

2020-10-01

# Knowledge, Practices and Challenges of Implementing Differentiated Instruction among Primary School Teachers in Bahir Dar City

Yetnayet, Woldu

---

<http://hdl.handle.net/123456789/11260>

*Downloaded from DSpace Repository, DSpace Institution's institutional repository*



**BAHIR DAR UNIVERSITY**

**COLLEGE OF EDUCATION AND BEHAVIORAL SCIENCES**

**DEPARTMENT OF SPECIAL NEEDS AND INCLUSIVE  
EDUCATION**

**KNOWLEDGE, PRACTICES AND CHALLENGES OF  
IMPLEMENTING DIFFERENTIATED INSTRUCTION AMONG  
PRIMARY SCHOOL TEACHERS IN BAHIR DAR CITY**

**BY**

**YETNAYET WOLDU KINFE**

**JULY, 2020**

**BAHIR DAR**

**BAHIR DAR UNIVERSITY**

**College of Education and Behavioral Sciences**

**Department of Special Needs and Inclusive Education**

**Knowledge, Practices and Challenges of Implementing  
Differentiated Instruction among Primary School Teachers in Bahir  
Dar City**

**By**

**Yetnayet Woldu Kinfe**

**A THESIS SUBMITTED TO**

**COLLEGE OF EDUCATION AND BEHAVIORAL SCIENCES, BAHIR  
DAR UNIVERSITY, IN PARTIAL FULFILLMENT OF THE  
REQUIREMENT FOR THE DEGREE OF MASTER OF ARTS IN  
SPECIAL NEEDS AND INCLUSIVE EDUCATION**

**Advisor: Tsigie Genet (PHD)**

**July, 2020**

**Bahir Dar**

**© 2020 Yetnayet Woldu Kinfe**

### **Declaration**

This is to certify that the thesis entitled “*Knowledge, Practices and Challenges of Implementing differentiated instruction among primary school teachers in Bahir Dar City*”, submitted in partial fulfillment of the requirement for degree of Master of Arts in Special Needs and Inclusive Education of Department of Special Needs and Inclusive Education, Bahir Dar University, is a record of original work carried out by me and has never been submitted to this or any other institution to get any other degree or certificates. The assistance and help I received during the course of this investigation have been duly acknowledged.

Yetnayet Woldu Kinfu

\_\_\_\_\_

\_\_\_\_\_

**Name of the candidate**

**Date**

**place**

**Bahir Dar University****College of Education and Behavioral Sciences****Department of Special Needs and Inclusive Education****Approval of Thesis for Defense**

I hereby certify that I have supervised, read, and evaluated this thesis titled “*Knowledge, Practices and Challenges of Implementing Differentiated Instruction among primary school teachers in Bahir Dar City*” by Yetnayet Woldu Kinfu prepared under my guidance. I recommend the thesis be submitted for oral defense.

---

Advisor's name

---

Signature

---

Date

---

Department head

---

Signature

---

Date

**Bahir Dar University****College of Education and Behavioral Sciences****Department of Special Needs and Inclusive Education****Approval of thesis for defense result**

As members of the board of examiners, we examined this thesis entitled “*Knowledge, Practices and Challenges of Implementing differentiated instruction among primary school teachers in Bahir Dar City*” by Yetnayet Woldu. We hereby certify that the thesis is accepted for fulfilling the requirements for the award of the degree of “Master of Art in Special Needs and Inclusive Education”.

**Board of Examiners**

External examiner name

Signature

Date

---

---

---

Internal examiner name

Signature

Date

---

---

---

## **DEDICATION**

This paper is dedicated to my grandmother Kidan Abreha and to my mother Yeshihareg Haylu.

## **ACKNOWLEDGEMENTS**

Taking this big opportunity, I would like to forward my sincere gratitude to people who have been by my side in countless ways. First and foremost, I wish to express special and heartfelt gratitude to my advisor Dr. Tsigie Genet for his comments and scholarly support in the long course of this work. His invaluable commitment, meticulous guidance and company have made this work a reality.

I am also indebted to all primary school teachers and supervisors who take part in this study whose cooperation and reflection this entire work has rested up on.

Finally, I would like to thank Asrat Dereb, Mulugeta Awayehu, and Muluwerk Ayele for their unreserved support from the beginning of the research to the end.



## ABSTRACT

*This study focused on assessing the knowledge, practice and challenges of implementing differentiated instruction by primary school teachers in Bahir Dar City. To do so, mixed sequential explanatory design was utilized and six research questions were included. Data was collected using questionnaire and semi-structured interview from 103 randomly selected teachers and 5 supervisors selected with comprehensive sampling. The quantitative data was analyzed using percentage, mean, standard deviation, independent sample t-test, one Way-ANOVA, and correlation. The qualitative data were also analyzed thematically. The findings revealed that: majority of teachers were not familiar with differentiated instruction strategies. The practices of differentiated instruction by primary school teachers were also low. While teachers' knowledge and practice of differentiated instruction were not significantly differentiated by their sex, significant difference obtained across their level of education, teaching experience and subjects they taught. Large positive correlation was also obtained between teachers' knowledge and practice of differentiated instruction. Large class size and students' diversity, lack of time, lack of training, and lack of materials were found as main challenges of implementing differentiated instruction. Equipping teachers with the appropriate knowledge of differentiated instruction and its practice both in in-service and pre-service training, considering teacher student ratio in the classroom, supervision and evaluation of school administrators' on how to help teachers in dealing with challenges, reducing teachers' workload and extending the duration were recommendations forwarded.*

**Key words:** Differentiated Instruction, Knowledge, Practice, Challenge

## TABLE OF CONTENTS

ACKNOWLEDGEMENTS.....	vii
ABSTRACT .....	viii
TABLE OF CONTENTS .....	ix
LIST OF TABLES .....	xiii
LIST OF FIGURES .....	xv
ABBREVIATIONS AND ACRONYMS .....	vii
CHAPTER ONE.....	1
1. INTRODUCTION .....	1
1.1. Background of the Study.....	1
1.2. Statement of the Problem .....	4
1.3. Research Questions .....	6
1.4. Objectives of the Study .....	7
1.4.1. General objective .....	7
1.4.2. Specific objective.....	7
1.5. Significance of the Study .....	8
1.6. Conceptual Framework .....	8
1.7. Scope of the Study .....	9
1.8. Operational Definitions .....	10
1.9. Limitation of the Study .....	10
CHAPTER TWO .....	11
2. REVIEW OF RELATED LITERATURE .....	11
2.1. Introduction .....	11
2.2. Concept and Definition of Differentiated Instruction .....	11
2.2.1. Concept of Differentiated Instruction .....	11
2.3. Elements of Differentiated Instruction.....	13
2.3.1. Content .....	13
2.3.2. Process.....	15
2.3.3. Product .....	16

2.3.4.	Assessment .....	17
2.3.5.	Learning Environment .....	18
2.4.	Differentiated instruction strategies .....	19
2.4.1.	Learning Contracts.....	20
2.4.2.	Tired Assignment.....	20
2.4.3.	Independent Study .....	20
2.4.4.	Curriculum Compacting .....	21
2.4.5.	Learning Center .....	21
2.4.6.	Varied instructional material .....	21
2.4.7.	Student choice.....	22
2.4.8.	Flexible grouping.....	22
2.4.9.	Varying questions .....	22
2.5.	Purpose of Differentiated Instruction.....	22
2.6.	Research on Differentiated Instruction .....	24
2.7.	Principles of Differentiated Instruction.....	26
2.8.	Theories linked to Differentiated Instruction .....	27
2.9.	Differentiation and Inclusive Education .....	29
2.10.	Teachers' knowledge about Differentiated Instruction.....	30
2.11.	Teachers Practice of Differentiated Instruction.....	30
2.12.	Challenges of Differentiated Instruction .....	31
CHAPTER THREE.....		33
3.	RESEARCH METHODS.....	33
3.1.	Introduction .....	33
3.2.	Research Approach .....	33
3.3.	Design of the Study.....	33
3.4.	Source of Data .....	33
3.5.	Study Area .....	34
3.6.	Population, Sample and Sampling technique .....	34
3.6.1.	Population.....	34
3.6.2.	Sample and Sampling Technique .....	34
3.7.	Data Gathering Instruments.....	37

3.7.1.	Questionnaire.....	37
3.7.2.	Interview.....	37
3.8.	Pilot Test.....	37
3.8.1.	Validity.....	38
3.8.2.	Reliability.....	38
3.9.	Data Collection Procedure.....	38
3.10.	Data Analysis Technique.....	39
3.11.	Ethical Consideration.....	40
CHAPTER FOUR.....		41
4.	DATA ANALYSIS AND INTERPRETATION.....	41
4.1.	Introduction.....	41
4.2.	Demographic Characteristics of Participants.....	41
4.3.	Teachers' Knowledge on Differentiated Instruction Strategies.....	43
4.4.	Teachers' Knowledge of Differentiated Instruction and their Demographic Characteristics.....	44
4.4.1.	Comparison of Teachers' Knowledge of Differentiated Instruction Strategy by their Sex.....	44
4.4.2.	Comparison of Teachers' Knowledge of Differentiated Instruction Strategies across their Level of Education.....	45
4.4.3.	Comparison of Teachers' Knowledge of Differentiated Instruction Strategies by their Teaching Experience.....	46
4.4.4.	Comparison of Teachers' Knowledge of Differentiated Instruction Strategies by Subjects Taught.....	47
4.5.	Teachers Practices of Differentiated Instruction.....	48
4.6.	Teachers Differentiated Instruction Practice and Demographic Characteristics.....	49
4.6.1.	Comparison of Teachers' Differentiated Instruction Practice by Sex.....	50
4.6.2.	Comparison of Teachers' Differentiated Instruction Practices by Levels of Education.....	50
4.6.3.	Comparison of Teachers' Differentiated Instruction Practice by Teaching Experience.....	51
4.6.4.	Comparison of Teachers' Differentiated Instruction Practice across Subjects Taught.....	53

4.7. Relationships between Teachers’ Knowledge and Practices of Differentiated Instruction .....	54
4.8. Challenges of Implementing Differentiated Instruction .....	55
CHAPTER FIVE .....	57
5. DISCUSSION.....	57
5.1. Introduction .....	57
5.2. Teachers’ Knowledge of Differentiated Instruction Strategies .....	57
5.3. Teachers knowledge of Instructional Strategies and their Demographic characteristics	58
5.4. Practices of Differentiated Instruction .....	59
5.5. Teachers Practice of Differentiated Instruction and their Demographic Characteristics	60
5.6. Relations between Knowledge and Practice of Differentiated Instruction .....	62
5.7. Challenges of implementing differentiated instruction.....	62
5.7.1. Challenges related to Class size and students diversity .....	63
5.7.2. Challenges related to time .....	63
5.7.3. Challenges related to training .....	63
5.6.4. Challenges related to material.....	64
CHAPTER SIX.....	65
6. CONCLUSIONS AND RECOMMENDATIONS .....	65
6.1. Conclusion.....	65
6.2. Recommendation .....	66
REFERENCE .....	67
APPENDICES .....	76

## LIST OF TABLES

<i>Table 1: Population and samples of teachers' .....</i>	36
<i>Table 2: Cronbach's alpha reliability coefficient for differentiated instruction strategies and practice .....</i>	38
<i>Table 3 Demographic characteristics of participants .....</i>	42
<i>Table 4: Descriptive scores of teachers' knowledge of differentiated instruction strategies (n = 103) .....</i>	43
<i>Table 5: Results of t-test on teachers' knowledge of differentiated instruction strategies across their gender (n = 103).....</i>	44
<i>Table 6: Results of t-test on teachers' knowledge of differentiated instruction strategies across their level of education (n = 103) .....</i>	45
<i>Table 7 Teachers teaching experience (n = 103) .....</i>	46
<i>Table 8: Result of ANOVA of teachers' knowledge of differentiated instruction strategies across teaching experience (n= 103).....</i>	46
<i>Table 9: Results of Scheffe Post Hoc Test of teachers' knowledge of differentiated instruction strategies across teaching experiences (n = 103) .....</i>	47
<i>Table 10: Result of ANOVA of teachers' knowledge of differentiated instruction strategies across the subjects they taught (n =103) .....</i>	48
<i>Table 11: Results of Scheffe Post Hoc Test of teachers knowledge of differentiated instruction strategies across subjects taught (n = 103).....</i>	48
<i>Table 12: Descriptive scores of teachers differentiated instruction practice (n =103).....</i>	49
<i>Table 13: Results of t-test on teachers' differentiated instruction practice across gender (n = 103) .....</i>	50

<i>Table 14: Results of t-test on teachers' differentiated instruction practice based on level of education (n=103) .....</i>	<i>51</i>
<i>Table 15: Teachers teaching experience (n = 103).....</i>	<i>51</i>
<i>Table 16: Result of ANOVA of teachers' differentiated instruction practice across teaching experience (n= 103).....</i>	<i>52</i>
<i>Table 17: Results of Scheffe Post Hoc Test of teachers' differentiated instruction practice across teaching experiences (n = 103) .....</i>	<i>52</i>
<i>Table 18: Result of ANOVA of teachers' differentiated instruction practice across the subjects taught (n =103).....</i>	<i>53</i>
<i>Table 19 Result of ANOVA of teachers' differentiated instruction practice across they subjects taught (n =103).....</i>	<i>54</i>
<i>Table 20: Correlation between knowledge and practice of DI (n = 103).....</i>	<i>54</i>
<i>Table 21: Challenges of implementing DI .....</i>	<i>55</i>

## LIST OF FIGURES

*Figure 1: Conceptual framework* .....9



## **ABBREVIATIONS AND ACRONYMS**

<b>CLIL</b>	Content and language integrated learning
<b>Covid-19</b>	Coronavirus Disease
<b>DI</b>	Differentiated instruction
<b>PGDT</b>	Post-Graduate Diploma in Teaching
<b>SPSS</b>	Statistical Package for the Social Sciences
<b>UNESCO</b>	United Nation Education, Science and Cultural Organization
<b>ZPD</b>	Zone of Proximal Development

# CHAPTER ONE

## 1. INTRODUCTION

In this chapter, the background for this study that is an overview on researches carried out in studying teachers' knowledge and practice of differentiated instruction in primary schools is examined. Then the statements of the problem and associated research question as well as its objective are presented. Significance of the studying knowledge, practice and challenges of differentiated instruction among primary school teachers is explained. Finally, conceptual framework, and delimitation are described, and operational definitions of terms are presented.

### 1.1. Background of the Study

Today's educational systems are experiencing greater diversity in the classrooms because "they are composed of a broad range of students, representing a wide variety of educational needs" (Moon, 2005, p. 227). Although, globally, inclusive education is considered as an extensive transformation that welcomes diverse learners (UNESCO, 2001), "it is mainly implemented as programmatic regularities which fail to initiate broad school reforms" (Strogilos, 2018, p. 2). The inclusion of students with various educational needs forced teachers to see again their teaching and learning practices (Subban, 2006). Inclusive education in several countries has not yet offered a change in advance from serving students with disabilities in mainstream schooling to more unifying practice by overcoming obstacles that the students face in education and involvement in school (Strogilos, 2018). In recent times, the concept of learning styles has gained attention since, the idea of differentiated instruction has become a hymn for schools all over the country (Landrum & McDuffie, 2010). Thus, several schools are implementing differentiated instruction to improve students' educational success (Ariss, 2017).

Differentiated instruction, is broadly defined as "varying instruction to meet the individual needs of all students" (Tomlinson, 1999), usually includes attention on students learning styles (Landrum & McDuffie, 2010). Differentiating instruction (DI here after) is a route to move toward teaching and learning for students with diverse capabilities in a similar classroom (Hall, 2002). DI is supportive to every teacher and vital for teachers in an inclusive classroom. Inclusive education does not detach students with a disability who are not capable to continue without considerable support (Lawrence-Brown, 2004), because it allows all students to get access to education. This makes DI to be required, mainly given a concurrent push to every

student for high attainment. Students with a disability must learn in the classroom where they can gain the general curriculum and obtain the uses of high expectations (Good, 2001). Thakur (2014) also explained that DI looks for changing the teaching of the whole class in a similar method and meets the needs of students with different capacities by using solid curriculum and feasible tactics of teaching.

Mainly imperative to DI are the elements of choice, flexibility, on-going assessment, and creativity resulting in differentiating the content being taught, or how students are processing and developing an understanding of concepts and skills, or how students show what they have learned and their level of knowledge through various products. Teachers decide at the beginning of their planning what their students should know and what each child should be able to do at the end of the lesson or unit (Tomlinson, 2000).

Tomlinson (1999) also states that DI typically includes modification in one or more of the following areas:

Content is what the teacher wants students to learn and the materials or mechanisms through which that is accomplished. Process describes activities designed to ensure that students use key skills to make sense out of essential ideas and information. Products are vehicles through which students demonstrate and extend what they have learned. (p. 11)

Borja, Soto, and Sanchez (2015) noted that by differentiating their instruction, teachers give themselves the opportunity to accommodate either the content, process, product, or learning environment within their instruction. Differentiated instruction roots from the idea about diversity in the way students learn, their inclination, and their interests. Naturally, differentiation entails that the intention of school must be to increase the achievement of all students (Abbati, 2012; Algozzine & Anderson, 2007; Hall, 2002). Therefore, if differentiation is to support students' progress, decisions should be made depending on what suits each student, not on what is most suitable to the teacher (Stradling & Saunders, 2006). Since DI is a complex process, it requires a persistent notice to the individual needs of students during the school year. It demands the ability to make flexible teaching and learning practices that allow the success of academically diverse students with challenging academic content, process, and to have a learning environment that is both helpful and challenging (Tomlinson, 2008).

Though teachers are aware of the strategies gained in professional development about differentiation and are able to recognize students in the heterogeneous classroom, they are not converting the material cover in the professional development into practice. Some teachers may not be safe with their own knowledge of teaching so, they are not flexible to modify their lessons to the needs of their students (Dixon et al., 2014). A study by Dee (2010) regarding pre-service teachers application of DI shows that new general education teachers are mainly susceptible to the burden and anxiety of the work and differentiation, and typical pre-service teacher education programs must prepare them to address the needs of all students by teaching the skills to make appropriate lesson adaptations, accommodations, and modifications. Similarly, a study by (Broderick et al., 2005) shows that some experienced and beginner teachers continue to resist DI and inclusion, adhering instead to the traditional, homogenizing system. Because people often consider neither adjustment of the typical content and pace nor other aspects of the instructional process as an unreasonable burden on the classroom teacher. Dee's study has tried to show us how novice teachers are faced with problems in implementing DI when they start their first work, Broderick and his friend's study shows that the implementation of differentiated instruction across teachers experience but both study doesn't show the difference in sex and qualification so the researcher has examined the difference in teachers practice of differentiated instruction across teaching experience, sex and qualification in an inclusive classroom.

Indeed, the process of implementing DI is complex. In studying why teachers did not differentiate, Schumm and Vaughn's (1992) reported that general education teachers' problems are rooted in calling attention to differences as reasons to not adapt instruction for any specific group of students. So, professional development opportunities must not only introduce the topic of differentiation, but they must also allow teachers to practice the strategy in a workshop setting in which the trainer helps them write and review their own lessons, assuring them of greater success in the classroom (Dixon et al., 2014). Teachers who are comfortable with differentiated classrooms would possibly say their role is different from that of a traditional teacher. When teachers DI they will change from seeing themselves as a guard and distributor of knowledge move towards considering themselves as a coordinator of learning opportunities (Tomlinson, 2001). On the other hand, Tomlinson (1995) summarized the challenges to differentiation as fear of faddism or just the thing to do this year and as a fear of not being able to manage a classroom with a number of learning activities happening at once. There is a fear of not knowing how to

assess the readiness level of students, and how to match appropriate resources with teaching. Finally, there is a fear of concept-based teaching with the pressure of standardized tests. Teachers also fear that there are no teacher models to talk to about this process.

There is no single formula for differentiation however; there is a guide that supports teachers to develop a valid and valuable practice that responds to the students with diverse educational needs (Tomlinson, 2005). Therefore, teachers must be willing to change their belief systems and practices in order to DI (Rodriguez, 2012). Similarly, Solomon (2019) indicated that teachers' knowledge is crucial to implement DI successfully. But, it is unknown the extent to which teachers' are practicing DI.

Even though many researchers agree that effective inclusion occurs when teachers modify the instruction to the needs of all students, limited knowledge exists about the types and the quality of modifications understood and used by teachers (Strogilos, 2018). Similarly Dixon et al. (2014) argue differentiated teaching requires practice. Therefore the aim of this study was to assess knowledge, practices and challenges of implementing differentiated instruction.

## **1.2. Statement of the Problem**

Nowadays there is a massive diversity of students in the classroom, so teachers are confronted with lots of problems when offering instruction that addresses each student's academic needs. Even though there is the implementation of a different approach in diverse pupils, modification of classroom instruction is required to meet the needs of all students. As a result, teachers should differentiate their instruction in order to provide an appropriate education. In doing so, teachers meet the needs of their students by making adaptation to the key learning variables. However, the knowledge of teachers' response to implement a DI approach is limited (Njagi, 2014).

For inclusion to be successful, all students must benefit. In order to achieve this success differentiated instruction is the catalyst because it is "as important for students who find school easy as it is for those who find it difficult. All students benefit from the availability of a variety of methods and supports and an appropriate balance of challenge and success" (Lawrence-Brown, 2004, p. 37). To do this teachers need to have sufficient knowledge on the content, process, product, and assessment involved in DI and an understanding that not every part of a lesson or even every unit needs to be differentiated.

Some teachers may have some knowledge of what DI is and how to plan it, but some may not. Thus, it is important to know the extent to which teachers understand differentiated instruction prior to implementing any modification and training. Different factors can become barriers in the implementation of these instructional strategies. Some teachers may think they are implementing effective strategies when in reality their practice is not effective. For these reasons, it is important to investigate the knowledge of teachers about DI and how they practice it.

The main reason for conducting this research is that there are many researchers about DI focusing in a different area. These researchers have conducted their study by focusing on differentiated instruction concerning teachers' self-efficacy, perception, understanding, DI for gifted students and students with a learning disability. For instance, Broderick et al.(2005)conduct a study on DI for disabled students by only focusing on disability-related issues for effective DI in inclusive classrooms.

Njagi (2014) conduct a study on secondary school teacher's perspectives about differentiated instruction as a teaching and learning of mathematics in Kenya. The finding indicates that the majority of teachers felt DI approach is significant enough to use in the classroom, necessary for teacher effectiveness and improve student achievement. Some other study by Machû (2015) on the level of application of DI in inclusive education of gifted pre-schoolers also indicates that 37 % of the research sample showed the inadequate or unsatisfactory level of application of DI, as they reached less than half of the maximum score. This indicates that there is inadequate teachers' practice of DI. Similarly, Siam and Al-Natour, (2016) conduct a study on teachers' differentiated instruction practice and implementation challenges for only students with a learning disability. The result revealed that the practice of differentiated instruction by teachers was low, which means educational skills in all areas (Content, Process, Teaching Resources, Product, Assessment, and Classroom Management) were low for all DI scopes. This implies that differentiated instruction is not practicing well by teachers'.

On the other hand, Solomon(2019) explores the instructor's knowledge, attitude, and practice of differentiated instruction in the college of education and behavioral sciences at Bahir Dar University. The study finding shows that instructors limited specific knowledge of the theories, models, and principles of using DIin the current diverse classrooms. Another research

was by Tadesse(2015) on perception, practice, and challenge of Primary school teachers who attended their fifth and sixth years of upgrading summer Post-Graduate Diploma in Teaching (PGDT) program at Bahir Dar University. His finding shows that the overall status and practice of DI by primary school teachers was low. Different from the above researches the current study focuses on investigating the knowledge, practice and challenges of implementing differentiated instruction among primary school teachers in inclusive classrooms rather than differentiating instruction focusing on a specific type of student with special needs or primary school teachers who attend PGDT program.

Furthermore, what initiates the researcher to conduct this research is that, though inclusive education opens opportunities to access education to all students, it is difficult to say that their diverse educational need is addressed properly. Because the researcher has observed during the practical work for the course fulfillment that teachers were teaching in an inclusive classroom mainly for content coverage rather than meeting the needs of diverse students. This makes students not gaining the appropriate education based on their needs. The other reason is that, Knowing teachers' knowledge of DI, how often they practice differentiated instruction and identifying the factors that help or hinder the process of differentiating instruction are important for the educational leaders to know and respond to if they expect their teachers to be successful in differentiating instruction.

Just as DI needs to be considered to support students, differentiated professional development needs to be considered to support teachers. Because teachers are confronted with classrooms of students with mixed abilities, varied instructional strategies are necessary to meet the needs of all students to allow students access to the curriculum. At the same time in Ethiopia, there is no research conducted on teachers' knowledge, practice and challenges of implementing differentiated instruction in inclusive primary schools. Therefore the researcher intends to come up with a clear picture of to what extent teachers are knowledgeable and are practicing differentiating instruction to meet the students' diverse educational needs. In this regard, the researcher supposes that this proposed study provides some contribution to fill this research gap.

### **1.3. Research Questions**

This study tried to answer the following research questions:

1. How knowledgeable are teachers' on differentiated instruction strategies?
2. To what extent do teachers' practice differentiated instruction?
3. Is there significant difference in teachers' knowledge of differentiated instruction strategies across their sex, level of education, teaching experience, and subject taught?
4. Is there significant difference in teachers' practice of differentiated instruction across their sex, level of education, teaching experience, and subject taught?
5. Is there any relationship between teachers' knowledge and practice of differentiated instruction?
6. What are the challenges teachers' faces to implement differentiate instruction in the classroom?

## **1.4. Objectives of the Study**

### **1.4.1. General objective**

The main objective of this study is to investigate the knowledge, practice and challenges of implementing differentiated instruction among primary school teachers of Bahir Dar primary school.

### **1.4.2. Specific objective**

More specifically the study aims to:

- ✚ To describe teachers' knowledge of differentiated instruction strategies.
- ✚ To investigate teachers' practice of differentiated instruction.
- ✚ To assess teachers' knowledge in strategies they use to implement differentiated instruction across their sex, level of education, teaching experience, and subject taught.
- ✚ To check primary schoolteachers' practice of differentiated instruction across their sex, level of education, teaching experience, and subject taught.
- ✚ To investigate the relationship between teachers' knowledge and practice of differentiated instruction.



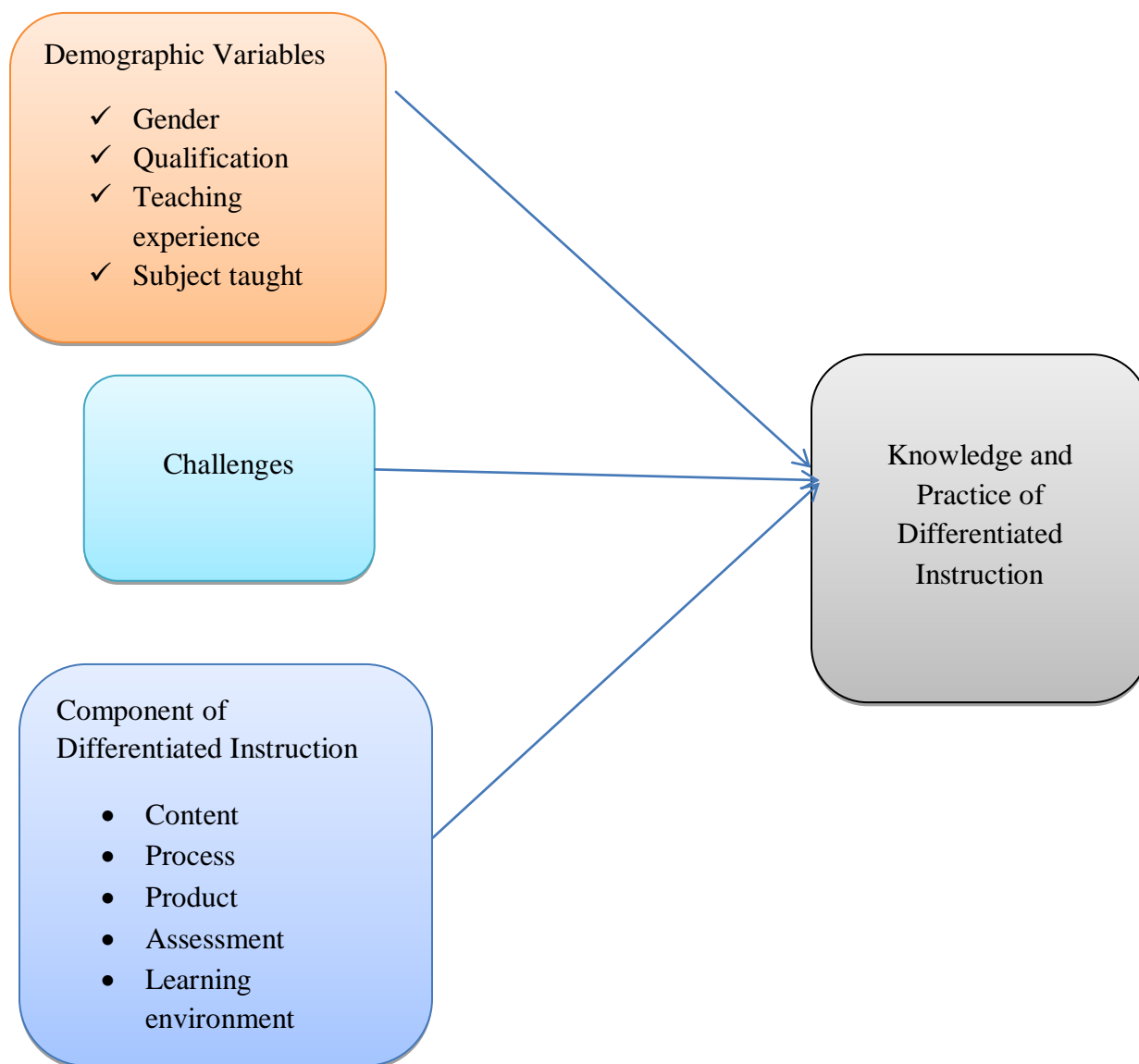
- ✚ To identify the challenges that teachers are facing during their implementation of differentiated instruction in the inclusive classroom.

### **1.5. Significance of the Study**

Studying knowledge and practice of DI among primary school teachers provides awareness that how differentiated instruction addresses the diverse educational needs of students rather than one size fits all approach. This enables teachers to facilitate their teaching and learning based on the needs of their students and increases their understanding of DI and to feel more confident in implementing it. It offers vital information for the designation of policy and the teacher's training program concerning teachers' needs. It also initiates school districts to provide professional development opportunities. On the other hand, the findings of the study help to intensify the awareness of the practice of DI and also contribute to the limited body of research by addressing teachers' knowledge, practice and challenges of differentiated instruction.

### **1.6. Conceptual Framework**

Based on the awareness acquired from the literature review of the study, the researcher developed and displayed the following conceptual framework. In this study, Tomlinson (2014) model of DI is used as a conceptual framework. This model states that teachers can differentiate a lesson based on content, process, product, and learning environment. In addition to Tomlinson's model, the conceptual framework of this study is mainly guided by broad review literature. The literature indicates that there is a strong relationship between teachers' knowledge and implementation of differentiated instruction (Brentnall, 2016; McMillan, 2011). Besides the current indication from the literature implies that there is a significant difference in teachers' knowledge of DI strategies and practice of DI based on their qualifications and experience (Moosa & Shareefa, 2019b; Suprayogi et al., 2017). On the other hand, some study finding shows that there is a significant difference in teachers' practice of differentiated instruction across sex (Tadesse, 2015). This implies that there is a practice difference of differentiated instruction between male and female teachers'. Therefore this study also examines how each demographic variable affects teachers' knowledge, practice of differentiated instruction.



*Figure* : Conceptual framework

### **1.7. Scope of the Study**

Even though a multitude of issues can be explored with the scope of differentiated instruction in schools, due to the time and financial constraints this study was delimited both geographically and conceptually. Geographically the study was delimited to teachers of Bahir Dar public primary school teaching specifically from grade 5-8 where there are students with disability are

integrated with students without disability. It was also conceptually delimited to the knowledge, practice and challenges of differentiated instruction among primary school teachers.

### **1.8. Operational Definitions**

**Knowledge:** is the familiarity or understanding of teachers in differentiated instruction strategies and measured by Siam and Al-Natour(2016) and Rodriguez(2012) adapted instrument.

**Practice:** is teachers' exercise of differentiating content, process, product, assessment, and learning environment.

**Inclusive education:** is an education system where both students with and without disability learn together in integrated classroom

### **1.9. Limitation of the Study**

There was some limitation for this study that needs to be discussed. At the beginning it was supposed to gather data using four instruments i.e., questionnaire, interview, classroom observation, and focus group discussion. But because of the current condition (Covid-19) classroom observation and focus group discussion was not conducted. But if these instruments were employed there might be a change in the findings of the study and an in-depth data might obtain. At the same time finding the expected numbers of teachers were difficult for the researcher as most teachers did not come to schools. This has affected the sample size of the study; if all of them were available in the school, I would have included more samples.

## **CHAPTER TWO**

### **2. REVIEW OF RELATED LITERATURE**

#### **2.1. Introduction**

This chapter presents education literature and empirical studies about differentiated instruction. It is divided into 11 sections consisting of the following topics: (a) Concept and definition of DI; (b) Elements of DI; (c) Differentiated Instruction Strategies (d) Purpose of DI; (e) Researches on DI; (f) Principles of DI; (g) Theories linked to DI; (h) Differentiated instruction and Inclusive education; (i) Teacher knowledge about DI; (j) Teachers practice of DI; (k) Challenges of implementing DI.

#### **2.2. Concept and Definition of Differentiated Instruction**

##### **2.2.1. Concept of Differentiated Instruction**

The concept of DI is grounded on the need for teachers to differentiate instruction to meet the needs of varied learners in the general education class (Chapman & King, 2012; Tomlinson, 1993; 2003). Teachers can take care of this diversity early on by maximizing the potential of each student in their classrooms, including students who come to the class with defined disabilities. And practicing DI, matching teaching to the needs of each learner, is an ideal way to help diversity succeed (Carolan & Guinn, 2007). It takes all students and their learning needs into consideration, but it does not offer a completely individualized lesson every day for each student (Fox & Hoffman, 2011).

As differentiation is about giving all students access to the same curriculum, then differentiation may emphasize different access methods, such as provide taped versions of written material for children with visual impairment (Lewis, 1991). The better the materials and the teaching, the fewer the individual accommodations required for students with special needs. However, for a variety of reasons, we may not have control over the materials used in the school. Furthermore, despite the best teaching efforts, some students will still need modifications to get access to important skills and content (Friend & Bursuck, 2012). Because we have to remember, most students with disabilities included in your classroom are expected to achieve the same curricular goals as their classmates without disabilities (Friend & Bursuck, 2012).

Although DI is not a new concept and has been clearly stated and understood in educational policies through the decades, the problem of having a common operational definition of the concept persists (Rock, Gregg, Ellis, & Gable, 2008). Since Tomlinson (1995, 1999, 2000, 2001, 2005a, 2005b, 2008, 2009) introduced and defined DI, many others have created their definitions. The term differentiation, like 'love' and 'health', is used freely but is nonspecific (Lewis, 2002).

There is ample definition of DI in the literature. But for this study, reviewing a few definitions that have a common language and theme is necessary. Adlam (2007) defined DI as an instructional method that allows teachers to magnify their knowledge of each student's inclination and a means of learning through a variety of teaching methods. DI is a system of teaching for every student to support them to achieve a common goal, despite the way they take to come to be there (Robinson et al., 2014). Again Theisen (2002) stated, differentiation is a method of teaching in response to the varied needs of the student. Likewise, Tomlinson defines the term and creates a sense of ease so educators can use DI to help close the achievement gap and reach all learners. She states, "Differentiated instruction is a philosophy of teaching purporting that students learn best when their teachers effectively address the variance in students' readiness levels, interests, and learning profile references. A key goal of DI is maximizing the learning potential of each student" (Tomlinson, 2001, 2003, p. 263)

Furthermore, Gregory and Chapman (2013) also defined differentiation as a philosophy that allows teachers to plan strategically to meet the needs of students because it is not a set of tools rather a belief system that teachers embrace to meet the diverse needs of all students. DI is considerate of students' needs, interests, willingness, and skills as it is rooted in educational literature and also requires teachers to obtain a dynamic and significant method for the preparation and teaching of the students (Rodriguez, 2012). In like manner, Levy (2008) defines DI as a set of tactics that will support teachers to meet each child where they are, when they enter a class and deliver teaching for academic improvement. In short, what every one of us needs to understand is that "Differentiation is not a recipe for teaching. It is not an instructional strategy. It is not what a teacher does when he or she has time. It is a way of thinking about teaching and learning. It is philosophy" (Tomlinson, 2000, p. 6). Altogether though the definition of DI

differs between and among authors, the fundamental objective is the same which is addressing the diverse educational needs of students.

### **2.3. Elements of Differentiated Instruction**

Teachers can create differentiated and adjusted education in many ways (Ariss, 2017), especially by considering four key elements that can make a difference in student learning: content, process, product, and learning environment (Robinson et al., 2014). Similarly, Tomlinson (2001) also noted instruction can be differentiated on the bases of what is learned (content), how it is learned (process), how learning is demonstrated (product), or what environment it is learned in (learning environment). It is these areas that teachers differentiate, or modify, based upon a student's readiness, interests, and learning style (Tomlinson, 1999, 2014). It is reasonable to think that once teachers have a better understanding of students' level of readiness, interests, and learning profiles, that they will be more likely to participate in effective and appropriate content, process, and product differentiation (Santangelo & Tomlinson, 2012). Although these domains are discussed separately, there are clear and distinct connections between them. One domain differentiated effectively will not be as powerful as all of the domains being addressed collectively (Tomlinson 2014).

#### **2.3.1. Content**

Content is the main "input" for teaching and learning. It is what the teacher teaches and what the teacher needs a student to learn or get access to the information (Tomlinson, 2001). Teachers may choose to differentiate the content by using flexible grouping, allowing students to work in similar groups using books on tape or the internet as a means for creating understanding and knowledge of the lesson. Some students may prefer to work in pairs, small groups, or independently, but all are working toward proficiency on the same content (Algozzine & Anderson, 2007).

Undoubtedly, differentiating content requires teachers to either modify or adapt to how they give students access to the material they want the students to learn (Joseph et al., 2013) As stated by Heacox (2002) content can be differentiated by providing students' choices to explore topics more intensely, and by providing students with resources that are concerning their' knowledge level. In like manner, Algozzine and Anderson (2007) also argued that instead of

changing the student goals and lowering performance expectations for some students, teachers may differentiate the content by using texts, novels, or short stories at varying complexity levels. For this reason, learning materials can be differentiated by student interest or ability level, and also by format, such as incorporating audio and video resources into lessons (Fox & Hoffman, 2011). This idea is also supported by Tomlinson (2001), she stated that differentiation of content requires that several elements and materials be used to support instruction, such as materials of varying readability levels, recorded text, spelling and vocabulary support, multisensory input, reading pairs or groups, and re-teaching and repetition with tasks aligned to individual learning goals. Moreover, teachers can also use multiple texts and supporting materials to appeal more widely to students' varied interests (Bartolo et al., 2007).

When asking children to participate in different levels of complexity with a task, teachers need to be conscious that children dislike doing work that is presented as appropriate for the less advanced learners (Bartolo et al., 2007). So, Content can be differentiated in response to a student's readiness level, interests, or learning profile. Readiness differentiation of content has as its goal matching the information students are asked to find out to a student's capacity to read and know it. Interest differentiation of content involves including within the curriculum ideas and materials that repose on current student interests or extend student interests. Learning profile differentiation of content implies ensuring that a student has a way of "coming at" materials and ideas that match his preferred way of learning (Tomlinson, 2001). Correspondingly Content can be differentiated by adapting, according to student characteristics, what is taught as well as how it is presented to students. While teaching an equivalent core concept, like a number, one can affect it at different levels of complexity. This enables students at different levels of readiness within the subject to be challenged with meaningful new learning that they will master (Bartolo et al., 2007).

Some strategies for content differentiation include: providing text materials at varied reading levels of complexity; curriculum compacting; using small group instruction to re-teach or reinforce content; providing text on audiotape; supplementing oral presentations with videotapes and visual demonstrations; providing note-taking organizers; highlighting or summarizing key portions of text; and using manipulative (Tomlinson 2005).

### 2.3.2. Process

Similar to content differentiation, process also can be differentiated in response to readiness, interest, and learning profile (Tomlinson 2005a, 2005b). Process means sense-making or, opportunity for learners to process the content or ideas and skills to which they have been introduced (Tomlinson, 2001). It includes the activities that teachers design to ensure that students use key skills to make sense of essential ideas and information (Rodriguez, 2012). In the traditional lesson delivery, this component of a lesson is typically a stable constant in most instructional lessons, meaning that all students complete the same type and amount of practice despite students' differences in abilities, learning styles, and students' prior knowledge (Algozzine & Anderson, 2007).

Furthermore, according to Tomlinson and Eidson (2003), it is important to recognize that the activity must be centered on the learning goals. The activity includes giving students time to work with key knowledge, understanding, and skills that will help them understand and think about ideas, and to solve problems. Students should be able to understand how and why things work the way they do and not just give back basic information. An activity is valuable if it captures and maintains a student's interest even if the student initially expressed it as being a difficult task. Bartolo et al.(2007) argued that rather than relying simply on 'talk and chalk' teaching and 'paper and pencil' tasks, responsive teachers use different strategies like different modalities (visual, auditory, kinesthetic ...), different types of tasks (role-playing, problem-solving, writing papers, making models), and different types of work arrangements (individual, pair, and group work with flexible groupings). So, it is important to note that the process is differentiated not only by how the teacher decides to teach (lecture for auditory learners; centers for tactile learners; small group and whole group) but by the strategies the teachers encourage students to use to facilitate thorough exploration of the content taught. This will be done by way of higher-order thinking, open-ended thinking, discovery, reasoning, and research (Bailey & Williams-Black, 2008).

Strategies for effective process differentiation contain: tiering activities to varying levels of complexity to improve every student's classroom experience; offering directions at varying levels of specificity; varying the pace of work; providing several options of expression; giving



students alternative topics on which to focus; creating activities that are harmonious with students' preferred modalities of learning (Tomlinson 2005a, 2005b).

### **2.3.3. Product**

Product differentiation comprises something noticeable, verbal, or action that offers students opportunities to prove what they have learned. Teachers can differentiate products when they plan themes that include several ways of learning and when teachers deliver students with different projects to choose from. Products can consist of the different ways or activities that students can use to show mastery of a concept (Rodriguez, 2012). Differentiation was mainly provided through differentiation of the outcome (Lewis, 2002). Santangelo and Tomlinson (2009) believe that it is important for teachers to provide students with adequate support, as well as opportunities for peer and self-evaluation. Bailey & Williams-Black (2008) also suggests that differentiating the product allows students to self-select a way to show they have learned the material that was taught. When students self-select their product, they normally choose a method that will provide them success which most likely will coincide with their learning style(s).

It is important to afford students a variety of choices for demonstrating what they know and can do (Tomlinson & Eidson, 2003). In a differentiated classroom, students often have a choice in the way they show their learning. They have the opportunity to use multiple means of expression instead of one standard format (Tomlinson, 2014). Broderick et al.(2005) support this idea by asserting that student must demonstrate what they understand using a variety of ways like use of audiotaped texts, universally designed texts available on CD-ROM, Braille, large print, or other adapted means of print access; peer support; additional time; fewer questions to address; multi-modal presentation, and so forth. Thus products should have clear, challenging, and specified criteria for the fulfillment, based both on grade level expectation and individual student need (Tomlinson & Eidson, 2003). But, Bartolo et al. (2007) argued that teachers are challenging to organize the kinds of input that students are expected to be able to take up meaningfully and to find it inspiring. Accordingly, Ismajli and Imami-Morina (2018) find out with their descriptive analysis of understanding and applying interactive strategies to meet the needs of all the students, Teachers pay more attention to the product and less the content and therefore differentiated learning process. This study finding contradicts the finding of Bailey and Williams-Black (2008) who study DI: three teachers' perspectives. Their finding shows that none

of the teachers differentiated the product, as they did not allow choice in how the students showed their understanding of the content being studied. Finally, it is not appropriate to have only one opportunity per unit to demonstrate one's knowledge. Students need many and varied smaller opportunities throughout the course of study, and having multiple opportunities for preparation and training of assessment activities typically supports students' successful performance (Broderick et al., 2005).

#### **2.3.4. Assessment**

Assessment is a compass for day-to-day plan in a differentiated classroom (Tomlinson et al., 2015). As it is required to gather information about students because each individual is unique in the following ways: knowledge base, motivation, emotion and desires, multiple intelligence, prior experience and background, attitude toward the topic or subject, learning styles and modalities, abilities, interests and talents .DI and assessment go hand in hand (Chapman & King, 2012), because assessments are used throughout the implementation of DI and are the driving force behind the specific instruction provided (Whipple, 2012). The results are used to strategically adapt instructional plans, allow students with multiple ways to show their learning, keep them on the right path, accelerate on their learning journeys (Chapman & King, 2012).

Different skills, learning styles and capacities require differentiated teaching and assessment(Koshy, 2013). When teaching with the philosophy of DI in mind teachers are expected to pre-assess students and provide formative assessments throughout the learning. This type of assessing is different from the typical form of assessments known as summative assessments (testing a child after each chapter or skill taught) in that it informs teachers on how to continue teaching (Whipple, 2012). However, “it is important to keep in mind students learning styles because for students to benefit most from instruction and assessment, part of the instruction and assessment should match their learning style” (Sternberg & Zhang, 2005, p. 245). Levy (2008) states, “If we do not know where we are, how can we get where we are going? Students come to us with greatly varying abilities and experiences. The place to begin is with pre-assessments” (p. 162). By assessing students, general education teachers who are delivering instruction in an inclusive classroom are going to be ready to monitor student learning and provide instruction that is appropriate (Whipple, 2012).

Levy has defined three types of assessment that are vital components of implementing DI. First is the pre-assessment which Levy (2008) state as an informal way to help a teacher gets a snapshot of where their students' learning levels are in relation to the curriculum being taught. Pre-assessments can range from KWL (what the students know, what they want to learn and what they have learned) charts to teacher-generated tests. Tomlinson and Moon (2013) suggest Pre-assessments and ongoing assessments are two significant events for the differentiation to occur. It is then that a teacher be able to learn about the students' preferences, interests and learning profile. Next is formative assessment, administered often throughout a unit (Tomlinson et al., 2015). It provides teachers with information during instruction that allow teachers to identify student weaknesses(Whipple, 2012). The data gathered from the formative assessments helps a teacher to identify the gaps between current level and desired level of learning. A teacher may ask if there are any questions while teaching but later on finds out students are struggling when they begin independent work. Progress monitoring is another sort of formative assessment. It allows teachers the ability to monitor students' achievement throughout the lesson. Teachers may provide formative assessments in multiple ways. Some may ask students for a written response demonstrate what they know, observe or question a student or simply discuss content. In order for the assessment to be classified as formative the teacher must take action on the data gathered from the assessment. Furthermore, students benefit most from formative assessments when teachers set clear expectations (Whipple, 2012).

Last, is summative assessment, it is used at end of key segments of a unit and at the end of a unit (Tomlinson et al., 2015). It is a way for a teacher to see if a student has successfully learned the objective or skill being taught. They can include, but are not limited to, standardized tests, projects, teacher-generated quizzes or tests and oral reports. Overall, assessments can differ from student to student. These part overlaps with flexibility in that teachers need to be flexible when providing assessments to students during all levels of instruction. It is best to incorporate the learning styles of each student and incorporate it into the students' assessments (Whipple, 2012).

### **2.3.5. Learning Environment**

Differentiation of the learning environment encourages respect to the individuals, the materials, space, and time (Borja et al., 2015). A learning environment is created when all children in

regular classrooms work together in a team and have a common goal. Research has shown that this is an effective method to increase academic achievement in comparison to traditional instruction (Dee, 2010; Friend & Bursuck, 2012; George, 2005; Wan, 2016). By supporting this Borja et al. (2015) acknowledged that it promotes the students' support, teamwork, and cooperation between one another. The accessibility of resources for classwork by considering the different factors that make each student different is another factor to consider within the differentiation of the learning environment.

Teachers are expected to adapt the educational setting, including curriculum content and materials and physical movement with students' needs, learning style, and readiness (Smeets, 2005). By the same token, Santangelo and Tomlinson (2012) noted that when differentiating the learning environment teachers and students share their responsibility for teaching and learning and teachers deliver individual attention to the students as they need it. Concerning this Brentnall (2016) recommend the learning environment and classroom climate must be warm, trusting, flexible, respectful, and safe for students. In the meantime, they must respect and support one another and be given responsibility for their learning and in the decision-making. On the contrary, the traditional classroom where students are seated in rows facing the teacher who stands at the front of the classroom does not fit the differentiated philosophy. But, the physical classroom should be flexible in the use of space, time, resources, and student groupings to allow for a student-centered approach to learning (Tomlinson, 2014; Tomlinson & McTighe, 2006).

#### **2.4. Differentiated instruction strategies**

Differentiated instruction for students uses teaching strategies and tools you maybe know already, and maybe even use regularly now. These tools fall under the name DI because they help students with various learning styles understand and master the material they might not understand as thoroughly otherwise. "Good teaching, at its heart, is like good jazz. Teachers need to be well versed in their teaching "instruments" and tools at hand and be able to improvise when needed by pulling out new tools and giving them a try" (Fox & Hoffman, 2011, p. 62). Each class of students may need something a slight different from the one before. Although the basic format of the lessons may be similar, teachers will be most successful when flexible and willing to meet the needs of the students. The DI techniques and suggestions contained in this section are most commonly used and prove to be most helpful in the differentiation process (Fox

& Hoffman, 2011). So the following are instructional strategies that are used in differentiated instruction.

#### **2.4.1. Learning Contracts**

Learning contracts are agreements made between students and teachers about what students will learn in a particular unit (Fox & Hoffman, 2011). It gives students some freedom in gaining skills and understandings that a teacher considers important at a given time. Many learning contracts also provide chances for student choice regarding some of what is to be learned, working conditions, and how the information will be applied or expressed (Tomlinson, 1999). The teacher and student decide what the student will do in place of the regular activity and develop a contract jointly. The contract includes working conditions, timelines, skills to be practiced and mastered, criteria for quality of work, assessment procedures, and positive and negative consequences for completed/ uncompleted work (Nordlund, 2003). Thus it helps all students to understand what they have to achieve, as well as the time frame for meeting the objectives (Fox & Hoffman, 2011).

#### **2.4.2. Tiered Assignment**

Tiered assignments are a method relevant to all students utilizing DI. The teacher provides a variety of levels of activities. Some students use repetition for learning while others use extension activities. A variety of resource materials should be available for tasks that are adjusted by complexity, abstractness, concreteness, and level of independence (Nordlund, 2003). By using tiered assignments, students are less likely to be over-challenged or bored with an assignment thereby encouraging student learning (Tomlinson, 2001).

#### **2.4.3. Independent Study**

Most students need help to learn how to become independent learners (Nordlund, 2003). Independent study is an appropriate opportunity to help students develop talent and interest areas, as long as teachers understand that the independent study needs to meet students at their current readiness for independence and move them toward better independence a little at a time. Independent study allows an emphasis on student readiness, interest, and learning profile (Tomlinson, 1999). Therefore, throughout all grades, subjects, and readiness levels, teachers should systematically support students in developing curiosity, pursuing topics that interest them,

identifying intriguing questions, developing plans to find out more about those questions, managing time, setting goals and criteria for work, assessing progress based on those goals and criteria, presenting new understandings to audiences who can appreciate them and beginning the phase again (Tomlinson, 2001).

#### **2.4.4. Curriculum Compacting**

Compacting encourages teachers to assess students before beginning a unit (Tomlinson, 1999). Its purpose is to avoid ineffective use of student learning time if some or all of the content being considered is already mastered as it helps to eliminate the former and facilitate the latter (Tomlinson, 2001). With three-stage compacting, teachers document (A) what the student already knows (and evidence for that conclusion), (B) what the pre-assessment shows the student does not know about the topic or skill (and plans for how the student will learn those things), and (C) a plan for meaningful and challenging use of time (Tomlinson, 1999).

#### **2.4.5. Learning Center**

A learning center is a classroom area that contains a collection of activities or materials used to teach, reinforce, or extend a particular skill or concept (Kaplan, Kaplan, Madsen, & Gould, 1980 as cited in Tomlinson 1999). These centers can be an excellent way of differentiating instruction. These centers can provide a variety of activities that include simple to complex tasks. Some activities can be open-ended whereas others are highly structured. Moreover, centers can be designed to meet the individual learning needs of specific students, such as the gifted student. The learning center must be teacher-directed with clear instructions and expectations. Activities should be based on a variety of learning styles and interests. Learning centers also allow the teacher to have time to work with small groups of students while other students participate in the center activities (Nordlund, 2003).

#### **2.4.6. Varied instructional material**

Grade-level texts are often far too simple for some students in a given class, but too complex for other students. Using various texts and combining them with a wide variety of other additional materials increases chances for reaching all students with content that is meaningful to them as individuals. The aim is to match the levels of complexity, abstractness, depth, breadth, and so forth of the resource materials with the student's learning needs (Tomlinson, 2001).

#### **2.4.7. Student choice**

Student choice is one of the cornerstone concepts in a successful DI classroom (Fox & Hoffman, 2011). Incorporating instructional choice in the classroom allows teachers to differentiate instruction along with communicating their respect for students' interests and abilities. Teachers interested in implementing instructional choice in their classroom should consider the following: provide students with two or more options, allow students to independently select an option, and provide students with the selected option (Tomlinson, 2001).

#### **2.4.8. Flexible grouping**

Flexible grouping is central to DI (Heacox, 2003). Also, it can allow for differentiation of instruction. Skill-based and interest-based groups can be created, either randomly or purposefully, to meet the needs of the students. This type of grouping allows for individualized instruction, either through an extended exploration of topics or direct instruction and remediation. The determination of flexible grouping is based on a particular skill or unit of study rather than general learning abilities. Students must have opportunities to work with a variety of students, with time for both collaborative studying and independent work (Nordlund, 2003).

#### **2.4.9. Varying questions**

All teachers make regular use of questioning daily to elicit students' knowledge, assess their understanding, and review concepts. It is very important however to adjust the types of questions according to the children's readiness and levels of comprehension (Tomlinson, 2001). Varying questions appropriately helps nurture motivation through success (Nordlund, 2003). In general, teachers should use a combination of closed questions that demand simple one-word answers and open questions that promote higher-order thinking and which invite more elaborate responses. As teachers come to know the children and recognize their abilities, questions can be differentiated by levels of complexity and abstractness (Tomlinson, 2001).

### **2.5. Purpose of Differentiated Instruction**

The purpose of differentiation is to let every student learn something in a meaningful way (Cunningham, 2015). Because it benefits students at all levels of education (Lightweis, 2013). Likewise, it helps teachers to meet each child where they are when they enter the class and move them forward as far as possible on their educational path (Levy, 2008). Jahan et al. (2017) also

noted that in a given context of multiple disabilities, diverse learning backgrounds, and special education cases, DI will be of countless significance to outfit to the needs. Thus it is a key for creating learning environments that effectively accommodate the diversity typical of today's classroom, especially where the needs of special needs learners must be accommodated (Tomlinson, 2000).

All students benefit from a variety of instructional methods and supports and an appropriate balance between the challenge of instruction and the opportunity for success (Lawrence-Brown, 2004). In the literature, many authors indicated that there are many reasons and purposes of DI. Levy (2008) reflected that using DI is reasonable because it allows teachers to make classrooms more responsive to student needs by being more systematic in their approach. Jahan et al. (2017) confirmed this idea by suggesting that, educators should know that one standard approach to teaching will not meet the needs of diverse learners. DI is the key to reaching all students. Lawrence-Brown (2004) asserts that DI serves two main goals; it provides additional support for learners who find school challenging while adapting or extending the curriculum to meet students' needs. Tomlinson (1999) supports the idea that DI is beneficial for teaching students with a wide range of abilities and needs, and argues that students benefit from instruction that matches their readiness levels, interests, and learning profiles. Sternberg and Zhang (2005) concur with Tomlinson's view and assert that children learn well in different ways and profit most when instruction is differentiated to accommodate their differences. Walpole and McKenna (2007) also acknowledge the positive effect of tailoring instruction to match students' needs and assert that providing students with what they need, through differentiation, maximize students' growth.

Another reason for DI is it increases student achievement (Jahan et al., 2017). Servilio (2009) stated, 'The combination of a differentiated curriculum and the options for students' choice are quite suitable for promoting students' success as it can improve outcomes for other students as well' (p. 10). In differentiated classroom, when students are actively engaged and have achieved their goal, they are more motivated to continue learning and exceed their original goal or expectation. "With the tools of DI, we can take each child as far as he or she can go" (Levy, 2008, p. 164) towards further achievement and success (Jahan et al., 2017). Within DI research, there is an indication that supports this claim. Valiandes (2015), for example, found



that students in classrooms where teachers implemented DI performed better compared to those students who did not receive DI. Similarly, Reis et al.(2011) as well as Baumgartner et al. (2003) reported positive effects of DI on students' achievement, specifically on their reading fluency and comprehension.

Regarding the purpose of DI on the inclusion of students with special needs Strogilos (2018) reviewed on the value of DI in the inclusion of students with special needs/ disabilities in mainstream schools, he noted that DI is still considered an effective and useful approach in the education of all students. He concludes his review by indicating important prerequisites for the integration of DI such as (a) policymakers to include differentiated instruction at the National Curriculum-Policy level; (b) universities to include relevant courses on teachers' pre-service and in-service training, and (c) schools to encourage the development of differentiated instruction as the main approach/ practice for the inclusion of students with disabilities.

## **2.6. Research on Differentiated Instruction**

More recently plenty of researches are conducting on a wide variety of topics related to DI. Available research shows the positive impact of DI. Some of them are; the implementation of DI resulted in higher academic scores for the students (Tulbure, 2011), better overall performance as compared to a traditional style of teaching (Beloshitskii & Dushkin, 2005), higher student engagement, interest, and satisfaction as well as for the teachers (Johnsen, 2003), more motivated and enthusiastic learners (McAdamis, 2001), and helped maximizing student potential (Wilujeng, 2012). Others linked DI to student persistence (Tomlinson, 1995), self-confidence and self-directedness, and metacognitive awareness of learners (McQuarrie &McRae, 2010). Research set up in the context of specific school subjects do again the more general positive impact of DI. DI resulted in significant progress in reading , higher reading fluency and reading comprehension (Reis et al., 2011), and had a positive impact on student literacy (Tobin & McInnes, 2008), and on math achievement (Chamberlin & Power, 2010; Tieso, 2005). Additionally, Grimes and Stevens (2009) reported an increase in students' desire to do well in math and their

In the area of understanding and implementation of DI Gray's (2008) examination of the quantitative and qualitative data from the four schools indicated teachers' low levels of use of differentiated instruction were a result of insufficient degrees of training, support, and resources

and resulted in no significant achievement difference between students' whose instruction was differentiated as compared to students' whose instruction was not differentiated. Similarly, Whipple (2012) conducted a quantitative study on teachers' understanding of differentiated instruction and their perceptions of their ability to implement DI in grades kindergarten through sixth. Generally, 75 participants answered questions regarding their level of implementation. The total mean score was 86.56 with a standard deviation of 10.47 and a median score of 88.00. There was a lower mean score for implementation than there was for understanding. Based on the data, teachers have a better understanding of DI than the ability to implement DI. Moreover, Ismajli and Imami-Morina's (2018) descriptive analysis research findings showed that the understanding and implementation of differentiated instruction in primary schools is not at the right level.

Despite the perceived importance of DI, research has indicated the absence or inconsistent use of this strategy (Strogilos, 2018). This idea is confirmed with the studies conducted in DI in the inclusive classroom. Likewise, a qualitative case study of Deason (2014) on the experiences of 8 elementary inclusion teachers who implemented DI in their classrooms findings revealed that although inclusion teachers readily implemented DI, they varied in their understanding and application of DI strategies and activities. On the other hand, other studies show that limited use of differentiated instruction has been noted for students with special needs/ disabilities in mainstream classrooms (Deason, 2014; Landrum & McDuffie, 2010; Strogilos, 2018; Thakur, 2014) as well as for 'typically developing' students (Hackenberg et al., 2016; Vantassel-baska et al., 2005).

Furthermore, there are studies of DI across subject matter. For instance, there was a study by Roiha (2014) entitled "Teachers views on differentiation in Content and Language Integrated Learning (CLIL) in terms of vision, practices, and challenges." The study examined the diversity of content and merging of languages in CLIL in Finland to figure out ways of supporting individual students with special needs in public classrooms. The study had a mixture of qualitative cases and quantitative statistical studies of elementary school teachers' perceptions of differentiated instruction and different practices in CLIL and the challenges encountered during implementation. To gather qualitative data, there were interviews with three teachers who apply the principles of differentiated instruction and CLIL provision to all their students. For

quantitative data, questionnaires were distributed to 143 male and female teachers. Results showed that teachers look differently to differentiation and that they differentiate in instruction, content, and language Integration. Problems associated with differentiated instruction had to do with time, materials, and class environment. In the meantime, Alicia (2012) assessed the impact of differentiated instruction on those failing to catch up in reading in Grade 1. In the study, teachers were meant to find ways to help students with learning disabilities read fluently using a semi-experimental differentiated instruction methodology, two experimental groups, and one control group (traditional teaching). The sample had 60 students from Grade 1. The results showed that the use of differentiated instruction improved students' reading skills. The test results showed differences between pre- and post-assessments over three scholastic semesters in "fluency" and "reading". In like manner Jahan et al.(2017) conducted on the relevance of differentiated instructions in English classrooms: an exploratory study in the Saudi context. It has been found that DI is relevant in an English classroom. Item wise analysis of different statements shows that DI can be used to cater to the needs of diverse learners who have different levels of readiness, interest, motivation level, and backgrounds. And also many teachers are aware of DI, and they employ the principles and techniques. However, all the teachers should be oriented with the DI principles and techniques to deal with different kinds of learners in a single class. On the other hand, Tieso (2006) conducted a quasi-experimental study with 31 4th and 5th-grade teachers and their 645 students to examine the effects of ability grouping (whole, between-class, and within-class) and curricular practices (traditional, revised, and differentiated) on students' achievement on data representation and analysis unit. Tieso found that differentiating curriculum and instruction by readiness helped keep high-ability students challenged in heterogeneous classrooms and yielded significantly higher scores for regularly-achieving and high-achieving students on a curriculum-based test; scores of low achieving students increased but not significantly. There are many studies conducted about DI. But regarding teachers' familiarity and their practices about DI, there is still a lack of studies.

## **2.7. Principles of Differentiated Instruction**

When teachers start to use new approaches to create student-centered lessons, the principles that form the basis of DI are important (Deason, 2014). With his in mind, to understand differentiated instruction, the principles for practicing must be articulated (Logan, 2011). Tomlinson and

Strickland (2005) identified principles that are useful for teacher planning and to serve as a measure of the effectiveness of differentiation for teachers. Such as:

- 1) Good curriculum comes first: The teacher's first job is always to ensure that the curriculum is coherent, important, inviting, and thoughtful. Then and only then does it make sense to differentiate that curriculum.
- 2) All tasks should be respectful of each learner: Differentiation won't work (and shouldn't work) when some students are assigned tasks that look "privileged" while others are assigned tasks that merit avoidance.
- 3) When in doubt, teach up: Be sure there's a support system in place to facilitate the student's success at a level he or she doubted was attainable.
- 4) Use flexible grouping: Before beginning a unit, a teacher needs to think about when it will be important for the class to work as a whole, when students will need to work and demonstrate competence alone, and when it makes the most sense for students to work with small groups of peers.
- 5) Become an assessment junkie: It is far better to think of assessment as an ongoing process, conducted in flexible but distinct stages.
- 6) Grade for growth: A portion of a teacher's grading may necessarily reflect a student's standing related to grade-level benchmarks. A portion of grades, however, should reflect a student's growth. (pp. 16-18)

On the other hand, O'Brien & Guiney (2001) pointed out the major principles of DI: 1) Every child can learn and every teacher can learn 2) All children have the right to high-quality education. 3) Progress for all will be expected, recognized, and rewarded. 4) Learners in a classroom have common needs, distinct needs, and individual needs. Altogether Tomlinson (2000) suggests that, in teaching diverse students in inclusive schools, it is arguable to say that teachers have not yet applied all the principles of differentiated instruction so that problems occurred in carrying out the task of teaching diverse students in inclusive schools.

## **2.8. Theories linked to Differentiated Instruction**

The foundational belief for differentiation is that every student is different and learns differently from others (Thakur, 2014). The rationale behind differentiated instruction is Piaget's constructivist theory, Vygotsky's zone of proximal development, and Gardner's theory of multiple intelligences (Adlam, 2007).

According to Piaget's theory, the learner interacts with objects and events available in the physical and social environment and thereby comprehends the features held by such objects or events using the process of assimilation, accommodation, and equilibration. The learners, therefore, construct their conceptualizations and use those conceptualizations to generate solutions to problems. This theory suggests that humans create and construct knowledge as they

try to bring meaning to their experiences. In the differentiated classroom, teachers should facilitate the learning process by organizing learning activities and using a variety of aid material according to the level of functioning of student's cognitive structure to enable them to construct knowledge through their experiences (Thakur, 2014). At the same time Robinson et al (2014) highlighted for students to be successful in the classroom, differentiated instruction must first be based on the student's previous knowledge to create a meaningful lesson that will produce success for the student and the teacher. Hilyard (2004) also agreed by reflecting this, in the differentiated classroom, learners' autonomy and initiative are accepted and encouraged. Teachers who implement the DI approach in their classrooms understand that they must vary their instructional approaches to modify curriculum and instruction and to design engaging learning activities and assessments in response to their students' range of learning needs.

The other theory that is linked to DI is Vygotsky's zone of proximal development. The zone of proximal development is the distance between student's ability to perform a task with assistance i.e. under adult guidance or with peer collaboration and the student's ability to perform the task without any assistance (Vygotsky 1986). According to Vygotsky learning occurs in this zone. In DI, first, the teacher needs to identify what the students can achieve independently (level of actual development) and for further learning of the more challenging tasks, differentiate learning tasks accordingly and provide academic support from the teacher as well as from more proficient peers so that students acquire necessary academic skills for independent learning (level of potential development) (Vygotsky, 1986). Vygotsky (1978) encouraged teachers to teach slightly ahead of their students' development by way of modeling, guiding, or scaffolding students' learning and understanding. Accordingly, for the child to learn new skills, the teacher must provide students with mediated assistance at a level beyond independent learning yet within their ZPD (Bruner, 1981; Vygotsky 1978, 2012 as cited in Stewart, 2016).

Gardner's theory of multiple intelligences also has a relation to DI. Gardner stated that human beings possess a basic set of intelligence at varying levels and that no intelligence should be viewed as bad or good (Gardner 1999). Gardner identified the existence of eight distinct intelligences: visual-spatial, verbal-linguistic, musical, logical-mathematical, bodily-kinesthetic, interpersonal, intrapersonal, and naturalistic. Gardner suggested that one of the intelligence may

be stronger than the other but they all are utilized by an ordinary person (Gardner 2006). In the differentiated classroom, teachers should provide educational opportunities in such a way that nurture the strong area of intelligence but also allow students to use all their intelligence (Thakur, 2014).

## **2.9. Differentiation and Inclusive Education**

Although differentiated instruction is not a new notion, it has recently become mainstreamed to meet the diverse needs of all students in an inclusive classroom. It provides teachers a method for developing classroom practices that will address rather than ignore the variance that exists among students while maintaining high standards for all (Tomlinson & Cooper, 2006). In general education, DI is considered a precondition for the inclusion of a student with disabilities (Strogilos et al., 2018). Westwood (2015) also acknowledged DI as fundamental to the concept of inclusion. He also asserted that if students with special needs are to be accommodated effectively in regular schools, how instruction is provided will need to be flexible enough to respond to individual differences.

In the reality, traditional instruction has a deleterious effect on students with disabilities who often show diverse cognitive abilities, varied instructional needs, and perform academically below their peer classmates (Friend & Bursuck, 2012). These insufficiencies make students with disabilities especially vulnerable to a one-size-fits-all approach to instruction (Lipsky, 2005). In this case, so many students with disabilities struggle in core areas of instruction are that physical access is not synonymous with cognitive access to the general education curriculum. To fully engage in and progress through the general education classroom, students with disabilities need more than to be physically present in the classroom (Abell et al., 2005). The net result is that many of these students perform poorly on standardized tests and have high dropout rates, low graduation rates, and high percentages of unemployment. One solution is what experts refer to as differentiating instruction (Lipsky, 2005). For this reason, they need group individualized instruction, supplementary aids and services, accommodations, and modifications to which they are allowed (Abell et al., 2005). Amadio (2014) also stated one student might learn visually whereas another student learns by manipulative. Because students have a variety of methods to understand a concept, they are more likely to achieve a higher level of understanding.

Here what all of us need to understand is that DI is a key tool for achieving the goals of inclusion which is meeting the needs of not only students with special needs but all students.

### **2.10. Teachers' knowledge about Differentiated Instruction**

The majority of existing research indicates tough evidence of a positive relationship between teachers' knowledge and implementation of DI (Moosa & Shareefa, 2019b). For instance, the regression analysis employed by McMillan (2011), involving 79 middle school teachers, revealed that teachers' implementation of DI strategies by content, process, and product is related to their knowledge and understanding with the concept. Brentnall (2016) also acknowledged this finding by suggesting teachers' knowledge and implementation of DI are positively related.

Other studies conducted in this area also show that the following results: Adlam (2007) investigated teachers' knowledge and use of differentiated instruction. This study focused specifically on how often teachers differentiated instruction in specific subject areas, and factors that helped or hindered implementing DI. Adlam's data revealed that the majority of the teachers surveyed were knowledgeable about differentiated instruction. Similarly Rodriguez's (2012) Study results demonstrated that the majority of the teachers surveyed are familiar with differentiated instruction. Again Deason (2014) Key findings revealed that although inclusion teachers readily implemented DI, they varied in their understanding and application of DI strategies and activities. On the contrary other studies show that very few teachers are knowledgeable in dealing with this group of students and DI (Archambault et al., 1993; Robinson, 1998; Westberg & Daoust, 2003; Whitton, 1997). This implies that there is some gap in the understanding of the concept of DI. By considering this the present study also investigates the teachers' familiarity with DI strategies and by depending on the findings of the study the researcher tries to indicate some solution to fill the gap.

### **2.11. Teachers Practice of Differentiated Instruction**

While many teachers recognize academic diversity in their classrooms and often confirm the need to address student variance, their practice tends to be misaligned with those beliefs (Tomlinson et al., 2003). Scholars also raised questions like; if differentiated instruction works, why is it not in wider practice? The answer is not surprising. Most general educators feel ill-

prepared to teach students with diverse learning needs (Schumm & Vaughn, 1991, 1995 as cited in Rock 2008). As well as it requires the integration of multiple instructional skills on the part of the teacher (McMilliani, 2011).

Empirical research has yielded; however, mixed evidence on teachers' reported use of DI. For instance, Moon, Callahan, Tomlinson, et al. (2002) reported that teachers rarely use DI practices in their everyday teaching. Bailey and Williams-Black (2008) found that many teachers do not know how to successfully incorporate DI into their regular instructional practice. Out of the 14 teachers who responded to the survey only three gave descriptions of classroom practices that demonstrated DI while teaching literacy. Similarly, Smit and Humpert (2012) indicated that teachers occasionally make use of DI practices. Moreover, their findings also indicate that teachers show rather a low variance in their use of DI practices as they substantially differentiate by tiering activities or implementing flexible grouping. In the meantime, Rodriguez's (2012) study finding also shows that because of their unfamiliarity of available tools, the immense amount of preparation time involved coupled with lack of resources, many teachers do not DI in their classrooms. Again in a recent study on Canadian elementary schools, teachers self-reported moderate use of differentiation practices, but strategies requiring more time to implement were used relatively infrequently (Roy et al., 2013). This implies that there is the inconsistency of teachers' practice DI. This study also tries to see the teachers' practice of DI across their sex, level of education, teaching experience, and subject taught.

## **2.12. Challenges of Differentiated Instruction**

There are many challenges in implementing differentiated instruction in today's classrooms. A teacher who differentiates his or her instruction faces the challenge to provide learning environments and opportunities that exclude no child (Anderson, 2007). While many approaches and strategies are available for teachers to use, considerable barriers to high-quality differentiation exist as well (Good, 2006).

Although teachers express a desire to meet the needs of all of their students, often too much workload responsibilities demands for substantial content coverage, and negative classroom behavior make the challenge seem overwhelming (Rock et al., 2008). Thus many teachers hesitate to weave differentiated practices into their classroom methods because they



believe that they lack time, professional development resources, and administrative support (Hootstein, 1998 as cited in Carolan & Guinn 2007). Tomlinson (2000) states that:

While most teachers persist with single-size approaches to instructing diverse student populations, both research and everyday observation provide ample evidence that many students are ill-served in such classrooms. We are repeatedly disappointed by test scores indicating a shortfall in student achievement. More disappointing is the number of students from varied economic and cultural backgrounds and achievement levels who become disenchanted with learning because the school has failed to connect with them as individual learners. (p. 9)

Comparable with Tomlinson's argument, it is often observed that the typical pupil sits through notes and lectures, completes worksheets, and then takes a test over the memorized materials. The classrooms were quiet except for the teachers' lecturing. The teachers chose content, duration of the study, and accessibility for student learning (James, 2009). It was an effort to ensure that all children receive an equal level of education (Levy, 2008). This is how most teachers are educated themselves; however, this is not differentiation. These barriers are real; if not addressed, they threaten to turn differentiation into the next education fad (Carolan & Guinn, 2007). Similarly VanTassel-Baska and Stambaugh (2005) identified different hindrances that hamper teachers in differentiating. The most common concern that teachers raise when attempting to differentiate refers to organizational issues, such as time and classroom management (Roiha, 2014). One of the characteristics of effective differentiation is varying instructional materials for differing instructional groups (Tomlinson et al., 2003). Many teachers, however, experience a lack of time to address all children individually or in small groups, they find it hard to organize and feel uncomfortable at having their children work on assignments that differ in content or level (Hertberg-Davis, 2009; VanTassel-Baska & Stambaugh, 2005). A second major barrier to differentiating that was identified by VanTassel-Baska and Stambaugh (2005) is the lack of knowledge and skills. Tailoring instruction requires knowledge of what children of different ability levels need in terms of instruction, resources, and feedback, as well as the skill to apply this knowledge in class. However, many teachers do not know what children below and above the standard teaching levels need, what kind of resources can be used, how much assistance children need in using those resources, and how reasoning and critical thinking at different levels can be promoted (Eysink et al., 2017).

## **CHAPTER THREE**

### **3. RESEARCH METHODS**

#### **3.1. Introduction**

This chapter includes a detailed description of the research approach, research design, source of data, study area, sampling technique, data gathering tools, pilot test, procedures of data collection, analytical methods, and ethical consideration.

#### **3.2. Research Approach**

The aim of this study was to investigate the knowledge, practice and challenges of implementing differentiated instruction among primary school teachers in Bahir Dar city. To achieve this end the researcher used both quantitative and qualitative (mixed) approach because the overall strength of the study is greater than either using quantitative or qualitative approaches alone (Creswell, 2014). This means it allows for a better understanding of the research problem and question than using only a quantitative or qualitative approach. Moreover, it allows for multiple methods, different forms of data collection and analysis.

#### **3.3. Design of the Study**

Among the types of mixed research design, the researcher prefers a sequential explanatory design. Thus, sequential explanatory design adopted in the study involved collecting and analyzing of quantitative data and then qualitative data in two consecutive phases of the same study (Creswell, 2014). Therefore, the quantitative data are more heavily weighted than qualitative data. So, this research design can provide descriptive information that leads to an understanding of teachers' knowledge, practice, and challenges of differentiated instruction, by collecting data from teachers' themselves and supervisors'.

#### **3.4. Source of Data**

This study utilized data solely from primary sources. To gain valid and reliable data and to achieve the expected objectives of the study the main sources of the data was Bahir Dar Primary school teachers and supervisors

### **3.5. Study Area**

The study was conducted in inclusive public primary schools of Bahir Dar city. Bahir Dar is one of the fastest-growing and the largest town in Ethiopia. It is located at the exit of the Abbay from Lake Tana at an altitude of 1,820 meters (5,970 ft) above sea level. The city is located 563 km north-northwest of Addis Ababa.

Based on the 2007 Census conducted by the Central Statistical Agency of Ethiopia (CSA), Bahir Dar Special Zone has a total population of 221,991, of whom 108,456 are men and 113,535 women; 180,174 or 81.16% are urban inhabitants, the rest of population are living at rural kebeles around Bahir Dar. At the town of Bahir Dar, there are 155,428 inhabitants; the rest of the urban population is living at Meshenti, Tis Abay and Zege towns which are part of Bahir Dar Special Zone ([https://en.wikipedia.org/wiki/Bahir\\_Dar](https://en.wikipedia.org/wiki/Bahir_Dar)).

### **3.6. Population, Sample and Sampling technique**

#### **3.6.1. Population**

The population of this study was regular teachers and supervisors. Though the study focuses on teachers the reason for including supervisors was to cross-check the data gained from teachers. There are 41 public primary schools in this city. Among these schools, the researcher selected those schools who teach by integrating both students with and without disability in the same classroom from grade 5-8. The schools were Yekatit 23, Donaberber, Tsehaygebate, Sertse dingil, Kulkuale, Weramite, Teyema, and Shembete primary schools.

The population of the study was 205, where 200 regular teachers and 5 supervisors

#### **3.6.2. Sample and Sampling Technique**

From 41 governmental primary schools 8 schools were selected purposively. The reason for selecting the schools using purposive sampling was because these 8 schools provide education (grade 5-8) for students with disability by integrating with students without disability than other schools with respect to the purpose of the study. Therefore teachers from this schools were selected using simple random sampling because every members of the population has a known and equal chance of being selected (Kothari, 2004). On the other hand supervisors for the

qualitative data were selected using comprehensive sampling because all of the supervisors were taken as a participant for the interview.

The sample size of teachers was determined using the formula of Yamane (1967) which is suggested by Kombo and Tromp (2006). This formula assumes a degree of variability (i.e. proportion) of 0.5 and a confidence level of 95%. The required sample size of the study participants (teachers) was determined by using a single population proportion formula as follow:

$$n = \frac{N}{(1 + N(e)^2)}$$

Where: n = sample size;

N = population size;

e = the level of precision.

Level of precision is 0.05.

For teachers  $n = \frac{200}{(1+200(0.05)^2)} = 133$

$$(1+200(0.05)^2)$$

*Table : Population and samples of teachers'*

	Name of the school	Gender	Population	Sample
1	Donaberber	Male	16	11
		Female	14	9
		Total	30	20
2	Kulqulae	Male	6	4
		Female	17	11
		Total	23	15
3	Tsehay Gebate	Male	7	4
		Female	15	10
		Total	22	14
4	Teyma	Male	13	9
		Female	22	14
		Total	35	23
5	Shembete	Male	14	9
		Female	21	14
		Total	35	23
6	Sertse Dingil	Male	13	10
		Female	6	4
		Total	19	14
7	Weramite	Male	6	4
		Female	5	3
		Total	11	7
8	Yekatit 23	Male	11	8
		Female	12	8
		Total	23	16
Grand total		--	200	133

Source: Bahir Dar Education Office

### **3.7. Data Gathering Instruments**

In order to gather the necessary data and answer the research questions, the researcher employed both quantitative (i.e., questionnaire) and qualitative (i.e., interview) data gathering instruments.

#### **3.7.1. Questionnaire**

A questionnaire is an effective way of collecting data in a structured and manageable form and it is used to collect vast quantities of data from a variety of respondents (Wilkinson & Birmingham, 2003). To gather quantitative data from teachers the researcher employed both open and close-ended questionnaires which was developed in English and later translated to Amharic. The close-ended questionnaire has four sections. The first section includes 4 items and deals with demographic characteristics of teachers. The second section were 9 items which deals about strategies of DI with 3 rating scale type (3=fully, 2= partially, 1= never). The third section were 4 likert scale type (4= always, 3= frequently, 2=Sometimes, 1= never) and grouped under 5 sections of components of DI: content (6 items), process (7 items), product (3 items), assessment (5 items), and learning environment (4 items). Regarding the open-ended there was a space provided for participants to put their further reflection. The researcher used a questionnaire developed by Siam and Alnatour (2010) and Rongriguez (2012) and adapted to the local context.

#### **3.7.2. Interview**

The qualitative data was obtained from supervisors using a semi-structured interview because it allows more freedom to modify the wording and order of questions throughout the interview process. The questions were developed by the researcher in English and translated to Amharic and consisted of 7 items in relation to the variables of the study. The researcher made a mutual agreement on the interview schedule and conducted on a person to person bases at least ranging from 20 up to 30 seconds and recorded using a sound recorder.

### **3.8. Pilot Test**

In addition to the modification made by the researcher advisor, pilot testing was conducted with 20 respondents who were not participating in the final data collection. The respondents were also selected from Mekserem 16 and Dilchebo primary schools where both schools were out of the participant schools of the study.

### 3.8.1. Validity

To determine the validity, the researcher presented drafts to the advisor of the study, two assistant professors from Adult education and Community Development and Educational Planning and Management to comment and ascertain the content coverage of the instrument and its face validity. Based on the constructive comments provided, the instrument was revised.

### 3.8.2. Reliability

Reliability refers to the consistency of the research and the extent to which studies can be replicated. The reliability of the questionnaire was tested using Cronbach's Alpha. Cronbach alpha test for the internal reliability estimates of the survey responses was conducted on 34 items. The normal range of Cronbach coefficient alpha value is between 0.0 and +1.0. The higher value indicates a higher degree of internal consistency. Accordingly the general reliability of all items is equals to 0.891. Since it was above 0.7 cronbach's coefficient alpha reliability of the items is considered high.

*Table : Cronbach's alpha reliability coefficient for differentiated instruction strategies and practice*

Reliability Statistics	Cronbach's Alpha	Number of items
DI strategies	0.712	9
Content Differentiations	0.871	6
Process Differentiations	0.855	7
Product Differentiations	0.790	3
Assessment Differentiations	0.729	5
Learning Environment Differentiations	0.913	4
Total	0.891	34

## 3.9. Data Collection Procedure

Before the administration of the data gathering instruments, the researcher followed the following procedure. First the letter of support was obtained by the researcher from the department of special needs and inclusive education, BahirDar University, addressed to all

schools requesting them to cooperate with the researcher in the process of gathering the necessary data to conduct the required research. Because of the current issue (Covid-19) collecting data in 8 schools alone was difficult to the researcher so the researcher used three assistants in collecting the data (3 of them were lecturer in Bahir Dar University). After permission was obtained from the schools the questionnaire was distributed in each of the selected schools.

The qualitative phase was conducted after the quantitative data were analyzed in order to feel the gap that has been observed in the quantitative data. The qualitative data were collected through interview. First the researcher communicated with the supervisors of the schools through cell phone to check their willingness to participate in the interview. As one supervisor supervise two and more schools the researcher got 5 supervisors for the selected schools. After their willingness was checked the time and place was selected by mutual agreement between the researcher and the participants.

### **3.10.Data Analysis Technique**

To analyze the gathered data, both qualitative and quantitative data analysis methods were used. Concerning the quantitative data, the collected data through questionnaire was entered and analyzed through SPSS version 23 using both descriptive and inferential statistics. From the descriptive statistics frequency and the percentage was used to analyze the demographic data and challenges of implementing DI. Moreover mean and the standard deviation was used to determine the overall knowledge of DI strategies and practice of DI. Regarding the inferential statistics independent sample t-test and one way ANOVA and correlation were employed. On the one hand independent sample t-test was used to see the significant difference in teachers' knowledge of DI strategies and the practice of DI based on gender and level of education (qualification). On the other hand one way ANOVA was used to see the significant difference on teachers' knowledge of DI strategies and practice of DI based on teaching experience and subject taught (department). Finally correlation was employed to see the relationship between teachers' knowledge of DI strategies and their practice.

With regard to the qualitative method, a thematic analysis was employed. Initially the data obtained was transcribed. After transcribing the core concept was categorized containing themes. The usefulness of a thematic approach to coding is apparent, as I noticed that some of



the data collected involved topics that I had not planned to focus too much on. Finally, the major finding was analyzed by organizing, summarizing, and interpreting together with the quantitative data.

### **3.11. Ethical Consideration**

When conducting this study, the researcher followed some ethical guidelines. Thus, the first activity that the researcher did was to get permission from participants. Once permission was obtained, the researcher made the participants feel safe and secure regarding the information they provided on the issue of investigation. In other words, the researcher assured participants that the information they provide would be used only for research purpose and hence was free to talk. Moreover, to make participants feel more confident about the information they provided, each informant was pre-informed that his/her real name will not be used while reporting the results. So the researcher gave a code name for the interviewees from S1 up to S5.

All participants were also oriented to understand their rights to confidentiality and anonymity in the research process and the right to withdraw from the research at any time, without having to give their reasons. The interviewees were audio recorded using audio recorder.

## **CHAPTER FOUR**

### **4. DATA ANALYSIS AND INTERPRETATION**

#### **4.1. Introduction**

This chapter presents the quantitative and qualitative findings of this study. It begins with the description of participants' demographic characteristics. Second, the knowledge of teachers' differentiated instruction strategies across their demographic characteristics is presented. Third, teachers' practice of DI across their demographic characteristics was also presented. Fourth, the relationships that exist between knowledge and practice of differentiated instruction strategies are addressed. Finally, the qualitative thematic descriptions of the study participants are presented to further explain the quantitative results as per the research question set at the beginning of this study.

#### **4.2. Demographic Characteristics of Participants**

In this study, from 133 disseminated questionnaire 103 teachers in the primary schools of Bahir Dar City Administration have completed the questionnaire surveys, but the remaining 20 does not return the questionnaire. So, the response rate was 77%. As indicated in Table 3, the proportion of male teachers (44.7%) was less than that of female teachers (55.3%). Regarding the level of education of teachers, (63.1 %) were diploma holders and (36.9 %) were degree holders. In terms of the subject teachers taught, (32.0%), (30.1%), and (37.9%) were language, social science and natural science teachers respectively. Teachers teaching experience ranged from five to ten years (25.2 %) to greater than 21 years (21.4%). In addition, 44 (42.7 %) of teachers received DI training, and the remaining 59 (57.3 %) of teachers did not receive training about DI.

*Table : Demographic characteristics of participants*

<b>Sex</b>	<b>n</b>	<b>%</b>
▪ Male	46	44.7
▪ Female	57	55.3
<b>Total</b>	<b>103</b>	<b>100</b>
<b>Level of education</b>		
▪ Diploma	65	63.1
▪ First degree	38	36.9
<b>Total</b>	<b>103</b>	<b>100</b>
<b>Teaching Experience</b>		
▪ 5-10	26	25.2
▪ 11-15	30	29.1
▪ 16-20	25	24.3
▪ >21	22	21.4
<b>Total</b>	<b>103</b>	<b>100</b>
<b>Subjects Taught</b>		
▪ Language	33	32.0
▪ Social Science	31	30.1
▪ Natural Science	39	37.9
<b>Total</b>	<b>103</b>	<b>100</b>
<b>Teachers DI training status</b>		
▪ Trained	44	42.7
▪ Untrained	59	57.3
<b>Total</b>	<b>103</b>	<b>100</b>

Source: Bahir Dar Primary School Teachers', 2020

### 4.3. Teachers' Knowledge on Differentiated Instruction Strategies

In order to examine the level of teachers' knowledge on differentiated instructional strategies, descriptive statistics were conducted. Consequently, the results are presented in Table 4. This provides an indication of the minimum and maximum values as well as the mean and standard deviation for the knowledge on differentiated instruction scale in which the participant teachers scored themselves regarding their knowledge of differentiated instruction strategies.

*Table : Descriptive scores of teachers' knowledge of differentiated instruction strategies (n = 103)*

	<i>Minimum score</i>	<i>Maximum score</i>	<i>Mean</i>	<i>SD</i>
Teachers knowledge	9	19	12.43	2.98

The results (Table 4) revealed that the mean score for teachers' knowledge of differentiated instruction strategies is 12.43. This falls in the lower average range of the differentiated instruction standard mean. The minimum and maximum scores also indicate that there were no outliers scores indicating higher differentiated instruction strategy score but that one or more of the individuals showed a differentiated instruction score that fell in the high score, which points to more knowledge in differentiated instruction strategy for teaching of children with disabilities in the regular classrooms. So, though the overall familiarity of teachers' with the strategies was low, the descriptive result of each strategy shows teachers familiarity difference with each of the strategies. For example, teachers were most familiar with the following strategies: varying question ( $M=1.5, SD. =.520$ ), flexible grouping ( $M= 1.45, SD. = .519$ ), learning contract ( $M=1.43, SD. =.497$ ), learning centers ( $M=1.41, SD. =.494$ ), student choice ( $M=1.39, SD. =.490$ ), and independent study ( $M=1.35, SD. =.479$ ). On the other hand, tired assignments ( $M=1.29, SD. =.457$ ), curriculum compacting ( $M=1.29, SD. =.478$ ) and varied instructional materials ( $M=1.29, SD. =.498$ ) were the least familiar strategies used by teachers (for further information refer appendix E).

This result was also supported by interview data conducted with supervisors. It revealed that teachers were not familiar with most of the strategies of DI and this was because lack of appropriate training regarding DI. For instance the interviewed supervisor (S4) responded:

As to me, it is difficult to say that teachers are knowledgeable about the strategies of DI. The reason is that there is lack of training for teachers regarding DI that improve their capacity & understanding. The school itself is responsible for this problem because the school does not facilitate for the provision of such training programs in frequent manner.

#### 4.4. Teachers' Knowledge of Differentiated Instruction and their Demographic Characteristics

A number of factors can promote or impede teachers' knowledge of differentiated instructional strategies. Thus, knowledge of differentiated instruction strategies of teachers may differ by several factors such as their sex, level of education, teaching experiences and subjects taught. To identify any statistically significant differences among demographic variables of teachers and their Knowledge of differentiated instruction strategies, Independent samples t-test and one way ANOVA were computed. The results on these variables are presented as follows.

##### 4.4.1. Comparison of Teachers' Knowledge of Differentiated Instruction Strategy by their Sex

One of the objectives of the this study was to examine if there was a statistically significant difference in teachers' knowledge of differentiated instruction strategies that are to be applied to meet the special educational needs of students with disabilities across their sex. To achieve this objective, participant teachers were categorized as male and female. Independent samples t-test was conducted by using sex of teachers as independent variable and knowledge of differentiated instruction strategy scores as dependent variable. The results on these variables are presented in Table 5.

*Table : Results of t-test on teachers' knowledge of differentiated instruction strategies across their gender (n = 103)*

<i>Group</i>	<i>n</i>	<i>Mean</i>	<i>SD</i>	<i>Mean Difference</i>	<i>t</i>	<i>df</i>	<i>p</i>
<i>Male</i>	46	12.33	3.011	-.183	-.308	101	.759
<i>Female</i>	57	12.51	2.977				

*Note: Leven's test for equality of variance gives [p = .81] and the t-test was conducted by assuming equality of variance*

*P>.05*

The t-test results (Table 5) demonstrated the knowledge of male teachers' ( $M=12.33$ ,  $SD. = 3.011$ ) and female teachers ( $M=12.51$ ,  $SD. =2.977$ ) did not show statistically significant difference, condition,  $t (-.31)$ ,  $df (101)$ ,  $p > 0.05$ . This implies that there was no knowledge difference between male and female teachers regarding the DI strategies.

#### 4.4.2. Comparison of Teachers' Knowledge of Differentiated Instruction Strategies across their Level of Education

In order to examine possible differences in teachers' knowledge of differentiated instruction strategies based on their level of education, t-test was computed. Comparisons were done by categorizing participant teachers in two groups of degree and diploma holders. Independent samples t-test was computed by using level of education as independent variable and knowledge of differentiated instruction strategies score as dependent variable. The results are presented in Table 6.

*Table : Results of t-test on teachers' knowledge of differentiated instruction strategies across their level of education (n = 103)*

<i>Groups</i>	<i>n</i>	<i>Mean</i>	<i>SD</i>	<i>Mean Difference</i>	<i>t</i>	<i>df</i>	<i>p</i>
<i>Diploma</i>	38	10.85	2.116	-4.285	-9.782	101	0.000
<i>Degree</i>	65	15.13	2.195				

*Note: Leven's test for equality of variance gives [ $p = .43$ ] and the t-test was conducted by assuming equality of variance*

$P < .05$

As it displayed in Table 6, the results disclosed a statistically significant difference in knowledge on differentiated instruction strategies between degree and diploma holder teachers, condition,  $t (-9.782)$ ,  $df (101)$ ,  $p < .05$ . The descriptive results in the table also indicated that teachers who have degree ( $M= 15.13$ ,  $SD. = 2.195$ ) had significantly higher knowledge of differentiated instruction strategies mean scores as compared to those diploma ( $M=10.85$ ,  $SD. = 2.116$ ) holder teachers. This indicates that there was a knowledge difference between degree and diploma holder teachers regarding DI strategies.

#### 4.4.3. Comparison of Teachers' Knowledge of Differentiated Instruction Strategies by their Teaching Experience

The study was also aimed to investigate if there were statistically significant differences in teachers' knowledge of differentiated instruction strategies across their teaching experiences. To carry out this objective, teachers were categorized based on their teaching experience as shown in Table 7.

*Table : Teachers teaching experience (n = 103)*

	<i>n</i>	<i>Mean</i>	<i>SD</i>
5-10	26	10.31	1.995
11-15	30	11.03	2.385
16-20	25	13.76	2.634
>21	22	15.32	1.836

Then, one-way ANOVA was computed by using teaching experience as independent variables and total scores of knowledge of differentiated instruction strategies as dependent variables. The results are presented in Table 8.

*Table : Result of ANOVA of teachers' knowledge of differentiated instruction strategies across teaching experience (n= 103)*

<i>Source</i>	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Between	403.366	3	134.455	26.525*	.000
Within	501.838	99	5.069		
Total	905.204	102			

*Note: equality of variance for the F-test was assumed [P = .10]*

\* $p < .01$

Since, the *F* ratio was found to be significant at a 0.01 level, to examine which of the pairs of groups differed among themselves, Post Hoc pair wise comparison was computed. The results are shown in Table 9.

*Table : Results of Scheffe Post Hoc Test of teachers' knowledge of differentiated instruction strategies across teaching experiences (n = 103)*

<i>Teaching experience</i>			
<i>Teaching experience</i>	11-15	16-20	>21
5-10	-.726	-3.452*	-5.010*
11-15		-2.727*	-4.285*
16-20			-1.558

\* $p < .01$

The results (Table 8) revealed a statistically significant difference in teacher's knowledge of differentiated instruction strategies mean scores with respect to their teaching experience ( $F_{(3,99)} = 26.525, P < .01$ ). Further, Post Hoc test results (Table 9) showed statistically significant knowledge of differentiated instruction strategies mean differences of 4 out of 6 pairs of comparisons made was found. This result further revealed a pattern that as teachers' teaching experience increases, their knowledge of differentiated instruction strategies. For example, a statistically significant knowledge of differentiated instruction strategies mean differences were obtained between teachers who had teaching experience between 5-10 years and greater than 21 years, ( $MD = -5.01, p = .000$ ).

#### **4.4.4. Comparison of Teachers' Knowledge of Differentiated Instruction Strategies by Subjects Taught**

The study was also aimed to know if there was a statistically significant difference in the knowledge of differentiated instruction strategies of teachers due to the subjects they taught. To answer this question, teachers were categorized based on the subjects they taught. The subject categories under which teachers were grouped are language, social science, and natural science. Teachers who taught language, social and natural sciences had knowledge of differentiated instruction strategies mean scores of ( $M=13.64, SD. = 2.356$ ), ( $M=14.77, SD. = 2.320$ ) and ( $M=9.54, SD. = .756$ ) respectively. Then, one way ANOVA where the subjects' teachers taught served as independent variables and total knowledge of differentiated instruction strategies scores as dependent variable was computed. The results are presented in Table 10.



*Table : Result of ANOVA of teachers' knowledge of differentiated instruction strategies across subjects they taught (n =103)*

<i>Source</i>	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Between	544.456	2	272.228	75.462*	.000
Within	360.748	100	3.607		
Total	905.204	102			

*Note: equality of variance for the F-test was not assumed [P = .00]*

\* $p < .01$

Since, the  $F$  ratio was found to be significant at a 0.01 level, to examine which of the pairs of groups differed among themselves, Post Hoc pair wise comparison was computed. The results are shown in Table 11.

*Table : Results of Scheffe Post Hoc Test of teachers knowledge of differentiated instruction strategies across subjects taught (n = 103)*

	<i>Subjects taught</i>	
<i>Subjects taught</i>	Social Science	Natural science
Language	-1.138	4.098*
Social Science		5.236*

\* $p < .01$

As displayed in Table 10 there was statistically significant difference in knowledge of differentiated instruction strategies mean scores of teachers across the subject they taught ( $F_{(2,100)} = 75.462$ ;  $p < .01$ ). Further, Post Hoc test results (Table 11) indicated statistically significant knowledge of differentiated instruction strategies mean differences of two out of three pairs of comparisons made was found. For example, a statistically significant mean difference in teachers knowledge of differentiated instruction strategies between those who taught language subjects and those who taught natural science subjects ( $MD = 4.1$ ,  $p = .000$ ) was obtained.

#### **4.5. Teachers Practices of Differentiated Instruction**

The academic achievement of students with disabilities obviously depends on the extent of teachers' involvement in differentiating instruction for these students so as to meet their special educational needs. Hence, this study was aimed to examine teachers' practice of instructional

differentiation for their students with disabilities. To achieve this objective, descriptive statistics were computed. The results are presented in Table 12.

*Table : Descriptive scores of teachers differentiated instruction practice (n =103)*

	<i>Minimum score</i>	<i>Maximum score</i>	<i>Mean</i>	<i>SD</i>
Overall DI practice	26	81	47.00	16.59

The results (Table 12) disclosed that the mean score for teachers' differentiated instruction practice is 47.00. This falls in the lower average range of the differentiated instruction practice standard mean. The minimum and maximum scores also indicate that there were no outlier scores indicating higher differentiated instruction practice score but that one or more of the teachers showed a differentiated instruction practice score that fell in the high score range, which points to higher differentiated instruction practice to in the regular classrooms to meet the special educational needs of students with disabilities. The results of the qualitative data further strengthened the findings of the quantitative result in that the low practice of DI was disclosed. Pertaining the practice of DI one of the supervisors (S1) indicated:

The practice of DI is said to be very poor in most school I supervise because most of the teachers use traditional mode of instruction. Of course there are some teachers who differentiate the content and methods to some extent but they provide the same test, assignment and examination for all students of the classroom. But as we know in a DI it is not only the contents and methods that should be differentiated but also the assessment techniques. But, I did not see such practice among teachers because most teachers in our school are mostly using chalk and blackboard, text book and the accustomed assessment technique for all students including students with disability.

#### **4.6. Teachers Differentiated Instruction Practice and Demographic Characteristics**

One of the most important factors that are closely related to successfully addressing the special educational needs of students with disabilities are the subject teachers' willingness and capability to differentiated instruction for students with disabilities in inclusive classrooms. In addition, differentiated instruction practice of teachers may be affected by several factors such as level of education, sex, subjects and the number of years they taught. To identify any statistically significant differences among demographic variables of teachers and differentiated instruction

practices, Independent samples t-test and one way ANOVA were computed. The results on these variables are presented as follows.

#### 4.6.1. Comparison of Teachers' Differentiated Instruction Practice by Sex

In order to examine the possible differences in teachers' differentiated instruction practices for students with disabilities based on sex, Independent samples t-test was conducted by using sex of teachers as independent variables and differentiated instruction scores as dependent variables. The results are presented in Table 13.

*Table : Results of t-test on teachers' differentiated instruction practice across sex (n = 103)*

<i>Group</i>	<i>n</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>t</i>	<i>df</i>	<i>p</i>
				<i>Difference</i>			
Male	46	43.61	16.009	-6.128	-1.887	101	.062
Female	57	49.74	16.684				

*Note: Leven's test for equality of variance gives [p = .48] and the t-test was conducted by assuming equality of variance*

$p > .05$

As it is shown in Table 13, the t-test results revealed a statistically insignificant difference in differentiated instruction practice , condition, t (-1.887), df (101),  $p > .05$  of male and female teachers. The descriptive results in the table also indicated that male teachers had not significantly higher mean scores as compared to female teachers. Hence, this implies that there is no DI practice difference between male and female teachers'.

#### 4.6.2. Comparison of Teachers' Differentiated Instruction Practices by Levels of Education

One of the issues the present study aimed to investigate was to see if there was difference in differentiated instruction practice among teachers across their levels of education. Comparisons were done by categorizing participant teachers in to groups of degree and diploma holders. Then, Independent samples t-test was computed by using level of education as independent variable and differentiated instruction practice score as dependent variable. The results are presented in Table 14.

*Table : Results of t-test on teachers' differentiated instruction practice based on level of education (n=103)*

<i>Groups</i>	<i>n</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>t</i>	<i>df</i>	<i>P</i>
				<i>Difference</i>			
Diploma	65	39.49	13.875	-20.350	-7.435	101	.000
Degree	38	59.84	12.547				

*Note: Leven's test for equality of variance gives [p = .82] and the t-test was conducted by assuming equality of variance*

$P < .05$

The results (Table 14) depicted a statistically significant difference in differentiated instruction practice, Condition,  $t$  (7.44),  $df$  (101),  $p < .05$  of teachers who have degree and diploma. The descriptive results in the table also indicated that teachers who have degree ( $M=59.84$ ,  $SD. =12.547$ ) had significantly higher differentiated instruction practice mean scores as compared to those diploma ( $M= 39.49$ ,  $SD. =13.875$ ) holder teachers. This indicates that there is a DI practice difference across teachers' level of education.

#### **4.6.3. Comparison of Teachers' Differentiated Instruction Practice by Teaching Experience**

One of the many objectives of the present study was also to examine if there were statistically significant differences in teachers' differentiated instruction practice for meeting the special educational needs of students with disability across their teaching experience. To answer this question, teachers were grouped based on their teaching experience as shown in Table 15.

*Table : Teachers teaching experience (n = 103)*

	<i>N</i>	<i>Mean</i>	<i>SD</i>
5-10	26	36.62	13.078
11-15	30	42.43	16.288
16-20	25	55.24	15.281
>21	22	56.14	12.981

Then, one way ANOVA was computed by using teaching experience as independent variables and total scores of differentiated instruction practice as dependent variables. The results are presented in Table 16.

*Table :Result of ANOVA of teachers' differentiated instruction practice across teaching experience (n= 103)*

<i>Source</i>	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Between	6963.329	3	2321.110	10.884*	.000
Within	21112.671	99	213.259		
Total	28076.000	102			

*Note: equality of variance for the F-test was assumed [P = .83]*

\* $p < .01$

Since, the  $F$  ratio was found to be significant at a 0.01 level, to examine which of the pairs of groups differed among themselves, Post Hoc pair wise comparison was computed. The results are shown in Table 17.

*Table : Results of Scheffe Post Hoc Test of teachers' differentiated instruction practice across teaching experiences (n = 103)*

<i>Teaching experience</i>	<i>Teaching experience</i>		
	11-15	16-20	>21
5-10	-5.818	-18.625*	-19.521*
11-15		-12.807*	-13.704*
16-20			-.896

\* $p < .01$

The results (Table 16) revealed a statistically significant difference in teachers differentiated instruction practice mean scores with respect to their teaching experience ( $F_{(3,99)} = 10.884$ ,  $P < .01$ ). Further, as it is shown in Table 17, Post Hoc test results depicted a statistically significant differentiated instruction practice mean differences of 4 out of 6 pairs of comparisons made was found. This result further revealed a pattern that as teachers' teaching experience increases, their differentiated instruction practice in inclusive classrooms also increases. For instance, a statistically significant differences in differentiated instruction practice mean scores

were obtained between teachers who had teaching experience 5-10 years and greater than >21 years, ( $MD = -20.02, p = .000$ ).

#### 4.6.4. Comparison of Teachers' Differentiated Instruction Practice across Subjects Taught

The study was also aimed to know if there was a statistically significant difference in differentiated instruction practice of teachers due to the subjects they taught. To achieve this objective, teachers were categorized based on the subjects they taught. The subject categories under which teachers were grouped are language, social science and natural science. Teachers who taught language, social and natural science subjects had differentiated instruction practice mean scores of ( $M=56.06, SD. = 14.847$ ), ( $M=56.29, SD. = 14.147$ ) and ( $M=32.79, SD. = 7.828$ ) respectively. Then, one way ANOVA where the subjects' teachers taught served as independent variables and total differentiated instruction practice scores of teachers serve as dependent variable was computed. The results are presented in Table 18.

*Table : Result of ANOVA of teachers' differentiated instruction practice across the subjects taught (n =103)*

<i>Source</i>	<i>Sum of Squares</i>	<i>Df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Between	12689.375	2	6344.688	41.235*	.000
Within	15386.625	100	153.866		
Total	28076.000	102			

*Note: equality of variance for the F-test was not assumed [P = .00]*

\* $p < .01$

Since, the  $F$  ratio was found to be significant at a 0.01 level, to examine which of the pairs of groups differed among themselves, Post Hoc pair wise comparison was computed. The results are shown in Table 19.

Table : Result of ANOVA of teachers' differentiated instruction practice across they subjects taught ( $n = 103$ )

<i>Subjects taught</i>		
<i>Subjects taught</i>	Social Science	Natural science
Language	-1.230	22.266*
Social Science		23.266*

\* $p < .01$

As displayed in Table 18 there was statistically significant difference in differentiated instruction practice mean scores of teachers across the subject they taught ( $F_{(2,100)} = 41.24$ ;  $p < .01$ ). Further, Post Hoc test results (Table 19) indicated statistically significant differentiated instruction practice mean differences of two out of three pairs of comparisons made was found. For example, a statistically significant mean difference in teachers differentiated instruction practice between those who taught social science subjects and those who taught natural science subjects ( $MD = 23.5$ ,  $p = .000$ ) was obtained.

#### 4.7. Relationships between Teachers' Knowledge and Practices of Differentiated Instruction

A correlation analysis was conducted in order to examine relationships between the variables of teachers' knowledge and practice of differentiated instruction strategies. A correlation matrix of these variables is displayed in Table 20.

Table : Correlation between knowledge and practice of DI ( $n = 103$ )

<b>Correlations</b>		
	Teachers practice	Teachers knowledge
Teachers knowledge	Pearson Correlation .743**	1
	Sig. (2-tailed) .000	

\*\* $p < 0.01$

The correlation analysis result (Table 20) disclosed the importance of investigating relationships among teachers' knowledge and practice of differentiated instruction strategies. Knowledge of teachers differentiated instruction strategies had very large positive correlations (.743) with differentiated instruction practices of teachers. These two variables generally had

large and positive significant correlations between themselves. This implied that when teachers' knowledge of teachers increases practice also increases.

#### 4.8. Challenges of Implementing Differentiated Instruction

Percentage and frequency were conducted to determine the rank of the most and least serious challenges which teachers face when implementing DI.

*Table : Challenges of implementing DI*

<i>Challenges</i>	<i>Frequency of teachers response</i>		<i>Remark</i>
	<i>n</i>	<i>%</i>	<i>Rank</i>
Student diversity	60	58.3	Most serious
Amount of planning time	66	64.1	2 <sup>nd</sup>
Staff development	42	40.8	3 <sup>rd</sup>
Availability of materials	40	38.8	4 <sup>th</sup>
Knowledge and experience	42	40.8	5 <sup>th</sup>
Administration/school leadership	40	38.8	6 <sup>th</sup>
Support of other staff	54	52.4	7 <sup>th</sup>
Parent expectation	55	53.4	Least serious

Regarding the challenges of implementing DI teachers have indicated the challenge by ranking from the most serious (1) up to the least series (8). So the result of the above table (Table 21) shows that student diversity 60 (58.3%) was ranked as the most serious challenge, amount of planning time 66 (64.1%) as a second challenge, staff development 42(40.8%) as third challenge, availability of materials 40 (38.8%) as a fourth challenge, knowledge and experience 42 (40.8%) as a fifth challenge, administration/school leadership 40 (38.8%) as a sixth challenge, support of other staff 54 (52.4%) as a seventh challenge, and the least serious challenge was parent expectation 55 (53.4%) .

The qualitative data which was obtained from supervisors indicated that teachers face many challenges in implementing DI. Those challenges are the large number of students in one



classroom, lack of access for training, lack of teaching materials in addition to the text book, and lack of time.

One of the supervisors (S5) also reported as:

Most of the teachers feel as though there is so much demand on them and yet time is limited. Time is spent on preparing, lesson planning, and finding material. There is also lack of teaching material that is supportive for students with disability. The other problem is lack of access for frequent training. You know what if there was appropriate and sufficient training for teachers all the problems that I mentioned above can be solved easily and also teachers were not challenged when new teaching methods are implemented.

The summary of open-ended responses furthered this finding. One teacher discussed;

It is known that in most or I can say all government schools the number of students in one classroom is 65 and above. And with this number students there are also students with disability who needs some kind of assistance. Imagine how it is difficult to deal with these highly diverse students. So how can one teacher practice DI in this situation? In general it is even hard to think about it.

## **CHAPTER FIVE**

### **5. DISCUSSION**

#### **5.1. Introduction**

There has been extensive research on teachers' knowledge, practices and challenges of differentiated instruction focused on the general population of students in the regular classrooms. However, little research is found to describe knowledge, practices and challenges of differentiated instruction from the perspective of students with disability in general and those with disabilities in particular. Consequently, this study was largely conceived to explore the level of teachers' knowledge of differentiated instruction strategies as well as the extent of the practice of these strategies by teachers in the current context of primary schools in Bahir Dar City Administration. The study was also aimed at exploring the challenges teachers have encountered in the process of implementing differentiated instruction for children with disabilities. It also examined the effects of various demographic characteristics of participants on their knowledge and practice of differentiated instruction and the relationship between teachers' knowledge and practice of differentiated instruction. In this chapter, the results of this study are discussed as per research questions and in light of prior research as required.

#### **5.2. Teachers' Knowledge of Differentiated Instruction Strategies**

In this study, the first research question examined teachers' knowledge of differentiated instructional strategies. Generally, as it was shown in the results of the descriptive statistics (table 4), teachers scored below the mean score in the overall strategies showing that the majority of the teachers surveyed were not familiar with DI strategies. Thus, this result implies that the education office and school administrators have to provide access for a frequent training to empower teachers to become familiar with the differentiated instructional strategies.

In line with this result, Nedellec (2015) stated that despite the potential benefits of differentiated instruction on student achievement, and the credibility of the approach in catering for individual differences in the inclusive educational setting of today's classrooms, knowledge of the strategies by teachers is below the benchmark. Contrary to the study finding Adlam (2007) and Rodriguez (2012) found that the majority of teachers were familiar with DI strategies. This may be due to the setting in which Adlam (2007) and Rodriguez

(2012) conducted study teachers might have sufficient access for both in-service and pre-service training regarding instructional strategies. The findings of the qualitative data also disclosed that teachers were not familiar with the Strategies of DI and lack of frequent training was raised as a reason for this problem.

However, even though the finding of this study showed the overall knowledge of teachers on DI strategies was low the descriptive results of each strategy indicated a knowledge difference in each of the strategies. More specifically teachers were better familiar with instructional strategies of varying question, flexible grouping, learning contract, learning centers, student choice, and independent study. Conversely, teachers were least familiar with tired assignment, curriculum compacting, and varied instructional materials. In line with this result, Tadesse,(2015) has identified the same type of result on many of these strategies. Specifically, both studies found that flexible grouping, learning centers, and independent study were the most familiar strategies, and tired assignment, curriculum compacting, and varied instructional materials were the least familiar strategies. However, while Tadesse found teachers were least familiar. However, Tadesse found varying question to be the least familiar instructional strategy in his study, whereas it was one of the most strategies in the present study. This might be attributed to the participants (teachers) of this study have students with disability in their classroom; they were aware of varying question by considering the learning styles of these students and students without disability.

### **5.3. Teachers knowledge of Instructional Strategies and their Demographic characteristics**

Though the overall result of teachers' knowledge of instructional strategies was found below the expected comparisons were made in each of the demographic variables. The results of independent sample t-test analysis on instructional strategies across sex revealed no difference between male and female teachers on knowledge of instructional strategies. Unfortunately, no literature yields empirical results which can be compared with these findings. Even though a significant difference was not observed due to sex, Moosa and Shareefa(2019a) suggested that teachers must be equipped with proper knowledge and understanding of how they can adjust the content, process, product, and the learning environment to match the learning profiles of the

student. McMillan (2011) also suggested that there is a need to increase teachers' familiarity with differentiated strategies and to encourage usage of such strategies in daily teaching routines.

With respect to the level of education (qualification), a significant difference was obtained regarding the familiarity of instructional strategies between diploma and degree holders. However, the findings Moosa and Shareefa (2019b) contradict with this study in that these researchers found insignificant differences in teachers' knowledge of DI strategies across their level of education. Hence, the present result showed a knowledge difference between degree and diploma holder teachers. This result implies that teachers upgrading of qualification may provide for better access to different courses that enable them to have enhanced knowledge than previous.

The other demographic variable was teaching experience and its finding showed a statistically significant difference in teachers' knowledge of instructional strategies across their experience. In contrast to this finding, the research finding of Moosa and Shareefa's (2019a) study indicated that no significant difference in teachers' knowledge of DI when compared against their experience. This contradiction might happen as the participants become more experienced they may also become more familiar with the instructional strategies. In general, one can understand from this finding that the impact of teaching experience on teachers' knowledge or how teachers' knowledge increases as teaching experience increases.

The analyzed data concerning teachers' subject taught (department) and their knowledge of instructional strategies shows a significant difference among teachers in different departments. Specifically, when we compared social science with the natural and language department, social science teachers were more familiar with the instructional strategies than the others. This might be social science teachers have more experience and exposure with students with disability than natural science teachers, because most students with disability do not take natural science subjects (e.g. maths, physics, chemistry, sport....) starting from grade 5 or 6.

#### **5.4. Practices of Differentiated Instruction**

Teachers' practice of differentiated instruction was also another aspect of this study. Its descriptive result shows that the practices of differentiated instruction by primary school teachers were low. That is the mean score of the finding ( $M= 47.00$ ) is less than the average range of the

differentiated instruction practice scale. The qualitative finding was also consistent with the quantitative finding because the interviewed supervisors indicated the low practice of DI in their schools.' Previous research by Siam and Al-Natour (2016) confirmed the results of the present study. They showed the practice of differentiated instruction by teachers was low. This means educational skills in all areas (Content, Process, Teaching Resources, Product, Assessment, and Classroom Management) were low for all DI components. From the finding of the present study, one can understand that teachers are not allowing students with a choice of showing their understanding of the content being studied. At the same time, students with disability may not be getting the modified access to content materials that are consistent with their learning styles. Broderick et al. (2005) also suggested that it is not appropriate to have only one opportunity per unit to demonstrate one's knowledge. Students need many and varied opportunities throughout the course of study and having multiple opportunities for preparation and training of assessment activities typically supports students' successful performance and also a classroom environment where all students benefit and mutual respect is a given to every student.

### **5.5. Teachers Practice of Differentiated Instruction and their Demographic Characteristics**

The practice of differentiated instruction was also examined across the demographic variables of the participants. Surprisingly, a significant difference was not found in the differentiated instruction practice of male and female teachers. The result of the present study contradicts Tadesse's (2015) finding who revealed a significant difference in male and female teachers' practice of DI. This contradiction might happen because of the majority of the participants of this study do not receive any training regarding DI. So, a practice difference may not be expected between male and female teachers. Koeze (2007) also indicated that teachers who participated in the DI training reported frequent differentiation in the areas of readiness, interest, choice, and learning styles.

Teachers' education level was also surveyed to determine if there was practice difference between degree and diploma holder teachers. It was found that a significant practice difference based on teachers' level of education (qualification). Previous studies also reported that a significant difference in the practice of DI based on teachers' qualifications (McMillan, 2011; Suprayogi et al., 2017). Besides Moosa and Shareefa (2019b) noted that it is assumed that the

difference in teachers' implementation of DI could be more due to their qualification which incorporated some training (knowledge) on DI. These findings indicated that how DI practice increases as teachers improve their educational level. In other words, as teachers improve their educational level from time to time there is a tendency to get of relevant pedagogical knowledge of DI along with the chance to practice differentiation. Moreover, it will reinforce the education office and school administrators to provide access for continuous improvements to the teacher education program consistently.

This study has also examined the possible differences in DI practice of teachers across their teaching experience. The results depicted a statistically significant difference in DI practice mean scores of teachers across their teaching experience. Consequently, teachers with several years of teaching experience showed higher DI practice mean scores than those with few years of teaching experience. Specifically, the result indicated that there was a difference in the teachers' practice of differentiated instruction among 5-10 and 16-20 years of experience, 5-10 and >21 years of experience, 11-15 and 16-20 years of experience, and 11-15 and >21 years of experience. In line with this finding Suprayogi et al. (2017) study also revealed that a significant difference in teachers' practice of DI based on their teaching experience. Furthermore, Suprayogi et al. also noted that Early-career teachers (5 or less years of experience) seem more eager to adopt innovations. In contrast, the late-career teachers (over 20 years of experience) are more likely to resist change and criticize the new instructional practices. Mid-career teachers (6 to 20 years of experience) have mixed reactions to educational innovations. These teachers feel competent and confident, but are cautious about innovations that require the development of new competences.

The practice of DI may vary across the subject matter teachers taught as different fields of subject types may have their challenges and opportunities for practicing DI. Taking these views in mind, the possible differences among teachers across the type of subject they taught was investigated. The results revealed the presence of a statistically significant difference in DI practice mean scores of teachers concerning the subject they have taught. More specifically primary school teachers of social science ( $M= 56.29$ ), and language ( $M=55.06$ ) better practice DI than natural science ( $M=32.79$ ). In contradiction with the present study Rodriguez's (2012) findings revealed that DI was practiced frequently in subjects such as Language Arts and

Mathematics due to more time allocated to these subjects. One reason for this contradiction might be as I stated earlier as most students with disability do not take natural courses after grade 5 or 6 the natural subject teachers may have less opportunity to practice DI than the social science teachers. This might be in terms of providing teaching-learning materials in a different format that can be easily accessible for students with disability (e.g. providing maps and letters in tangible materials, providing taped notes and brief written notes including instructions in each portion of the subject, etc.), allowing students to express what they understood based on their learning styles like oral presentation for students with visual impairment or written format for students with hearing impairment, or giving extra time during exam and assignment submission dates and so forth.

### **5.6. Relations between Knowledge and Practice of Differentiated Instruction**

The relationship between teachers' knowledge of DI strategies and practice of DI were examined to see how these two dependent variables were related to each other. The results of the correlation analysis disclosed that knowledge of teachers DI strategies has large correlations with DI practice of teachers. Besides the significant correlation between knowledge and practice of DI, a significant positive correlation was observed between knowledge and practice. This is to say that an increase in knowledge is associated with the positive (high) practice of DI. A recent study by Moosa and Shareefa (2019a) supported the finding of the present study and their finding showed that a significant correlation between knowledge and practice of DI. They further explained that teachers' knowledge is the most significant factor in having an impact on the implementation of DI. Hence, it is claimed that knowledge of what DI is and how it can be applied in a given context is necessary for the successful implementation of DI. So, the presence of knowledge enhances practice of DI.

### **5.7. Challenges of implementing differentiated instruction**

There are many challenges that teachers are facing in implementing DI. By considering these challenges of implementing DI were examined in this study. In the survey students' diversity, lack of planning time, and staff development were ranked as the most serious challenges in descending order. The least serious challenge which was ranked by primary school teachers was Parent expectation. The responses of supervisors' interviews about the challenges for DI

implementation were thematically analyzed and the emerged categories were identified. The emerged themes were class size and students' diversity, time, training, and resource.

### **5.7.1. Challenges related to Class size and students diversity**

The results of the interview indicated that large number of students in one classroom and the students' diversity were one of the biggest challenges where teachers always face in the classroom. Because in one classroom there are 60 up to 80 students with diverse learning backgrounds which is very difficult. This challenge was also identified as the first most serious challenge in the survey. Futrell and Gomez (2003as cited in Shareefa et al., 2019) noted that meeting the needs of a diverse student population is one of the most persistent and daunting challenges educators experience at all levels. The findings of the present study confirmed the accuracy of this assertion. There are several empirical evidence in the literature that is in accord with the current findings (Roiha, 2014; Siam & Al-Natour, 2016; Tomlinson, 2008; Vantasselbaska et al., 2005). This and the past studies indicated that teaching a heterogeneous student population is difficult, and the difficulty increases if teachers are ill-prepared for the challenges. In general, teachers recognize that there was a great difference among students and faced a dilemma in managing all students.

### **5.7.2. Challenges related to time**

The finding of this study showed that time as a challenge for the implementation of DI. This is because teachers' conception of DI as time-consuming, and use up the expensive time they have to plan and evaluate. Open-ended responses to the survey also included comments about how time-consuming and challenging it is to differentiate instruction. This result is consistent with those of Siam and Al-Natour (2016) study, limited availability of time to implement given learning goals in the curricula. Similarly, the lack of time was also an issue for the teachers in the study conducted by Robinson et al (2014). This might be teachers' concern about the need for sufficient time for material preparation, understanding of students' needs, and collaborating with other teachers.

### **5.7.3. Challenges related to training**

Lack of proper training in the area of DI was also another challenge for effective DI implementation. The vast majority of teachers who participated in this study do not receive



training on DI strategies and their practice. So it would be difficult to implement DI without any training because at least teachers should get some introduction which can be used as a clue. In line with this finding, Pozas and Letzel (2019) stated that without the proper training, teachers are inherently unable to provide meaningful and successful instruction for all students, as they do not count with the knowledge on DI, and in the case of beginning teachers, the experience to teach diverse learners. It is then necessary and urgent that DI receives sufficient attention in pre-service education and further in-service teacher training. Rodriguez (2012) also suggested that school administrators, need to develop, plan, and implement training and support for their teachers to become increasingly more familiar with the knowledge of differentiated instructional strategies and more effective in their use.

#### **5.7.4. Challenges related to material**

The availability of teaching-learning materials was also one which was raised as a challenge for DI implementation. All of the supervisors mentioned how helpful it would be to have a wider variety of resources like a tape recorder, adapted sport materials, textbooks, and pictures that are prepared with braille or in general modified teaching materials. But because of the lack of sufficient availability of resource teachers were challenged to provide the appropriate support for these students. In support of this study finding VanTassel-Baska and Stambaugh (2005) finds resource as a major challenge for differentiation, they indicated that many teachers do not know what children below and above the standard teaching levels need, what kind of resources can be used, how much assistance children need in using those resources.

To sum up the findings of challenges of implementing DI, the main reason that DI is not implemented efficaciously might be professional unpreparedness, lack of adequate conditions that school offers as well as a large number of students in classes, and lack of time and resources.

## CHAPTER SIX

### 6. CONCLUSIONS AND RECOMMENDATIONS

#### 6.1. Conclusion

The study sheds light on teachers' knowledge and practice of differentiated instruction as well as the challenges impeding the implementation of DI within the present context of primary schools in Bahir Dar City, Ethiopia. Although some mixed results are obtained in some of the variables, the overall results of the present investigation are consistent with the findings of previous studies.

Teachers teaching in primary schools lack Knowledge of differentiated instruction strategies. However, teachers are familiar with the strategies of varying question, flexible grouping, learning contract, learning centers, student choice, and independent study. Whereas tired assignment, curriculum compacting and varied instructional materials are the least familiar strategies by teachers. There is no significant difference between male and female teachers' knowledge of instructional strategies. Teachers with a higher level of education and teaching experience have more knowledge of differentiated instruction strategies than those with lower levels of education and teaching experience. Department wise social sciences subject teachers were more familiar in instructional strategies than language and natural science department teachers.

The overall differentiated instruction practice of teachers is low. This means that the teachers' practice of DI is low in each of its components (content, process, product, assessment, and learning environment) of differentiated instruction. Specifically, there is no significant difference in DI practice between male and female teachers. Teachers with a higher level of education and teaching experience have a better practice of differentiated instruction strategies than those with lower levels of education and teaching experience. Department wise, social science teachers have better a practice of DI than language and natural science department teachers.

There is a large positive correlation between knowledge of DI strategies and their practice. Lastly, large class size and students' diversity, lack of time, lack of proper training, and lack of materials were the identified challenge for the implementation of DI. In general based

on the finding it can conclude that majority of teachers were not familiar with the strategies of DI and also the practice was less than expected.

## 6.2. Recommendation

Based on the results obtained and conclusions made, the following recommendations are forwarded.

- ✚ As both teachers' knowledge and practice of DI were low it is necessary to equip teachers with the appropriate knowledge of DI and its practice both in in-service and pre-service training.
- ✚ In addition, the results of this study support the claim that principals and supervisors must provide teachers with a variety of professional development opportunities that relate to, and deal with differentiated instruction. Bahir Dar University can take such initiatives to better capacitate school teachers.
- ✚ School administrators should closely supervise and evaluate the practice of DI while developing a critical understanding of how to help teachers deal with these difficulties.
- ✚ While disseminating knowledge about DI, stakeholders (education office, university teachers on the area, school administrators, etc...) need to eliminate the challenges as buffering the challenges will facilitate better implementation.
- ✚ Teachers must get adequate support, guide, and aid with a rich array of resources and technical assistance.
- ✚ The number of students in one classroom must be considered i.e. Teacher-students' ratio.
- ✚ Lack of time for both planning and implementation was reported to be the biggest challenge for DI implementation. Hence, school administrators and policymakers should consider reducing teachers' workload and Subject credit hours so that teachers can facilitate better planning and implementation of DI.

### Recommendation for future research

The research can be further developed by examining the knowledge and practice of differentiated instruction by special education teachers and regular education teachers.

## REFERENCE

- Abbati, D. G. (2012). *Differentiated Instruction: Understanding the personal factors and organizational conditions that facilitate differentiated instruction in elementary mathematics classrooms* [University of California at Berkeley].  
[https://search.proquest.com/docview/1040872022?accountid=14509%0Ahttp://ucelinks.cdlib.org:8888/sfx\\_local?url\\_ver=Z39.88-2004&rft\\_val\\_fmt=info:ofi/fmt:kev:mtx:dissertation&genre=dissertations+%26+theses&sid=ProQ:Dissertations+%26+Theses+%40+University+of+](https://search.proquest.com/docview/1040872022?accountid=14509%0Ahttp://ucelinks.cdlib.org:8888/sfx_local?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&genre=dissertations+%26+theses&sid=ProQ:Dissertations+%26+Theses+%40+University+of+)
- Abell, M. M., Bauder, D. K., & Simmons, T. J. (2005). Access to the General Curriculum: A Curriculum and Instruction Perspective for Educators. *Intervention in School and Clinic, 41*(2), 82–86. <https://doi.org/10.1177/10534512050410020801>
- Adlam, E. (2007). *Differentiated Instruction in the Elementary School: Investigating the knowledge elementary teachers possess when implementing differentiated instruction in their classrooms*. <https://doi.org/10.1016/j.jaci.2012.05.050>
- Algozzine, B., & Anderson, K. M. (2007). Tips for Teaching: Differentiating Instruction to Include All Students. *Preventing School Failure: Alternative Education for Children and Youth, 51*(3), 49–54. <https://doi.org/10.3200/psfl.51.3.49-54>
- Amadio, R. (2014). *Differentiated Instruction in Secondary Mathematics*. <https://doi.org/10.1017/CBO9781107415324.004>
- Anderson, K. M. (2007). Tips for Teaching: Differentiating Instruction to Include All Students. *Preventing School Failure, 51*(3), 49–54. <https://doi.org/10.1080/10459889809603300>
- Ariss, L. D. (2017). *Differentiated Instruction: An Exploratory Study in a Secondary Mathematics Classroom*. The University of Toledo.
- Bailey, J. P., & Williams-Black, T. H. (2008). *Differentiated Instruction: Three teacher's perspectives*. Texas A&M University-Commerce.
- Bartolo, P., Janik, I., Janikova, V., & Hofsäss, T. (2007). *Responding to student diversity: teacher's handbook*. P.E.G. Ltd. <http://www.diva->

portal.org/smash/record.jsf?pid=diva2:520679

Borja, L. A., Soto, S. T., & Sanchez, T. X. (2015). Differentiating Instruction for EFL Learners. *International Journal of Humanities and Social Science*, 5(81), 30–36.

[https://ccle.ucla.edu/pluginfile.php/2329904/mod\\_resource/content/0/W5-2-BorjaSotoSanchez.pdf](https://ccle.ucla.edu/pluginfile.php/2329904/mod_resource/content/0/W5-2-BorjaSotoSanchez.pdf)

Brentnall, K. (2016). *Believing every one can learn: Differentiating instruction in mixed ability classroom*. College of Saint Elizabeth.

Broderick, A., Mehta-Parekh, H., & Reid, D. K. (2005). Differentiating instruction for disabled students in inclusive classrooms. *Theory into Practice*, 44(3), 194–202.

[https://doi.org/10.1207/s15430421tip4403\\_3](https://doi.org/10.1207/s15430421tip4403_3)

Carolan, J., & Guinn, A. (2007). Differentiation: Lessons. *Educational Leadership*, 44–48.

[http://tccl.rit.albany.edu/knilt/images/8/85/Di\\_unit\\_1a.pdf](http://tccl.rit.albany.edu/knilt/images/8/85/Di_unit_1a.pdf)

Chapman, C., & King, R. (2012). *Differentiated assessment strategies: One tool doesn't fit all* (2nd ed.).

Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Approaches* (4th ed.). SAGE Publications Ltd.

Cunningham, C. J. (2015). *Differentiation Revealed: A Multiple-methods Qualitative Study on the Implementation of Differentiated Instruction in a Mixed-ability Elementary Classroom*.

Deason, J. (2014). *General Education Teachers' Differentiated Instruction in Elementary Inclusion Classrooms*. Walden University.

Dee, A. L. (2010). Preservice teacher application of differentiated instruction. *The Teacher Educator*, 46(1), 53–70. <https://doi.org/10.1080/08878730.2010.529987>

Dixon, F. A., Yssel, N., McConnell, J. M., & Hardin, T. (2014). Differentiated instruction, professional Development, and Teacher Efficacy. *Journal for the Education of the Gifted*, 37(2), 111–127. <https://doi.org/10.1177/0162353214529042>

Fox, J., & Hoffman, W. (2011). *The Differentiated Instruction: Book of Lists*. Jossey-Bass.

- Friend, M., & Bursuck, W. D. (2012). *Including Students with Special Needs: A Practical Guide for Classroom Teachers* (6th ed.). Pearson Education, Inc.
- George, P. S. (2005). A Rationale for Differentiating Instruction in the Regular Classroom. *Theory into Practice*, 44(3), 185–193. [https://doi.org/10.1207/s15430421tip4403\\_2](https://doi.org/10.1207/s15430421tip4403_2)
- Good, M. E. (2006). *Differentiated Instruction: Principles and Techniques for the Elementary Grades*. Dominican University of California.
- Gray, J. (2008). *The Implementation of Differentiated Instruction for Learning Disabled Students Included in General Education Elementary Classrooms*. UNIVERSITY OF LA VERNE.
- Gregory, G. H., & Chapman, C. (2013). One size doesn't fit all. In *Differentiated instructional strategies* (3rd ed., pp. 1–11). <https://doi.org/10.1504/IJMMMM.2009.027285>
- Hackenberg, A. J., Creager, M., Eker, A., & Lee, M. Y. (2016). *Understanding How to Differentiate Instruction for Middle School Students*.
- Hall, T. (2002). Differentiated instruction. *Principal Leadership*.
- Heacox, D. (2003). *Differentiating Instruction in the Regular Classroom : How to Reach and Teach All Learners, Grades 3-12*.
- Hilyard, & M, V. (2004). *Teachers' Understanding and Use of Differentiated Instruction in the Classroom*. <https://doi.org/10.1016/j.jaci.2012.05.050>
- Ismajli, H., & Imami-Morina, I. (2018). Differentiated instruction: Understanding and applying interactive strategies to meet the needs of all the students. *International Journal of Instruction*, 11(3), 207–218. <https://doi.org/10.12973/iji.2018.11315a>
- Jahan, A., Khan, I., & Asif, F. (2017). Relevance of differentiated instructions in English classrooms: An exploratory study in the Saudi context. *International Research Journal of Human Resources and Social Sciences*, 4(9), 274–294.
- James, D. (2009). Differentiated Instruction : One School ' s Survey Analysis. *The Journal of Student Research at GCSU*, 10(1), 169–191.

- Joseph, S., Thomas, M., Simonette, G., & Ramsook, L. (2013). The Impact of Differentiated Instruction in a Teacher Education Setting: Successes and Challenges. *International Journal of Higher Education*, 2(3). <https://doi.org/10.5430/ijhe.v2n3p28>
- Koeze, P. A. (2007). *Differentiated instruction: The effect on student achievement in an elementary school*. <http://commons.emich.edu/theses/31>
- Koshy, S. (2013). Differentiated assessment activities : customising to support learning. *Quality Enhancement of University Teaching and Learning*, 1–7.
- Kothari, C. R. (2004). *Research Methodology: Methods and Techniques* (2nd revise). New Age International (P) Ltd.
- Landrum, T. J., & McDuffie, K. A. (2010). Learning styles in the age of Differentiated Instruction. *A Special Education Journal*, 18(1), 6–17. <https://doi.org/10.1080/09362830903462441>
- Lawrence-Brown, D. (2004). Differentiated Instruction : Inclusive Strategies for Standards-Based Learning that Benefit the Whole Class. *American Secondary Education*, 32(3), 34–62. <https://about.jstor.org/terms>
- Levy, H. M. (2008). Meeting the Needs of All Students through Differentiated Instruction: Helping Every Child Reach and Exceed Standards. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 81(4), 161–164. <https://doi.org/10.3200/tchs.81.4.161-164>
- Lewis, A. (2002). Primary Special Needs and the National Curriculum. In *Primary Special Needs and the National Curriculum* (2nd ed.). <https://doi.org/10.4324/9780203290712>
- Lightweis, S. (2013). College Success: A fresh look at differentiated instruction and ther student centered strategies. *College Quarterly*, 16(3), 1–18.
- Lipsky, D. (2005). Are we there yet? *Learning Disability Quarterly*, 28(1), 156–157. <https://doi.org/10.1177/0893318908318265>
- Logan, B. (2011). Examining differentiated instruction : Teachers respond. *Research in Higher*

*Education Journal*, 13, 1–15. <http://www.aabri.com/manuscripts/11888.pdf>

Machû, E. (2015). Analyzing Differentiated Instructions in Inclusive Education of Gifted Preschoolers. *Procedia - Social and Behavioral Sciences*, 171(2010), 1147–1155.

<https://doi.org/10.1016/j.sbspro.2015.01.224>

McMillan, A. (2011). *The relationship between professional learning and middle school teachers' knowledge and use of differentiated instruction* [Walden University].

<https://search.proquest.com/docview/864037425?accountid=15870>

Moon, T. R. (2005). The role of assessment in differentiation. *Theory into Practice*, 44(3), 226–233. [https://doi.org/10.1207/s15430421tip4403\\_7](https://doi.org/10.1207/s15430421tip4403_7)

Moon, T. R., Callahan, C. M., Tomlinson, C. A., & Miller, E. M. (2002). *Middle School Classrooms: Teachers' Reported Practices and Student Perceptions*.

Moosa, V., & Shareefa, M. (2019a). Implementation of Differentiated Instruction: Conjoint Effect of Teachers' Sense of Efficacy, Perception and Knowledge. *Anatolian Journal of Education*, 4(1), 23–38. <https://doi.org/10.29333/aje.2019.413a>

Moosa, V., & Shareefa, M. (2019b). The impact of teachers' experience and qualification on efficacy, knowledge and implementation of differentiated instruction. *International Journal of Instruction*, 12(2), 587–604. <https://doi.org/10.29333/iji.2019.12237a>

Nedellec, C. M. (2015). *Teachers' understanding of differentiated instruction in Swiss elementary schools*. (Doctoral Dissertation). Available from ProQuest Dissertations & Theses. (Order No. 3718012).

Njagi, M. W. (2014). Teachers' perspective towards differentiated instruction approach in teaching and learning of Mathematics in Kenya. *International Journal of Humanities and Social Science*, 4(13), 236–241.

Nordlund, M. (2003). DIFFERENTIATED INSTRUCTION: Meeting the Educational Needs of All Students in Your Classroom. In *Journal of Chemical Information and Modeling*. <https://doi.org/10.1017/CBO9781107415324.004>

Reis, S. M., McCoach, D. B., Little, C. A., Muller, L. M., & Kaniskan, R. B. (2011). The effects



- of differentiated instruction and enrichment pedagogy on reading achievement in five elementary schools. *American Educational Research Journal*, 48(2), 462–501.  
<https://doi.org/10.3102/0002831210382891>
- Robinson, L., Maldonado, N., & Whaley, J. (2014). *Perceptions about implementation of differentiated instruction*. <https://doi.org/10.1017/CBO9781107415324.004>
- Rock, M. L., Gregg, M., Ellis, E., & Gable, R. A. (2008). REACH: A Framework for differentiating classroom instruction. *Preventing School Failure: Alternative Education for Children and Youth*, 52(2), 31–47. <https://doi.org/10.3200/psfl.52.2.31-47>
- Rodriguez, A. (2012). *An analysis of elementary school teachers' knowledge and use of differentiated instruction* [Olivet Nazarene University School].  
[http://digitalcommons.olivet.edu/edd\\_diss](http://digitalcommons.olivet.edu/edd_diss)
- Roiha, A. S. (2014). Teachers' views on differentiation in content and language integrated learning (CLIL): Perceptions, practices and challenges. *Language and Education*, 28(1), 1–18. <https://doi.org/10.1080/09500782.2012.748061>
- Santangelo, T., & Tomlinson, C. A. (2012). Teacher educators' perceptions and use of differentiated instruction practices: An exploratory investigation. *Action in Teacher Education*, 34(4), 309–327. <https://doi.org/10.1080/01626620.2012.717032>
- Servilio, K. (2009). You get to choose! motivating students to read through differentiated instruction. *TEACHING Exceptional Children Plus*, 5(5), 1–10.
- Shareefa, M., Hj, R., Mat, A., Zaiham, N., Abdullah, M., & Jawawi, R. (2019). *Differentiated Instruction : Definition and Challenging Factors Perceived by Teachers*. December.
- Siam, K., & Al-Natour, M. (2016). Teacher's differentiated instruction practices and implementation challenges for learning disabilities in Jordan. *International Education Studies*, 9(12), 167–181. <https://doi.org/10.5539/ies.v9n12p167>
- Smeets, E. (2005). Does ICT contribute to powerful learning environments in primary education? *Computers and Education*, 44(3), 343–355.  
<https://doi.org/10.1016/j.compedu.2004.04.003>

- Smit, R., & Humpert, W. (2012). Differentiated instruction in small schools. *Teaching and Teacher Education*, 28, 1152–1162. <https://doi.org/10.1016/j.tate.2012.07.003>
- Solomon, M. (2019). Instructors' Knowledge, Attitude and Practice of Differentiated Instruction: the Case of College of Education and Behavioral Sciences, Bahir Dar University. *Cogent Education*, 6, 1–12. <https://doi.org/10.17810/2015.89>
- Sternberg, R. J., & Zhang, L. (2005). Styles of Thinking as a Basis of Differentiated Instruction. *Theory Into Practice*, 44(3), 234–244. <https://doi.org/10.1207/s15430421tip4403>
- Stradling, B., & Saunders, L. (2006). Differentiation in practice: Responding to the needs of all pupils. *Educational Research*, 35(2), 127–137. <https://doi.org/10.1080/0013188930350202>
- Strogilos, V. (2018). The value of differentiated instruction in the inclusion of students with special needs/ disabilities in mainstream schools. *SHS Web of Conferences*, 42(3), 1–7. <https://doi.org/10.1051/shsconf/20184200003>
- Subban, P. (2006). Differentiated instruction: A research basis. *International Education Journal*, 7(7), 935–947.
- Suprayogi, M. N., Valcke, M., & Godwin, R. (2017). Teachers and their implementation of differentiated instruction in the classroom. *Teaching and Teacher Education*, 67, 291–301. <https://doi.org/10.1016/j.tate.2017.06.020>
- Tadesse, M. (2015). Differentiated Instruction: Perceptions, Practices and Challenges of Primary School Teachers. *Science, Technology and Arts Research Journal*, 4(3), 253–265.
- Thakur, K. (2014). Differentiated instruction in the inclusive classroom. *Research Journal of Educational Sciences*, 2(7), 10–14. <https://doi.org/10.4135/9781483387321.n11>
- Tomlinson, C. A. (1995). Deciding to Differentiate Instruction in Middle School: One School's Journey. *Gifted Child Quarterly*, 39(2), 77–87. <https://doi.org/10.1177/001698629503900204>
- Tomlinson, C. A. (1999). *The differentiated classroom: Responding to the needs of all learners*. Association for Supervision and Curriculum Development Alexandria,.

- Tomlinson, C. A. (2000). *Differentiation of instruction in the elementary grades*. *ERIC Digest*, 1–7. [www.eric.ed.gov](http://www.eric.ed.gov)
- Tomlinson, C. A. (2001). *Differentiate Instruction in Mixed-Ability Classrooms* (2nd ed.). Association for Supervision and Curriculum Development, <http://www.teachersity.org/resources/instruction.pdf>
- Tomlinson, C. A. (2005). Grading and differentiation: Paradox or good practice? *Theory into Practice*, 44(3), 262–269. [https://doi.org/10.1207/s15430421tip4403\\_11](https://doi.org/10.1207/s15430421tip4403_11)
- Tomlinson, C. A. (2008). The goals of differentiation. *Educational Leadership*, 66(3), 26–30.
- Tomlinson, C. A., Brighton, C., Hertberg, H., Callahan, C. M., Moon, T. R., Brimijoin, K., Conover, L. A., & Reynolds, T. (2003). Differentiating instruction in response to student readiness, interest, and learning profile in academically diverse classrooms: A review of literature. *Journal for the Education of the Gifted*, 27(2–3), 119–145. <https://doi.org/10.1177/016235320302700203>
- Tomlinson, C. A., Moon, T., & Imbeau, M. B. (2015). Assessment and student success in a differentiated classroom. *ASCD Professional Learning Services*, 17. <https://books.google.com/books?hl=en&lr=&id=IHciAgAAQBAJ&pgis=1>
- Tomlinson, C. A., & Strickland, C. A. (2005). *Differentiation in Practice: A Resource Guide for Differentiating Curriculum*. Association for Supervision and Curriculum Development (ASCD).
- Vantassel-baska, J., Stambaugh, T., & Vantassel-baska, J. (2005). Challenges and Possibilities for Serving Gifted Learners in the Regular Classroom. *Theory Into Practice*, 44(3), 211–217. <https://doi.org/10.1207/s15430421tip4403>
- Wan, S. W. Y. (2016). Differentiated instruction: are Hong Kong in-service teachers ready? *Teachers and Teaching: Theory and Practice*, 284–311. <https://doi.org/10.1080/13540602.2016.1204289>
- Westwood, P. (2015). *Commonsense methods for children with special educational needs* (3rd ed.). Taylor & Francis e-Library. <https://doi.org/10.4324/9781315716695>

Whipple, K. A. (2012). *Differentiated instruction: A survey study of teacher understanding and implementation in a southeast Massachusetts school district*. Northeastern University.

Wilkinson, D., & Birmingham, P. (2003). *Using research instruments: A guide for researchers*. Routledge Falmer.

# APPENDICES

## Appendix A

### Bahir Dar University

#### College of Education and Behavioral Sciences

#### Department of Special Needs and Inclusive Education

#### Questionnaire to be filled by Teachers

The main objective of the study is to investigate the Teachers knowledge and practice of differentiated instruction in Bahir Dar city Administration primary school. This questionnaire is designed to be filled by teachers who are teaching in inclusive educational settings from grade 5 to 8. For the success of this research your genuine cooperation is important. So please fill the items correctly and return on the schedule. Finally this research is conducted only for academic purpose and your response is kept confidentially.

Thank you in advance!

#### General Direction

- There are three sections. Each section has its own specific directions. Please, complete all the items according to the instructions given in each section.
- No need of writing your name
- Read the questions carefully and please put a checkmark “√” in the box next to each alternative that you think is the most appropriate response for you.

#### Part I. Demographic data of Respondents

1. Sex                    A. Male            B. Female
2. Qualification    A. Certificate     B. Diploma     C. Degree        D.MA
3. Teaching            A.    5-10            B.    11-15        C. 16-20        D. >21          
experience
4. Subject you        \_\_\_\_\_  
taught

### Preliminary Question

1. Have you taken any course related to inclusive education during your TTI/college/University study? Yes  No
2. Do you receive any training about differentiated instruction? Yes  No

### Part II: Items related to Understanding of Differentiated instruction strategies

**Instruction:** The following items describe your familiarity or understanding of the strategies of differentiated instruction. Please read the statements carefully and decide your level of familiarity with the statement and indicate your response by putting a checkmark "✓" under the alternative. Alternatives are

1. I am not familiar with this strategy, (Never). 2. I am somewhat familiar with this strategy (Partially), 3. I am very familiar with this strategy (Fully).

1. Are you familiar with the following instructional strategies?

No	Instructional Strategies	1	2	3
1	Agreement between student and teacher where freedoms are put in a place for designing and completing work			
2	Provision of multiple assignments to different students at the same time that are related to the same concept or topic but differ in complexity			
3	Teacher facilitation to systematically aid students in developing curiosity, pursuing topics that interest them, identifying intriguing questions, and time management			
4	Pretesting of students before a unit and then eliminating instruction in the areas of competence			
5	A collection of materials where students explore topics or practice a set of skills			

6	Utilization of varied subject materials according to student readiness, interest, or other areas of student difference			
7	Provision of students with a choice of content, process, product, and learning environment			
8	Grouping of students for completion of instruction, specific task or assignments and the group changes as needed based on students' abilities, interests, and readiness			
9	Variation of the sorts of questions posed to learners in the discussion and on tests, based on their readiness, interests, and learning styles			

### Part III: Practice of Differentiated instruction

**Instruction:** The following items describe your practice of differentiated instruction. Please read the statements carefully and decide your level of practice and indicate your response by putting a checkmark "√" under the alternative. Alternatives are

1. Never,      2. Sometimes,      3. Frequently,      4. Always

		1	2	3	4
<b>Content</b>					
1	I use materials for students with disability that represent a variety of formats (e.g., text, video, audio,)				
2	I provide supplemental materials/resources to support students with disability who have difficulty understanding course content				
3	I present course content using examples that reflect students with disability interests or experiences.				
4	I create more advanced opportunities for students with disability who master course content with minimal effort.				

5	I provide high-achieving students with disability with enrichment tasks				
6	I select the most important tasks for very low-achieving students with disability				
<b>Process</b>					
7	I design activities/assignments that help students with disability to understand course content by interacting with each other				
8	I vary the pace of the instruction based on the needs of individual learner with disability				
9	I purposely group students with disability with other students for learning activities based on readiness				
10	I purposely group students with disability with other students based on their interest				
11	I purposely group students with disability with other students based on their learning profile				
12	I use a variety of flexible grouping formats for students with disability during class (e.g., whole class, small group, individual)				
13	I create activities/assignments that offer format options for students with disability (e.g., write a paper, create a visual, or give a presentation).				
<b>Product</b>					
14	I allow students with disability to present their products in a written manner.				
15	I allow students with disability to present their products verbally				
16	I provide supplemental support to students with disability who have difficulty completing activities				



<b>Assessment</b>					
17	I gave extra time for students with disability to complete tasks/exams				
18	I use continuous and varied assessments of students with disability				
19	I use three or more forms of assessment to determine course grades (e.g., a paper, presentation, participation, final exam)				
20	I adjust assignment deadlines in response to students with disability needs and/or circumstances				
21	I pre-assess students with disability before the beginning of the lesson				
<b>Learning Environment</b>					
22	I create activities/assignments to develop a sense of community among students with and without disability				
23	I take deliberate efforts to ensure each student with disability feels known, welcome, and respected				
24	I take deliberate efforts to ensure students with disability participate consistently and equitably during class				
25	I motivate students with disability to help each other with students without disability				

**Part VI: Challenge of Differentiated Instruction**

1. What challenges do you face when implementing 'Differentiated instruction'? (Please rank them by giving a number from the most important 1 to the least 8 in the box).

- |                                       |                      |                            |                      |
|---------------------------------------|----------------------|----------------------------|----------------------|
| ▪ Administration/school leadership    | <input type="text"/> | ▪ Parent Expectation       | <input type="text"/> |
| ▪ Range of diversity in the classroom | <input type="text"/> | ▪ Support of other staff   | <input type="text"/> |
| ▪ Availability of materials           | <input type="text"/> | ▪ Knowledge and Experience | <input type="text"/> |
| ▪ Amount of planning time             | <input type="text"/> | ▪ Staff Development        | <input type="text"/> |

Please list other challenges that you face when implementing Differentiated instruction that is not listed above \_\_\_\_\_

---

## **Appendix B**

**Bahir Dar University**

**College of Education and Behavioral Sciences**

**Department of Special Needs and Inclusive Education**

### **Interview guide for supervisors**

The main objective of the study is to investigate the Teachers knowledge and practice of differentiated instruction in Bahir Dar city Administration primary school. Since your contribution to the success of this study is highly valued, you are kindly requested to honestly respond to the interview questions and the researcher would like to assure that your responses are strictly confidential.

**Thank you in advance for your cooperation!**

1. Are teachers familiar with the concept of differentiated instruction? If yes would you please explain?

2. Do you think teachers are implementing differentiated instruction? Why?

Like \* using a variety of course materials

\* Varying the pace of the instruction based on the learner need

\* Allowing students to show their understanding of using different modes of expression

\* Creating a classroom environment where the student feels welcome and respected

3. How does the school provide support to empower teachers for implementation of differentiated instruction? (Like, Access to training, provision of resources...).

4. As a supervisor of this school in what ways do you collaborate with classroom teachers to build and strengthen instruction for the individual needs of each student?

5. What challenges do you think teachers face in implementing differentiated instruction?

6. How do you see the status of teachers' implementation of differentiated instruction in the school?

### Appendix C: Amharic Version Questionnaire

#### በባህርዳር ዩንቨርሲቲ

#### የትምህርትና ሥነ-ባህርይ ኮሌጅ

#### የልዩ ፍላጎትና አካቶ ትምህርት ትምህርት ክፍል

የዚህ ጥናት ዋና ዓላማ በባህር ዳር ከተማ አስተዳደር የመጀመሪያ ደረጃ ት / ቤቶች የመምህራንን የልዩነት-ተኮር የትምህርት(Differentiated instruction) አሰጣጥ ዕውቀት እና ልምምድ ለመዳሰስ ነው ። ይህ መጠይቅ ከ 5 ኛ እስከ 8 ኛ ክፍል በሚያስተምሩ መምህራን እንዲሞላ ታስቦ የተዘጋጀ ሲሆን የጥናቱም ስኬት በዋናነት የሚወሰነው እርስዎ በሚሰጡት እውነተኛ መረጃ ስለሆነ፣ እያንዳንዱን ጥያቄ በጥንቃቄ እንዲመልሱና በተባለው ሰአት እንዲመልሱኝ በታላቅ ትህትና እጠይቃለሁ። ለዚህ ጥናት የሚሰጡት መረጃ ለምርምር ስራ ብቻ የሚውልና በሚስጥርም የሚያዝ መሆኑን ለማረጋገጥ እወዳለሁ።

**ለትብብርዎ ከወዲሁ ምስጋናየን አቀርባለሁ!!**

#### አጠቃላይ መረጃ

- መጠይቁ ሶስት ክፍሎች ያሉት ሲሆን እያንዳንዱ ክፍል የራሱ የሆነ መመሪያ አለው። እባክዎን ሁሉንም ክፍሎች በእያንዳንዱ ክፍል በተሰጡት መመሪያዎች መሠረት ያጠናቅቁ ።
- ስምዎን መጻፍ አያስፈልግም
- ጥያቄዎችን በጥንቃቄ ካነበቡ በኋላ ተገቢ ምላሽ ነው ብለው ያሰቡትን በፊት ለፊት በተቀመጠው ሰጥን ውስጥ "✓" በማስቀመጥ መልስዎን ያመለክቱ።

#### ክፍል አንድ: የመምህራን የግል መረጃ

1. ፆታ            A. ወንድ                             B. ሴት
2. የትምህርት ደረጃዎ    A. ሰርተፍኬት     B. ዲፕሎማ     C. የመጀመሪያ ዲግሪ     D. ማስትሬት ዲግሪ
3. የማስተማር ልምድዎ    A. 5-10     B. 11-15     C. 16-20     D. >21

4. አሁን ላይ የሚያስተምሩት የትምህርት ዓይነት .....

**የመግቢያ ጥያቄ**

1. በ መምህራን ማሰልጠኛ ተቋም ወይም በኮሌጅ ወይም በዩኒቨርሲቲ የትምህርት ቆይታዎ ከአካቶ ትምህርት ጋር በተያያዘ ትምህርት ወስደዋል? አዎ  አልወሰድኩም
2. ስለ ልዩነት ተኮር የትምህርት አሰጣጥ ስልጠና ወስደዋል? አዎ  አልወሰድኩም

**ክፍል ሁለት: የመምህራንን የልዩነት ተኮር(Differentiated instruction) ማስተማርያ ስልቶችን ከመረዳት ጋር የተያያዙ ጥያቄዎች**

መመሪያ: የሚከተሉት ዓረፍተ-ነገሮች የርስዎን የልዩነት ተኮር ማስተማርያ ስልቶች ዕውቀት/አረዳድ የተመለከቱ ናቸው። እባክዎን ዓረፍተ ነገሮችን በጥንቃቄ ያንብቡ እና መልሱን በአማራጭው ላይ የ “√” ምልክትን በተገቢው ቦታ በማድረግ ምላሽዎን ያመልክቱ ።

**አማራጮቹም**

3. በደንብ አውቀዋለሁ (ሙሉ በሙሉ) 2. በተወሰነ ደረጃ አውቀዋለሁ (በከፊል) 1. አላውቀውም(በጭራሽ)

1. የሚከተሉትን የትምህርት ስልቶች ያውቃሉ?

ተ. ቁ	የትምህርት/የማስተማርያ ስልቶች	በጭራሽ	በከፊል	ሙሉ ለሙሉ
1.	በተማሪና በአስተማሪ ስምምነት በነፃነት ስራን መንደፍና ማጠናቀቅ			
2.	በተመሳሳይ ርዕስ ላይ የክብደት ደረጃቸውን በማለያየት በርከት ያሉ መልመጃዎችን ለተማሪዎች ማቅረብ			

3.	ተማሪዎች የማወቅ ጉጉት እንዲያዳብሩ፣ በይዘታቸው አዳዲስ ጥያቄዎችን እንዲያነሱ ከማመቻቸት በሻገር የጊዜ አጠቃቀማቸውን ስልታዊ እንዲሆን ማድረግ			
4.	ተማሪዎችን ከእያንዳንዱ ምዕራፍ በፊት ቅድመ ምዘና በመስጠት ብቁ የሆኑበትን ላለመድገም መቀነስ/ማስወገድ			
5.	ተማሪዎች በየርዕሶቹ ለሚሚረገጡ/ለሚያከናውኗቸው የተግባር ልምምዶች አጋዥ የሚሆኑ የግብዓቶች ስብስብ			
6.	የተማሪዎችን ዝግጁነት፣ ፍላጎት ወይም ሌሎች ልዩነታቸውን በማገናኘት የተለያዩ ግብዓቶችን መጠቀም			
7.	ለተማሪዎች የይዘት፣ የሂደት፣ የውጤት፣ የምዘናና የመማርያ አከባቢ ምርጫ ማቅረብ			
8.	ተማሪዎችን በቡድን በማደራጀት የተለያዩ የእርስ በእርስ መማርያ መመልመጃዎችን በመስጠት በጋራ እንዲሰሩ ማድረግ፣ እንዲሁም በተማሪዎች ችሎታ፣ ፍላጎትና ዝግጁነት ላይ በመመስረት አደረጃጀቱን እንደአስፈላጊነቱ በየጊዜው መቀየር			
9.	በተማሪዎች ፍላጎት፣ ዝግጁነትና የመማርያ ዘዴ በመመስረት የተለያዩ የጥያቄ አማራጮችን ለውይይትና ለፈተና ማቅረብ			

**ክፍል ሶስት፡ የመምህራን የልዩነት ተኮር ትምህርት ልምምድ**

መመሪያ፡ የሚከተሉት ዓረፍተ-ነገሮች የእርሶዎን የልዩነት ተኮር ትምህርት ልምምድ የተመለከቱ ናቸው።  
 የርስዎን ትክክለኛ ልምምድ በሚያሳይ የልኬት አማራጮች ስር የ “√” ምልክት በማስቀመጥ መልሶን ይግለጹ። አማራጮቹም

4. ሁልጊዜ

3. በተደጋጋሚ

2. አልፎ አልፎ

1. በፍፁም

ተ. ቁ	ዓረፍተ-ነገር	በፍፁም	አልፎ አልፎ	በተደጋጋሚ	ሁልጊዜ
<b>ይዘት</b>					
1.	የአካል ጉዳተኛ ተማሪዎችን ያገናዘበ የተለያዩ የማስተማርያ ግብዓት አማራጮችን እጠቀማለሁ				
2.	በማስተምረው የትምህርት ይዘት ላይ የመረዳት ችግር ላለባቸው የአካል ጉዳተኛ ተማሪዎች ተጨማሪ/አጋዥ ግብዓቶችን በማቅረብ ድጋፍ አደርጋለሁ				
3.	የትምህርት ይዘቱን የአካል ጉዳተኛ ተማሪዎችን ፈላጎትና ልምድ የሚያንፀባርቁ ምሳሌዎችን በመጠቀም አቀርባለሁ				
4.	የትምህርት ይዘቱን በቀላሉ ለሚረዱ የአካል ጉዳተኛ ተማሪዎች የላቁ ዕድሎችን በማቅረብ የተሻለ እንዲሰሩ አደርጋለሁ				
5.	ከፍተኛ ውጤት ለሚያስመዘግቡ የአካል ጉዳተኛ ተማሪዎች አቅማቸውን የበለጠ የሚያበላፅግ ተጨማሪና ለየት ያሉ ስራዎችን እንዲሰሩ አደርጋለሁ				
6.	በውጤት ደካም ላሉ የአካል ጉዳተኛ ተማሪዎች አጋዥና ጠቃሚ የሆኑ ስራዎችን በመምረጥ እሰጣለሁ				
<b>ሂደት</b>					
7.	የአካል ጉዳተኛ ተማሪዎች ከሌሎች ተማሪዎች ጋር በጋራ በመወያየት በቀላሉ የትምህርት ይዘቱን እንዲረዱ መልመጃዎችን/ ሌሎች ስራዎችን አዘጋጃለሁ				
8.	የአካል ጉዳተኛ ተማሪዎችን ፍላጎት ከግምት ውስጥ በማስገባት የመማር መስተማሩን ፍጥነት እንደሁኔታው				



	እቀያይራለሁ				
9.	የአካል ጉዳተኛ ተማሪዎችን ዝግጁነት መሰረት በማድረግ ከሌሎች ተማሪዎች ጋር ተደራጅተው እንዲሰሩ አደርጋለሁ				
10.	የአካል ጉዳተኛ ተማሪዎችን ፍላጎት መሰረት በማድረግ ከሌሎች ተማሪዎች ጋር ተደራጅተው እንዲሰሩ አደርጋለሁ				
11.	የአካል ጉዳተኛ ተማሪዎችን የትምህርት ግለታሪክ መሰረት በማድረግ ከሌሎች ተማሪዎች ጋር ተደራጅተው እንዲሰሩ አደርጋለሁ				
12.	በክፍል ውስጥ ለአካል ጉዳተኛ ተማሪዎች ተለዋዋጭ የአደረጃጀት ዘዴን እጠቀማለሁ። ለምሳሌ አነስተኛ፣ የግልፍ የሙሉ ክፍል አደረጃጀት				
13.	መልመጃዎችን ሳዘጋጅ የተለያዩ አማራጮችን ለአካል ጉዳተኛ ተማሪዎች አቀርባለሁ (ለምሳሌ በፅሁፍ፣ በምስልፍ ወጥተው እዲያቀርቡ )።				
<b>ውጤት</b>					
14.	የአካል ጉዳተኛ ተማሪዎች የተማሩትን/የሰሩትን የመጨረሻ የስራ ውጤት በፅሁፍ እንዲያቀርቡ አደርጋለሁ				
15.	የአካል ጉዳተኛ ተማሪዎች የተማሩትን/የሰሩትን የመጨረሻ ስራ ወጥተው እዲያቀርቡ አደርጋለሁ				
16.	የተሰጣቸውን መልመጃ ለማጠናቀቅ ለተችገሩ የአካል ጉዳተኛ ተማሪዎች ተጨማሪ ድጋፍ እሰጣለሁ				
<b>ምዘና</b>					
17.	በፈተና ጊዜ ለአካል ጉዳተኛ ተማሪዎች ተጨማሪ ሰዓት እሰጣለሁ				
18.	ቀጣይነትና የተለያዩ የምዘና ዘዴዎችን በመጠቀም የአካል ጉዳተኛ ተማሪዎችን እመዝናለሁ				

19.	የትምህርት ውጤትን ለመወሰን ሶስትና ከዚያ በላይ የምዘና ዘዴዎችን እጠቀማለሁ (ለምሳሌ በመልመጃዎች፣ ወጥተው በማቅረብ፣ በተሳትፎ፣ በፈተና ወ.ዘ.ተ....)				
20.	ለአካል ጉዳተኛ ተማሪዎች የመልመጃ ማስረከቢያ ቀነገደቦችን እንደፍላጎታቸው እንደሁኔታዎች እያየሁ አስተካክላለሁ				
21.	ማስተማር ከመጀመሪያ በፊት የአካል ጉዳተኛ ተማሪዎችን አስቀድሜ ገመግማለሁ				
<b>የመማርያ አካባቢ</b>					
22.	በአካል ጉዳተኛ ተማሪዎችና በሌሎች ተማሪዎች መካከል የአብሮነት ስሜትን ለመፍጠር መልመጃዎችን አዘጋጃለሁ				
23.	እያንዳንዱ የአካል ጉዳተኛ ተማሪ የመታወቅ፣ የተቀባይነትና የመከበር ስሜት እንዲሰማው ጥረት አደርጋለሁ				
24.	የአካል ጉዳተኛ ተማሪዎች በክፍል ውስጥ በቋሚነትና በእኩልነት እንዲስተፉ ጥረት አደርጋለሁ				
25.	የአካል ጉዳተኛ ተማሪዎችን ከሌሎች ተማሪዎች ጋር እርስ በእርስ እንዲረዳዱ አበረታታቸዋለሁ				

**ክፍል አራት፡ የልዩነት ተኮር ትምህርት ችግሮች**

1. የልዩነት ተኮር ትምህርትን ሲተገብሩ የሚያጋጥሞት ችግር ምን ምን ናቸው? እባክዎ የሚከተሉትን ችግሮች ከባድ ነው ብለው የሚያስቡትን ከ 1 ቁጥር በመጀመር ወደታች በመሄድ እስከ 8 ድረስ በሳጥኑ ውስጥ ቁጥሮችን በማስገባት በደረጃ ያስቀምጡ።

- አስተዳደራዊ/ ከት/ቤት አመራር ጋር የተያያዙ ችግሮች
- የወላጆች ለትምህርት ያላቸው አነስተኛ ግምት
- በክፍል ውስጥ የተለያዩ የተማሪ አይነቶች (ብዝሃነት) መኖር
- የሌሎች ሰራተኞች ድጋፍ ማነስ

• የግብዓት/የማስተማርያ ቁሳቁሶች   
እጥረት

• የጊዜ እጥረት

• የዕውቀትና ልምድ ማነስ

• የመምህራን የሞያ ብቃት   
ማሻሻያ ስልጠናዎችን በበቂ  
ሁኔታ አለመኖር

እባክዎ ከላይ ከተጠቀሱት አማራጾች ውስጥ የሌለ ነገር ግን እርስዎን ያጋጠሞት ችግር ካለ  
ይጥቁሱ.....  
.....  
.....

### Appendix D: Amharic Version Interview

1. መምህራን የልዩነት ተኮር ማስተማርያን በተመለከተ ብቁ ግንዛቤ አላቸው ብለው ያምናሉ? መልስዎ አዎ ከሆነ እባክዎ ያብራሩ?
2. መምህራን የልዩነት ተኮር ማስተማርያ ዘዴን ተግባራዊ ያደርጋሉ? መልስዎ አዎ ከሆነ እንዴት ? ለምሳሌ:
  - ልዩ ልዩ ይዘት ያላቸውን ግብዓቶች መጠቀም
  - የአካል ጉዳተኛ ተማሪዎችን ፍላጎት መሰረት በማድረግ የመማር ማስተማር ፍጥነቱን እንደሁኔታው መቀያየር
  - የአካል ጉዳተኛ ተማሪዎች የተለያዩ ዘዴዎችን ተጠቅመው ስለትምህርቱ የተረዱትን እንዲገልጹ ማስቻል
  - የአካል ጉዳተኛ ተማሪዎችን የተቀባይነትና የመከበር ስሜትን የሚፈጥር የመማርያ ክፍል ሁኔታን መፍጠር
3. መምህራን የልዩነት ተኮር ማስተማር ዘዴን እንዲተገብሩ ትምህርት ቤቱ ምን ዓይነት ድጋፍ ያደርግላቸዋል? (ለምሳሌ: አጭጭር ስልጠናዎችን እንዲወስዱ ማድረግ፣ ግብዓት ማቅረብ...)
4. እርስዎ እንደ አንድ የትምህርት ቤት ሱፐርቫይደር መምህራን የአካል ጉዳተኛ ተማሪዎችን ፍላጎት እና ተሰጥኦ መሰረት ያደረገ የማስተማርያ ዘዴ እንዲከተሉ በምን በምን መልኩ ያግዝባችኋል?
5. መምህራን የልዩነት ተኮር ማስተማርያ ዘዴን በአግባቡ እንዳይተገብሩ አንቅፋት ሆኖባቸዋል የሚሉት ችግር ምንድን ነው?
6. የመምህራን በልዩነት ተኮር የማስተማርያ ዘዴ የትግበራ ሁኔታ እንዴት ያዩታል?

## Appendix E

### Descriptive results of Differentiated Instruction Strategies

#### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Learning contract	103	1	2	1.43	.497
Tired assignment	103	1	2	1.29	.457
Independent study	103	1	2	1.35	.479
Curriculum compacting	103	1	3	1.29	.478
Learning centers	103	1	2	1.41	.494
Varied_instructional_ma terials	103	1	3	1.29	.498
Student choice	103	1	2	1.39	.490
Flexible grouping	103	1	3	1.44	.518
Varying questions	103	1	3	1.53	.520
Valid N (list wise)	103				

