small-Group Instruction Promote Reading Success in All Children. *Learning Disabilities Research & Practice* , 203-212.

Gadagbui, G. Y. (2008). *Inclusive Education in Ghana*. Winneba: Ghana National Commission for UNESCO.

- Gwernan-Jones, Ruth, & Burden, R. L. (2010). Are They Just Lazy? Student Teachers' Attitudes About Dyslexia. *DYSLEXIA* , 66- 86.
- Hastings, R. P., & Oakford, S. (2010). Student Teachers' Attitude Towards the Inclusion of Children with Special Needs. *Educational Psychology* , 87 - 94.
- Hudson, R., High, L., & Al Otaiba, S. (2007). Dyslexia and the brain: What does current research tell us. *International Reading Association* , 506 - 516.
- Joshi, R. M., Blinks, E., Hougen, M., Dahlgren, M. E., & al, e. (2009). Why Elementary Teachers Might Be Inadequately Prepared to Teach Reading. *Journal of Learning Disabilities* , pp. 392-402.
- Kavale, K. A., & Forness, S. R. (2000). What Definitions of Learning Disability Say and Don't Say: A Critical Analysis. *Journal if Learning Disabilities* , 239-256.
- Kuyini, A. B., & Desai, I. (2007). Principals' and teachers' attitudes and knowledge of inclusive education as predictors of effective teaching practices in Ghana. *Journal of Research in Special Educational Needs* , 104-113.
- Lyon, R. G. (1996). Learning Disabilities. *The Future of Children* , 54-76.
- Malpas, M. (2012). *Adults and Dyslexia, 40 years on*. London: British Dyslexia Association.
- McCutchen, D., Abbott, R. D., Green, L. B., Beretvas, N., & al, e. (2002). Beginning Literacy: Links Among Teacher Knowledge, Teacher Practice, and Student Learning. *Journal of Learning Disabilities* , pp. 69-86.
- McCutchen, D., Green, L., Abbott, R. D., & Sanders, E. A. (2009). Further evidence for teacher knowledge: supporting struggling readers in grades three through five. *Read Writ* , pp. 401-423.
- McCutchen, D., & Harry, D. R. (2002). Reading Teachers' Knowledge of Children's literature and English Phonology. *Annals of Dyslexia* , pp. 207-228.
- Moats, L. C. (1994). The Missing Foundation in Teacher Education: Knowledge of the Structure of Spoken and Written Language. *Annals of Dyslexia* , pp. 82-101.
- Moats, L. (2009). Still Wanted: Teachers With Knowledge of Language. *Journal of Learning Disabilities* , pp. 387-391.
- Parasuram, K. (2006). Variables that affect teachers' attitude towards disability and inclusive education in Mumbai, India. *Disability & Society* , pp. 231-242.

- Piasta, S. B., Connor, C. M., Fishman, B. J., & Morrison, F. J. (2009). Scientific Studies of Reading. *Teachers' Knowledge of Literacy Concepts, Classroom Practices, and Student Reading Growth* , pp. 224- 248.
- Ramus, F., Stuart, R., Dakin, S. C., Day, B. L., Castellote, J. M., & White, S. (2003). Theories of developmental dyslexia: insights from a multiple case study of dyslexic adults. *Brain* , 841 - 865.
- Rose, J. (2009). *Identifying and Teaching Children and Young People with Dyslexia and Literacy Difficulties*. Nottingham: Department for Children, Schools and Families (DCSF) Publications.
- Sadler, J. (2005). Knowledge, attitudes and beliefs of the mainstream teachers of children with a preschool diagnosis of speech /language impairment. *Child Language Teaching and Therapy* , pp. 147-163.
- Sanchez, E., Garcia, J.-R., & Gonzalez, A.-J. (2007). Can Differences in the Ability to Recognize Words Cease to Have an Effect Under Certain Conditions? *Journal of Learning Disabilities* , 290-305.
- Shaywitz, S. E., Morris, R., & Shaywitz, B. A. (2008). The Education of Dyslexic Children from Childhood to Young Adulthood. *Annual Review of Psychology* , 451-475.
- Snowling, M. (1998). Dyslexia as a Phonological Deficit: Evidence and Implications. *Child Psychology & Psychiatry Review* , 4-11.
- Snowling, M. J., Duff, F., Patrou, A., Schiffeldrin, J., & Bailey, A. M. (2011). Identification of children at risk of dyslexia: the validity of teacher judgement "Phonic Phases". *Journal of Research in Reading* , 157-170.
- Stanovich, K. E. (1994). Annotation: Does Dyslexia Exist? *Journal of Child Psychology & Psychiatry* , 579-595.
- Stanovich, K. E. (1991). Definitions of Reading Disability: Has Intelligence Led Us Astray. *Reading Research Quarterly* , 7-29.
- Stanovich, K. E. (1996). Toward a More Inclusive Definition of Dyslexia. *DYSLEXIA* , 154-166.
- Stanovich, P. J., & Jordan, A. (1998). Canadian Teachers' and Principals' Belief about Inclusive Education as Predictors of Effective Teaching in Heterogeneous Classrooms. *The Elementary School Journal* , pp. 221-238.

Torgesen, J. K. (2006). Recent Discoveries from Remedial Interventions for Children with Dyslexia. In M. Snowling, & C. Hulme, *The Science of Reading: A Handbook* (pp. 1-36). Oxford: Blackwell Publishers.

UNESCO. (1994). The Salamanca and Framework For Action on Special Needs Education. *World Conference on Special Needs Education: Access and Quality* (pp. 1-50). Salamanca, Spain: UNESCO.

Vellutino, F. R., Fletcher, J. M., Snowling, M. J., & Scanlon, D. M. (2004). Specific reading disability (dyslexia): what have we learnt in the past four decades? *Journal of Child Psychology and Psychiatry* , 2-40.

Wadlington, E. M., & Wadlington, P. L. (2005). What educators really believe about dyslexia. *Reading Improvement* , 16-33.

Washburn, E. K., Binks-Cantrell, E. S., & Joshi, M. R. (2013). What Do Prservice Teachers from the USA and the UK Know about Dyslexia? *DYSLEXIA* , 1-18.

Williams, J., & Lynch, S. (2010). Dyslexia: What Teachers Need to Know. *Kappa Delta Pi Record* , pp. 66-70.

APPENDIX A: DESCRIPTIVE STATISTICS ON SPECIFIC ITEMS

Descriptive Statistics

	N	Mean	Std. Deviation
Dyslexia is a learning disability that affects language processing	35	3.71	.519
Children with dyslexia need more systematic reading instruction	35	3.63	.547
Children with dyslexia also have problems with spelling and/ or writing	35	3.43	.979
Multisensory instruction is absolutely necessary for students with dyslexia to learn	35	3.20	1.052
Individuals with dyslexia have trouble understanding the structure of language, especially phonics	35	3.11	1.105
Children with difficulty segmenting, blending and manipulating sounds in words usually have dyslexia	35	2.86	1.141
Dyslexia and emotional/ social problems are highly correlated	35	2.86	.845
Physicians can prescribe medication to help dyslexia	35	2.66	1.305
Children with difficulty mapping sounds to letters and writing letters of the alphabet are usually not intelligent	35	2.63	1.215
In school, dyslexia affects the student's performance in only reading	35	2.63	1.190
Dyslexia is a disability specific to the English Language	35	2.54	1.172
Dyslexia is hereditary	35	2.46	.886
Dyslexia can be caused by literacy-poor home environment/ poor reading instruction	35	2.09	1.095
Children with dyslexia have below average intelligence	35	1.74	1.039
Seeing letters and words backwards is a major characteristic of dyslexia	35	1.69	.963
Valid N (listwise)	35		

APPENDIX B: FREQUENCY AND PERCENTAGES ON SPECIFIC ITEMS

Dyslexia and emotional/ social problems are highly correlated

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Definitely false	1	2.9	2.9	2.9
Probably false	12	34.3	34.3	37.1
Probably true	13	37.1	37.1	74.3
Definitely true	9	25.7	25.7	100.0
Total	35	100.0	100.0	

Dyslexia is a learning disability that affects language processing

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Probably false	1	2.9	2.9	2.9
Probably true	8	22.9	22.9	25.7
Definitely true	26	74.3	74.3	100.0
Total	35	100.0	100.0	

Seeing letters and words backwards is a major characteristic of dyslexia

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No response	1	2.9	2.9	2.9
Definitely true	17	48.6	48.6	51.4
Probably true	12	34.3	34.3	85.7
Probably false	2	5.7	5.7	91.4
Definitely false	3	8.6	8.6	100.0
Total	35	100.0	100.0	

Dyslexia can be caused by literacy-poor home environment/ poor reading instruction

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Definitely true	12	34.3	34.3	34.3
Probably true	15	42.9	42.9	77.1
Probably false	1	2.9	2.9	80.0
Definitely false	7	20.0	20.0	100.0
Total	35	100.0	100.0	

Children with dyslexia have below average intelligence

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No response	1	2.9	2.9	2.9
Definitely true	18	51.4	51.4	54.3
Probably true	8	22.9	22.9	77.1
Probably false	5	14.3	14.3	91.4
Definitely false	3	8.6	8.6	100.0
Total	35	100.0	100.0	

Children with dyslexia also have problems with spelling and/ or writing

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No response	1	2.9	2.9	2.9
Definitely false	1	2.9	2.9	5.7
Probably false	3	8.6	8.6	14.3
Probably true	7	20.0	20.0	34.3
Definitely true	23	65.7	65.7	100.0
Total	35	100.0	100.0	

Dyslexia is hereditary

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Definitely false	6	17.1	17.1	17.1
Probably false	10	28.6	28.6	45.7
Probably true	16	45.7	45.7	91.4
Definitely true	3	8.6	8.6	100.0
Total	35	100.0	100.0	

Physicians can prescribe medication to help dyslexia

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No response	4	11.4	11.4	11.4
Definitely true	1	2.9	2.9	14.3
Probably true	10	28.6	28.6	42.9
Probably false	8	22.9	22.9	65.7
Definitely false	12	34.3	34.3	100.0
Total	35	100.0	100.0	

In school, dyslexia affects the student's performance in only reading

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No response	1	2.9	2.9	2.9
Definitely true	5	14.3	14.3	17.1
Probably true	12	34.3	34.3	51.4
Probably false	5	14.3	14.3	65.7
Definitely false	12	34.3	34.3	100.0
Total	35	100.0	100.0	

Individuals with dyslexia have trouble understanding the structure of language, especially phonics

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No response	1	2.9	2.9	2.9
Definitely false	3	8.6	8.6	11.4
Probably false	4	11.4	11.4	22.9
Probably true	10	28.6	28.6	51.4
Definitely true	17	48.6	48.6	100.0
Total	35	100.0	100.0	

Dyslexia is a disability specific to the English Language

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Definitely true	10	28.6	28.6	28.6
Probably true	5	14.3	14.3	42.9
Probably false	11	31.4	31.4	74.3
Definitely false	9	25.7	25.7	100.0
Total	35	100.0	100.0	

Children with difficulty mapping sounds to letters and writing letters of the alphabet are usually not intelligent

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No response	1	2.9	2.9	2.9
Definitely true	8	22.9	22.9	25.7
Probably true	4	11.4	11.4	37.1
Probably false	12	34.3	34.3	71.4
Definitely false	10	28.6	28.6	100.0
Total	35	100.0	100.0	

Children with difficulty segmenting, blending and manipulating sounds in words usually have dyslexia

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No response	2	5.7	5.7	5.7
Definitely false	2	5.7	5.7	11.4
Probably false	7	20.0	20.0	31.4
Probably true	12	34.3	34.3	65.7
Definitely true	12	34.3	34.3	100.0
Total	35	100.0	100.0	

Children with dyslexia need more systematic reading instruction

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Probably false	1	2.9	2.9	2.9
Probably true	11	31.4	31.4	34.3
Definitely true	23	65.7	65.7	100.0
Total	35	100.0	100.0	

Multisensory instruction is absolutely necessary for students with dyslexia to learn

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No response	1	2.9	2.9	2.9
Definitely false	2	5.7	5.7	8.6
Probably false	4	11.4	11.4	20.0
Probably true	10	28.6	28.6	48.6
Definitely true	18	51.4	51.4	100.0
Total	35	100.0	100.0	

APPENDIX C: SAMPLE QUESTIONNAIRE

ASHESI UNIVERSITY COLLEGE

Questionnaire No.....

The purpose of this survey is to explore inclusive school teachers' beliefs, attitude and knowledge of dyslexia. All data collected will be purely for the purposes of the researcher's senior thesis. Please know that participation is entirely voluntary and there is no penalty for choosing not to participate. This survey will take approximately 25 minutes to complete

SECTION ONE: DEMORGRAPHIC INFORMATION

Questions in this section relate your background and experience in education. This is to help place your responses in context. **Instructions: Please tick (√) the most accurate response.**

1. Gender Male Female

2. Age

20 – 25 years

36 – 40 years

26 – 30 years

41 – 45 years

31 – 35 years

More than 45 years

3. What grade level do you currently teach?

Kindergarten 1

Primary 2

Kindergarten 2

Primary 3

Primary 1

Primary 4

4. How long have you taught, regardless of level or subject?

1 to 3 years

3 to 5 years

5 to 10 years
years

More than 10

5. What is the highest level of professional qualification attained?

3- Year Post Secondary Cert 'A'

Diploma in Education

Diploma in Special Education

Bachelor's Degree in Education

___ Bachelor's Degree in Special Education

___ Masters Degree in Education

Other (Please specify)

6. Have you received any special education training, whether pre-service or in-service?

___ Yes

___ No

If yes, please proceed to Questions 6a and 6b

If no, please proceed to Question 7

6a. Please indicate which of the following is the most accurate descriptor of your special education training?

___ 1-2 courses in special education

___ 3-4 courses in special education

___ More than 4 courses in special education

___ Graduated with a Bachelor's Degree or higher in special education

6b. Did you receive any input on dyslexia as part of your special education training?

___ Yes

___ No

7. Have you knowingly taught children with dyslexia? ___ Yes

___ No

8. Are there pupils in your class that you concerned might be dyslexic? ___ Yes

___ No

9. How would you describe the amount of **experience** you have had with teaching pupils with dyslexia?

___ None

___ Some

___ Very little

___ Considerable

10. How would you rate your **knowledge** of dyslexia in children?

___ Considerable

___ Adequate

____ Limited

____ Very Limited

SECTION TWO

Instructions: Please indicate, by ticking (✓), the extent to which you agree with each of the following statements.

ITEMS	Definitely false	Probably false	Probably true	Definitely true
11. Dyslexia is a learning disability that affects language processing				
12. Seeing letters and words backwards is a major characteristic of dyslexia				
13. Dyslexia can be caused by a literacy-poor home environment (e.g., parents not reading to their children)/ poor reading instruction				
14. Children with dyslexia have below average intelligence				
15. Children with dyslexia also have problems with spelling and/ or writing				
16. Dyslexia is hereditary				
17. Physicians can prescribe medication to help dyslexia				
18. In school, dyslexia affects the student's performance in reading (not in math, social studies, etc.)				
19. Individuals with dyslexia have trouble understanding the structure of language, especially phonics				
20. Dyslexia is a disability specific to the English Language				

21. Children with difficulty mapping sounds to letters and writing letters of the alphabet are usually not intelligent				
22. Children with difficulty segmenting, blending and manipulating sounds in words usually have dyslexia				
23. Children with dyslexia need more systematic, sequential and explicit reading (<i>direct literacy</i>) instruction than their typically developing peers				
24. Multisensory instruction is absolutely necessary for students with dyslexia to learn				
25. Dyslexia and emotional/ social problems are highly correlated				

APPENDIX D: SAMPLE INTERVIEW GUIDELINES

Please tell me what first caused you to become concerned about these pupils

1. Did you do anything special to accommodate the pupil(s) (e.g classroom organization, instructional adaptations or modifications)?
 - a. Where did you go for information
 - b. Whom have you contacted
2. What other steps have you taken to reflect the information you received?
3. What methods do you use to monitor and evaluate the progress of your pupil(s)?
 - a. How often do you evaluate progress?
 - b. How do you judge your progress?

APPENDIX E: SAMPLE CONSENT FORM FOR RESPONDENTS

CONSENT TO PARTICIPATE IN RESEARCH

EXPLORING TEACHERS' BELIEFS ABOUT DYSLEXIA: A SURVEY OF PILOT INCLUSIVE SCHOOLS IN THE EFFUTU DISTRICT

You are asked to participate in a research study conducted by Diana Ewurabena Abraham, from the Business Administration Department at Ashesi University College. This study is being conducted as part of an undergraduate thesis. Your participation in this study is entirely voluntary. Please read the information below and ask questions about anything you do not understand, before deciding whether or not to participate. You have been asked to participate in this study mainly because you are a qualified (had received training in recognized institutions in and outside the country) teacher in a mainstream school in a rural area.

PURPOSE OF THE STUDY: The aim of this research is to:

- **Access how inclusive school teachers conceptualize dyslexia**

POTENTIAL RISKS AND DISCOMFORTS: There are no foreseeable risks or discomforts with participating in this research.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY: At the end of the study, we will provide a thorough explanation of our findings at a presentation where a representative of your organization will be invited so they can collect the information, seek clarification etc. If you will want a copy of our findings as well, please insert your e-mail address here [_____].

- **CONFIDENTIALITY:** Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of a password protected cloud application such as DropBox or SkyDrive
- **PARTICIPATION AND WITHDRAWAL:** You can choose whether or not to be in this study. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind or loss of benefits to which you are otherwise entitled. You may also refuse to answer any questions you do not want to answer. There is no penalty if you withdraw from the study and you will not lose any benefits to which you are otherwise entitled.
- **IDENTIFICATION OF INVESTIGATORS**

<p>To Contact the Researcher: If you have questions about this research, please contact: Diana Ewurabena Abraham Tel: 00233 544673983 E-mail: diana.abraham@ashesi.edu.gh. You may also contact the faculty member supervising this work: Mrs. Rebecca Awuah E-mail: rawuah@ashesi.edu.gh</p>

Agreement: The nature and purpose of this research have been sufficiently explained and I agree to participate in this study.

Signature: _____

Date: