Curriculum Differentiation in Ethiopian Secondary Education: Policy Intentions, Principals' and Teachers' Conceptualizations and School Practices

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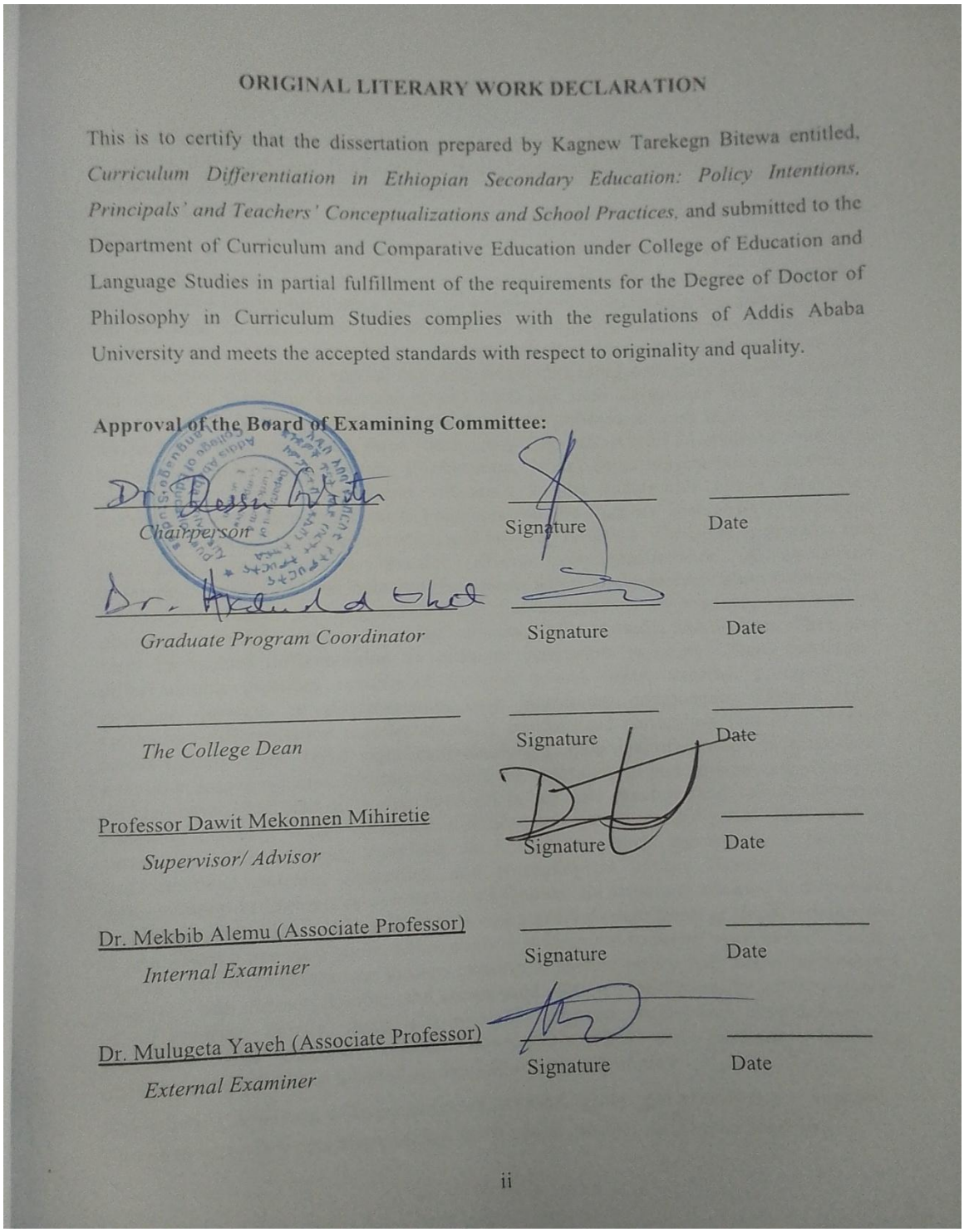
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ORIGINAL LITERARY WORK DECLARATION



ORIGINAL LITERARY WORK DECLARATION

This is to certify that the dissertation prepared by Kagnew Tarekegn Bitewa entitled, *Curriculum Differentiation in Ethiopian Secondary Education: Policy Intentions, Principals' and Teachers' Conceptualizations and School Practices*, and submitted to the Department of Curriculum and Comparative Education under College of Education and Language Studies in partial fulfillment of the requirements for the Degree of Doctor of Philosophy in Curriculum Studies complies with the regulations of Addis Ababa University and meets the accepted standards with respect to originality and quality.

Approval of the Board of Examining Committee:

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ABSTRACT

Dissertation Title: Curriculum Differentiation in Ethiopian Secondary Education: Policy Intentions, Principals' and Teachers' Conceptualizations and School Practices
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This study employed an exploratory sequential mixed-methods design, a qualitative phase followed by a quantitative phase, to examine policy intentions, conceptualizations, and practices on curriculum differentiation in secondary schools. It also explored the lived experiences of students in the implementation of curriculum differentiation. The study focused on regular, special day, and special boarding secondary schools, selected via stratified sampling based on school type and their experience with curriculum differentiation. In the qualitative phase, data were gathered through interviews with 21 teachers and three principals, three focus group discussions with 24 students, review of policy and student grade rosters. Furthermore, school environments were observed to identify curriculum differentiation indicators. In the quantitative phase, data were collected via questionnaires from 133 teachers and 304 students. Data analysis employed thematic analysis, descriptive statistics, and one-way ANOVA. The findings revealed that practitioners and policies revealed diverse conceptualizations of curriculum differentiation as a tool for inclusive classrooms where common curriculum components (content, instruction, learning environment and assessment) are modified, and student placement into school types, language subjects, fields-of-study, and streams. They also view curriculum differentiation as ordinary curriculum planning. Then, curriculum differentiation practices manifested through school types, streams, grouping into language subjects, or differentiating core curriculum components. Despite these curriculum differentiation manifestations, a standardized curriculum was implemented across school types. Thus, significant challenges were identified such as misaligned intentions among policies, incomprehensive understanding of practitioners on curriculum differentiation that lead to a gap between policy and practice, and raising concerns regarding inequity, social exclusion and academic pressure and stress. The issue of curriculum differentiation, therefore, is related to policy incoherence, conceptual fragmentation, systemic disparities, and psychological impact. Besides, curriculum differentiation in Ethiopia is currently a mechanism for structural tracking and resource distribution that usually help neither to accommodate diverse learning characteristics nor to implement a true curriculum differentiation strategy for inclusive excellence. To move beyond mere segregation, the system requires a unified policy that aligns institutional resources with distinct, flexible, and accelerated curricula tailored to the actual potential of all students. Finally, there is a need for targeted professional development for practitioners to establish unified conceptualizations and practices, including differentiating gifted and talented students from high-achievers.

Keywords: Curriculum differentiation, educational equity, educational policy alignment, Ethiopian secondary education, inclusive education, special and regular schooling

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LIST OF ABBREVIATIONS

CD	Curriculum Differentiation
DI	Differentiated Instruction
ETP	Education and Training Policy
FGD	Focus Group Discussion
GECF	General Education Curriculum Framework
IEP	Individualized Educational Plan
MIs	Multiple Intelligences
MoE	Ministry of Education
UNESCO	United Nations Educational, Scientific and Cultural Organization
ZPD	Zone of Proximal Development

CHAPTER ONE

INTRODUCTION

This chapter introduces background of the study, statement of the problem, research questions, objectives of the study, significance of the study, delimitation of the study, and operational definitions of terms.

1.1. Background of the Study

One of the main goals of education in today's society is to produce well-rounded and critical people who reach their full potential as learners (Adam, 2020). Since a group of students share similar characteristics, they all may benefit from a similar approach to learning, whereas a unique individual may require a unique approach (Seifert & Sutton, 2009). To this end, education should be organized in such a way that it is relevant for different groups of students and also for each individual student (Eikeland & Ohna, 2022; Seifert & Sutton, 2009). For instance, Seifert and Sutton stated that individuals differ from one another in terms of preferred learning styles, intellect, learning pace and motivation for learning. They also vary as groups in terms of social, academic, linguistic, and culture for learning. Therefore, many argue that an educational system needs to diversify its delivery approaches to support students in accordance with their diverse abilities and equitably address the diverse interests of individuals and groups (Abodey & Ansah, 2017; Seifert & Sutton, 2009; Tomlinson, 2014).

By diversifying the approaches in which an education system and its general curriculum are delivered, curriculum differentiation is one of the strategies for supporting students with a variety of needs and abilities (Adewumi et al., 2017; Kaplan, 2004; Reis & Renzulli, 2015). It is crucial to develop curriculum differentiation approaches to support students in accordance with their diverse learning characteristics. The reason is that curriculum differentiation is firmly rooted in the idea of diversity within any group of students. Then, school leaders, teachers and other educators accommodate the students' learning characteristics accordingly (Watson & Reigeluth, 2008). Since there are a

variety of ways and strategies for conceptualizing curriculum differentiation, they are considered educational responses to the diverse learning characteristics of students to help them reach their full potential (Ireland et al., 2020).

Regarding curriculum differentiation conceptualization, some educators conceptualize it as placing students with varying needs, talents, and interests in inclusive classrooms, providing all students with standardized curriculum, and adapting and expanding the curriculum to fit each student's learning abilities, styles and interests (Reis & Renzulli, 2015; Tomlinson, 2014; Watson & Reigeluth, 2008). Here, curriculum differentiation is offering a common curriculum for all students with diverse needs, abilities, and skills through differentiation of curriculum components such as contents, instructional strategies, assessments or products, and learning environments in mixed-ability inclusive classrooms. Several educators (e.g., Eikeland & Ohna, 2022; Smale-Jacobse et al., 2019; Tomlinson, 2014) stated that this kind of curriculum differentiation is conceptualized as differentiated instruction. Thus, curriculum differentiation is understood as a strategy of varying instruction for which a common curriculum is implemented to support all students with diverse needs in an inclusive classroom (Adewumi et al., 2017; Reis & Renzulli, 2015). In this regard, Gardner's (1983) theory of multiple intelligences and Vygotsky's (1978) sociocultural theory of learning are the theories that serve as the foundations of such kind of curriculum differentiation. Both theories acknowledge that teachers and educational leaders must differentiate a curriculum to meet students' diverse needs and potential abilities. The underlying principle of curriculum differentiation in these theories is that each student is unique and learns differently from others through being given a variety of opportunities to experience multiple methods of learning and knowing (Kuhlthau et al., 2007).

On the other hand, some educators conceptualize curriculum differentiation as assigning students to distinct tracks and learning settings by offering different curricula to various student groups (Ayalon, 2006; LeTendre et al., 2003; Ware et al., 2011). Still, others conceptualized it as subject and level differentiations (Ayalon, 2006; Ware et al., 2011). Placements of students into distinct school types, streams, and fields of study are some

aspects of track differentiation. Placements of students into different subjects, and the same subjects but with different levels of advancement (e.g., basic and advanced subjects) offered at the same grade level are subject and level differentiations. Here, curriculum differentiation is conceptualized as systems, structures, and processes that provide distinct curricular opportunities in separate paths to diverse groups of students to meet their specific learning characteristics, interests, and abilities (Eikeland & Ohna, 2022; LeTendre et al., 2003; Perry & Lamb 2017). In this regard, LeTendre et al. (2003) developed a typology of curriculum differentiation that incorporates five distinct types to create diversified curricula.

According to LeTendre et al. (2003), the first type of curriculum differentiation is by type of schools, for example, between academic, technical, and vocational schools. This is a common practice in many European countries such as Germany, Czech, and Finland. Students are placed in different types of secondary schools which prepare them for various purposes. The second type of curriculum differentiation is by field of study. This is the provision of various fields of study to students within the same school. Students are expected to take similar courses for each field of study in a country. The fields in natural sciences, social sciences, and vocations available to Ethiopian students in grades 11 and 12 appear to fall under this category. The third type is curriculum differentiation by streams, which gradually differentiates students into natural and social sciences in the number, type, and difficulty of their courses. This differentiation considers students' past achievements and interests. The fourth type of curriculum differentiation is ability grouping, in which students in the same class are grouped into different ability levels, or instruction is arranged to these different types of students in different classes in the same school. These are ability groupings in reading, mathematics, or classes for gifted or talented students. The fifth type of curriculum differentiation is based on geographic location that occur differences between the same types and levels of schools across regional states due to local funding bases and/or socioeconomic status.

In general, the main idea of curriculum differentiation revolves around the fundamental question of whether countries should design a common curriculum for all students in

general education or develop different curricula for diverse students (Terwel, 2005). Under this fundamental question belongs an academic debate on streaming, ability grouping, and tracking between or within regular schools, special day schools and/or special boarding schools. For example, proponents of differentiation argue that both group and individual diversities are increasing and curriculum and teaching should be responsive to these growing diversities (Kanevsky, 2011). However, Wermke et al. (2024) argue that "differentiation signifies transformations to processes of dividing (e.g. people and institutions) and clarifying boundaries (e.g. of curricular contents and educability)" (p.2). Some researchers (e.g., Ayalon, 2006; Perry & Lamb, 2017; Van de Werfhorst & Mijs, 2010) also argue that when schools separate students into different tracks, it creates a rigid hierarchy. Instead of matching students to their actual abilities and needs, this system gives some tracks better access to academic courses and learning efficiency. Ultimately, this creates unfair gaps in student success, career opportunities, and social status based on background rather than ability. Thus, the curriculum differentiation conceptualizations and practices vary among educators across countries.

The variety of ways that educators conceptualize and practice curriculum differentiation is linked to several contributing factors, apart from the diversity of student learning characteristics. For example, Kaplan (2022) and Terwel (2005) stated that political, social, cultural, and economic factors often influence the conceptualizations of curriculum differentiation that leads to tracking practice. They argue that such tracking practices also lead to harmful categorization of students and uphold enduring inequity between student categories. According to Ayalon (2006), Kaplan (2022), and Terwel (2005), separating students into different learning tracks based on race, class, or family background - rather than their actual abilities - limits access to quality educational resources. Ultimately, this system reinforces social hierarchies and deepens the gap between privileged and underprivileged students.

In addition, the practices of curriculum differentiation in various school types, such as special boarding schools and special day schools, are reported to be detrimental to educational goals and to the economic, social, and political advantages of students

(Demirel & Kurt, 2021; Friborg et al., 2020; Gaztambide-Fernandez, 2009; LeTendre et al., 2003; Terwel, 2005). Depending on the context, students may encounter a variety of challenging issues when they enroll in special boarding schools, such as traumatic experiences, bullying, sexual abuse, homesickness, and friend deprivation, and subsequently, the majority of them experience a sharp decline in their grades (Ahmed et al., 2019; Behaghel et al., 2017; Demirel & Kurt, 2021; Laiser & Makewa, 2016). Furthermore, increasing social class disparities, inequality in educational opportunities and learning outcomes between student categories, as well as a decline in average achievement, are the negative consequences of such curriculum differentiation practices (Ayalon, 2006; Bol et al., 2014; LeTendre et al., 2003; Perry & Lamb, 2017; Smyth, 2017; Van de Werfhorst & Mijs, 2010). Therefore, the variations of curriculum differentiation conceptualizations and practices—that is, whether offering students different curricula in different paths or offering a standard curriculum by differentiating its components in inclusive classrooms—must be aligned with the goals of schools. One of such goals is provision of equitable learning outcomes for all students in order to minimize hierarchy and inequality among students in an education system (Terwel, 2005; Van de Werfhorst & Mijs, 2010).

According to Terwel (2005) and Van de Werfhorst and Mijs (2010), the goals of schools are to support each student's learning, assist them in reaching their full potential, and minimize inequalities among them, with which educators' conceptualizations and practices of curriculum differentiation needs to be aligned. Otherwise, the practices of curriculum differentiation negatively impact the equitable learning outcomes of students and their adult lifestyles. For curriculum differentiation practices to be successful, teachers and other educators should have clear conceptualizations that help to make accommodations for varied levels of learning profiles, readiness, and interests of students (Eikeland & Ohna, 2022; Ireland et al., 2020; Tomlinson, 2014). According to Kaplan (2022), policies tend to change over time in reaction to disputes and changes to curricula. Changes in curricula also necessitate corresponding changes in people, programs, and organizations (Fullan, 2007). However, the majority of teachers and school principals are

not involved in changing policies or curricula to be differentiated; instead, they are responsible for delivering them (Sparapani & Callejo-Perez, 2015).

Strong alignment between policy aims, school goals, and curricular conceptualizations in an education system allows teachers and other educators to translate policy intentions and curricular contents into classroom practices. In addition, it assists educators in succeeding in analyzing student assessment results and learning outcomes (Eikeland & Ohna, 2022; Phaeton & Stears, 2017; Sparapani & Callejo-Perez, 2015; Terwel, 2005; Van de Werfhorst & Mijs, 2010). After reviewing research conducted in the US, Japan, and Germany, LeTendre et al. (2003) disclosed that the legitimacy for implementation of curriculum differentiation is determined by country-specific values, cultures, or policies, as well as by the perceptions, beliefs, or conceptualizations of parents, teachers, students, and principals. Thus, it is crucial to understand that a key component of a successful curriculum differentiation practice is the alignment of country-specific policy aims (like Ethiopia) with the conceptualizations of teachers and school principals.

Changing education policies or curricula in African countries, including Ethiopia, is often associated with internal government changes and the influences of multiple external forces, like the governments of other countries or international institutions (Halkiyo, 2023). Particularly, Ethiopia experienced education policy changes from the era of long-aged traditional and religious education to the introduction of Western-like secular education. These are the era of modern formal education (340 AD–1886), the era of Emperor Menellik II, Lij Eyasu and Empress Zewditu (1886–1930), the era of Emperor Haile Selassie I (1930–1974), the Derg era (1974–1991), the EPRDF era (1991–2018), and the Prosperity Party era from 2018 to present (Halkiyo, 2023; Ministry of Education [MoE], 2018; Solomon, 2019b). Within these eras, policy or curricular changes share similar characteristics, such as a top-down approach, disjunctions between global discourse and limited local practices, and foreign influences including France, Britain, America, Russia, or other governments, NGOs, the IMF, and the World Bank (Animaw et al., 2022; Halkiyo, 2023; Seyoum, 1996; Solomon, 2019b).

Especially, the top-down approach to policy and curriculum changes, under the influence of internal and external forces, involved state actors and non-state actors, including top political leaders such as ministries, parliamentarians, regional presidents, bureau heads, university presidents, deans, directors, experts, and professional association leaders. However, the changes have usually overlooked the involvement of practitioners such as school principals, and teachers (Animaw et al., 2022; Halkiyo, 2023; Seyoum, 1996). Conversely, it is widely agreed that policy enactment depends on the alignment between policy intentions and teachers and school leaders' interpretations of the intentions (Phaeton & Stears, 2017).

Now, Ethiopia is implementing significant educational reforms aimed at improving schools, restructuring the curriculum, and changing education policy. For example, since 2018, changes have been made to the Federal Democratic Republic of Ethiopia (FDRE) Education and Training Policy (ETP) of 2023, the General Education Curriculum Framework (GECF) of 2020, and the school improvements that involve the expansion of special day and special boarding secondary schools. In Ethiopia, special day and special boarding schools are distinct educational options that have developed as alternatives to regular secondary schools. Unlike regular schools, special day and special boarding secondary schools admit only selected students who have demonstrated outstanding academic performance in eighth grade regional examinations. These schools offer secondary education for students in Grades 9-12. Special boarding schools provide students with accommodation and food in addition to secondary education. Students in special boarding secondary schools live in the school campus with their peers and attend classes until the end of the school year, while students in special day secondary schools attend classes during the day and live with their families. These educational arrangements are part of the education system's reform in recent years, although a few special day and special boarding schools have existed since decades.

This educational system change in Ethiopia aims to incorporate the issue of curriculum differentiation. Curriculum differentiation has also been discussed among policymakers, teachers, and other educators as a vital component of curriculum revision since the

introduction of the National Guideline for curriculum differentiation and Individual Educational Programs (IEP) of 2012 (Joshi & Verspoor, 2013; MoE, 2012, 2019). For example, the FDRE Ministry of Education (MoE) in 2021 states that "curriculum flexibility has to be introduced in Grades 11 and 12 to allow equitable access to... different career paths and make efficient use of school resources to support the diversity of educational contexts in Ethiopia" (p. 74). The GECF stated that "the curriculum should provide equitable opportunities for all learners so that they can reach their full potential" (MoE, 2020, p. 23). Furthermore, the FDRE MoE (2023a), in the ETP, commented that "the previous education policy has several shortcomings, including a low participation rate of students with special needs, especially students with disabilities" (p. 2). As a result, the ETP emphasizes the need to create and implement a curriculum developed to address the interests of gifted and talented students, and those with disabilities (MoE, 2023a).

The national education policy documents, i.e., the Guidelines for curriculum differentiation and IEP of 2012, the GECF of 2020, and the ETP of 2023, all appear to have as their general goal to accommodate students' varied learning profiles, interests, and readiness through curriculum differentiation. As per the MoE (2023b), and the 5-year Education Sector Development Program VI (2020/21-2024/25), the MoE and regional education bureaus are giving priority to opening special day and special boarding schools in order to cater to the needs of high achievers. Through which competent young citizens are equipped with the necessary academic knowledge and skills that enable Ethiopia to transform into a middle-income economy in less than a decade (MoE, 2021, 2023b).

According to the state minister of the Ethiopian MoE, there is a move to establish 50 special day and boarding secondary schools in Ethiopia (MoE, 2023b). This appears to be a priority set out by the new MoE leadership and triggered by the high passing rate of Grade 12 students in special day schools and special boarding schools in national examinations, as well as the high failing rate of Grade 12 students in regular schools in secondary school leaving examinations (MoE, 2023a, 2023b). Hence, on top of the stated policy intentions, special day and special boarding schools are perceived as ways to increase pass rates in Grade 12 examinations. Currently, the various regional

governments of Ethiopia, under the direction of the MoE, also appear to emphasize the expansion of special day and special boarding schools. Conversely, there is no evidence of how schools, principals, and teachers conceptualize and implement curriculum differentiation, despite a growing interest in it at the top level.

The available differentiation studies in Ethiopia focus exclusively on differentiated instruction (DI). A review of these studies shows that its focus is on the attitudes and practices of teachers, students, school leaders, and teacher trainers in adapting curriculum content and teaching-learning to the educational needs of diverse learners (Abraham et al., 2022; Girma, 2022; Girma & Dawit, 2023; Solomon, 2019a; Tadesse, 2018; Zewudie, 2019). Although DI is an important component of curriculum differentiation, the conceptualization focuses on instructional practices and interactions between teachers, school leaders, and students. DI remains a viable way to address the group and individual needs of learners, but it cannot capture differentiation practices at the education system or at the national level. As already mentioned, the curriculum differentiation has sociological, philosophical and political foundations and goes beyond school or classrooms.

Various other studies have shown that there are challenges in developing a shared understanding of educational ideas and innovation in Ethiopia. For example, the MoE and many scholars (e.g., Dawit, 2023; Girma & Dawit, 2023; MoE, 2019, 2021) contend that teachers and principals have awareness and clarity problems with some of the main reforms such as active learning, continuous assessment, social promotion, continuous professional development, and problem-based learning. Dawit (2007) also reported considerable gaps in the evolution of the education aims of the previous ETP into curricular materials and teachers' awareness and classroom practices. To understand how curriculum differentiation is used in Ethiopian secondary education, this study explores two main areas. First, it analyzes national policy intentions alongside how principals and teachers actually understand the concept. Second, it examines the specific types of curriculum differentiation practices—and how students experience them—across three school settings: regular, special day, and special boarding schools. The study, therefore,

provides evidence of coherence in policy ideas and their evolution in the context of Ethiopia.

1.2. Statement of the Problem

Ethiopia's education system continues to face challenges due to low and deteriorating trends in secondary school students' learning outcomes, poor practices of continuous assessment, and inadequate responses to students' diverse needs despite improvements in education access during the past three decades (Joshi & Verspoor, 2013; MoE, 2016, 2019; 2021). For example, the total numbers of Grade 12 examinees in Ethiopian higher education entrance examinations in 2021/22; 2022/23 and 2023/24 were 896,520; 845,099 and 674,823 respectively. From which, only 3.3%; 3.2% and 5.4% have scored 50% and above to join the Ethiopian higher education institutions (MoE, 2023a; 2023b). Besides, a thorough review of the General Secondary Education Curriculum in Ethiopia revealed the need for curriculum change to provide equitable access to values, knowledge, and skills and alternative career routes, as well as efficient use of school resources for all students, including previously excluded groups of gifted and talented students and those with disabilities (MoE, 2019, 2020, 2023a). Thus, the government revised its ETP and GECF based on an education roadmap study and other studies on the national curriculum. The Guideline for Curriculum Differentiation and IEP, developed in 2012 and appeared to contradict with the ETP and the GECF, is still in use.

Improving quality, relevance, and equitable access to quality education are the main rationales for the policy and curriculum reforms. Firstly, although policy documents stipulate equitable access to quality education and curriculum differentiation can be one of the ways to address this. It appears that there are two parallel directions: tracking students at the secondary school level and a policy of inclusive education, which is still a guiding principle of some of the above documents. On top of this, the coherence among the national policy documents regarding curriculum differentiation is essential to translating policy intentions into actual practices. As noted earlier, there is a clear divide in the policy documents. The guidelines for curriculum differentiation and IEP emphasize

supporting students with diverse needs inside inclusive classrooms. In contrast, the ETP and the GECF incline toward separating students into different tracks, such as placing them in regular, special day, or special boarding schools (MoE, 2012, 2020, 2021, 2023a). Secondly, though special day schools and special boarding schools could have diverse purposes, there is no evidence of how teachers and principals conceptualize their purposes or whether they are in fact serving the needs of academically high-achieving students selected at the end of primary education.

In fact, some of the current rhetoric from top educational leaders at the Ministry of Education and regional states seem to suggest that high academic achievement in secondary school leaving examinations is the prime purpose rather than differentiating the curriculum to the needs and abilities of students. Particularly, students in special day and special boarding secondary schools performed well in school leaving exams, prompting other regions to open similar schools. Regional governments are now pushing to establish special day schools and special boarding schools. Universities have also established such schools, and many universities in the various regional states consider opening such schools as the best way to serve their community and train the best local minds. Thus, top leadership at the Ministry of Education seems to emphasize establishing special day schools and special boarding schools to provide quality educational opportunities to the best-performing students.

Conversely, it is reported that the purpose of expanding special day schools and special boarding schools is primarily to meet the exceptional needs and abilities of gifted and talented students who cannot realize their abilities in regular schools (Choi & Hon, 2009; MoE, 2020, 2023b). However, the curriculum, the subjects, and the streaming options in special boarding schools and special day schools in Ethiopia seem similar to regular secondary schools so far. Special day and special boarding secondary schools admitted students with excellent academic achievement in the 8th grade rather than gifted and talented students to teach the common curriculum, which is already in use for students in regular school. Conversely, regular secondary schools admitted students with below average, average, and above average or excellent academic achievements in the 8th grade

to teach the national curriculum. In recent years, special day and special boarding schools have been praised because almost all of their students passed their school-leaving exams given to grade 12 completers. In fact, special day or special boarding school students are the best 8th-grade students and have the best teachers and resources compared to the underfunded regular high school students. Therefore, they are highly likely to perform better in school-leaving exams.

In this regard, several researchers have agreed that many special boarding schools and special day schools admit a particular group of students with adequate teaching and learning facilities (e.g., Kaltsas & Gkaintartzi, 2021; Laiser & Makewa, 2016; Gaztambide-Fernandez, 2009). Authorities in Ethiopia also argue that the students with high academic achievement and abilities should be taught in special day and special boarding schools where facilities are well equipped so that they can be the future scientists and leaders. Even though special boarding schools and special day schools have a reputation for academic excellence, researchers in Ethiopia rarely pay attention to this area of study and even there is not much rhetoric in terms of meeting the needs of students with low learning achievements. Under such a context, the study examines how school principals and teachers conceptualize and practice curriculum differentiation.

Current research in Ethiopia (i.e., Abrham, 2019; Addis, 2019; Solomon, 2019a; Tadesse, 2018) focus on DI (such as differentiation of content, instructional process, assessment, and learning environment) in an inclusive classroom setting rather than curriculum differentiation in a broader sense. The explanatory sequential mixed study of Tadesse (2018) and the three distinct case studies by Abrham (2019), Addis (2019), and Solomon (2019a) deal with the DI. There are also studies that refer to DI as curriculum differentiation. The qualitative study by Marishane et al. (2015) and the quantitative survey study by Ireland et al. (2020) characterize DI components as curriculum differentiation. Others use curriculum differentiation to examine student placements into different tracks within and between school types (Ayalon, 2006; Perry & Lamb, 2017; Smyth, 2017). Thus, the conceptualization of curriculum differentiation appears to vary across researchers.

Furthermore, some studies in Ethiopia (e.g., Animaw et al., 2022; Halkiyo, 2023; Seyoum, 1996; Solomon, 2019b) showed that the Ethiopian education policy and curriculum reforms appear to be the result of a top-down approach dominated by the top leadership, experts, and development partners or donors, with little to no involvement of practitioners (e.g., school leaders, and teachers). These practices discourage school leaders, teachers, and researchers from challenging the challenges of educational reforms in Ethiopia (Animaw et al., 2022; Halkiyo, 2023; Seyoum, 1996). It is also often reported that a lack of clear understanding of education reform ideas is one of the implementation problems.

Besides, there is still debate on the appropriateness of curriculum differentiation, although there are strong psychological foundations and national needs for differentiation of education. Studies in other countries reported various drawbacks to student placement practices, in general, in special day and special boarding school types. For example, studies by LeTendre et al. (2003), Ayalon (2006), and Smyth (2017), among others, showed the detrimental effects that tracking practices in various school types have on reproducing social and academic inequalities as well as curricular segregation. Curricular segregation based on gender and socioeconomic background other than students' abilities also hurts students' chances of academic success and post-secondary education pathways.

Conversely, the current practice of placing students into special day and special boarding secondary schools in Ethiopia based on gender and academic achievement is not supported by empirical evidence in Ethiopian secondary school contexts. In these schools, principals and teachers are supposed to have vital roles in implementing the available types of curriculum differentiation. However, principals' and teachers' conceptualizations and practices of various types of curriculum differentiation and their alignments with the intentions of national policy documents on curriculum differentiation are not yet investigated. Therefore, this study has vital contributions in the field to fill these gaps in Ethiopian secondary education context. The study then attempts to answer the research questions mentioned below.

1.3. Research Questions

This study has been intended to address the following basic research questions:

1) What are the policy intentions regarding curriculum differentiation? How coherent are the intentions of different policies?

2) Which types of curriculum differentiation practices are offered in Ethiopian secondary education from Grades 9 to 12?

3) How do secondary school principals and teachers conceptualize curriculum differentiation?

4) How coherent are these conceptualizations with policy intentions?

5) How do placements of students into regular, special day and special boarding secondary schools develop their academic and psychosocial experiences in the study area?

6) To what extent the available types of curriculum differentiation practices across regular, special day and special boarding secondary schools differ in meeting the learning characteristics of students?

1.4. Objectives of the Study

1.4.1. General objective

The general objective of this study is to investigate how curriculum differentiation is designed and practiced in Ethiopian government secondary schools (Grades 9–12). Specifically, it examines national policy intentions, how school principals and teachers understand and implement these policies in relation to student learning characteristics, and how students experience these practices.

1.4.2. Specific objectives

The specific objectives of the study focused on the national policy intentions and conceptualizations of curriculum differentiation as well as on their alignments, the types of curriculum differentiation practices and the student experiences are listed as follow:

a) To analyze the intentions of education policy documents of Ethiopia regarding curriculum differentiation.

b) To examine the coherences among the intentions of different national education policy documents of Ethiopia.

c) To examine the types of curriculum differentiation practices offered by regular, special boarding and special day secondary schools from Grades 9 to 12.

d) To explore secondary school principals' and teachers' conceptualizations on curriculum differentiation.

e) To examine the coherence of secondary school principals' and teachers' conceptualizations with the intentions of national education policy documents of Ethiopia.

f) To explore the academic and psychosocial experiences of students in regular, special boarding and special day secondary schools.

g) To determine the extent of differences that exist among the available types of curriculum differentiation practices across regular, special day and special boarding secondary schools in meeting student learning characteristics.

1.5. Significance of the Study

This study identified critical gaps in the coherence of Ethiopia's national education policies regarding curriculum differentiation. Specifically, it highlights misalignments between policy intentions, the conceptual understanding of school principals and teachers, and current classroom practices. The findings offer several theoretical and practical

contributions: Policy alignment, professional development, equity in placement, collaborative governance, and research contribution.

Policy alignment: The study provides a framework for policymakers and curriculum developers to harmonize key documents—such as the Education and Training Policy of 2023, the General Education Curriculum Framework of 2020, and the Guideline for Curriculum Differentiation and IEP of 2012—ensuring they align with both curriculum differentiation theory and school-level realities. *Professional development:* By clarifying curriculum differentiation principles, the study empowers principals and teachers to implement diverse instructional strategies that better accommodate students' varying learning profiles, readiness levels, and interests. *Equity in placement:* The study informs national and regional education authorities on how to practice student placement across regular, special day, and special boarding secondary schools. It advocates for the development of national guidelines that ensure these placements adhere to curriculum differentiation principles, thereby fostering equity and educational quality for all students. *Collaborative governance***:** The study finding supports informed decision-making and encourages collaboration between school leaders and stakeholders to set and achieve inclusive curricular goals. *Research contribution:* This study establishes a baseline for curriculum differentiation in the Ethiopian context. It serves as a vital resource for local researchers seeking to expand this field and for international scholars conducting comparative educational research.

1.6. Delimitation of the Study

While previous studies in Ethiopia have primarily focused on perceptions and attitudes toward Differentiated Instruction (DI) within inclusive classrooms across various education levels, this study includes a more comprehensive scope. This study specifically examines national education policy intentions regarding curriculum differentiation, the conceptualizations of curriculum differentiation held by school leaders and teachers, and the different types of curriculum differentiation practices currently available. Furthermore, it explores student experiences across different school modalities, including regular,

special day, and special boarding schools. Thus, the study is delimited based on the following parameters: Institutional scope, geographic focus, participant type, and rational for context. *Institutional scope:* The study is restricted to government-run secondary schools (Grades 9–12), specifically those categorized as regular, special day, and special boarding schools. *Rationale for context:* Government schools were prioritized over non-government counterparts because the implementation and conceptualization of curriculum differentiation received attention in government secondary school level. *Geographic focus:* The study is localized to Addis Ababa, where curriculum differentiation practices (particularly differentiation by school type) has been actively implemented for the past decade with political stability and safe security issue for the data collectors and the researcher. *Participant type:* Data collection involves secondary school principals and teachers, chosen for their indispensable roles in translating policy into practice and tailoring curriculum differentiation to meet students' diverse learning characteristics.

1.7. Operational Definitions of Terms

Conceptualization: refers to secondary school principals' and teachers' perspectives, views, awareness, understanding, knowledge, or intention about different types of curriculum differentiation in government regular, special day and special boarding secondary schools.

Curriculum Differentiation (CD): refers to a system, structure, and process that provide distinct curricular opportunities through separate paths or the modification of curriculum components (including curriculum content, process, product, and learning environment) in an inclusive setting to meet the diverse needs, interests, and abilities of students.

Differentiated Instruction (DI): refers to one of the specific forms of curriculum differentiation practiced within inclusive, mixed-ability classrooms where a common curriculum is implemented through varied instructional strategies to accommodate diverse needs and abilities of students.

Policy: refers to the core educational national policy documents of Ethiopia (i.e., the Education and Training Policy, General Education Curriculum Framework, and Curriculum Differentiation Guideline) that intend to guide secondary schools for the conceptualizations and practices of curriculum differentiation.

Policy Coherence: refers to the level of alignment and consistency among different national educational policies (such as the ETP, GECF, and Curriculum Differentiation Guidelines) in their intentions and strategies for curriculum differentiation implementation.

Practice: implies the implementation of different types of curriculum differentiation between and within government regular, special day and special boarding secondary schools that are intended to accommodate the diverse learning characteristics of students.

Regular Secondary School: refers to a government school that admit students with diverse levels of academic achievements (i.e., below average, average and above average) from the eighth-grade regional examinations and provide daytime education for Grades 9 through 12.

School Principal: refers to a main principal or a vice principal who take part in the process of curriculum differentiation practices in government regular, special day and special boarding secondary schools in Addis Ababa City Administration.

Special Boarding Secondary School: refers to a residential school for high-achieving students that provide accommodation and food in addition to education; students live on campus for the duration of the school year.

Special Day Secondary School: refers to a school that admit only selected students with outstanding academic performance in eighth-grade examinations; students attend classes during the day and live with their families.

Teacher: refers to a qualified individual in a specific subject area and assigned to teach school subject(s) from grades 9 to 12 in Addis Ababa city Administration.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter presents the overview of the goals of curriculum differentiation, perspectives on curriculum differentiation, theoretical frameworks of the study, student learning characteristics in curriculum differentiation, curriculum differentiation practices among school types, curriculum differentiation practices within a school type, student experiences in special school types, curriculum differentiation in Ethiopian secondary education, and conceptual framework of the study.

2.1. Overview of the Goals of Curriculum Differentiation

Kaplan (2004) asserts that the conceptual foundation of curriculum differentiation is fundamentally straightforward: the primary goal of schooling is to ensure that all students engage in continuous, ongoing learning. In this context, the goals of curriculum differentiation are complementary to broader educational aims, specifically seeking to enhance student achievement while reducing inequalities in educational outcomes (Ayalon, 2006). Effective learning occurs when teachers recognize, respect, and accommodate individual differences to foster meaningful engagement (Roberts & Inman, 2013). Abodey and Ansah (2017) and Kanevsky (2011) further contend that the ultimate goal of curriculum differentiation is universal: enabling all students to realize their full potential as unique learners through tailored educational services that meet group or individual needs. Consequently, curriculum differentiation must function as a mechanism for ensuring both equity and excellence for a diverse student population.

Theoretically, this involves differentiating the curriculum based on specific learning characteristics, including student profiles, readiness, and interests (Solberg, 2017; Tomlinson, 2014). Students demonstrate deeper connections to their learning when these characteristics are explicitly valued (Solberg, 2017). Ultimately, a teacher's implementation of curriculum differentiation reflects their professional view regarding the support a student requires advancing in knowledge and skills. Therefore, the goal of

curriculum differentiation in a classroom is to facilitate the development of more independent and productive learners. Despite these benefits, the overarching goals of curriculum differentiation remain a subject of debate, as educators and policymakers maintain varying perspectives on the implementation and outcomes of curriculum differentiation.

2.2. Perspectives on Curriculum Differentiation

Scholars and researchers maintain diverse conceptualizations of curriculum differentiation. Drawing on decades of international empirical research, Terwel (2005) categorizes these empirical study findings into three primary frameworks: the genetic, sociological, and cultural perspectives. Historically, the genetic perspective has significantly influenced curriculum differentiation. This view posits that intelligence is genetically determined and measurable via objective IQ tests. Proponents suggest that students should be identified early and placed into distinct academic streams or tracks based on these test outcomes. This approach creates a rigid hierarchy within school systems and broader society, not only between individuals but across social groups. Consequently, these tracking systems direct students toward predetermined career paths and contrasting socioeconomic lifestyles.

The sociological perspective also focuses on boundaries between social groups and the causal mechanisms that sustain persistent inequality (Terwel, 2005). Within this framework, curriculum differentiation is viewed as a process of reserving specific tracks for students based on their cultural, national, or familial backgrounds. This institutionalization of tracks introduces categorical boundaries into schooling that are often undefeatable. Here, the goal of curriculum differentiation is not to accommodate individual profiles or interests; instead, it serves to maintain boundaries typically between elite and non-elite groups as educational resources are monopolized by the elite. Thus, curriculum differentiation becomes an institutional mechanism that structures and maintains categorical inequality by providing distinct opportunities to different groups of students.

In contrast, the cultural perspective frames curricula and schooling as moral and cultural endeavors (Terwel, 2005). From this viewpoint, the debate surrounding curriculum differentiation is fundamentally rooted in a moral dimension concerning human dignity and equality of respect. Unlike the previous perspectives, the cultural view suggests that a "lower track" is not inherently inferior but is simply a different version of a "higher track." The distinction between tracks becomes less critical as long as both prioritize individual liberty, personal choice, and the moral obligation of schools to treat all students with equal dignity and respect.

2.3. Conceptual and Theoretical Frameworks

From reviewing empirical evidence, Eikeland and Ohna (2022) identified four different levels of curriculum differentiation. These are (1) individual level curriculum differentiation, characterized by a focus on the uniqueness of each student's learning process; (2) group-specific level curriculum differentiation, characterized by an emphasis on specific groups of students who are often targeted in terms of their abilities and skills; (3) classroom level curriculum differentiation, characterized primarily by the focus on the instructional context of all students in a heterogeneous classroom; and (4) system level curriculum differentiation, characterized by emphasizing the importance of policy perspective or institutional system such as education system, education policies, and school culture and leadership as conditions for curriculum differentiation. These four perspectives of differentiation can be broadly categorized into two forms, first, curriculum differentiation between school types or classes (LeTendre et al., 2003; Perry & Lamb, 2017) and, second, curriculum differentiation within a classroom (Reis & Renzulli, 2015).

In the first form i.e., curriculum differentiation between school types or classes, for example, Perry and Lamb (2017) defined curriculum differentiation as "the process of accommodating diverse abilities, interests, and skills of students by providing them with different curricular opportunities" (p. 1). The conceptual framework of LeTendre et al.

(2003), also known as typology of curriculum differentiation, supports the first form of curriculum differentiation.

Moreover, in the second form i.e., curriculum differentiation within a classroom, for example, Reis & Renzulli (2015) and UNESCO (2004) defined curriculum differentiation as the practice of adapting a common curriculum to consider students' varied skills and ability levels within a classroom. Howard Gardner's (1983) theory of multiple intelligences and Lev Vygotsky's (1978) theory of sociocultural learning, particularly the concept of the zone of proximal development (ZPD) support the second form of curriculum differentiation. The form of curriculum differentiation that promotes the inclusion of students with diverse needs, skills and abilities within a classroom by differentiating curriculum components such as instructional processes, contents, assessment strategies, and learning environments in accordance with every student's learning profiles, interest, and readiness (Tomlinson, 2014) are rooted in the theories of multiple intelligences and sociocultural learning, particularly the Zone of Proximal Development (ZPD).

Teachers, working in collaboration with other stakeholders like school administrators, curriculum designers, and policymakers, can employ this form of curriculum differentiation to support every student's learning at their own pace and ability level (UNESCO, 2004). Accordingly, UNESCO specified that teachers differentiate the curriculum to make it more need-based by changing the contents, instructional strategies, and assessment options in an inclusive classroom. Moreover, Reis and Renzulli (2015) added that classroom differentiation needs to be considered as a curriculum component in addition to content, instructional process, and assessment differentiations for the implementation of curriculum differentiation in a classroom of students with diverse needs. Thus, this form of curriculum differentiation is supported the theoretical frameworks of Gardner's (1983) theory of multiple intelligences (MIs) and Vygotsky's (1978) concept of the ZPD. The theory of MIs and the concept of the ZPD both recognize that educators must differentiate a curriculum to accommodate students' varying needs and abilities.

Therefore, the present study employed the conceptual framework of typology of curriculum differentiation, the theory of multiple intelligences, and the sociocultural theory of learning, mainly ZPD, to explore the issue of curriculum differentiation comprehensively in secondary school context of Ethiopia.

2.3.1. Conceptual framework of typology of curriculum differentiation

The conceptual framework of LeTendre et al. (2003) concisely explains five different types of curriculum differentiation that demonstrate a wide range, from tracking students between school types to grouping them between classrooms. LeTendre et al.'s framework of curriculum differentiation helps to guide the present study to explore how different types of curriculum differentiation are conceptualized; identify which types of curriculum differentiation are incorporated in the education policy documents of Ethiopia; and examine which types of curriculum differentiation practices are available in secondary schools from grades 9 to 12. Moreover, the second form of curriculum differentiation framework within a classroom, commonly known as differentiated instruction, is proposed by UNESCO (2004) and researchers (e.g., Reis & Renzulli, 2015). Thus, these six different types of curriculum differentiation are explained below.

Type 1 (School Type): The first type of curriculum differentiation refers to curriculum differentiation by school type, which means curriculum differentiation differs between school types in formal and structural ways. These school types, serving the same grade level, differ in their curricula, which direct students towards various post-secondary paths. Formal selection methods typically govern student admission into different school types, making it challenging for students to transfer between school types. Austria, Belgium, the Czech Republic, Finland, Germany, Hungary, Ireland, Japan, the Netherlands, Slovenia, and Turkey are among the nations with Type 1 curriculum differentiation in their education systems (Bol & Van de Werfhorst, 2013; LeTendre et al., 2003; Perry & Lamb, 2017). For example, the three types of high schools in Germany - lowest level, middle level, and highest level - (Bol & Van de Werfhorst, 2013), the three types of upper secondary schools in the Czech Republic - academic, technical, and vocational/trades

(Perry & Lamb, 2017), the two types of upper secondary schools in Finland - general academic school and vocational school, and the three types of secondary schools in Ireland - voluntary, comprehensive, and vocational schools (Smyth, 2017) are all Type 1 curriculum differentiation.

Type 2 (Fields of Study): This category describes curriculum differentiation by fields of study, which entails offering students' more than one official pathway within a school. Each field of study often comprises several distinct core subjects (the core of broad disciplinary areas). These are subjects taught in all regional and national educational systems. Students typically find it challenging to shift from one field of study to another. Australia, Japan, Norway, and Sweden are among the nations whose educational systems comprise Type 2 curriculum differentiation (LeTendre et al., 2003; Perry & Lamb, 2017). For example, the distinct core classes for chemistry and electrical engineering fields of study across a nation in Japan (LeTendre et al., 2003), as well as the core academic subjects within the Victorian Certificate of Education or vocational subjects and general skill subjects within the Victorian Certificate of Applied Learning in secondary schools in Australia (Perry & Lamb, 2017) are all Type 2 curriculum differentiation.

Type 3 (Stream): Curriculum differentiation through streams involve more than one pathway within a school, with each path containing multiple subjects but one route differing from the other(s) by rigor rather than broad disciplinary area. This type of curriculum differentiation usually covers several years or courses. Student interest and past-grade academic performance usually determine entry into streams, and movement between streams is flexible. Australia, Japan, and the United States are examples of countries with Type 3 curriculum differentiation in their education systems (LeTendre et al., 2003; Perry & Lamb, 2017). The stream is particularly prevalent within a comprehensive high school due to its popularity in many nations. For example, the liberal arts and science streams in Japan and the college preparatory and regular streams in the United States (LeTendre et al., 2003), as well as the academic extension stream for a selected group of students and the general stream for all other students in some Australian

lower secondary high schools (Perry & Lamb, 2017), are all commonly referred to as Type 3 curriculum differentiation.

Type 4 (Ability Grouping): In a school or between classrooms in the same grade, Type 4 refers to curriculum differentiation by ability grouping, which often includes one or more pathways for each core subject area. Standardized exams and teacher-made assessments of some measurable or assumed abilities of students are just two of the many reasons used to place students into ability groups. Although initially flexible, their transition across courses of ability groupings becomes progressively more challenging. Usually, ability grouping refers to a single subject or year level. Australia, Britain, France, Ireland, Israel, and the United States are among the nations whose educational systems include Type 4 curriculum differentiation (Ayalon, 2006; Callahan, 2005; Gamoran, 1989; Hallinan & Kubitschek, 1999; LeTendre et al., 2003; Perry & Lamb, 2017; Smyth, 2017). For example, ability grouping for mathematics in three pathways (advanced, general, and foundation) within and between classrooms in the same high school in the United States (Callahan, 2005; Gamoran, 1989; LeTendre et al., 2003; Smyth, 2017); ability grouping for mathematics, English, and science between classrooms in a lower secondary school in Australia (Perry & Lamb, 2017); and ability groupings for English and mathematics at higher or foundation level in Irish lower secondary schools (Smyth, 2017) are Type 4 curriculum differentiation.

Type 5 (Geographic Location): According to LeTendre et al. (2003), unsystematic differences in curriculum differentiation exist between schools of the same kind in various geographic regions due to differences in socioeconomic makeup and funding source of the school. Australia and the United States are two nations whose education systems are well-known for their Type 5 curriculum differentiation (LeTendre et al., 2003; Perry & Lamb, 2017). In the United States, socioeconomic disparities and local school funding across different geographic locations gave rise to Type 5 curriculum differentiation (LeTendre et al., 2003). For example, Western Australia and Victoria State offer optional foreign language subjects at different secondary schools, also known as Type 5 curriculum differentiation (Perry & Lamb, 2017).

Differentiated Instruction (DI): DI is an additional form of curriculum differentiation within a classroom. According to UNESCO (2004), curriculum differentiation involves modifying learning experiences to match the varying ability levels, needs, interests, and backgrounds of students within a single classroom or within an inclusive classroom. Rather than applying a rigid, one-size-fits-all approach, teachers adjust how content is delivered, practiced, and assessed to maximize growth for every student. While educational researchers (e.g., Reis & Renzulli, 2015; Tomlinson, 2001, 2014) describe curriculum differentiation using slightly different terminology, their models center on the same fundamental principle: adapting key curriculum components to student readiness, interests, and learning profiles. These curriculum differentiation components are content (knowledge and text), process (pedagogy/ practice), product (expression/ assessment), environment (climate and classroom), and teacher role (agents) differentiations.

Content differentiation: It is what the student is expected to learn, including facts, concepts, and skills. Teachers modify learning materials to ensure they are meaningful and go beyond simple factual recall. Instead of assigning identical materials to the entire class, teachers adjust content complexity, reading levels, or depth so students can work toward target learning outcomes at their own pace. Some examples content differentiation are adjusting text readability, providing tiered reading assignments, or offering extension content materials for advanced learners.

Process differentiation (how students learn): It is the methods, instructional modes, and activities used to help students gather, process, and make sense of new information. Teachers vary their delivery techniques - incorporating visual, auditory, and kinesthetic modes - and provide varied opportunities for practice and application. Some examples of process differentiation are using flexible grouping (e.g., mixed-ability peer pairs or targeted skill groups), incorporating hands-on simulations, displaying visual graphic organizers alongside lectures, or conducting independent research projects.

Product differentiation (demonstrating mastery): It is how students demonstrate what they have learned and what they can do (expression styles). Rather than relying solely on traditional paper-and-pencil tests, product differentiation allows students to choose the

medium that best represents their mastery. Some examples of product differentiation are demonstrating understanding through written reports, oral presentations, visual artwork, musical compositions, digital media, hands-on models, or community-action projects.

Classroom environment and climate differentiation: It is the physical, temporal, and social setting in which learning takes place, including rules, procedures, physical layout, and general classroom climate. Teachers adjust spatial layouts, time allocation, and learning resources to accommodate diverse learning preferences and working styles. Some examples of classroom environment and climate differentiation are creating dedicated quiet zones for independent study, organizing collaborative group workstations, leveraging online tools to extend learning beyond classroom walls, or incorporating guest speakers and field trips.

Teacher role differentiation (agents of differentiation): It is the instructional choices, behaviors, and roles adopted by educators to drive differentiation. Instead of acting merely as traditional lecturers, teachers shift roles dynamically based on student needs. They also enrich the curriculum through artistic modification - incorporating their own personal passions, real-world experiences, and specialized expertise. Some examples of teacher role differentiation (agents of differentiation) are acting as a coach, production manager, facilitator, or academic adviser depending on the activity.

In general, assessment in a differentiated classroom relies heavily on ongoing formative and informal assessment rather than static, end-of-unit testing alone. It involves on early checks, direct observation, and flexible evaluation. Diagnostic/ early checks mean gathering preliminary data on student readiness, interests, and prior knowledge to plan entry points. Direct observation refers to monitoring students actively as they practice skills, offer ideas, or work in groups. Flexible evaluation is evaluating diverse final products against clear, objective criteria to ensure fair measurement of genuine understanding.

2.3.2. Theory of multiple intelligences

The overviews of Haward Gardner's theory of MIs are given below. Gardner identified nine distinct types of intelligences: verbal-linguistic, logical-mathematical, visual-spatial, bodily-kinesthetic, musical, naturalistic, interpersonal, intrapersonal and existential intelligences (Ornstein & Hunkins, 2018). The MIs theory explains that each person has nine relatively independent forms of intelligences and everyone uses all the nine intelligences with various levels of strengths and weaknesses in each area of intelligence (Gardner & Hatch, 1989; Gardner, 2011; Thakur, 2014). Though all persons exhibit nine types of intelligences, they differ in their current profile of intelligences (Gardner, 2011). As also stated by Gardner, an education built on MIs can develop a broader range of talents, and can make the standard curriculum accessible to a wider range of students. A wide variety of resources offer opportunities for students to employ their MIs to experience different ways of learning and knowing (Kuhlthau et al., 2007). With the knowledge of MIs, a teacher can make sure that they are differentiating the curriculum to accommodate all the nine types of intelligences throughout the day. However, the idea is not to create nine different activities of the same content to accommodate each intelligence but to select a few and strong intelligences to target in one lesson (Gang, 2011). In curriculum differentiation, therefore, teachers and school leaders provide educational opportunities that nurture the strong area of intelligences but also allow students to use all their intelligences (Gang, 2011; Seifert & Sutton, 2009).

In other words, proposed by Howard Gardner in his 1983 book *Frames of Mind*, the Theory of Multiple Intelligences (MI) challenges the traditional view that intelligence is a single general factor (g) measured primarily by standardized paper-and-pencil tests. Gardner defines intelligence as a bio-psychological potential to process information, solve problems, or create products that are valued within one or more cultural settings. Rather than viewing intelligence as a static numerical score (such as IQ), Gardner argues that human beings possess a set of relatively autonomous intellectual capacities - discrete "frames of mind." Originally identifying seven intelligences, he later expanded the framework to nine.

Verbal-linguistic intelligence: It is the capacity to use language effectively for rhetorical, poetic, or mnemonic purposes. It is sensitivity to spoken and written language, the ability to learn languages, and the capacity to use language to accomplish certain goals. It involves core mechanisms like sensitivity to the meaning, order, rhythm, and inflections of words. Individuals high in linguistic intelligence - such as writers, poets, lawyers, and public speakers - excel in reading, debate, storytelling, and complex discussions. Examples: Poets, writers, journalists, lawyers, speakers, and literate scribes.

Logical-mathematical intelligence: It is the capacity to analyze problems logically, carries out mathematical operations, and investigates issues scientifically. It relies on detecting patterns, reasoning deductively, and thinking logically. People strong in this domain are typically systematic, analytical, and proficient with numerical formulas. Examples: Mathematicians, scientists, computer programmers, and logic puzzle solvers.

Musical-rhythmic intelligence: It is extraordinary skill in the performance, composition, and appreciation of musical patterns. It includes sensitivity to pitch, rhythm, timbre, tone, and musical structure. Individuals with high musical intelligence easily recognize instrumental compositions, mimic sounds and speech accents, and respond deeply to auditory patterns. Examples: Composers, instrumentalists, vocalists, conductors, and avid music listeners.

Visual-spatial intelligence: It is the potential to recognize, manipulate, and navigate spatial the patterns of wide space as well as the patterns of more confined areas. It involves mental imagery, spatial reasoning, and visual-spatial navigation. Spatial thinkers process information through imagery, showing strong awareness of colors, shapes, and designs. Examples: Puluwat island navigators, chess grandmasters, architects, sculptors, and surgeons.

Bodily-kinesthetic intelligence: It is the potential of using one's whole body or specific parts of the body (like the hands or mouth) to solve problems, create objects, express ideas or fashion products. It emphasizes mind-body coordination, fine motor skills, and physical agility. Common traits include strong non-verbal communication, physical

dexterity, and a preference for hands-on learning, movement, and role-playing. Examples: Athletes, dancers, actors, craftspeople, and surgeons.

Interpersonal intelligence: It is the capacity to understand the intentions, motivations, desires, and feelings of other people. It allows individuals to work effectively with others and navigate social situations smoothly. Individuals with strong interpersonal skills excel in collaboration, conflict resolution, mediation, and empathy. Examples: Religious leaders, teachers, politicians, therapists, and sales professionals.

Intrapersonal intelligence: It is the capacity to understand oneself - having a working model of one's own desires, fears, capabilities, and motivations - and to use that information effectively in regulating one's life. It is the capacity for deep self-reflection, emotional awareness, and meta-cognition. Intrapersonal thinkers possess a clear understanding of their own feelings, values, and motivations, allowing them to regulate their personal lives effectively. Examples: Philosophers, psychologists, theologians, and self-reflective individuals who make grounded life choices.

Naturalist intelligence: It is added later by Gardner, this involves the ability to recognize, classify, and draw upon features of the natural environment (such as flora, fauna, and weather patterns) or it is sensitivity to the natural world. Examples: Botanists, zoologists, hunters, farmers, and landscape architects.

Existential intelligence: Gardner also explored an existential intelligence, the intelligence of big questions regarding life, death, and human existence. It concerns with cosmic or philosophical questions. Examples: Philosophers, theologians, and theoretical thinkers.

2.3.3. Theory of sociocultural learning, the zone of proximal development

The overviews of Lev Vygotsky's (1978) theory of sociocultural learning, specifically the concept of ZPD are given below. The Vygotsky's concept of the ZPD is another theoretical foundation of curriculum differentiation. It is the gap between what a student can do alone and what a student can do through scaffolding or learning under the support of a teacher or more capable peers (Miller, 2003; Polly et al., 2018; Pound, 2011;

Reigeluth et al., 2017;Seifert & Sutton, 2009; Verenikina, 2003). As shown in Figure 2.1, one of its fundamental principles is learning occurs within the ZPD/ area of potential development (Polly et al., 2018). Otherwise, tasks presented below the ZPD/ area of current development are already mastered by a student whereas tasks presented above the ZPD/ area of beyond reach at present is too difficult to learn for a student; only instructions and activities that fall within the ZPD promote development. Then, appropriate tasks that fall within a student's ZPD conceptualized as the range of learning potential (Zuckerman, 2003), that help him/her to learn new knowledge and skills. Its implications for teachers and school leaders indicate that each student in a classroom has different levels of ZPD.

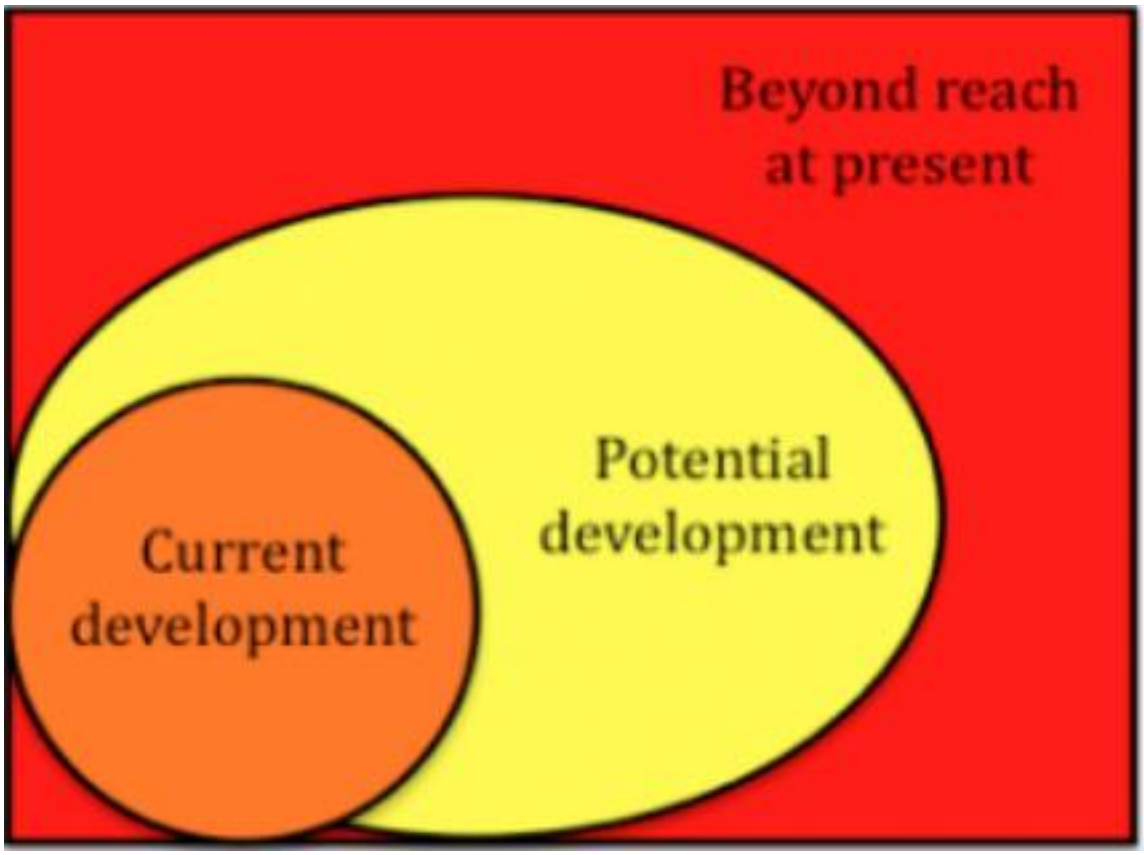


Figure 2.1: Diagram on fundamental principles of the zone of proximal development

Assessing and knowing the actual development and the potential development levels of each student are vital tasks for learning. In curriculum differentiation, teachers need to first identify each student's ZPD in order to differentiate a curriculum in a way that enhances learning and development so that students acquire necessary academic knowledge and skills. Therefore, curriculum differentiation within a student's ZPD helps move a student from his/her current level of knowledge and skills to the next higher potential level of knowledge and skills (Reigeluth et al., 2017).

In other words, the Zone of Proximal Development (ZPD) is the gap between a student's actual performance (what they can accomplish independently) and their potential performance (what they can achieve with guidance). The ZPD is inherently dynamic: as a student masters a task through guided support, their potential level becomes their new actual level, shifting the zone upward toward more complex skills. To be effective, instruction must target this zone directly. Content below the ZPD leads to disinterest, while content above it causes frustration, as students cannot master material beyond their zone until foundational readiness is established. While Lev Vygotsky developed the concept of the ZPD, Jerome Bruner coined the term scaffolding to describe the specific instructional technique used within it (Wood, Bruner, & Ross, 1976). Scaffolding provides dynamic, calibrated support that gradually fades as the learner's mastery increases.

Vygotsky conceptualized intelligence not as a static trait, but as a dynamic, culturally mediated capacity to learn through social interaction. Within this framework, a student acquires knowledge with the help of a More Knowledgeable Other (MKO) - a teacher, peer, or instructional tool. Crucially, Vygotsky's constructivist model rejects the traditional "transmission" model of education, where knowledge is passively poured into a student. Instead, knowledge is socially co-constructed through active engagement. Peer learning, for instance, is only effective when structured properly; if a peer MKO simply gives away answers or takes over the task, no learning occurs. Successful cooperative learning requires clear roles and scaffolded dialogue.

To teach effectively within the ZPD, assessment must evolve beyond traditional measures: Static assessment and dynamic assessment. Static assessment measures only what a student can accomplish independently at a single point in time. Dynamic assessment evaluates how a student responds to hints, prompts, and support during problem-solving process. Dynamic assessment provides actionable data that directly informs targeted instruction. However, implementing it in real-world settings presents logistical challenges. Conducting individual dynamic assessments across large classrooms is time-consuming and difficult to standardize. Managing dozens of distinct ZPDs simultaneously requires flexible instructional methods, such as combining whole-class foundational lessons with small-group scaffolded activities.

Vygotsky's sociocultural theory frames cognitive development as a product of social interaction within a specific socio-historical context. Cognitive growth occurs through two distinct phases: interpersonal (social) and intrapersonal (individual). Interpersonal (social) refers learning happens first through interactions between the student and others using cultural tools. Intrapersonal (individual) means the learner internalizes these interactions, transforming external guidance into internal thought. Students use symbolic tools - such as counting systems, writing, and language - shaped by their culture to navigate the world. Vygotsky identified language as the primary cultural tool, serving as the bridge through which social dialogue and "private speech" transition into higher-order thought. Teachers support this process by acting as interactive facilitators who think aloud, ask reflective questions, and model reasoning.

Because learning is culturally mediated, educators must avoid imposing a single, dominant set of approach, which risks marginalizing students. Modern action research frameworks address this challenge by encouraging teachers to actively investigate their own classroom practices rather than passively implementing external curricula. By reflecting on how cultural tools and dynamic scaffolding function in their specific classrooms, educators can create more equitable, responsive, and effective learning environments.

Generally, the aforementioned five specific types of curriculum differentiation to be implemented in separate paths between school types or classes along with DI, such as curriculum contents, instructional processes, assessment strategies and learning environments within an inclusive classroom are employed in this study to examine the issue of curriculum differentiation. Table 2.1 summarizes these typology of curriculum differentiation (CD) possibly used in the study's scope.

TABLE 2.1: SUMMARY OF THE VARIOUS TYPES OF CURRICULUM DIFFERENTIATION

Types of CD	Core Description	Example
By school types	Between academic, technical, or vocational schools.	Regular school vs. special school.
By fields of study	Various paths between broad disciplinary areas within a school.	Chemistry vs. mathematics fields of study.
By streams	Various paths, between routes differ by rigor, within a school.	Natural science vs. social science streams.
By ability grouping	Various grouping within the same class or between classes.	Reading/ math groups or basic vs. advanced subjects.
By geographic location	Unsystematic differences in CD exist b/n schools of the same kind in various geographic regions.	Foreign language vs. Local language subjects.
By differentiated instruction	Differentiating a curriculum components across individual needs and intelligences within an inclusive classroom	Differentiating contents, processes, assessments and learning environments.

2.4. Student Learning Characteristics in Curriculum Differentiation

Curriculum differentiation is a teaching philosophy that aims to help students engage with and respond to the school curriculum by matching the various learning readiness, interests, and profiles of each student with the learning contents, instructions, and learning output in flexible learning environments (Drake & Sherin, 2006; Lee et al. 2006;

Tomlinson, 2004; Tomlinson, 2014; Tomlinson & Imbeau, 2010). Tomlinson and Imbeau (2010) assert that students' learning readiness, interests, and profiles are crucial and essential determining variables in realizing curriculum differentiation.

2.4.1. Learning readiness of students

Learning readiness, according to Tomlinson (2014) and Tomlinson & Imbeau (2010), refers to students' entrance point or current proximity to specific knowledge and skills developed in the pursuit of specific learning goals. It is not fixed and is not a synonym for ability. For example, in order to bridge the gaps between prior knowledge and new knowledge, students may receive support through curriculum differentiation in identifying and understanding the missing linkages. So, students' prior knowledge determines how ready they are (learning readiness) to acquire new knowledge with assistance. This strategy has a concept related to the idea of ZPD (zone of proximal development).

Lev Vygotsky's (1978) idea of ZPD, which is one of the key foundations of curriculum differentiation, is thought to be the source of the approach to readiness. This notion is discussed in the theoretical framework portion of this paper. As a result, learning readiness is a broader and deeper paradigm shaped by prior knowledge, life experiences, cognitive and meta-cognitive proficiency, and attitudes towards schooling that can lead to improvement in terms of student achievement if the task and the student's level of readiness are matched (Santangelo & Tomlinson, 2009; Tomlinson, 2005). The work assigned to students during curriculum differentiation must, therefore, be at an appropriate level of challenge, meaning it should neither be too difficult nor too easy, in accordance with the students' levels of learning readiness (Tomlinson, 2005). This prevents students from becoming frustrated or bored.

2.4.2. Learning interest of students

It is critical to curriculum differentiation in accordance with the student's interests, such as their curiosity and passion for a specific skill or topic (Tomlinson & Imbeau, 2010;

Tomlinson, 2014). Student's learning interests include their attention, curiosity, and involvement. Learning interest is one of the elements of learning that inspires motivation for learning, serves as a guide when developing learning tasks, and is essential to a student's academic success (George, 2005). Students' engagement, attention span, participation, satisfaction, creativity, and independence are all enhanced when teachers tailor the curriculum to their individual learners' interests. They also help students make connections between what is being taught and what they already know, which enhances their attitudes towards learning, sense of competence, and achievement of learning outcomes (Santangelo & Tomlinson, 2009; Tomlinson, 2005).

2.4.3. Learning profiles of students

The learning profile of a student is how that student learns (Tomlinson, 2014), and it is influenced by factors such as gender, culture, and/or intelligence preferences, such as Gardner's multiple intelligences, learning styles, such as auditory, visual, and kinesthetic learning styles. Students' learning profiles provide details on their skills, desires, preferences, personality traits, cultural, linguistic, and life experiences, as well as their strengths, weaknesses, and communication styles, helping us to better understand their learning requirements (Downing, 2008; Salend, 2011). Documents containing information about a student's background, circumstances, medical history, family history, and educational history can be consulted to determine that student's profile (Walton, 2013).

Gardner's (1983) multiple intelligences, including logical, linguistic, spatial, bodily-kinesthetic, musical, naturalistic, intrapersonal, and interpersonal intelligence, have become a widely used framework for teachers to identify their students' strengths and learning styles in order to guide their curriculum differentiation practices (Noble, 2004), as explained in the conceptual or theoretical framework of this paper. Understanding the profiles of students' learning needs, and learning styles, as well as their preferences and various approaches to learning across diverse groups and individuals, is one of the crucial elements and the first step towards curriculum differentiation for teachers when

differentiating the curriculum (Rock et al., 2008). For this reason, Santangelo and Tomlinson (2009) and Tomlinson (2005) suggest that teachers should be aware of how to create a learning context that is flexible enough to work for a variety of student profiles, allows for efficient learning, and improves achievements in learning in a wide range of diverse groups and individuals.

In general, the aforementioned learning characteristics of students that need to be considered in curriculum differentiation appear to be explained from the perspective of differentiating curriculum components such as contents, instructional processes, learning environments, and assessment strategies within a classroom. These learning characteristics of students also need to be considered when educators implement all types of curriculum differentiation including types of curriculum differentiation between schools or classrooms.

2.5. Curriculum Differentiation Practices among School Types

The most common types of curriculum differentiation practices around the world are between school types and within a school type i.e., regular/ comprehensive, special boarding or special day school type. These most common types of schools such as special boarding, special day and regular schools are the most unique types of schools (Gaztambide-Fernandez, 2009; Kaltsas & Gkaintartzi, 2021; Laiser & Makewa, 2016). In special boarding school, students live in dormitory-style residence halls, receive nutritious food, and attend classes for the duration of the academic year (Gaztambide-Fernandez, 2009; Kaltsas & Gkaintartzi, 2021; Laiser & Makewa, 2016). This school type is a rigorous kind of education in which students are given housing to live at school and only have weekends and holidays to spend with their families (Ahmed et al., 2019; Behaghel et al., 2017).

On the other hand, special day school type allow students to attend classes during the day, return home after school, and live with their families (Ahmed et al., 2019; Gaztambide-Fernandez, 2009). Its students are significantly more comparable to regular or comprehensive school students. However, many regular schools enroll any students with

inadequate learning and teaching facilities, whereas many special day schools admit a specific group of students with adequate teaching and learning facilities (Gaztambide-Fernandez, 2009; Zachariah & Joshua, 2016).

An example of curriculum differentiation practice across various specific school types is found in the three distinct models of special boarding schools for mathematically gifted students in South Korea. These schools were established primarily to serve the unique needs and abilities of high-achieving students, which regular high schools are often unequipped to meet (Choi & Hon, 2009). The academic structures of these three models differ significantly: The accelerated model, the holistic/ innovative model, and the enrichment model. With the accelerated model, one school employs an intensive acceleration system, enabling students to complete a standard three-year mathematics curriculum in a single year to facilitate early entry into elite higher education institutions. With innovative model, another school offers a distinctive, innovative curriculum that emphasizes non-academic abilities like leadership, sports, and the performing arts, while still adhering to the Ministry of Education's curriculum guidelines. The third school, with enrichment model, integrates the national curriculum with professional-level coursework, including both accelerated and enriched studies in mathematics, science, and technology.

There are also several specific types of curriculum differentiation practices between the majority of regular, special boarding, and/or special day secondary schools (Bol & Van de Werfhorst, 2013; Perry & Lamb, 2017; Smyth, 2017). For example, the lowest, middle, and highest levels of high schools in Germany; academic, technical, and vocational/trades upper secondary schools in the Czech Republic; general academic and vocational upper secondary schools in Finland; and voluntary, vocational, and comprehensive secondary schools in Ireland are a few examples of the usual form of structural differences in curriculum differentiation practices between school types (Bol & Van de Werfhorst, 2013; Perry & Lamb, 2017; Smyth, 2017).

Many different types of special boarding and special day schools have also been developed for both boys and/or girls (Child, 2018). In their analyses of previous literature,

Kaltsas and Gkaintartzi (2021) and Gaztambide-Fernandez (2009) described various specific school types that could be formed as special boarding schools or special day schools. For example, some of these special school types mentioned in Kaltsas and Gkaintartzi's (2021) study are *preparatory schools* that help students get ready for their time in higher education institutions; *sports schools* that concentrate on sports and are primarily designed for students who want to pursue sports careers; *performing arts schools* that focus on music, dance, drama, and other creative pursuits; and religious schools that concentrate on religious teachings and practices.

2.6. Curriculum Differentiation Practices within a School Type

The typical practices within a school type include curriculum differentiation practices within and between classrooms, in particular, student placements into various streams, fields of study, and ability grouping into subjects (Ayalon, 2006; Ayalon & Yogev, 1997; Hallinan & Kubitschek, 1999; LeTendre et al., 2003; Perry & Lamb, 2017; Terwel, 2005; Yonezawa et al., 2002). Just a few examples of the typical curriculum differentiation practices by streams include the distinctions between the college preparatory stream and the regular stream in the United States, the liberal arts stream and the science stream in Japan, and the academic extension stream for selected students and the general stream for all other students in some Australian lower secondary high schools (LeTendre et al., 2003; Perry & Lamb, 2017).

Additionally, examples of typical curriculum differentiation practices by fields of study include the unique core classes for the fields of chemistry and electrical engineering within a technical high school type across a country in Japan, and the variety of core academic subjects within the Victorian Certificate of Education. In secondary schools in Australia, it also comprises the various core academic subjects within the Victorian Certificate of Education or vocational subjects and general skill subjects within the Victorian Certificate of Applied Learning (LeTendre et al., 2003; Perry & Lamb, 2017).

Ayelon (2006) and Ware et al. (2011) added that the common types of curriculum differentiation practices within a school type by ability grouping into subjects is the

placement of a category of students into a variety of optional subjects offered at the same grade level, and/or the provision of basic and advanced subjects offered at the same grade level for a category of students. Examples of curriculum differentiation practices by ability grouping into subjects include ability-based reading groups, ability grouping for mathematics in advanced, general, and foundation levels within and between classrooms in the same grade level of a high school in the United States, and ability grouping for mathematics, English, and science between classrooms in a lower secondary school in Australia. Additionally, there are more examples of curriculum differentiation practices, such as ability grouping into higher or foundation level English and mathematics subjects in Israeli high schools and ability grouping into higher or ordinary level subjects in Irish lower secondary schools (Ayalon, 2006; Ayalon & Yogev, 1997; Callahan, 2005; Gamoran, 1997; LeTendre et al., 2003; Perry & Lamb, 2017; Smyth, 2017).

Besides, the most typical type of curriculum differentiation practice within a classroom is the differentiation of curriculum components such as content, instructional process, assessment, learning environment, and teacher differentiations (Kanevsky, 2011; Ledwaba, 2017; Reis & Renzulli, 2015; Ronksley-Pavia, 2010; Tomlinson, 1999; UNESCO, 2004; Ware et al., 2011). Under the students' diverse academic abilities and interests, content differentiation is what the student needs to learn (Abodey & Ansah, 2017; Reis & Renzulli, 2015). According to Reis and Renzulli (2015), various instructional strategies that correspond to the preferences of individuals or groups in a classroom are part of the practice of instructional process differentiation. Assessment differentiation refers to how students express themselves in several ways about what they have learned. Teacher differentiation also involves the commitments, choices, and decisions that the teacher makes regarding how to differentiate the curriculum for a diverse group of students. Teachers must accept the freedom, flexibility, and creativity required to implement curriculum differentiation in a classroom.

Finally, Reis and Renzulli (2015) and Tomlinson (1999) describe learning environment differentiation as the way teachers manage learning classrooms or how the classroom adapts to students' various requirements. The use of media or technology, field trips, the

provision of quiet areas for independent study, and the scheduling of library and computer lab time are a few examples of learning environment differentiation. This type of curriculum differentiation practice i.e., differentiation of curriculum elements within an inclusive classroom constitute the common type of curriculum differentiation in many nations, including Australia, Israel, the United States, Germany, France, and England (Ayalon, 2006; Ayalon & Yogev, 1997; Ireland et al., 2020; Terwel, 2005; Ware et al., 2011).

2.7. Student Experiences in Special School Types

2.7.1. Academic performances

Entrance examinations are commonly used to select students for admission to special schools around the world, including special boarding schools and special day schools (Behaghel et al., 2017). According to Behaghel et al. (2017) and Kaltsas and Gkaintartzi (2021), special boarding and special day schools today significantly boost the quantity and quality of schooling inputs and provide students with an excellent education that helps them advance to university. There are numerous advantages for students who enroll in these types of schools. For example, special boarding and special day schools give students friends who are good at learning and speaking, more involved teachers, smaller groups, and far less disruption in the classroom (Bass, 2014; Behaghel et al., 2017).

Additionally, special boarding school students are required to spend longer or more time each day in study rooms and during monitored homework hours (Behaghel et al., 2017; Kaltsas & Gkaintartzi, 2021). These schools' potential to stabilize students' lives, lower educational barriers, and enhance educational achievements is emphasized (Laiser & Makewa, 2016). According to the analysis of performance data, special boarding school students typically perform better academically than their counterparts in regular schools, and they also have access to superior learning environments (Ahmed et al., 2019; Zachariah & Joshua, 2016). There are a number of reasons for the relatively poor performances in regular schools, including inadequate study facilities, a long walk to school, the absence of a professional supervisor during their private studies, the

constrained amount of time for private studies, and the absence of study rooms (Zachariah & Joshua, 2016).

On the contrary, when students enroll in special boarding schools, students encounter a number of detrimental academic challenges. The majority of them experience a sharp decline in their grades as a result of these factors, which include higher academic demands placed on teachers, the presence of academically superior peers, a more competitive environment, separation from their friends and families, a lack of support from these families, and disruptive school-to-home transitions (Behaghel et al., 2017; Laiser & Makewa, 2016). Furthermore, special boarding and special day schools do not promote equal learning opportunities for students from all backgrounds; provide students with the skills they need to be productive; and socialize students (Bol & Van de Werfhorst, 2013). Administrators and politicians in some countries devise a means whereby a few number of students are selected for the different goals. If education is provided for a selected few, then the range of diversity is restricted by the selection process (Tomlinson, 2001; Visser, 1998). This may place students in a hierarchy where inevitably some are regarded as more worthy than others. This implies that such types of practices are against the goal of curriculum differentiation in reducing educational inequality and exclusion among students.

Besides, Gamoran (1989) found out that placement of high achiever students into special secondary schools directed toward high powered colleges, receive unusual care and attention, their special courses provide sources of prestige, and their path of achievement is highly praised by the wider community. Those students who are average achievers or those in a visible crisis, on the contrary, are unnoticed. These indicated that such kind of curriculum differentiation produces categorization between high-achieving and low-achieving students (Terwel, 2005). High-achieving students benefit from being in a high track, while low-achieving students suffer from being in the lower track. Thus, this practice is against the goal of curriculum differentiation i.e., reducing educational inequalities and curricular segregation among students.

2.7.2. Psychosocial experiences

According to reports, special boarding schools provide a special environment where students can learn to accept diversity from various backgrounds, make friends, broaden their horizons, collaborate and work as a team, and, through this process of coexistence with others, better understand themselves and others (Demirel & Kurt, 2021; Kaltsas & Gkaintartzi, 2021). They also have a built-in social life, where students live with friends for pleasure, an acceptable place for busy parents against unfriendly home life, and extracurricular opportunities for students to engage in novel hobbies as they interact with people in the evenings and on weekends (Laiser & Makewa, 2016). Furthermore, Pfeiffer et al. (2016) reported that special boarding school students are more successful than special day school students at gaining autonomy from parents for self-reliance and developing romantic relationships. However, special day school students reported more peer group integration than special boarding school students did. Students from special boarding schools have limited options to find a peer group from outside if they do not acquire access to peer groups within their school because they spend a lot of their free time with other students from their school. Due to this, special boarding school students received less parental support than special day school students do, but more support from their friends and teachers (Demirel & Kurt, 2021; Pfeiffer et al., 2016).

On the contrary, various contexts, such as whether students attend a special boarding school or a special day school, can affect their psychosocial and other developments (Pfeiffer et al., 2016). For example, being cut off from family, friends, and comfortable surroundings has a severe impact on special boarding school students' educational, psychological, and physical development (Demirel & Kurt, 2021). Although special boarding schools offer students freedom, and many other amenities, nothing will ever completely alleviate family deprivation or replace a parent's love and relationship with a student (Demirel & Kurt, 2021; Laiser & Makewa, 2016). Pressure and stress can result from students living together in the same space while studying, sleeping, and socializing (Cookson et al., 2009).

According to Laiser and Makewa's (2016), special boarding school types are not beneficial for students' social lives since they foster parental distrust and have a negative impact on their emotional stability and personalities through traumatic events. As boarding school students live away from their families and homes, they are more likely to experience discrimination, violence, and unhealthy lifestyle behaviors like smoking than non-boarding students (Friborg et al., 2020), as well as problematic bullying, teenage sexual abuse, homesickness, and being away from former friends and familiar surroundings (Behaghel et al., 2017; Demirel & Kurt, 2021; Laiser & Makewa, 2016; Pfeiffer et al., 2016).

There are also researches that show curriculum differentiation practices in a variety of special boarding school types have drawbacks in attaining students' educational goals and their psychological development (Demirel & Kurt, 2021; Friborg et al., 2020; Gaztambide-Fernandez, 2009; LeTendre et al., 2003; Terwel, 2005). For example, depending on the context, students may encounter a variety of challenging issues such as traumatic experiences, bullying, sexual abuse, homesickness, and friend deprivation, and subsequently, the majority of them experience a sharp decline in their grades (Ahmed et al., 2019; Behaghel et al., 2017; Demirel & Kurt, 2021; Laiser & Makewa, 2016). Moreover, some studies identified increasing social class disparities, inequality in educational opportunities and learning outcomes between student categories, as well as a decline in average achievement when differentiating students among school types (Ayalon, 2006; Bol et al., 2014; LeTendre et al., 2003; Perry & Lamb, 2017; Smyth, 2017).

2.7.3. Educational resource experiences

When a student's family faces challenging circumstances like homelessness and severe financial difficulties, special boarding school is crucial (Laiser & Makewa, 2016). Families who send their children to special boarding schools frequently struggle with extreme poverty, family dissolution, and access to education due to the absence of neighboring schools in the village (Demirel & Kurt, 2021; Zachariah & Joshua, 2016).

For example, because of the high level of poverty in most rural areas, parents employ their children to earn more money for the family and other associated activities (Zachariah & Joshua, 2016). It is not unexpected that the majority of special day school and regular school students are required to help their parents with housework like cutting grass, gathering firewood, looking after the household animals, etc. when they get home in the evening and on weekends. This takes away from their study time. The special boarding schools act as a form of foster care for students in these families, where they are at least guaranteed enough food and housing (Colmant et al., 2004).

On the contrary, one of the most serious drawbacks of special boarding schools is that they are more expensive and out of reach for students of diverse abilities than regular schools (Bass, 2014). Special boarding schools frequently use a significant amount of a country's scarce resources and are exclusively open to students from affluent families, making them elite boarding schools. Thus, special boarding schools serve as images of disparity in access to educational resources and possibilities in at least the amount of money they invest in each student's education and their physical facilities (Gaztambide-Fernandez, 2009). Those experiences of students are revealed from the perspectives curriculum differentiation in countries school contexts other than Ethiopian secondary school contexts. Hence, the curriculum differentiation experiences in Ethiopian secondary schools are overviewed as follows to reveal whether there are similar student experiences from global perspectives.

2.8. Curriculum Differentiation in Ethiopian Secondary Education

2.*8.1. Foundations for Ethiopian secondary education*

Modern education in Ethiopia began during the reign of Emperor Menelik II (1889–1913), following the establishment of Addis Ababa as the capital. In 1905, the Emperor established the first school (*Menelik II School*) in the palace to educate the sons of the nobility (Teshome, 1979). This primary school level offered a curriculum that included subjects such as languages (i.e., Amharic, Ge'ez, French, English, Arabic, and Italian), mathematics, sciences, and physical education (Solomon, 2008; Teshome, 1979). By

1935, modern education had expanded to approximately nine schools in operation. Notable examples included the *Menelik II School* (the first in the country) provided primary and secondary instruction in French, English, and Italian; the *Tafari Makonnen School* offered both elementary and secondary levels; and the *Itegue Menen School* (the first for girls) provided primary and secondary instruction specifically for girls in French (Teshome, 1979). These schools provided both primary and secondary instruction, often aligned with international standards; for example, students frequently sat for the French Certificate in Primary Studies. By 1936, according to Teshome, the number of government schools had grown to at least 21, three of which offered secondary classes in the capital marking the early institutionalization of formal secondary education in Ethiopia.

2.8.2. Emergence of curriculum differentiation in Ethiopian secondary education

By 1943, the formal inauguration of *Haile Selassie I Secondary School* marked the beginning of full secondary education designed to produce technical and academic personnel (Solomon, 2008; Teshome, 1979). This school introduced a four-year curriculum with two distinct tracks: an *academic track* leading to university entrance and a *technical track* leading to professional technical training. This structure aligns with the framework of curriculum differentiation by fields of study, which was the first formal occurrence of curriculum differentiation *by field of study* in Ethiopia. Further, differentiation occurred with the establishment of the *General Wingate Secondary School* in 1946. Jointly operated by the Ethiopian and British governments, it followed the English Public School model to prepare high-ability boys for leadership roles in government, the military and academic fields such as medicine, engineering and law. As a special boarding school, the practice of General Wingate aligns with curriculum differentiation *by school type*.

During this same period, the *Empress Menen Girls' School* evolved into a prominent secondary school. It focused on technical education and indigenous crafts with academic teacher-training courses. Simultaneously, the expansion of specialized institutions—such

as the Air Force Cadet Training Center, the Commercial School, and various medical and agricultural colleges—underscored a growing system of vocational differentiation. Following the first formal 6-6 curriculum structure in 1947, the system shifted to an 8-4 structure in 1949 (Solomon, 2008). By 1952, technical and academic secondary schools were established nationwide. Despite several experimental structures (including a piloted 6-2-3 system), the system settled into a 6-2-4 structure in 1963/64, which remained until 1994. In 1962, comprehensive secondary schools were introduced, offering both academic and vocational streams. According to the typology of LeTendre et al. (2003), this aligns with curriculum differentiation by school type and by streams.

Throughout the 1940s and 50s, several specialized schools emerged to meet specific workforce needs. These schools indicate the presence of various curriculum differentiation practices, although the curriculum was not explicitly examined for how it accommodated diverse student abilities, nor was the conceptualization of curriculum differentiation precisely stated. In the 1960s, comprehensive secondary schools were introduced to bridge the gap between academic and vocational education. However, the 1994 Education and Training Policy (ETP) eventually shifted the focus toward a "70:30" enrollment ratio favoring science and technology (MoE, 1994, 2002).

2.8.3. The shift to academic preparatory and current reform of Ethiopia

In 1994, a major structural shift occurred as the 6-2-4 system was replaced by an 8-2-2 school structure. This structure introduced eight years of primary education followed by two years of general secondary education (Grades 9–10). Differentiation occurred primarily after Grade 10, where students were tracked into either a two-year preparatory secondary program (Grades 11–12) designed for university admission or a Technical and Vocational Education and Training (TVET) track lasting one to three years (Solomon, 2008). Under this framework, the TVET system was decoupled from general secondary schools and moved to specialized institutes. This was intended to absorb the majority of Grade 10 graduates into the labor market as semi-skilled workers. Within the preparatory track, options included regular, special day, and special boarding schools, categorized by

natural or social science streams. These variations align with curriculum differentiation by school type and stream. While these schools admitted high-performing students based on Grade 8 regional exams, their existence often conflicted with the national policy's emphasis on inclusive educational practices.

The Ethiopia's educational system is currently undergoing another educational reform guided by the 2023 Education and Training Policy and the 2020 General Education Curriculum Framework, which restructured the system from an 8-2-2 back to a 6-2-4 school structure (MoE, 2020, 2023a). Furthermore, the 2012 Ethiopian MoE guideline for curriculum differentiation focused on *differentiated instruction* (DI) which is one part of curriculum differentiation rather than the comprehensive nature of curriculum differentiation (CD). Consequently, the precise meaning and implementation of curriculum differentiation for teachers and school leaders in the Ethiopian secondary context remain unclear. Generally, a comprehensive historical overview of how the frequent changes in the Ethiopian secondary education system, specifically focusing on how the curriculum has been differentiated over time is summarized in Table 2.2.

TABLE 2.2: CURRICULUM CHANGES AND TYPES OF CURRICULUM DIFFERENTIATION IN ETHIOPIAN SCHOOL STRUCTURE

Period of Change	Structure	Primary Focus/ CD Type
1947-1949	6-6	Unified/Standardized (First formal curriculum)
1949-1963	8-4	Academic orientation (Second curriculum)
1963-1994	6-2-4	Comprehensive (Academic vs. Vocational)
1994-2023	8-2-2	Preparatory (Grade 11-12) vs. TVET
2023-Present	6-2-4	New Education and Training Policy

In conclusion, the historical evolution of the Ethiopian education system in which the early modernization period (1905–1935) focused on the elite education and the introduction of foreign languages; the rise of technical tracking period (1943–1960s) focused on the creation of academic specialized schools like General Wingate; the standardization and comprehensive reform period (1960s–1994) focused on the shift to

the 6-2-4 system and vocational integration; and the shift to academic preparatory and TVET period (1994–Present) focuses on the 1994 policy and the recent 2023 updates. While these persistent changes in Ethiopian secondary education appeared to reflect a long-standing commitment of attempting to differentiate its curricula, the curricula at different stages were not yet formally examined for its ability to accommodate individual student needs, nor were the concept of curriculum differentiation explicitly defined in policy documents. These remain significant conceptual gaps in policy and lack of clarity regarding the goals and practice of curriculum differentiation.

In addition, the government has rapidly expanded special boarding and special day secondary schools for high-achieving students, which appeared to be contrary to the current formal curriculum differentiation guideline (published in 2012) in which the conceptual understanding of curriculum differentiation (e.g., systemic tracking) often mix with DI, which focuses on classroom-level instructional strategies (MoE, 2009, 2012). These imply that there is a critical need for research that explores how these curriculum differentiation practices, especially in different secondary school types (regular vs. special) meet the academic needs and psychosocial experiences of students and how policy can better align with the conceptualizations of school practitioners (principals and teachers).

2.9. Conceptual Framework of the Study

The conceptual framework of the study, Figure 1, depicted the assumption that several factors affect in realizing the goals of curriculum differentiation (CD) and student experiences in secondary schools. This framework is constructed by the researcher after thorough review of related literature.

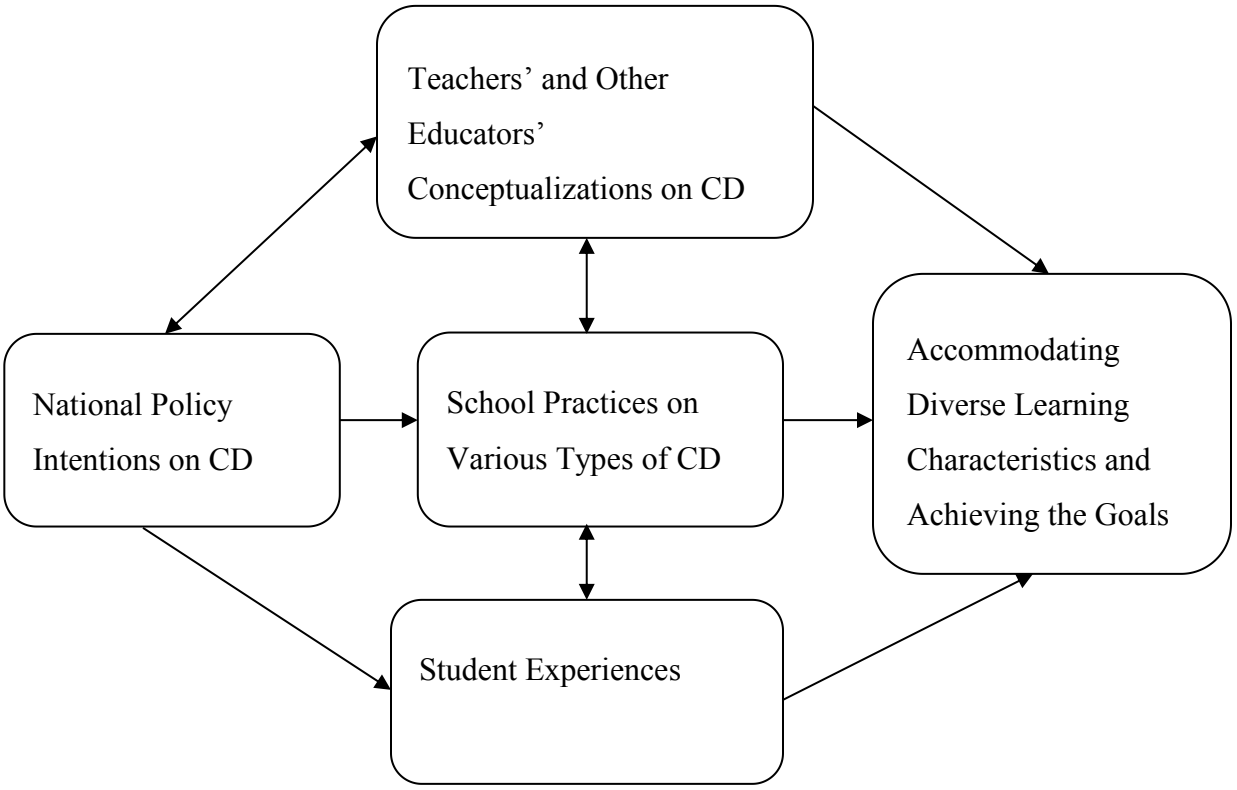


Figure 2.2: Relationships among variables of curriculum differentiation to achieve its goals in secondary education

CHAPTER THREE

RESEARCH METHODS

This chapter presents the research design employed to the study, research area, population, participants, sampling techniques, sources of data, data collection instruments, validity and reliability of data collection instruments, data collection procedures, methods of data analysis, and ethical considerations.

3.1. Research Design

The present study employed an exploratory sequential mixed-methods research design, characterized by a qualitative phase followed by a quantitative phase. According to Creswell (2012), this design involves "gathering qualitative data to explore a phenomenon, identify themes, and design an instrument, and then collecting quantitative data to explain relationships found in the qualitative data" (p. 543). Kothari (2004) notes that exploratory research emphasizes the discovery of ideas and insights, maintain the flexibility necessary to consider various aspects of a problem. Furthermore, Cohen et al. (2018) suggest that this design allows researchers to investigate participants' internal interpretations, making sense of the world through their own terms, attitudes, and interactions. This approach requires researchers to suspend personal assumptions regarding people, cultures, and contexts.

In this sequential framework, the researcher initiates the process with a qualitative phase to explore participant views and analyze data, which subsequently informs the quantitative phase (Creswell & Creswell, 2018). This initial exploration is essential for building or identifying instruments that accurately reflect the population or for specifying variables required for the follow-up study. Creswell and Creswell (2018) emphasize that an exploratory study is particularly appropriate when the topic or population is under-researched, allowing the researcher to build an understanding based directly on participant voices. The objective is to explore qualitatively with a small sample to design research features (e.g., instruments or variables) and then test these features with a larger

sample to ensure cultural and contextual fit. Therefore, the focus of this study on curriculum differentiation is a relatively recent development within the Ethiopian secondary school context.

Consequently, this study utilized an exploratory sequential mixed-methods design to achieve two primary purposes within two phases: The qualitative phase is to explore national education policy intentions, principals' and teachers' conceptualizations of curriculum differentiation, and the implementation of various curriculum differentiation practices within regular, special day, and special boarding secondary schools. This phase also accounted for students' lived experiences in learning and psychosocial development. The quantitative phase, on the other hand, is mainly to examine the status of curriculum differentiation practices in addressing diverse learning characteristics and to evaluate student experiences across the three types of secondary school settings.

3.2. Research Area

This study specifically focused on secondary education rather than other education levels. In Ethiopia's government secondary schools, student placement into regular, special day and special boarding schools - a key indicator of curriculum differentiation - has been practiced for at least a decade based on 8th-grade regional examination results. Furthermore, the newly revised national general education curriculum framework introduces additional layers of curriculum differentiation for secondary students. These include natural and social science streams, which are further divided into five fields of study within the natural sciences and three fields within the social sciences. Consequently, focusing on curriculum differentiation at the government secondary education level of Ethiopia is uniquely suited to achieving the objectives of this study.

The current federal government system of Ethiopia is architecturally structured into 12 regional states and two federal-level city administrations. The regional states include Afar, Amhara, Benishangul-Gumuz, Gambela, Harari, Oromia, Somali, Tigray, and the four recently emerged regions: Central Ethiopia, Sidama, South Ethiopia, and Southwest Ethiopia. The two federal city administrations are Addis Ababa and Dire Dawa. Due to

widespread civil conflict, blockage of land transportation and insecurity across regional states (including Dire Dawa) other than Addis Ababa City Administration during the research data collection period, this study was delimited exclusively to the Addis Ababa City Administration.

Addis Ababa City Administration is also organized into 11 distinct sub-cities: Addis Ketema, Akaki Kaliti, Arada, Bole, Gullele, Kirkos, Kolfe Keranio, Lemi Kura, Lideta, Nefas Silk-Lafto, and Yeka. According to preliminary data from the Addis Ababa City Education Bureau for the 2022/23 academic year, the city hosted 230 secondary schools. This total comprises 81 government and 149 non-government schools, the latter of which includes private, faith-based (church and mosque), missionary, community, and international schools. The specific distribution of students, teachers, and principals across these schools (Grades 9–12) is detailed in Table 3.1.

TABLE 3.1: NUMBERS OF STUDENTS, TEACHERS, AND PRINCIPALS ACROSS SEX AND SCHOOL TYPE

	Government School			Non-Government School		
Target Populations	**M**	**F**	**T**	**M**	**F**	**T**
Student	67,715	84,667	152,382	24,992	30,783	55,775
Teacher	3,525	1,217	4,742	2,114	328	2,442
Principal	201	42	243	223	75	298
Total	71,441	85,926	157,367	7,329	1,186	8,515

Note: M=Male; F=Female; T=Total

Table 3.1 shows that the total number of students, teachers and principals found in Addis Ababa government and non-government secondary schools is 215,882 (98,770 males and 117,112 females).

3.3. Population, Participants and Sampling Techniques

3.3.1. Study population

Out of the 11 sub-cities in the Addis Ababa City Administration, only three - Akaki Kaliti, Arada, and Gullele - contain a mix of regular, special boarding, and/or special day secondary schools. This variation in school types serves as an initial indicator of curriculum differentiation. Furthermore, because these three sub-city education offices manage their secondary schools according to localized contexts, the implementation of Differentiated Instruction (DI) - specifically regarding teaching-learning processes, assessment practices, and learning environments - likely varies across schools. Consequently, both the approach to curriculum differentiation and the specific DI practices in Akaki Kaliti, Arada, and Gullele differ significantly from the rest of the sub-cities. For these reasons, these three sub-cities were purposively selected as the study sites to explore the issues of curriculum differentiation according to their unique administrative and educational contexts.

In other words, a key reason for this purposive selection was the presence of distinct student placement practices - at least within the last decade - into regular, special boarding, and special day secondary schools. This structure represents a deliberate form of curriculum differentiation by both school type and school-tailored DI. These existing indicators of differentiation are essential for effectively addressing the specific objectives of this study. Concerning purposive sampling, Cohen et al. (2007) and Creswell (2012) stated that researchers can intentionally select information rich sites and knowledgeable individuals using purposeful sampling to understand the central phenomenon (phenomenon of curriculum differentiation in this study case). From this perspective, these three sub-cities in Addis Ababa City Administration were selected purposively.

In these three study sub-cities (i.e., Akaki Kaliti, Arada and Gullele sub-cities), there were 59 (government=27 and non-government=32) secondary schools. Among these 59 secondary schools, student placement practices into regular, special boarding and/or special day secondary school types which is one of the types of curriculum differentiation

were limited to the government secondary schools rather than non-government secondary schools. Accordingly, the study population exclusively focused on 27 government secondary schools to examine the indicators of curriculum differentiation at least by school types. Hence, the study target populations in 27 government secondary schools of the three sub-cities were 42,978 students (19,634 males and 23,334 females), 2,196 teachers (1,692 males and 504) and 82 principals (68 males and 14 females). Of which, 24 government secondary schools were regular schools and three of them were a special day secondary school and two special boarding secondary schools.

A special day school found in Arada sub-city was the only school in Addis Ababa which admitted both male and female students. The two special boarding schools, of which one admitted only male students and the other admitted only female students, are found in Akaki Kaliti sub-city and Gullele sub-city, respectively. The three government secondary schools (two special boarding schools and one special day school) enroll a small number of students from grades 9 through 12. These three schools admit high academic achievers, and they are supposed to practice curriculum differentiation types to meet the various needs, interests, and abilities of those students.

The total 27 government secondary schools from Grades 9 to 12 found in the three sub-cities were categorized into three strata by their school types i.e., regular, special day and special boarding secondary school types. Among the three strata of secondary schools, the regular and special boarding school types designated as School A and School C respectively were selected as study sites using simple random sampling or lottery method. Creswell and Creswell (2018) noticed that stratified sampling involves identification of strata or specific characteristics of individuals from the population before selecting samples. When randomly selecting samples from a list of population, the specific characteristics within each stratum ensures their representation as the characteristic appears in the entire population. Furthermore, the school type designated as School B was selected using purposive sampling because it was the only special day secondary school in the study area and vital to achieve the purpose of the study. According to Creswell (2012) and Cohen et al. (2018), to comprehend the vital phenomenon (the

phenomenon of curriculum differentiation in this study), information-rich sites and knowledgeable persons can be chosen purposefully. Generally, the three school types i.e., the regular, the special day, and the special boarding secondary schools were selected by stratified sampling, and purposive sampling techniques.

The school type designated as School A refers to a regular secondary school founded in 1905. Now, it offers education from Grades 9 to 12 for all male and female students who have mixed-ability academic achievements. School B is a special day secondary school founded in 1957 as a regular school but transitioned to its current status in 2015. It is the only special day school in Addis Ababa and offers education from Grades 9 to 12, but only for selected male and female students who are admitted as high academic achievers. School C is a special boarding secondary school founded in 1931 as girls' boarding school. Now, it offers education from Grades 9 to 12, but only for selected female students who are admitted as high academic achievers. Generally, School A, School B and School C were chosen for the main study while the remaining one special boarding and the other one regular secondary schools were used for the pilot testing. Hence, these schools were thought to make it possible to gather in-depth information about the different types of curriculum differentiation conceptualizations and practices as well as student experiences.

In 2022/23 academic year, School A had 2,338 students (1,153 males and 1,185 females), 128 subject teachers (110 males and 18 females), and four school principals (one main principal and three vice principals). In addition, School B had 312 students (174 males and 138 females), 35 subject teachers (28 males and seven females), and two school principals (a main principal and a vice principal). School C also had 402 students (0 male and 402 females), 50 subject teachers (42 males and eight females), and three school principals (a main principal and two vice principals). Table 3.2 also shows the total number of accessible population of students in selected secondary schools (i.e., School A, School B and School C) broken down by sex and grade level.

TABLE 3.2: ACCESSIBLE POPULATION OF STUDENTS ACROSS SEX AND GRADE LEVEL

Grade Level	School A			School B			School C		
	M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**
Grade 9	304	265	569	48	34	82	---	119	120
Grade 10	119	137	256	37	36	73	---	44	44
Grade 11	332	329	661	44	38	82	---	181	181
Grade 12	398	454	852	45	30	75	---	58	58
Total	1,153	1,185	2,338	174	138	312	---	402	402

Note: M=Male students; F=Female students; and T=Total students.

3.3.2. Study participants and sampling techniques

In this study, data were collected from study samples through two sequential phases. The study participants in the first phase were selected non-randomly for qualitative data collection in 2022/23 academic year, whereas the study samples in the second phase were selected randomly for quantitative data collection in 2023/24 academic year. The study samples in both qualitative and quantitative data collection phases were taken from the same accessible populations (found in the three secondary schools) but different samples in different academic years. In exploratory sequential mixed research design, Creswell and Creswell (2018) suggest that the researcher would first collect qualitative data, analyze the results, develop instruments for quantitative data collection, testing it, and then administer it to the sample of the same population in the second phase. Here, the qualitative sample is typically much smaller than a quantitative sample needed to generalize from a sample to a population. Accordingly, the sample for the qualitative phase cannot be the same for the quantitative phase, because to have individuals involved in the qualitative phase who help develop an instrument and then participate the same individuals to survey in the quantitative phase would introduce confounding factors into the study (Creswell, & Creswell, 2018).

According to Creswell and Creswell (2018), mixed methods researcher, sometimes, use entirely different samples for the qualitative and quantitative phases of the study.

However, a good procedure is to draw both samples from the same population but make sure that the individuals for both samples are not the same. Therefore, the present study used entirely different samples drawn from the same population for the qualitative and quantitative phases of the study. In other words, the accessible populations during the first qualitative phase of the study were 3,052 students (1,327 males and 1,725 females), 213 subject teachers (180 males and 33 females), and nine principals (five males and four females, or three main principals and six vice principals). Note that during the quantitative data collection 985 students, who were accessible to the qualitative study phase, had completed grade 12 in 2022/23 academic year and had not participated in the second quantitative phase. Hence, the accessible populations during the second phase of quantitative data collection were the same 2,067 student and 213 teacher populations.

Regarding the first phase of qualitative data collection, the study participants and their selection process are presented below. In fact, school principals and students were chosen in three schools using purposive sampling due to their positions in the school, longer years of experience in their respective school administrative system and teaching-learning processes, or their extensive knowledge and information about school matters that might represent other staff or students of their respective schools. In addition, school principals are primarily responsible for implementing national policies in their schools. In this regard, Cohen et al. (2007), Creswell (2012), and Creswell and Creswell (2018) stated that researchers use "purposive sampling" to specifically select people who are knowledgeable about and understand the underlying phenomenon (in this study's context, the types of curriculum differentiation conceptualizations, practices and student experiences). Thus, using a purposive sampling, a female vice principal of School A, a male principal of School B, and a male vice principal of School C as well as eight students from each schools were chosen as participants. One male and one female student from each grade level (i.e., grades 9th to 12th) were selected purposively as the qualitative study participants.

Besides, 21 subject teachers who taught Amharic, English, Afan Oromo, mathematics, chemistry, biology, physics, history, geography, ICT, and civics and ethical education

subjects in the three schools were chosen using convenience sampling. According to Cohen et al. (2007), convenience sampling is the sampling strategy that could be employed for qualitative study design, through which the researcher simply choose respondents from those to whom they have easy access at the time. Cohen et al. stated that students or teachers often serve as respondents based on convenience sampling.

Accordingly, 11 teachers from School A, six teachers from School B and four teachers from School C, as depicted in Table 3.3, were chosen as the qualitative study participants using convenience sampling based on their easy availability and accessibility to the researcher at the time of data collection. Here, the status of data saturation determined the number of teacher participants during interviews. Align with this, Creswell (2014) supported the principle that the total number of individual interview participants in a study can be determined by the level of data saturation or until the end of new opinions and views are emerged from the participants.

TABLE 3.3: DEMOGRAPHIC CHARACTERISTICS OF PRINCIPAL AND TEACHER PARTICIPANTS

Participant Code	Position	Sex	Education level	Work experience in years	School code
Principal A	Vice Principal	F	MA	11	School A
Principal B	Main Principal	M	MA	17	School B
Principal C	Vice Principal	M	MA	11	School C
Teacher A1	Teacher	F	MA	5	School A
Teacher A2	Teacher	M	MA	30	School A
Teacher A3	Teacher	M	MSc	38	School A
Teacher A4	Teacher	M	MSc	8	School A
Teacher A5	Teacher	M	BA	4	School A
Teacher A6	Teacher	M	MA	12	School A
Teacher A7	Teacher	M	MA	8	School A
Teacher A8	Teacher	M	BSc	31	School A
Teacher A9	Teacher	F	MA	15	School A
Teacher A10	Teacher	M	BA	27	School A
Teacher A11	Teacher	F	MA	16	School A
Teacher B1	Teacher	M	MSc	14	School B
Teacher B2	Teacher	M	MEd	14	School B
Teacher B3	Teacher	M	MSc	10	School B
Teacher B4	Teacher	M	MSc	17	School B
Teacher B5	Teacher	F	PhD	25	School B
Teacher B6	Teacher	M	MA	12	School B
Teacher C1	Teacher	F	MA	11	School C
Teacher C2	Teacher	M	MA	20	School C
Teacher C3	Teacher	M	MSc	12	School C
Teacher C4	Teacher	M	MSc	9	School C

Note: M=Male; F=Female; MA=Master of Arts; MSc=Master of Science; MEd=Master of Education; PhD=Doctor of Philosophy; BA=Bachelor of Arts; & BSc=Bachelor of Science.

Table 3.3 shows the demographic details of the principal and the teacher participants from the three schools during the first qualitative phase data collection (in the 2022/23 academic year). All principals and teachers in School B and School C had master's degrees or above whereas teachers who had bachelor degree and above taught subjects in School A. In general, one vice principal, 11 subject teachers, and eight students from School A; one main principal, six subject teachers, and eight students from School B; and one vice principal, four subject teachers, and eight students from School C participated in the first phase of the study.

Regarding the second phase of quantitative data collection, the study samples and their selection process are presented in the following paragraphs. To determine the representative sample sizes for the second phase, the sample size determination Table scientifically developed by Krejcie and Morgan (1970) were employed. The Table has been constructed using the following formula: $S = X^2NP(1\text{-}P)/[d^2(N\text{-}1) + X^2P(1\text{-}P)]$, where S=required sample size, N=the population size, P=the population proportion (assumed to be .50 since this would provide the maximum sample size), d=the degree of accuracy expressed as proportion (.50), X=the table value of the test X^2 for 1 degree of freedom at the desired confidence level.

Finally, 327 sample students from 2067 population and 140 sample teachers from 213 population in regular, special day and special boarding schools from grades 9 to 12 were selected by stratified proportionate sampling technique (i.e., across school type) to examine the types of curriculum differentiation practices and student experiences. In this regard, Creswell (2012) justified that stratified sampling technique is used in a specific study when the researcher wants to examine how perceptions of the school's organizational culture and practices vary across the characteristics of sub-groups (e.g., age, sex, level in the school, departments, years of working in the school, etc).

Particularly, questionnaires were administered to 235 (71.89%) students and 84 (60.10%) teachers in the regular school, 38 (11.47%) students and 23 (16.43%) teachers in the special day school, and 54 (16.64%) students and 33 (23.47%) teachers in the special

boarding school for those who were selected as samples of the second phase quantitative data collection. Unlike the complete return rate of questionnaires in special day and special boarding secondary schools, the non-returned and discarded (due to items incompleteness) questionnaires in the regular secondary school was 23 from students and seven from teachers. In other words, the completed questionnaires returned to the researcher (via the data collection supervisor) were 212 (90.21%) from students and 77 (91.67%) from teachers in the regular school, 38 (100%) from students and 23 (100%) from teachers in the special day school, and 54 (100%) from students and 33 (100%) from teachers in the special boarding secondary schools. Generally, 304 (92.67%) questionnaires from students, and 133 (95%) questionnaires from teachers in the three schools were filled completely and ready for quantitative analysis. This section also focuses on the demographic characteristics of the students and teachers involved in the quantitative phase of the study.

The demographic characteristics of teacher participants (n=133) include sex, age, educational attainment, years of work experience, school type, and subject specialization. As illustrated in Table 3.4, these characteristics were reported by respondents during the quantitative phase of the study.

TABLE 3.4: DEMOGRAPHIC CHARACTERISTICS OF TEACHER RESPONDENTS

Demographic characteristics		Frequency	Percent
Sex	Male	108	81.2
	Female	25	18.8
Age	≤ 35 years	36	27.1
	36-40 years	50	37.6
	≥ 41 years	47	35.3
Education level	Bachelor degree	35	26.3
	Master & PhD degree	98	73.7
Work experience	≤ 10 years	31	23.3
	11-20 years	72	54.1
	≥ 21 years	30	22.6
School type	School A	77	57.9
	School B	23	17.3
	School C	33	24.8
Subject taught	Natural science	44	33.1
	Social science	24	18.0
	Common subject	36	27.1
	Language subject	29	21.8

Table 3.4 details the demographic variables of the teacher participants. Regarding institutional distribution, 77 (57.9%) respondents were from regular schools (School A), 23 (17.3%) from special day schools (School B), and 33 (24.8%) from special boarding schools (School C). In terms of subject specialization, 44 (33.1%) taught natural sciences exclusively, while 24 (18%) taught social sciences. Additionally, 36 (27.1%) taught common subjects and 29 (21.8%) taught languages to both streams. Gender distribution was notably skewed, with 108 (81.2%) male and 25 (18.8%) female participants; this disparity reflects the lower representation of female educators in the sampled secondary schools.

The demographic characteristics of the student respondents (n=304) include sex, age, grade level, academic stream, and school type. As illustrated in Table 3.5, these data were collected from participants during the quantitative phase of the primary study.

TABLE 3.5: DEMOGRAPHIC CHARACTERISTICS OF STUDENT RESPONDENTS

Demographic characteristics		Frequency	Percent
Sex:	Male	124	40.8
	Female	180	59.2
Age	16 years	81	26.6
	17 years	115	37.8
	18 years	108	35.6
Grade level	Grade 10	65	21.4
	Grade 11	128	42.1
	Grade 12	111	36.5
School type	School A	212	69.7
	School B	38	12.5
	School C	54	17.8
Stream	Natural science	135	44.4
	Social science	104	34.2
	Undecided	65	21.4

Table 3.5 presents the demographic distribution of the student respondents. Of the total sample, 212 (69.7%) were enrolled in the regular school (School A), 38 (12.5%) in the special day school (School B), and 54 (17.8%) in the special boarding school (School C). Notably, the School C cohort consisted entirely of female students. Regarding academic streams, 135 (44.4%) participants were in the natural science stream and 104 (34.2%) were in the social science stream. The remaining 65 (21.4%) respondents had not yet declared a stream, as they were Grade 10 students at the time of the study.

3.4. Sources of Data

For this study, data were collected from primary sources. The primary sources of data were national education policy documents, and students' grade rosters as well as teachers, students and principals in regular, special day and special boarding secondary schools. This study utilizes national education policy documents and school-level fieldwork to evaluate curriculum differentiation in Ethiopia. First, data from policy documents are analyzed to determine official policy intentions and assess their internal coherence. Second, data from student grade rosters, teacher and principal interviews, and student Focus Group Discussions (FGDs) are used to map out the specific types of differentiation practiced in Grades 9–12 across regular, special day, and special boarding schools. Furthermore, data from teacher and principal interviews reveal how educators conceptualize curriculum differentiation, allowing for a comparison between school-level understanding and national policy intentions. Finally, data from students and teachers shed light on students' academic and psychosocial experiences, while highlighting how effectively the differentiation practices across these three school types meet actual student learning needs.

During data collection from primary sources, the LeTendre et al. (2003) typology of curriculum differentiation was used to guide the intentions of national education policy documents to conceptualize curriculum differentiation, as briefly described under review of the related literature section in Chapter 2. In addition, this study data collection process was focusing on the way teachers and principals addressed different types of multiple intelligences, learning readiness and interests of each student during curriculum differentiation practices as stipulated in the Gardner's (1983) theory of multiple intelligences. Finally, the Vygotsky's (1978) sociocultural theory of learning explains the ZPD, which is the area of learning, as the distance between the actual level of a student's performance determined by independent learning and the potential level of his/her performance determined through learning under teacher support or in collaboration with more capable peers.

In determining ZPD, there are mandatory tasks for teachers and principals to identify or assess each student's current level of performance (or learning readiness) to teach him/her the next new content areas. In order to teach the next new content areas step-by-step support through differentiation from teachers/ more capable peers until the new contents or knowledge mastered by each student is imperative. Hence, these kinds of intentions, conceptualizations, experiences and practices are the main focus of this study during qualitative and quantitative data collection from primary data sources. Accordingly, the theoretical conceptualizations of the works of Gardner's (1983), LeTendre et al. (2003) and Vygotsky's (1978) guided the present study.

3.5. Data Collection Instruments

The present study employed document review, interview, focus group discussion (FGD), and observation to collect qualitative data in its first phase whereas the study employed questionnaire to collect quantitative data in its second phase. A combination of these instruments enhances the validity of data. From the perspectives of many educators (e.g., Cohen et al., 2007; Creswell, 2012, 2014; Dawson, 2007; Marczyk et al., 2005), data collection in a study from individuals, groups, and physical environments through a combination of interview, FGD, document review, observation and questionnaire about tangible and intangible aspects of a school and its members such as experiences, perspectives and practices enhances the appropriateness and relevance of data. During the first phase of qualitative data collection, interview guide for secondary school principals and teachers, FGD guide for students, document review guide for national education policy documents and student grade rosters, and observation checklist for observing the school physical infrastructure and learning environments were employed, as their details presented in the following paragraphs. In this study, therefore, these four qualitative data collection instruments were developed after carefully examining pertinent literature to gather in-depth information in regular, special day and special boarding secondary schools.

***Document Review Guide*:** The first data collection instrument, a document review guide, was employed in this study to gather qualitative data from secondary school grade rosters and national education policy documents in Ethiopia. Scott and Morrison (2005) contend that documents can be used to assess educational goals and practices in addition to group and/or individual interviews.

For the purpose of document review, first, all national education policy documents in Ethiopia and school documents in selected secondary schools were collected from the respective offices of the MoE and the three schools. Then, the 2023 Education and Training Policy (ETP) of Ethiopia incorporate the concept of curriculum differentiation in broad terms, whereas the 2020 General Education Curriculum Framework (GECF) outlines specific indicators derived from the ETP. Additionally, the 2012 Guidelines for Curriculum Differentiation and IEP introduce a distinct approach to differentiation not found in the ETP and the GECF documents. In short, the ETP document only addresses curriculum differentiation in broad terms, whereas the GECF and the Guidelines for Curriculum Differentiation and IEP documents outline various specific types of differentiation and how to implement them. Because all other national education policy documents derive their ideas of curriculum differentiation from these three core policy sources, their concepts to curriculum differentiation are redundant. Therefore, to avoid unnecessary repetition, only these three foundational policy documents were selected for the study's document review, while the remaining documents were excluded.

Second, the relevant policy and school documents for the study—the Education and Training Policy (ETP) of 2023, the General Education Curriculum Framework (GECF) of 2020, the Guidelines for Curriculum Differentiation and IEP of 2012, and student grade rosters in three schools—were identified and ready for review. Though the focus of the former two policy documents is mainly on the general education system, the features of various types of curriculum differentiation have been incorporated into their intentions and contents as vital components. Furthermore, the focus of the latter one policy document is specific to the intention of curriculum differentiation in an inclusive classroom.

Last, the document review guide in the form of a checklist (Appendix A) was prepared to review whether the intentions of the three national education policy documents and practice indicators of school documents include different types of curriculum differentiation. These are Type 1, Type 2, Type 3, Type 4, Type 5, and other types of curriculum differentiation (to examine if there were other types of curriculum differentiation that emerged from the documents). Critical reviews were also conducted on documents (documented grade rosters of students) pertaining to curriculum differentiation practice indicators in School A, School B and School C.

Document review and analysis process was mainly guided by the typology of curriculum differentiation based on LeTendre et al. (2003) theoretical framework; and guided by differentiation of curriculum components grounded from Gardner's (1983) theory of multiple intelligences and Vygotsky's (1978) concept of the ZPD, as mentioned in the theoretical framework section of this study. The types of curriculum differentiation, from Type 1 to Type 5, are known as a typology of curriculum differentiation developed by LeTendre et al. (2003). The other type of curriculum differentiation that emerged from a document is the differentiation of curriculum components such as contents, instructional processes, learning environments, and assessment strategies. The reason to employ the typology of curriculum differentiation as a theoretical framework is that because of its comprehensiveness from system level to classroom level and simple to explore the unique features of curriculum differentiation. Besides, the framework is relevant globally, and other academics have utilized it to assess the curriculum differentiation experiences of nations like Australia.

***Interview Guide*:** The interview guide included two forms both contained background data related questions and main study data related questions: one form of the guiding questions was administered to the main principal and the two vice principals while the other form was administered to 21 teachers. Audio recorder was used for each interview with principals and teachers to capture the reliable conversations precisely. The guiding questions were specifically tailored to the responsibilities and duties of secondary school principals (Appendix B) and teachers (Appendix C). For example, in the teachers' form

of interview, there was a question: How do you match the common national curriculum, (a) contents (b) instructional strategies (c) learning environments/ classrooms, and (d) assessments, with the diverse learning profiles, readiness, interests of all students in a classroom? However, in the principals' form, the question was: How do you help teachers to match the common national curriculum, (a) contents (b) instructional strategies (c) learning environments/classrooms, and (d) assessments, with the diverse learning profiles, readiness, interests of all students in a classroom?

During face-to-face individual interviews with principals and teachers, the consent of each of them was asked orally, and they participated after explanations of the study's purpose. According to Creswell and Creswell (2018), face-to-face individual or group interviews enable a researcher to safeguard participants' emotional states while eliciting further information, elaboration, and explanation of responses. Dawson (2007) also confirmed that combining other data collection instruments with one-to-one interview help a researcher to get more in-depth and valid data. This process was implemented in the present study.

***FGD Guide*:** Background data and main study data related FGD questions were also developed (Appendix D), and audio recorder was used for each FGD with students to capture the reliable conversations precisely. Following extensive reading of relevant literature from multiple sources, open-ended questions for the FGD were developed. The purpose of the FGD, according to Cohen et al. (2018), was to gain a group opinion instead of an individual one through a sort of group interview with four to twelve participants in each group. On the other hand, Creswell, (2014) stated that the number of participants in each FGD is ranging from six to eight to easily manage and collect the data as intended. Thus, an FGD was made with eight students selected from each school i.e., regular school, special day school and special boarding school from grades 9 to 12.

Observation Checklist: The aims of observation checklist was to collect qualitative data through observing the presence or absence of learning infrastructure including laboratories, libraries, ICT rooms, classrooms, and teaching-learning facilities or

evidences of student placement differentiations in regular, special day and special boarding secondary schools. In this sense, Creswell (2014) stated that researchers in qualitative study involve observation of physical settings to collect data that cannot be provided by participants. To capture aspects of the physical environment overlooked by other qualitative tools, this study utilized an observation checklist (Appendix E). The checklist featured "yes/no" items accompanied by qualitative descriptions. These items were used strictly for qualitative data collection and analysis rather than quantitative evaluation. In total, one observation session was conducted at each of the three sampled secondary schools.

Questionnaire Scale: During the second phase of the study, a questionnaire rating scale was administered to teachers and students in regular, special day, and special boarding secondary schools (Grades 9–12). This served as the primary instrument for quantitative data collection. As Creswell (2014) notes, quantitative data in mixed-methods research typically comprises closed-ended responses obtained through survey instruments. In this study, the questionnaire was developed in two distinct versions: one for teachers (Appendix F) and the other for students (Appendix G).

In teachers' questionnaire version, Part I contained items related to the demographic background of participants. Part II: Conceptualizations of Curriculum Differentiation, utilizing a 5-point Likert scale (1 = *Strongly Disagree* to 5 = *Strongly Agree*). Part III: Curriculum differentiation practices and student experiences, utilizing a 5-point Likert scale (1 = *Not at all* to 5 = *Always*). In students' questionnaire version, Part I contained items related to the students' demographic background. Part II also contained items related to secondary school practices of curriculum differentiation while Part III contained items related to student experiences in secondary schools. Both Part II and Part III utilized a 5-point Likert scale ranging from 1 = *Not at all* to 5 = *Always*. The questionnaires were distributed across the three school types by three trained data collectors and managed by a supervisor to ensure systematic data collection. Critically, the items within these instruments were developed based on the qualitative findings previously gathered through interviews, FGDs, document reviews, and observations. This

ensures that the quantitative phase directly extends and validates the initial exploratory findings.

3.6. Validity and Reliability of Data Collection Instruments

To ensure the validity of the study, the research instruments underwent a rigorous validation process and reliability testing across both the qualitative and quantitative phases.

Qualitative Instrument Validation (Phase I): To ensure data quality, the face and content validity of the interview, FGD, and document review guides, and observation checklists were established through expert review. Feedback from professionals in the field was incorporated to refine the instruments; specifically, vague phrasing was simplified, redundant items were removed, and underrepresented areas were expanded to strengthen content validity. Subsequently, a pilot study was conducted in two secondary schools (one regular and one special boarding school) that shared similar characteristics with the main study sites. This pilot study led to several key adjustments: Clarity and consistency, instrument alignment, relevance, observation focus, and logistical adjustments.

In relation to clarity and consistency, items interpreted ambiguously by participants were rephrased to ensure a uniform understanding. Regarding instrument alignment, relevant items originally limited to the interview guides were integrated into the FGD guide. Moreover, irrelevance items that did not align with the study objectives were discarded. In relation to observation focus, the specific physical materials and infrastructure to be evaluated were clearly defined. Finally, logistical adjustments, that is, operational challenges related to school schedules were identified, allowing the timing of interviews, FGDs, document reviews, and observations to be strategically aligned with the schools' timetables.

In addition, the validity of the qualitative data collection instruments was further strengthened through data triangulation, methodological rigor, and expert review. *Data*

triangulation: As supported by Cohen et al. (2007) and Creswell (2014), the use of multiple instruments and participant groups allowed for a more complex and rich understanding of the issue investigated or curriculum differentiation. *Methodological rigor*: The researcher conducted all face-to-face interview and FGD sessions using audio recordings to ensure accuracy. Recorded data were then carefully transcribed and translated for analysis. *Expert review*: Professional feedback and pilot-testing results were used to refine the instruments before the main data collection phase. Thus, all these efforts improved the face and content validities of the qualitative data collection instruments to attain the intended objectives of the study.

Quantitative Instrument Validation (Phase II): The questionnaire scale was developed through a multi-stage validation process such as grounded development, expert review, and pilot testing. *Grounded development*: The questionnaire items were directly derived from the qualitative findings of Phase I. Because these qualitative findings had been evaluated against the study objectives by senior researchers and journal reviewers, they possessed strong face and content validity. Notably, these preliminary findings were peer-reviewed and accepted for publication in both international and local journals prior to the construction of the scale. Grounding the questionnaire items in these peer-reviewed qualitative data inherently enhanced their validity. This robust foundation was further confirmed by the high reliability values obtained during an item-by-item reliability analysis using the pilot study results.

Expert review: Curriculum differentiation (CD) related specialists assessed the teacher and student versions of the questionnaire. Their recommendations regarding item deletion, addition, and linguistic refinement were fully integrated to improve face and content validity. *Pilot testing*: The student and teacher instruments were piloted with 74 randomly selected participants (40 students and 34 teachers) from two schools similar to the main study contexts. Of the 74 questionnaires distributed during the pilot phase, 63 (85.24%) were returned rate. However, most items of the 14 returned questionnaires were incomplete and then discarded from reliability analysis. After discarding 14 improperly filled forms, data from 49 participants (29 students and 20 teachers) were analyzed. To

ensure internal consistency, Cronbach's alpha reliability coefficients were calculated for each version using SPSS Version 24, as summarized in Table 3.6. This statistical measure verified that the instruments were reliable for the intended study purpose.

TABLE 3.6: CRONBACH ALPHA VALUES OF THE QUESTIONNAIRE VERSIONS USING PILOT RESULTS

Questionnaire Scale	Subscales	No. of items	Subscale α-value	Scale α-value
Student questionnaire	Practices of CD	8	.771	.860
	Student experiences in secondary schools	15	.783	
Teacher questionnaire	Teacher conceptualization of CD	17	.929	.944
	Practices and student experiences in secondary schools	22	.874	

Table 3.6 presents the Cronbach's alpha reliability coefficients derived from the pilot study. The student questionnaire (23 items) yielded an alpha value of .860, while the teacher questionnaire (39 items) demonstrated a value of .944. As indicated in the table, all scales and subscales exceeded the .70 threshold, confirming a high level of internal consistency. These results align with the methodological standards established by Creswell and Creswell (2018), who emphasize that pilot testing is essential for verifying an instrument's content validity and score reliability, with acceptable ranges typically falling between .7 and .9. Furthermore, Cohen et al. (2007) argue that high reliability coefficients represent a strong fit between recorded data and the actual phenomena in the research setting.

According to the guidelines provided by Cohen et al. (2007), alpha coefficients are interpreted as follows: Greater than 0.90 indicates very highly reliable, between 0.80 and 0.90 refers highly reliable, between 0.70 and 0.79 is reliable, between 0.60 and 0.69 is marginally/minimally reliable, and less than 0.60 means unacceptably low reliability.

Based on these benchmarks, both the student and teacher questionnaire versions were deemed sufficiently reliable for use in the second main study quantitative phase.

Following the pilot phase, the instruments were administered during the main study. The reliability scores remained consistently high and stable: The student questionnaire scored .860 from the pilot study whereas it scored .854 from main study. Similarly, the teacher questionnaire scored .944 from the pilot study whereas it scored .933 from main study. This stability indicates that the instruments functioned consistently across different timeframes and participant groups.

In general, the overall validity of the study was improved through a multi-faceted approach involving triangulation of instruments, diverse participant groups, expert assessments, and rigorous pilot testing. In this regard, many authors (e.g., Cohen et al., 2007; Creswell, 2014; Marczyk et al., 2005) confirmed that data triangulation using more than one methods of data collection (i.e., more instruments or participants) in a study increases the validity of the collected data because the data explain more fully the richness and complexity of the issue under study.

Regarding data collection management, the researcher personally gathered all pilot data at the regular secondary school, while a trained data collector managed the process at the special boarding secondary school during both the qualitative and quantitative pilot phases. For the main study, the researcher personally collected all qualitative data. During the subsequent quantitative phase, questionnaire data collection was managed by three trained data collectors and overseen by one supervisor.

3.7. Data Collection Procedures

This section outlines the logical procedures employed to collect qualitative and quantitative data for this study. The process encompassed a range of activities, from preparation and instrument development phase to the quantitative data collection phase. *Preparation and instrument development phase*: The data collection process commenced with obtaining official permission letters from the Department of Curriculum and

Instruction at Addis Ababa University and the Addis Ababa City Administration Education Bureau. Following administrative approval, a comprehensive list of the sampled regular, special day, and special boarding secondary schools was compiled, identifying accessible populations of students, teachers, and school principals. Research instruments including document review, FGD, and interview guides and observation checklist were then developed. To ensure validity and contextual relevance, the guides and the observation checklist were pilot-tested in similar school settings that were not part of the main study. Based on the pilot results, revisions were made to refine the clarity of the instruments and ensure terminology was appropriate for the various school types (regular, special day, and special boarding).

Qualitative data collection and analysis phase: Qualitative participants were purposively or conveniently selected, and data were gathered through document reviews from national education policies and school rosters, semi-structured interviews with principals and teachers, FGDs with students, and observations of school infrastructure and learning environments. The qualitative analysis followed thematic analysis of data collected from national policy documents, school documents, interviews, FGDs, and observations. The researcher examined three pivotal national documents i.e., the ETP (2023), the GECF (2020), and the Guideline for Curriculum Differentiation and IEP (2012) alongside school-level grade rosters. These were analyzed to identify the goals and practical applications of curriculum differentiation. Grade rosters, in particular, provided insights into subject based groupings and stream differentiation. Data from interviews, FGDs, and observations were analyzed following the sequential steps outlined by Creswell and Creswell (2018). This involved transcribing audio recordings, coding the text, and organizing data into five distinct themes that were subsequently presented in the results section.

Quantitative data collection phase: Following the initial analysis, the qualitative findings were accepted for publication in two reputable international and local journals. These findings served as the foundational framework for developing the quantitative

questionnaire scales for students and teachers. To ensure the internal consistency of these instruments, a pilot test was conducted in two secondary schools (i.e., one regular and another special boarding schools), and the results were subjected to a Cronbach's alpha reliability analysis. The finalized questionnaire versions were then administered to a statistically determined sample of teachers and students across the three school types. Finally, the data from all sources i.e., interviews, FGDs, document reviews, observations, and questionnaires were triangulated and integrated for the final report of this PhD study.

3.8. Methods of Data Analysis

This study employed a mixed-methods approach to data analysis, integrating qualitative thematic analysis with quantitative statistical procedures. Qualitative data were analyzed using descriptive and thematic analysis techniques. Data obtained through the document review of the three national education policy documents were first categorized to identify their primary aims and intentions. These contents were then thoroughly evaluated against a review checklist to determine the presence of typology of curriculum differentiation and other components of curriculum differentiation. Data from interviews, FGDs, and observations were analyzed following the inductive process outlined by Creswell and Creswell (2018), this involved moving from specific raw data to broader codes and, finally, to general themes.

As per the study's sequential design, these qualitative findings served as the primary data source, informing the subsequent quantitative phase. The researcher used the qualitative findings to design questionnaire versions which were then administered to students and teachers to gather quantitative data. The quantitative data collected from students and teachers were first screened for completeness and then processed using SPSS (Version 24). The analysis involved the descriptive and inferential statistical measures.

Descriptive statistics: Frequencies, percentages, means, and standard deviations were used to summarize teachers' conceptualizations of curriculum differentiation, current school practices, and student experiences. The descriptive data analysis is based on the

following sample details and questionnaire structures: Response rates, and questionnaire structure. Regarding response rates, out of 327 sampled students, 304 completely filled out their questionnaires. Out of 140 sampled teachers, 133 completely filled out their questionnaires. Then, a total of 304 student questionnaires and 133 teacher questionnaires were completed and used for data analysis. Regarding teacher questionnaire structure, the teacher questionnaire consisted of two distinct sections using 5-point Likert scales. One section is the conceptualization of curriculum differentiation (17 items) measured on a scale of 1 to 5 (1 = strongly disagree, 2 = disagree, 3 = not sure, 4 = agree, 5 = strongly agree). The other section is curriculum differentiation practices and student experiences (22 items) measured on a scale of 1 to 5 (1 = not at all, 2 = rarely, 3 = sometimes, 4 = often, 5 = always). Similarly, the 23 items on the student questionnaire used a 5-point Likert scale (1 = not at all, 2 = rarely, 3 = sometimes, 4 = often, 5 = always) to measure the implementation of curriculum differentiation practices and student experiences. Data collected from both the teacher and student questionnaires were then analyzed using the following criteria.

Teachers' conceptualization of curriculum differentiation was analyzed and interpreted based on questionnaire mean scores (*M*) ranging from 1.00 to 5.00. These scores were interpreted according to the intervals outlined in Table 3.7.

TABLE 3.7: MEAN SCORE INTERPRETATION GUIDE FOR TEACHER CONCEPTUALIZATION

Mean Score Range	Interpretation
4.50 – 5.00	Strongly agree
3.50 – 4.49	Agree
2.50 – 3.49	Neutral
1.50 – 2.49	Disagree
1.00 – 1.49	Strongly disagree

Similarly, curriculum differentiation practices and student experiences were analyzed and interpreted using the mean scores (*M*) from the teacher and the student questionnaires,

ranging from 1.00 to 5.00. The scores were interpreted based on the intervals outlined in Table 3.8.

TABLE 3.8: MEAN SCORE INTERPRETATION GUIDE

Mean Score Range	Interpretation
4.50 – 5.00	Always
3.50 – 4.49	Often
2.50 – 3.49	Sometimes
1.50 – 2.49	Rarely
1.00 – 1.49	Not at all

Inferential statistics: A one-way ANOVA was conducted to determine if significant differences existed in curriculum differentiation practices, specifically regarding student learning profiles, readiness, and interests across the different school types. A one-way ANOVA is used to analyze how well different types of curriculum differentiation (i.e., curriculum differentiation by school type, by stream, by fields of study, by language subjects, and by differentiated instruction) met students' learning characteristics. Statistical significance analysis was set at a *p*-value less than 0.05.

3.9. Ethical Considerations

As this study employed an exploratory sequential mixed-methods design, ethical issues were rigorously considered to ensure the protection of participants with their respective schools and the integrity of the data. Adhering to the principles outlined by Creswell (2012) and Cohen et al. (2018), the researcher prioritized institutional approval, informed consent, confidentiality, anonymity, incentives and risk assessment issues throughout the research process.

Institutional approval and informed consent: The study received formal approval from the Institutional Ethics Review Committee (IERC) of the College of Education and Behavioral Studies at Addis Ababa University (Reference: CEBS_IERC_C & I_001/2023). Before data collection, all participants were briefed on the study's purpose

and provided oral informed consent. It was explicitly stated that participation was entirely voluntary and that individuals could withdraw at any stage without prejudice.

Confidentiality and anonymity: To safeguard participant identities, the following measures were implemented: Anonymity, secured environments, and data security. Anonymity was ensured when participant names and school identities were replaced with codes during data analysis and reporting. Interviews and FGDs were conducted in private settings within the respective school compounds to ensure secure and confidential environments. Audio recording data and their transcriptions were stored securely, with access restricted to the third party other than researcher to maintain participant privacy.

Incentives and risk assessment: In accordance with Marczyk et al. (2005), the nature of compensation was addressed; however, no financial incentives were provided to participants due to a lack of external funding. Participants were informed that while there were no direct personal benefits, their contributions would provide valuable insights for future educational policy reforms in Ethiopia. Furthermore, the study posed no anticipated physical or psychological risks or discomforts to the participants.

CHAPTER FOUR

RESULTS

This chapter presents the qualitative and quantitative findings of the study, organized according to the following thematic sequence: Background of qualitative and quantitative data sets, the intentions of national policy documents in conceptualizing curriculum differentiation, school principals' and teachers' conceptualization of curriculum differentiation, types of curriculum differentiation practices in different school types, student experiences among school types, and the extent of curriculum differentiation practices in meeting student learning characteristics among school types.

4.1. Background of Qualitative and Quantitative Data Sets

The study employed a sequential mixed-methods approach. In the first phase, qualitative data were gathered via interviews with 21 teachers and three principals, three focus group discussions (FGDs) with 24 students, and a comprehensive review of Ethiopian national policy documents (2012–2023) and student grade rosters. Additionally, observations of school physical and learning environments were conducted to identify curriculum differentiation indicators. In the second phase, quantitative data were collected via questionnaires from 133 teachers and 304 students. The following sections detail the integrated analysis of the qualitative and quantitative data sets.

4.2. The Intentions of National Policy Documents in Conceptualizing Curriculum Differentiation

In Ethiopia, the education sector has undergone several national policy documents since 2019/20 Academic year. These documents include the General Education Curriculum Framework (GECF) of 2020 and the Education and Training Policy (ETP) of 2023. The ETP and the GECF guide the whole intentions of the general education system of Ethiopia, including the intention of curriculum differentiation. Similarly, the 2012 National Guidelines for Curriculum Differentiation and IEP are still guiding the intention of curriculum differentiation within the general education system of Ethiopia. While all

three national policy documents aim to guide curriculum differentiation in Ethiopia's general education system, they vary significantly in detail. The ETP and GECF introduce the principles of differentiation but lack conceptual clarity. In contrast, the Guideline for Curriculum Differentiation and IEP explicitly defines what the concept actually means. Table 4.1 shows the intentions or purposes of the national policy documents as a source of the conceptualizations of different types of curriculum differentiation.

TABLE 4.1: INTENTIONS OF NATIONAL EDUCATION POLICY DOCUMENTS OF ETHIOPIA

National document	Intention/Purpose
The ETP of 2023	To provide language subjects in secondary education, i.e., mother tongue, and optional federal language(s) and foreign language(s) (p. 8); To ensure delivering secondary education in different tracks, streams, or fields of study (p. 9); To prepare secondary education curricula those accommodate the needs of talented students and persons with disabilities (PWDs) (p. 9).
The GECF of 2020	To provide students in Grades 9 and 10 with general education subjects that include five optional subjects (pp. 3, 10); To help students in Grades 11 and 12 choose among eight career and technical education fields of study in social science and natural science streams (pp. 3, 10); To organize special schools to accommodate the needs of talented people and PWDs (pp. 3, 10).
The Guideline for Curriculum Differentiation and IEP of 2012	To introduce curriculum differentiation to the education sector in Ethiopia (p. 6); To provide clear instructions on curriculum differentiation and give technical support to schools and teachers to include the diverse needs of learners (p. 6).

As shown in Table 4.1, the three documents that make up Ethiopia's national education policy are broad in their stated intentions (purposes), from which the conceptualization of curriculum differentiation emerged. The following sub-sections provide in-depth analyses of these national policy documents against the framework of the typology of curriculum differentiation developed by LeTendre et al. (2003) and the other form of curriculum differentiation, i.e., differentiation of curriculum components.

4.2.1. Types of curriculum differentiation in the education and training-policy

Language area is one of the curriculum differentiation conceptualization indicators included in the 2023 Education and Training Policy (ETP) of Ethiopia. In this regard, the Federal Democratic Republic of Ethiopia (FDRE) Ministry of Education ([MoE], 2023a) mentioned that "mother tongue shall be used as a subject and... its end subject to be decided by concerned regional authorities. A student or a student parent can choose from among the Federal Languages and learn as a subject from grades 3–10" (p. 8). The ETP document also includes the following statements:

> *One additional language may be selected from among the federal languages and learned as a subject. The decision regarding the grade level where it starts and ends is left to the regions. One additional foreign language shall be offered as an optional subject beginning in grade 9 (MoE, 2023a, p. 8).*

These results indicate that regional authorities, students, or parents can choose federal and foreign languages as optional subjects alongside the mother tongue. While these choices align with intentions of curriculum differentiation, particularly ability grouping, it remains unclear whether decisions made by regional authorities and parents are based on students' learning profiles or political factors.

The ETP document also included the conceptualization that "special curriculum that accommodates gifted and talented students and students with disabilities... shall be prepared and implemented" (MoE, 2023a, p. 9). Moreover, the ETP document indicates

that the 2 years of secondary education will be organized into various focus areas or fields of study and offered to students in Grades 11 and 12. These results imply that gifted and talented students, as well as students with disabilities, will receive a differentiated curriculum tailored to their specific abilities and needs when the regular curriculum falls short. Additionally, students in Grades 11 and 12 can choose a career focus area, selecting between the natural and social science streams or specific fields of study within them. Consequently, these policy intentions align with curriculum differentiation structured by stream, by field of study, and by student placement into specialized curricula.

In general, the intentions of the 2023 education and training policy of Ethiopia give legitimacy for schools to practice various types of curriculum differentiation including curriculum differentiation by languages subjects, by streams, by fields of study, and by student placement into specialized curricula. However, the policy's lack of clarity leaves schools without proper guidance on whether student placements into these various specialized curricula should happen within a school or between different school types. Besides, the policy does not clearly explain how students actually choose or are assigned to these paths. As a result, these critical choices may be driven by outside factors rather than the students' actual learning needs and characteristics.

4.2.2. Types of curriculum differentiation in the national curriculum framework

The secondary school level from Grades 9 to 12 incorporates principles of various types of curriculum differentiation. According the 2020 General Education Curriculum Framework (GECF) of Ethiopia, "In grades 9 and 10, students continue learning general education subjects, which consist of 10 compulsory and two optional ones out of five subjects" (p. 3). In particular, students in Grades 9 and 10 take 12 subjects, including 10 compulsory subjects. These subjects include English, mathematics, chemistry, physics, biology, geography, history, citizenship education, economics, and information technology. First language, a federal language, a foreign language, health and physical education, and performing and visual arts are the options for the two optional subjects. In

addition, the GECF specifies that students in Grades 11 and 12 enroll in either social science or natural science streams. The national GECF allows students to choose two elective subjects from five options alongside their core courses, as well as select either the social science or natural science stream. The intentions of these choices directly align with the principles of curriculum differentiation by subjects and by streams.

The curriculum framework also included the following:

> *Grades 11 and 12 subjects divide students into natural science and social science streams, in which natural science has five fields and social science has three fields of study. Each of the natural sciences field of study has seven general subjects and a maximum of five field-based subjects, while each of the social sciences field of study has six subjects and a maximum of five field-based subjects (MoE, 2020, p. 41).*

In particular, the natural science stream has five fields of study: construction, manufacturing, information technology (and computer science), agriculture, and health science. In contrast, the social science stream has three fields of study: business science, language (and social science), and performing and visual arts. All Grade 11 and 12 students enrolled in the natural science stream complete seven general education subjects and a maximum of five field-based subjects for each field of study. Similarly, all students enrolled in the social science stream in Grades 11 and 12 take six general education subjects and a maximum of five field-based subjects in each field of study. Consequently, the GECF aims Grade 11 and 12 students to choose a specific field of study from five options within the natural science stream or three options within the social science stream. This intention goes beyond basic stream differentiation to align with the principles of curriculum differentiation by fields of study.

Additionally, according to the GECF of Ethiopia, special schools can now offer secondary education in various settings to cater to the needs of gifted students and students with severe disabilities. In its GECF of Ethiopia, MoE (2020) stated, “Special

schools shall... provide for the needs of the talented and those with severe disabilities" (p. 10). In other words, to fulfill the specific needs of students with severe disabilities and those who attend special schools for gifted and talented students, their curricula is expected to differ from the regular school curriculum. The GECF stipulates that gifted and talented students, alongside those with severe disabilities, will be educated in special schools with tailored, differentiated curricula if regular schools cannot accommodate them. This approach aligns with the principles of curriculum differentiation by school type.

In general, the intentions of the 2020 general education national curriculum framework (GECF) of Ethiopia give legitimacy for educators and schools to practice various types of curriculum differentiation including curriculum differentiation by subjects, by streams, by fields of study, and by school types.

4.2.3. Types of curriculum differentiation introduced in its national guideline

According to the Guideline for Curriculum Differentiation and IEP published by the Ethiopian MoE in 2012, a curriculum contains four components: contents, instructional strategies, instructional materials, and learning assessments. This guideline's intention of curriculum differentiation expands curriculum components according to the various learning levels of the students in an inclusive classroom. As the MoE (2012) notes in this document:

> *The curriculum in an inclusive classroom is a single core curriculum that is accessible to all learners. Teachers have a vital role in making assessments of the learners' interests, potentials, and abilities and implementing curriculum differentiation in an inclusive classroom (p. 13).*

These results from the intentions of the 2012 Guideline for Curriculum Differentiation and IEP of Ethiopia reveal that curriculum differentiation is not structural tracking. Separating students by different subjects, academic streams, fields of study, or school types is not recognized in the guideline as curriculum differentiation as a valid way to

accommodate diverse abilities. Instead, true curriculum differentiation means that all students learn the same core national curriculum. Support is provided by tailoring the specific content, teaching methods, assessments, and learning environments to fit individual student characteristics.

The guidelines for curriculum differentiation and IEP incorporated the idea that curriculum differentiation is essential to addressing every student's educational needs and fostering inclusive classroom practices. According to the curriculum differentiation guideline, the inflexibility of the curriculum and teachers' lack of adequate training in modifying the standard school curriculum to meet the needs of individual students are two drawbacks of implementing curriculum differentiation in inclusive classrooms. The guideline states that teachers have a crucial role in determining how best to differentiate curriculum elements, including what is taught, how it gets taught, how it is assessed, and what resources and tools are employed in an inclusive classroom. Thus, teachers must be aware of the contents, instructional methods, assessment strategies, and learning contexts to build an inclusive environment and ensure that everyone has access to learning. In other words, curriculum differentiation is inclusive adaptation.

All students have the equal opportunity to learn the same national curriculum. However, teachers accommodate different learning styles by modifying four key areas: content, instructional processes, assessments, and the learning environment. Thus, the intention of the 2012 Guideline for Curriculum Differentiation and IEP is misaligned with the intentions of the ETP of 2023 and the GECF of 2020.

In summary, the ETP stipulated that career and technical education fields of study would be offered in Grades 11 and 12, and that mother tongues, federal languages, and foreign languages would be offered as elective subjects in Grades 9 and 10 in all regions and schools. The GECF, which aligns with the ETP intention, outlines the career and technical education fields of study in natural or social science stream and subjects that will be offered in Grades 9 through 12 across regions or schools. Subject differentiation, which is limited to language subjects, stream differentiation, and differentiations based

on fields of study and geographical locations are therefore implied to be implemented in Grades 9 through 12.

Additionally, while the GECF specifies that students with disabilities and talented students might be placed between school types or within a school type to complete their education in Grades 9 through 12, the ETP document states the provision of secondary education curriculum to these students with disabilities and talented students based on their needs and abilities in general terms. These remarks suggest curriculum differentiation across school types or ability groupings within a school type. However, the GECF appears to conceptualize curriculum differentiation in terms of grouping between school types or within a school type but does not explicitly mention how curriculum will be organized for such schools or what the specific aim of curriculum differentiation is for talented and gifted students. Furthermore, since the intention of curriculum differentiation is limited to the general curriculum (Grades 9–12), its interface with students further is not clearly stated. Hence, the intentions of curriculum differentiation at a system level remain to be spelled out at both the ETP and the GECF, but they are essential to meeting the needs of students with special educational needs, including talented and gifted students.

Conversely, the Guideline for Curriculum Differentiation and IEP specify that the common curriculum components, such as contents, instructional processes, assessment strategies, and classroom environments, should be differentiated based on the needs of each student in order to meet their diverse needs in an inclusive classroom. The guideline document includes an additional and distinct kind of curriculum differentiation. As a result, the ETP and the GECF have different intentions and strategies for curriculum differentiation compared to the guidelines for curriculum differentiation and IEP.

4.3. The School Principals' and Teachers' Conceptualization of Curriculum Differentiation

In this sub-section, data presentation and analysis regarding participants and their respective schools are identified using the following coding system to maintain

anonymity. First, School A (Regular School) led by Principal A, with 11 teacher participants coded sequentially from Teacher A1 to Teacher A11. Second, School B (Special Day School) led by Principal B, with 6 teacher participants coded sequentially from Teacher B1 to Teacher B6. Last, School C (Special Boarding School) led by Principal C, with 4 teacher participants coded sequentially from Teacher C1 to Teacher C4.

The data collected from principals and teachers about their conceptualizations of curriculum differentiation are presented under the following major themes. These major themes emerged from the data following the processes of qualitative data analyses recommended by Creswell and Creswell (2018, pp. 268– 270). Creswell and Creswell stated that transcribing individual and/or group interviews and categorizing the data based on information sources is the initial stage of organizing and preparing data for analysis. Reading through all the data in the second stage provides a comprehensive understanding and an opportunity to evaluate its overall significance. The third phase involves data coding, which includes classifying the text data, assigning a label to each group, and categorizing the data.

The fourth phase creates a description and identifies themes, which goes beyond simply recognizing the themes during the coding process. It involves extensively working with the themes to create intricate theme linkages and add further layers of analysis. The final step articulates the description and themes, stating how they are presented in the qualitative narrative. A narrative passage is often used to convey the conclusions of the analysis. Thus, while all five steps of the analysis were completed across separate Microsoft Word documents, they are not detailed individually here. Instead, the following subsections present the final themes and their descriptions.

4.3.1. Curriculum differentiation as gifted program and conceptions of giftedness

Some of the participants perceived curriculum differentiation as a program that considers the various abilities and passions of gifted and talented students. Teacher A1 and Teacher

A3 mentioned that every student has at least one unique talent or gift. According to Teacher A3, "Some students have exceptional abilities in mathematics, others in language areas, and others in sports areas." As a result, for Teacher A1 and Teacher A3, curriculum differentiation should consider the diversity of every student's talents and interests rather than catering to the talents and interests of a small group of students. Teachers A1 and A3 shared the perspective that while every student possesses unique gifts or talents, these abilities vary significantly among individuals. Consequently, they conceptualize their core role as understanding these individual differences and accommodating them through a differentiated curriculum - an approach that closely aligns with the theory of multiple intelligences. Its implication matched with a type of curriculum differentiation program i.e., differentiation of a curriculum components within an inclusive classroom to meet every student's needs.

On the other hand, Teacher B1 and Teacher B3 believed that a small number of students had innate gifts and talents in both academic and extracurricular arenas. Teacher B1 stated, "There is a big difference between high-achievers and gifted or talented students. High achievers are the best scorers in subject areas, but gifted or talented students are also practically inventors of something new in a community." Therefore, for Teacher B1 and Teacher B3, the majority of students are high achievers in the classroom but not necessarily gifted or talented. They stated that curriculum differentiation is a program that serves a small number of gifted students based on their unique abilities to help them become inventors. Its implication also aligns with the various curriculum differentiation programs across different tracks, which are designed to meet the needs of small groups of students. Specifically, small groups of gifted students require tailored instruction separate from the general student body to fully accommodate their advanced abilities through a specialized curriculum.

Teacher B5 also argued:

> *In my understanding, all students cannot be successful in academic areas. They have various abilities in music, art, literature, agriculture, technical*

drawing, woodwork, and gymnastics. For example, some want to be artists, others want to be educated farmers, and still others want to be space scientists. Thus, curriculum differentiation means meeting students' unique needs through dropping unrelated areas of learning for their abilities and promoting their abilities for a need-based future career in which they can lead a successful life in a society.

These results from Teacher B5 imply that purely academic tracks benefit only academically gifted students. Those with talents in non-academic areas must be engaged through fields that match their specific strengths. Forcing all students into academic pathways regardless of their abilities and preferences wastes a massive portion of a society's future innovative workforce. Therefore, curriculum differentiation must involve identifying diverse talents across various student groups and establishing distinct programs that align with their unique strengths.

Teacher A7 expressed, "I believe that every student has his or her own unique giftedness or talent, but the way the education system treats the student's giftedness and talent makes a difference. Therefore, curriculum differentiation is a program of individualized curriculum for every student's talent or giftedness in an inclusive school." For example, Teacher A7 elaborated that if musically talented students were mistreated, they were considered "normal" in their whole lives. If their talent is identified early and treated properly, they invent something in their talent area and contribute to their society. Teacher A7 further added, "All students should learn a common curriculum by differentiating curriculum components based on their giftedness or talents. Otherwise, dividing students into separate school types based on certain criteria such as gender, academic achievement, and types of disabilities promotes exclusion among students."

This result from Teacher A7 implies that while every student is born with the potential for giftedness and talent, the expression and strength of these traits vary individually. To succeed, all students must have the opportunity to engage with a common curriculum that is adapted to their unique needs within an inclusive classroom. Crucially, curriculum

differentiation is not about placing students into separate programs with entirely different tracks; rather, it is about creating an individualized educational program for every student by adjusting specific components of a shared curriculum within an inclusive classroom.

Furthermore, Teacher C2 added that "I believe that giftedness is naturally given for some students even if differences exist among students. Thus, curriculum differentiation is additional program of supporting strategy for naturally gifted students because the existing regular curriculum does not benefit the learning abilities of these students." Teacher C1 conceptualized, "Some but not all students have natural giftedness or talent. Then, a type of unique program, called curriculum differentiation, is designed for these groups of gifted and talented students based on their learning preferences to cultivate their potential ability." Teacher C1 believed that there is a problem of cultivating students' natural giftedness and talent to advanced level. Then, curriculum differentiation, which is specially designed program with unique curricula for naturally gifted and talented students, address their needs and abilities. Therefore, Teacher C1, and Teacher C2 conceptualized that curriculum differentiation is a type of curriculum or program for only specific groups of naturally gifted students to address their extraordinary abilities in an education system.

These results from Teacher C1 and Teacher C2 imply that giftedness and talent are innate traits of some groups of students, though the specific areas of strength vary from one gifted/talented student to another gifted/talented student. In this context, curriculum differentiation is conceptualized as a program that provides specific groups of gifted and talented students with specially designed curricular pathways alongside the regular curriculum. Here, this program is necessary because a standard, one-size-fits-all curriculum often fails to accommodate the unique abilities and advanced talents of these groups of students.

4.3.2. Curriculum differentiation as student placement into subjects, streams and school types

Another theme that emerged from the data is the conceptualization of curriculum differentiation as placement into different subjects, streams and school types. According to Teacher B2, "There are grouping students into the natural and social sciences stream in Grades 11 and 12, and into Amharic and Afan-Oromo subjects in Grades 9 and 10 within regular government schools in Addis Ababa. These show the conceptualizations of curriculum differentiation." Teacher C4 also stated, "I think that students differ in their ability but only some students possess naturally given extraordinary giftedness. Thus, curriculum differentiation is specially designed curriculum in the form of streams or special schools that accommodates these students' extraordinary giftedness."

Teacher A9 also viewed:

> *I understand that students in a classroom differ by interest, understanding, and ability. Some groups of students are interested in number-related areas; others are interested in social areas; and still others are interested in practical application or vocational areas of study. Thus, curriculum differentiation is a stream choice based on interests among social, natural, and vocational tracks.*

These results of Teacher B2 and Teacher C4 imply that giftedness is not inherent to all students, but rather a trait reserved for a select, exceptional few. Consequently, curriculum differentiation means placing these specific gifted students into specialized curriculum tailored to their needs and abilities - whether through advanced subjects, distinct academic streams, or specialized school types. The results of Teacher A9 also suggest that students vary significantly in their interests and abilities, and differences can be addressed through academic streaming. From this perspective, curriculum differentiation is achieved by offering diverse streams like natural science, social science and vocational streams tailored to these distinct student groups.

Teacher B2 added, “I think curriculum differentiation as a program specialization like health and agriculture is important to meet the students’ diverse needs.” Besides, Teacher B4 argued that:

> *If we take the case of the Netherlands as an example, there are two groups of students. One group that scored lower academic achievement joins a type of school that focuses on the application area. The other group that scored higher academic achievement joins another type of school that provides students with university preparatory education and then directly joins the university. So, ability grouping into such types of schools is part of the curriculum differentiation response to their levels of abilities.*

The findings from Teacher B2 and Teacher B4 imply that students possess varying levels of academic ability and are categorized into two primary tracks: academic and vocational. Based on this perspective, curriculum differentiation is conceptualized as tracking students into these distinct school types according to their demonstrated abilities.

Teacher A7 further stated, “Curriculum differentiation, in my opinion, is reflected by the historical boarding schools for girls and boys, special day schools for high academic achievers, and other school types.” Teacher 7 added, “In Ethiopia, for example, Sebeta Special Boarding School is considered a curriculum differentiation for blind students, and Gelan Boys Boarding School, Menen Girls Boarding School, and Menelik I Special Day School are considered a curriculum differentiation for high academic achievers.” However, Teacher A7 argued that these types of separate schools as curriculum differentiation are not advisable because all students, including persons with and without disabilities, high and low academic achievers, and economically rich and poor families, are not treated equally and equitably in such types of segregated environments; rather, these types of curriculum differentiation abandon inclusion.

While Teacher A7 implies that curriculum differentiation conceptually aims for equitable student treatment, the actual implementation based on historical precedents results in

segregation. Students in Ethiopia are placed into separate special day and special boarding school types based on demographic backgrounds such as: gender, disability, academic achievement, and socio-economic status. Because these factors do not reflect genuine student ability, this practice ultimately creates an inequitable and segregated educational environment. Consequently, a poor understanding of curriculum differentiation fosters inequality and segregation in education.

4.3.3. Curriculum differentiation as special curriculum document for groups of students

Principal B stated that "curriculum differentiation is designing unique curriculum courses for gifted and talented students because the existing common curriculum contents developed for all secondary school students cannot meet their exceptional needs." Similar to how Teacher B1 and Teacher B3 envisioned curriculum differentiation, Principal B argued that curriculum should be exclusively designed for talented and gifted students to maximize their potential. These respondents argued that all students should not follow a single, nationally developed curriculum. According to Teacher A1, "curriculum differentiation is a specially designed curriculum, not just for a specific group of students, but for different groups of students based on their needs, abilities, and interests."

According to Principal B, Teacher B1, and Teacher B3, gifted and talented students have distinct learning ability compared to their peers. To reach their full potential, these students require advanced, specialized coursework beyond the standard curriculum. Consequently, curriculum differentiation is defined here as providing advanced, supplementary curriculum courses tailored to the unique abilities of gifted and talented groups.

Teacher A2 also stated the following:

> *I think the students in the classroom can be divided into three categories: high achievers, medium achievers, and low achievers. To help these groups of low- and medium-achievers move up to the level of high-*

> *achievers, a unique curriculum called curriculum differentiation should be created based on their ability levels. When teachers assign the types of curriculum differentiation to low- and medium-achievers, it also benefits high achievers to have extra activities and avoid idleness.*

Teacher A5 also stated that "In my view, some groups of students are fast learners who are capable of understanding things easily, whereas others are medium and slow learners who are not. So, curriculum differentiation is a special type of curricular practice for groups of medium and low learners."

The findings from Teacher A2 and Teacher A5 imply that student abilities are evaluated solely through the narrow lens of traditional academic achievement, rather than individual multiple intelligences. Because Teacher A2 and Teacher A5 did not view low- and medium-achieving students as exceptionally talented, these students were seen as incapable of working independently without support. Thus, curriculum differentiation involves developing supportive or remedial coursework that helps low- and medium-achieving students reach their full potential by elevating their current academic performance. Since high achiever groups have already attained high-achievement status, Teacher A2 and Teacher A5 believes that curriculum differentiation is not necessary for them. In this instance, talented and gifted students were seen as high achievers.

On the other hand, Principal C conceptualized curriculum differentiation as the provision of a "special curriculum document" tailored for students attending specialized institutions from the secondary education to the university level. Principal C targeted on a tri-level classification of learners as "slow," "medium," or "fast." According to Principal C, "fast-learners" should be placed in specialized environments where they can access a uniquely designed curriculum. This differentiated framework is seen as distinct from the regular school curriculum and is intended to maximize students' potential by allowing them to progress according to their individual pace of learning.

Mirroring the views of Teachers A2 and A5, Principal C conceives student ability solely through the narrow lens of traditional academic achievement, categorizing students as low, medium, or high achievers. However, Principal C defines curriculum differentiation as a specially designed curriculum document spanning secondary to higher education, tailored to accommodate the unique academic abilities of high achievers because the regular school curriculum fails to meet their academic abilities.

Teacher B4 views, "Curriculum differentiation is not a one-size-fits-all approach because students are diverse in their abilities. It is simply the provision of groups of students with special curricula on the basis of their talents and knowledge as well as the needs of society." Besides, Teacher B4 explained that there is no special curriculum in Ethiopia designed for specific groups of students on the basis of their talents, though university differentiation discourse exists at the higher education level. The findings from Teacher B4 imply that simply placing students into special day or special boarding schools like students in secondary schools of Ethiopia and providing them with the standard national curriculum does not constitute curriculum differentiation. According to Teacher B4, true curriculum differentiation requires a specially designed curriculum document that accommodates the identified and recognized talents and abilities of different student groups.

4.3.4. Curriculum differentiation as identification and accommodation of giftedness and talent

Another conceptualization of curriculum differentiation that arises from teachers and principals' responses is that one of qualities of curriculum differentiation is its capacity to recognize exceptional talent and giftedness and to maximize each person's potential for innovation and the advancement of society. Principal B addressed this issue by saying, "Identifying students who are intelligent and employing a variety of strategies to accommodate these unique intelligences can foster students' creative abilities instead of concentrating on content coverage." Teacher B3 explained that "when I refer to a student as gifted or talented, it goes beyond just their academic performance; it is more than

that." Teacher B3 noted that students assigned to special day and special boarding secondary schools are selected based more on their academic performance in subject areas than on the recognition and support of their exceptional giftedness and talent, which is why the practice of curriculum differentiation is not yet practiced in Ethiopia.

Teacher C3 further added:

> *I believe that every student has visible individual differences, for example, some students have natural giftedness or talent in drawing area who beautify their school compounds, some of them have superb ability in presentation and language skills, and still some other students have exceptional ability in thinking and reasoning rather than language skills. Hence, curriculum differentiation is the process of identification of every student's special giftedness or talents, recognizing individual differences, and fitting the curriculum into each student special giftedness or talent to accommodate individual differences and maximize their creative and innovative abilities*.

The insights from Principal B, Teacher B3 and Teacher C3 suggest that every student possesses unique intelligence that extends beyond academic performance. They argue that accommodating diverse intelligences requires more than just standard academic strategies, such as tracking students or designing rigid curricula. Instead, curriculum differentiation demands identifying each individual's unique strengths and implementing varied strategies to maximize their creative and innovative potential, ultimately contributing to societal advancement and their own well-being.

Teacher A6 also added:

> *In my understanding, all students are not equally gifted or talented. Those students who are naturally gifted or talented learn, understand, and remember things easily without much effort, whereas those who are not gifted or talented exert much effort to learn things. Therefore, curriculum*

differentiation is identifying the giftedness or talents of students and then matching the curriculum with their exceptional abilities.

The findings from Teacher A6 imply that students are categorized into two groups: naturally gifted or talented, who achieve goals effortlessly, and the non-gifted or non-talented, who must exert significant effort to succeed. Consequently, this perspective views curriculum differentiation primarily as a tool to maximize the creative and innovative abilities of students already identified as gifted or talented.

Teacher B1 argued that "even though Ethiopia does not currently have mechanisms for identifying talent or giftedness, creating institutions where students can showcase their abilities is a solution." Because gifted or talented students are not accommodated in the current curriculum, Teacher B1 believed that one of the major causes of poor learning outcomes at the national level is the absence of curriculum differentiation based on the identified needs of gifted and talented students.

The findings from Teacher B1 imply that sustaining a successful gifted and talented program requires formal identification systems and institutions to spot gifted and talented students' needs early and adapt the curriculum accordingly, preventing poor learning outcomes. Thus, curriculum differentiation is conceptualized as an institutional process: using tailored mechanisms to identify gifted students' needs, thereby preventing underachievement across the education system.

4.3.5. Curriculum differentiation as curricular planning and teaching strategy

Participants under this theme stated that they were not aware of the issue of curriculum differentiation in their previous careers, but they guess curriculum differentiation is the application of different time allotment, teaching, and curriculum planning strategies to operate an education system. Principal A explained that "there are subjects offered to students one period per week [e.g., health and physical education and technical drawing], three periods per week [e.g., natural science], and five periods per week [e.g., English]." The principal explained that "curriculum differentiation is how much weight the subjects

have in terms of time allocation and the focus of the school curriculum on different disciplines or subjects. This difference in subjects' period allocations could be conceptualized as curriculum differentiation."

Teacher A4 mentioned that:

> *Although I'm not exactly sure what curriculum differentiation entails, I believe it involves creating a physics curriculum based on the general education curriculum, an annual plan derived from the physics curriculum, and a lesson plan derived from the annual plan. Each of these then goes on to detail what teachers do.*

Furthermore, Teacher A10 thought that "curriculum differentiation is curriculum change when one government of a country is changed by another government so as to respond to all students' common needs." Teacher A8 added that "curriculum differentiation, in my point of view, is designing curriculum based on the context of a country and applying it accordingly. It is also updating it after years of implementation and evaluation of its impact." Teacher A11 also argued that "curriculum differentiation is the development of one's country's national curriculum by professionals ranging from curriculum documents through textbooks and syllabuses to teacher's guides for students' learning. Then, professionals make such a common curriculum adapted to the local contexts of different regional states."

Teacher B6 also stated the following:

> *In my opinion, the contents of the common curriculum are too difficult to learn for some students or too easy to learn for others. Then, curriculum differentiation might make the common curriculum relevant for all students based on every student's level of knowledge aligned with the current economic and social developments and the existing contexts of a country. Students' specialty through curriculum differentiation has to be*

aligned with the country's economic development plan. Thus, these students could be change agents for the country's development.

Responses from Teacher A4, Teacher A8, Teacher A10, Teacher B6, and Principal A imply that curriculum differentiation is a conceptually unfamiliar topic to them. Their understanding of the concept relates it strictly to standard or national curriculum delivery, which diverges from established scientific literature of curriculum differentiation. Thus, these participants misunderstand curriculum differentiation, conflating it with routine curriculum design, development, and implementation strategies.

4.3.6. Quantitative results on curriculum differentiation conceptualization of teachers

Complementing the qualitative findings, this section details the second phase of quantitative data regarding curriculum differentiation conceptualization of teachers across regular, special day, and special boarding secondary schools. The qualitative data originally yielded five thematic areas regarding how curriculum differentiation is conceptualized: (1) as a gifted program, (2) as student placement into subjects, streams, and school types, (3) as a special curriculum document for specific groups, (4) as the identification and accommodation of giftedness, and (5) as a curricular planning and teaching strategy. To quantify these perspectives via the teachers' questionnaire, these five themes were consolidated into three primary conceptualizations: curricular tracking related, curriculum document related and curriculum development, planning and teaching related curriculum differentiation.

The quantitative data focuses on curricular tracking related, curriculum document related, and curriculum development, planning and teaching related curriculum differentiation conceptualizations were gathered from a sample of 133 teachers via a questionnaire scale. Then, individual questionnaire items were interpreted using the mean score guide established in Chapter 3 (Table 3.7, Methods of Data Analysis section). Analysis of the data focuses on curricular tracking related curriculum differentiation conceptualization of

teachers across regular, special day, and special boarding secondary schools is illustrated in Table 4.2.

TABLE 4.2: CURRICULAR TRACKING RELATED CURRICULUM DIFFERENTIATION CONCEPTUALIZATION OF TEACHERS

S. N	Tracking related items	Teachers	
		M	**SD**
1	Curriculum differentiation is a system level practice of grouping gifted and talented students into separate tracks, like regular, special day, & special boarding schools on the bases of their choices, & abilities.	3.29	1.06
2	Curriculum differentiation is a system level practice of grouping students with disabilities into separate tracks, like regular, special day, and special boarding schools on the bases of their choices, & abilities.	3.22	1.10
3	Curriculum differentiation is a school practice of grouping its students into natural science and social science streams according to their choices, interests and abilities.	3.70	1.06
4	Curriculum differentiation is a school practice of student placements into various fields of studies according to their choices, interests & abilities.	3.52	.97
5	Curriculum differentiation is a school practice of grouping its students into various optional academic or school subjects according to their choices, interests and abilities.	3.28	1.08
6	Curriculum differentiation is a school practice of grouping its students into various optional language subjects according to the choice and interest of parents.	3.23	.90
7	Curriculum differentiation is a school practice of grouping its students into mother tongues, federal languages, & foreign languages to fulfil the interests of local, national & international political authorities.	3.17	1.02
	Average	**3.34**	**1.03**

Table 4.2 presents the descriptive statistics for curriculum differentiation conceptualization of teachers as curricular tracking. The aggregate mean score for these seven items (M = 3.34, SD = 1.03) falls within the 2.50 to 3.50 benchmark range on the five-point Likert scale, which corresponds to an interpretation of "not sure." This indicates that the participating teachers were averagely uncertain whether curriculum differentiation should be conceptualized as curricular tracking.

The item-by-item analysis below presents teachers' interpretations of curriculum differentiation as a form of curricular tracking. The highest-rated conceptualizations were the curriculum differentiation conceptualizations of teachers as a practice of grouping students into natural and social science streams (M=3.70, SD=1.06) and as a mechanism for placing students into various fields of study based on their interests and abilities (M=3.52, SD=.97). The two items mean scores fall within the 3.50 to 4.50 benchmark range on the five-point Likert scale, which corresponds to an interpretation of "agree."These findings show that participating teachers viewed curriculum differentiation in two ways: first, as streaming students into either natural or social sciences based on their choices, interests, and abilities; and second, as placing them into specific fields of study using those same criteria.

Other moderately rated conceptualizations of curriculum differentiation framed it as either a system-level or school-level grouping practice. Specifically, teachers conceptualized curriculum differentiation as: A system-level tracking practice for gifted and talented students, placing them into regular, special day, or special boarding schools based on their choices, needs, and abilities (M = 3.29, SD = 1.06); a system-level tracking practice for students with disabilities, placing them into regular, special day, or special boarding schools based on their choices, needs, and abilities (M = 3.22, SD = 1.10); a school-level practice of grouping students into optional academic subjects based on their choices, interests, and abilities (M = 3.28, SD = 1.08); a school-level practice of grouping students into optional language subjects based on parental choice and interest (M = 3.23, SD = 0.90); and a school-level practice of grouping students by languages (mother tongues, federal languages, and foreign languages) to satisfy the political interests of

local, national, and international authorities (M = 3.17, SD = 1.02). Because all individual items mean scores fall within the 2.50 to 3.50 benchmark range on the 5-point Likert scale, they correspond to an interpretation of "not sure." Consequently, these findings indicate that the participating teachers were generally uncertain whether curriculum differentiation should be conceptualized in the manners described in most parts of Table 4.2. Furthermore, Table 4.3 illustrates curriculum differentiation conceptualizations of teacher as a curriculum document within secondary schools.

TABLE 4.3: CURRICULUM DOCUMENT RELATED CURRICULUM DIFFERENTIATION CONCEPTUALIZATIONS OF TEACHERS

S. N	Curriculum document related items	Teachers	
		M	SD
1	Curriculum differentiation is a school practice to provide *different curricula for various groups of gifted students* due to a common curriculum unable to meet their exceptional abilities.	3.34	1.07
2	Curriculum differentiation is a school practice to provide *a common curriculum for all students* by varying contents, instructions, assessment strategies, and learning environments to foster inclusive classroom practices and meet diverse abilities.	3.45	1.00
3	Curriculum differentiation is a school practice to help *low-, medium-, and high-academic achievers* reach their full academic potential by attaining high-achievement status.	3.53	1.06
4	Curriculum differentiation is a program document that serves *small groups of gifted and talented students* based on their unique abilities because only small numbers of students possess giftedness and talents.	3.26	1.02
5	Curriculum differentiation is an individualized program document that serves *every student in a classroom* based on his/her unique abilities because every student has one or more unique talent and/or giftedness.	3.21	1.08
6	Curriculum differentiation is a process of identifying various types of exceptional giftedness and talents of students and matching them with curricula.	3.51	.96
	Average	**3.38**	**1.03**

Table 4.3 presents the descriptive statistics for curriculum differentiation conceptualizations of teachers as a curriculum document. The aggregate mean score for these six items (*M*=3.38, *SD*=1.03) indicates that, on average, participants' view falls within the 2.50 to 3.50 benchmark range on the five-point Likert scale, which corresponds to an interpretation of "not sure." This indicates that the participating teachers were generally uncertain whether curriculum differentiation should be conceptualized as a curriculum document.

The item-by-item analysis below presents teachers' interpretations of curriculum differentiation as a curriculum document. Within this category, the highest levels of agreement were observed for the following two items: Curriculum differentiation as a practice to help students across all achievement levels reach their full academic potential (*M*=3.53, *SD*=1.06), and curriculum differentiation as a process of matching curricula with various types of identified exceptional giftedness (*M*=3.51 and *SD*=.96). The two items mean scores fall within the 3.50 to 4.50 benchmark range on the five-point Likert scale, which corresponds to an interpretation of "agree."These findings show that participating teachers viewed curriculum differentiation in two ways: first, as a practice to help students across all achievement levels reach their full academic potential; and second, as a process of matching curricula with various types of identified exceptional giftedness.

Other moderately rated conceptualizations of curriculum differentiation framed it as either a school-level or program-level curriculum document practice. Specifically, teachers conceptualized curriculum differentiation as: A school practice to provide different curricula for various groups of gifted students due to a common curriculum unable to meet their exceptional abilities (*M* = 3.34, SD = 1.07); a school practice to provide a common curriculum for all students by varying contents, instructions, assessment strategies, and learning environments to foster inclusive classroom practices and meet diverse abilities (*M* = 3.45, SD = 1.00); a program document that serves small groups of gifted and talented students based on their unique abilities because only small

numbers of students possess giftedness and talents (M = 3.26, SD = 1.02); and an individualized program document that serves every student in a classroom based on his/her unique abilities because every student has one or more unique talent and/or giftedness *(*M = 3.21, SD = 1.08). Because all individual items mean scores fall within the 2.50 to 3.50 benchmark range on the 5-point Likert scale, they correspond to an interpretation of "not sure." Consequently, these findings imply that the participating teachers were generally uncertain whether curriculum differentiation should be conceptualized in the manners described in most parts of Table 4.3.

In addition, Table 4.4 displays curriculum differentiation conceptualizations of teachers as curricular development and teaching processes in secondary schools.

TABLE 4.4: CURRICULAR DEVELOPMENT AND TEACHING RELATED CURRICULUM DIFFERENTIATION CONCEPTUALIZATION OF TEACHERS

S. N	Curricular development and teaching related items	Teachers	
		M	**SD**
1	Curriculum differentiation is applying different weight/time allotment to different subjects, and is planning and teaching strategies to operate an education system.	3.55	1.00
2	Curriculum differentiation is about *curriculum change when one government of a country replaced by another* so as to respond to a common needs of a society.	3.15	1.22
3	Curriculum differentiation is the *development of a country's national curriculum* by professionals ranging from curriculum framework through teacher's guides and syllabuses to textbooks for students' learning.	3.47	1.02
4	Curriculum differentiation is feeding the selected high-achieving students in special schools and providing them with quality resources to teach a national curriculum.	2.95	1.00
	Average	**3.28**	**1.06**

Table 4.4 presents the descriptive statistics for curriculum differentiation conceptualizations of teachers as curricular development and teaching processes. The aggregate mean score for these four items (*M*=3.28, *SD*=1.06) falls within the 2.50 to 3.50 benchmark range on the five-point Likert scale, which corresponds to an interpretation of "not sure." This indicates that the participating teachers were either unsure if curriculum differentiation includes the regular tasks of curriculum development and teaching processes, or they mistakenly viewed these regular curricular practices as part of curriculum differentiation.

The item-by-item analysis below also presents teachers' interpretations of curriculum differentiation as curricular development and teaching processes. The highest-rated conceptualizations were the curriculum differentiation conceptualizations of teachers as applying different weight/time allotment to different subjects, and is planning and teaching strategies to operate an education system (*M*=3.55, *SD*=1.00). This item mean score fall within the 3.50 to 4.50 benchmark range on the five-point Likert scale, which corresponds to an interpretation of "agree."This finding shows that participating teachers wrongly viewed curriculum differentiation as a mechanism for implementing varied time allotments to subjects and as a framework for planning and teaching strategies to operate an educational system.

Other moderately rated conceptualizations of curriculum differentiation framed it as the practice of either a national curriculum change or curriculum development and quality resources provision for selected students. Specifically, teachers conceptualized curriculum differentiation as: curriculum change when one government of a country replaced by another so as to respond to a common needs of a society (*M* = 3.15, SD = 1.22); the development of a country's national curriculum by professionals ranging from curriculum framework through teacher's guides and syllabuses to textbooks for students' learning (*M* = 3.47, SD = 1.02); and feeding the selected high-achieving students in special schools and providing them with quality resources to teach a national curriculum (*M* = 2.95, SD = 1.00). Because all individual items mean scores fall within the 2.50 to 3.50 benchmark range on the 5-point Likert scale, they correspond to an interpretation of

"not sure." Consequently, these findings indicate that the participating teachers were wrongly conceptualized curriculum differentiation as the manners described in most parts of Table 4.4.

In conclusion, a comparison of the findings across Table 4.2, Table 4.3, and Table 4.4 reveals a consistent trend in how teachers across regular, special day and special boarding secondary schools conceptualize curriculum differentiation. The aggregate mean scores for all three dimensions - curricular tracking, curriculum documents, and curriculum development and teaching processes - fall within a narrow 3.50 to 4.50 benchmark range on the five-point Likert scale, which corresponds to an interpretation of either "not sure" or "agree." This suggests a moderate but cautious level of consensus among teachers regarding these various roles of curriculum differentiation. While the means are similar, the highest level of agreement was observed in relation to curriculum documents. Specifically, teachers most strongly identify curriculum differentiation with inclusive practices, such as helping students of all achievement levels reach their potential and matching giftedness with appropriate curricula.

4.4. Types of Curriculum Differentiation Practices in Different School Types

The available types of curriculum differentiation practices and the academic and psychosocial experiences of students in regular, special day and special boarding secondary schools are presented in this section. The qualitative data regarding the common types of curriculum differentiation practices were gathered from the reviews of national policy and school documents, the interviews with school principals and teachers, the FGDs with students, and the observation of physical resources, which are presented in this section. Because qualitative data collection took place from November to December 2022 - during the transition to the 2020 revised curriculum framework - both the old (2009) and new (2020) curriculum frameworks were partially in use. Consequently, this study examines the curriculum differentiation types within both frameworks. The 2009 curriculum framework reflects ongoing practices at the time, while the 2020 framework serves as a benchmark for the future intentions of special boarding and special day

secondary schools. Thus, the types of curriculum differentiation incorporated in Ethiopia's General Secondary Education Curriculum Frameworks are listed in Table 4.5.

TABLE 4.5: TYPES OF CURRICULUM DIFFERENTIATION IN GENERAL SECONDARY EDUCATION CURRICULUM FRAMEWORKS

Streams	Subjects for grades 11 and 12 students in the framework of 2009	Fields of study for grades 11 and 12 students in the framework of 2020
Natural Sciences	**Specialized subjects**: Biology, chemistry, physics, and technical drawing. **Common subjects**: Civics and ethical education, English, ICT, mathematics, and physical education. **Elective subject**: Mother tongue/ nationality language or Amharic.	**Fields of study:** Manufacturing (comprises 7 general subjects and 4 field-based subjects), construction (with 7 general subjects and 4 field-based subjects), ICT (with 7 general subjects and 5 field-based subjects), agriculture (with 6 general subjects and 4 field-based subjects), and health science (with 7 general subjects and 4 field-based subjects).
Social Sciences	**Specialized subjects**: History, general business, geography, and economics. **Common subjects**: Civics and ethical education, English, ICT, mathematics, and physical education. **Elective subject**: Mother tongue/ nationality language or Amharic.	**Fields of study:** Business sciences (contain 6 general subjects and 5 field-based subjects), language and social sciences (contain 6 general subjects and 4 field-based subjects), and performing and visual arts (contain 6 general subjects and 5 field-based subjects).

Table 4.5 depicted that boarding and special day secondary schools have legitimacy to practice stream differentiations (between natural and social sciences), subject choices (among elective subjects), and differentiation by fields of study (among five natural

sciences and three social sciences study areas) for students in grades 11 and 12. Moreover, Amharic as a second language, English, mother tongue, mathematics, ICT, physics, chemistry, biology, civics and ethical education, geography, history, and physical education were all incorporated into the curriculum framework of 2009 and offered to students in grades 9 and 10 (MoE, 2009). Besides, ten compulsory and two optional subjects are currently incorporated in the newly revised curriculum framework of 2020 but not implemented yet for students in grades 9 and 10 (MoE, 2020). English, mathematics, physics, chemistry, biology, geography, history, citizenship education, economics, and IT are the ten subjects that are intended to be offered. First language, a federal language, a foreign language, health and physical education, and performing and visual arts are the optional subjects, from which students in grades 9 and 10 may select two. These results imply that the 2020 curriculum framework expands curriculum differentiation by introducing distinct streams, fields of study, and academic subjects for secondary school students. In contrast, the 2009 curriculum framework confined curriculum differentiation strictly to language subjects, specifically between the national language subject (i.e., Amharic) and various mother tongue subjects.

However, the Ethiopian Ministry of Education wrote a "tentative letter" in February 2023 that included subjects to be offered to all secondary school students from grades 9 to grade 12 across Ethiopia as of the 2023/24 academic year. According to the letter, all grades 9 and 10 students across Ethiopia shall take twelve compulsory subjects: English, mathematics, biology, chemistry, physics, geography, history, citizenship education, economics, IT, health and physical education, and mother tongue, with the option to choose either a federal language or a foreign language or a performing and visual arts subject. This result implies that curriculum differentiation for grades 9 and 10 was designed to occur at the subject level.

Similarly, according to the Ministry of Education tentative letter of 2023, all grade 11 and 12 natural science students across Ethiopia shall take seven compulsory subjects: English, mathematics, IT, biology, chemistry, physics, and agriculture, with no opportunity to choose additional subjects. On the other hand, all grade 11 and 12 social science students

across Ethiopia shall take six compulsory subjects: English, mathematics, IT, geography, history, and economics, with no opportunity to choose additional subjects. These results imply that curriculum differentiation for grades 11 and 12 was strictly limited to streaming, offering no opportunities for differentiation by wider fields of study, academic subjects, or languages.

In general, the Ethiopian national curriculum frameworks authorized secondary schools to differentiate the curriculum through distinct streams, fields of study, and academic subjects for grades 11 and 12, as well as by subject for grades 9 and 10. However, a tentative 2023 letter from the Ministry of Education restricted this, permitting only subject-based differentiation for grades 9 and 10. Given these conflicting directives, the subsequent sections examine how curriculum differentiation is actually practiced across special boarding, special day, and regular secondary schools.

4.4.1. Types of curriculum differentiation practices within special boarding school

The data from the students' grade roster grade roster, FGD, interview and observation was gathered and is presented here on specific types of curriculum differentiation practices at the boarding school for students in grades 9 through 12. This document review data show that the types of curriculum differentiation practices in the boarding school are the natural sciences and social sciences streams for students in grades 11 and 12 and Amharic and Afan Oromo languages are elective subjects in grades 9 through 12.

Particularly, the subjects offered in 2022 for grades 11 and 12 natural science students were nine compulsory subjects: English, mathematics, physics, chemistry, biology, technical drawing, civics and ethical education, ICT, and physical education. Additionally, they can choose either Afan Oromo or Amharic subjects. All grades 11 and 12 social science students also took nine compulsory subjects: English, mathematics, geography, history, economics, general business, civic and ethical education, ICT, and physical education. Additionally, they took both Amharic and Afan Oromo subjects. Similarly, grades 9 and 10 students took ten compulsory subjects: English, mathematics,

physics, chemistry, biology, civics and ethical education, geography, history, ICT, and physical education. They have also the option to choose either Amharic or both Amharic and Afan Oromo subjects. Student grade rosters imply that special boarding secondary schools differentiate their curriculum in two main ways: by academic stream, and by language subject (specifically, Amharic and Afan Oromo).

Observations at the special boarding secondary school confirmed the presence of specific curriculum differentiation practices. All students admitted to this institution were classified as special boarding students and were provided the option to choose between natural science and social science streams. Furthermore, student placement was categorized based on language subjects: the first group consisted of students taking only Amharic; the second group included those taking only Afan Oromo; and the third group comprised students taking both languages. Thus, special boarding secondary schools appear to be an alternative to special day and regular school types, practicing curriculum differentiation by academic streams and language subjects.

Observations at the school also confirmed that students utilized ICT rooms, private study spaces, and the library rooms for learning options as learning environment differentiation. However, other resources, such as the school mini-media, laboratories, and field trip sites, were non-functional and did not contribute to environmental differentiation. Consequently, curriculum differentiation practices in this special boarding school are characterized by streaming, subject-based grouping centered on language, and partial differentiated instruction of the learning environment.

The FGD conducted with special boarding school students shows that the choice of natural sciences and social sciences streams is the dominant practice in the school, with the majority of the students joining the natural sciences stream. The students believed that natural sciences are more preferred to social sciences. One of the FGD participants also stated that "these boarding school staff members have completed all the admission and placement processes into both Afan Oromo and Amharic, or Afan Oromo, or Amharic separate classes." According to an interview with Principal C, "There is stream

differentiation in the special boarding school between the social sciences and the natural sciences for students in grades 11 and 12."

Principal C further noted that:

> *Afan Oromo classes are open to students who have an Afan Oromo language background and attend primary schools in both Addis Ababa city and the Oromia Special Zone (closest to the Addis Ababa city administration). Students from Addis Ababa City's primary schools who speak Amharic are also welcome to enroll in Amharic classes. There is officially approved subject differentiation between Afan Oromo and Amharic subjects in secondary schools, to be implemented for students in grades 9 and 10.*

Furthermore, Teacher C3 stated, "I taught in grade 11 natural science classes in which students were grouped into separate classes for Afan Oromo and Amharic subjects; however, they were in a mixed class for other compulsory subjects." Teacher C3 added that students, who are taking both Amharic and Afan Oromo subjects in grades 9 and 10, as well as grades 11 and 12, in the social science stream, were grouped into mixed classes for Afan Oromo and Amharic subjects; they were also in a mixed class for other compulsory subjects. According to Teacher C3, "Students in grades 9 and 10 who are taking only the Amharic subject, and natural science stream students in grades 11 and 12 who are taking either an Amharic or an Afan Oromo subject are placed in their respective separate classes for all subjects." Generally, Teacher C3 in boarding school thought that there is no instructional practice beyond content coverage given in textbooks except differentiated instruction in terms of partial learning environment.

Students also mentioned that the teaching practices of most subjects in the special boarding school were more focused on content coverage than providing students with in-depth and advanced content. It is similar to the regular school teaching practices except

for the laboratory equipment and practice available for science subjects in the boarding school.

In summary, data from grade rosters, principal and teacher interviews, student FGDs, and physical resource observations confirmed that the special boarding school, appears to be optional to the special day and the regular secondary schools, primarily differentiate their curriculum in three ways: by academic stream, by limited language subjects, and by adapting the learning environment as part of differentiated instruction.

4.4.2. Types of curriculum differentiation practices within special day school

The data from the students' grade roster, FGD, interview and observation was gathered and is presented here on specific types of curriculum differentiation practices at the special day school for students in grades 9 through 12. Table 4.6 presents data regarding the available types of curriculum differentiation practices gathered from the students' grade roster at the special day school.

TABLE 4.6: TYPES OF CURRICULUM DIFFERENTIATION PRACTICES WITHIN SPECIAL DAY SCHOOL

Grade level	Streams	Subjects offered for students in grades 11 and 12 special day school in 2022
Grades 9 and 10	---	**Compulsory subjects:** Amharic, English, mathematics, physics, chemistry, biology, civics and ethical education, ICT, physical education, geography, and history.
Grades 11 and 12	Natural Sciences	**Compulsory subjects:** Amharic, English, mathematics, physics, chemistry, biology, civics and ethical education, ICT, physical education, and technical drawing.

As depicted in Table 4.6, all students in the special day school are admitted only to the natural science stream at the beginning of grade 11. Grades 9 and 10 students also take the same kind of courses offered in the regular national curriculum of grades 9 and 10. Student grade rosters imply that all students admitted to the special day secondary school

at the beginning of Grade 9 are placed on a natural science track, as evidenced by the promotion of all Grade 10 students into the Grade 11 natural science stream. In other words, although school records show no evidence of the types of curriculum differentiation by stream or subject, students enrolled in this school by their choices to pursue their personal interests and career aspirations in the natural sciences stream.

Observations at the special day school confirmed a lack of curriculum differentiation practices regarding student streaming or subject-based categorization, including language-specific groupings. Although all students were admitted under the special day school criteria, they were systematically directed into the natural science stream upon reaching grades 11 and 12, with no option for the social science stream. Regarding the learning environment, most facilities—including ICT rooms, laboratories, field trip sites, and the library—were utilized to provide learning options or environmental differentiation. The only exceptions were the school's mini-media center and private study spaces, which remained non-functional for these purposes. Consequently, the primary curriculum differentiation practice identified in the special day school is learning environment differentiation, as the school lacks diverse student placement options for social sciences or varied language subjects. At this school, placing students into the natural science stream is synonymous with placing them into the special day school. Because the special day school was originally established as a dedicated STEM academy, enrollment is entirely choice-based. The school fully honors all student stream preferences during the Grade 9 admission process, meaning no student is assigned to this path against their interest. Thus, the only type of curriculum differentiation implemented here is the modification of the learning environment i.e., a core element of differentiated instruction.

Participants in the FGD from the special day school also disclosed that all students in grades 9-12 have no opportunity to choose among subjects, and students in grades 11 and 12 join only the natural science stream. A student noted that:

> *In our school, students in both grades 9 and 10, as well as grades 11 and 12, study the same set of subjects. Specifically, students in grades 9 and 10 have access to courses in Amharic, English, mathematics, physics, chemistry, biology, civics and ethical education, ICT, physical education, geography, and history. Meanwhile, students in grades 11 and 12 are offered courses in Amharic, English, mathematics, physics, chemistry, biology, civics and ethical education, ICT, physical education, and technical drawing.*

The participants in the FGD further revealed the presence of highly qualified teachers in the school. The students reported that the teachers enrich the regular textbooks with advanced or university-level content. One of the participants mentioned that "despite containing only two paragraphs of content in the biology textbook, the topic of bacteria is extensively covered by teachers. They delve into the subject matter deeply, dedicating entire chapters to it both in the classroom and during laboratory sessions." These results indicate that the curriculum is entirely uniform: all students in grades 9 and 10 take identical subjects, as do those in grades 11 and 12, without any stream or subject differentiation. Consequently, while all students encounter advanced content, it is not differentiated to accommodate their diverse learning abilities.

According to Principal B (interview participant) "the existing common curriculum is the minimum requirement to cover in our school because committed teachers who have at least a master's degree try to meet the exceptional learning needs of our students by updating and expanding the existing curriculum contents." Principal B continued, "We have made an effort to meet the interests and choices of our students by employing university instructors who are highly qualified and dedicated and provide well equipped and resourced learning classrooms, laboratories, and the library." These results imply that students in the special day school follow the same national curriculum as regular school students, with the only distinction being the differentiation of their learning environment. In other words, the school does not practice any form of curriculum differentiation apart from environmental modifications.

Teacher B1 also affirmed that:

> *Certainly, our school caters to exceptional students who have achieved top marks at the eighth-grade level. However, we do not offer a social science stream nor do we assign students to different subjects based on their placements. Instead, our students benefit from highly qualified teachers who can meet their academic needs by digging deeper into and advancing the content of the common national curriculum. Each teacher is committed to imparting advanced knowledge and skills by utilizing supplementary materials and alternative teaching methods while covering the same topics outlined in the textbooks.*

Strengthening this, Teacher B2 stated that "… students uniformly possess the highest academic abilities, enabling them to grasp the subject matter outlined in the national common curriculum independently. Consequently, we focus on extending their knowledge and skills to advanced levels by implementing diverse instructional techniques." Teacher B3 affirmed that although the curriculum is the same for all students across the country, our school is exceptional in meeting the needs of our students due to its small class sizes, teaching-learning resources, and teachers' emphasis on advanced knowledge, creativity, research skills, project work, worksheets, and laboratory rather than tests and examination practices. Although the special day school has no additional subjects or streams for students, its teachers take the responsibility of enriching the common curriculum to meet the students' needs and abilities.

These results of Teacher B1 and Teacher B2 confirmed that there is no type of curriculum differentiation in the special day school except differentiated instruction. In other words, this is similar to what has been categorized as differentiated instruction in the literature. As there is no national guideline or standard that guides special day school curriculum, teaching, or assessment, this practice, however, rests mainly on the practice of teachers.

4.4.3. Types of curriculum differentiation practices within regular school

This section presents data on the curriculum differentiation practices used for grades 9 through 12 in the regular school. Data regarding the school's subject and stream offerings was gathered through student grade rosters, focus group discussions (FGDs), interviews, and the school physical environment observations. The document (i.e., student roster) review data show that the types of curriculum differentiation practices in the regular school were the natural sciences and social sciences streams for students in grades 11 and 12; and Amharic and Afan Oromo language subjects were elective in grades 9 and 10.

Particularly, in 2022, the subjects offered for grades 11 and 12 natural science regular school students were ten compulsory subjects: Amharic, English, mathematics, physics, chemistry, biology, technical drawing, civics and ethical education, ICT, and physical education. There was no additional subject(s) offered for grades 11 and 12 natural science students. All grades 11 and 12 natural science students took the same subjects. Similarly, all grades 11 and 12 social science students took 10 compulsory subjects: Amharic, English, mathematics, geography, history, economics, general business, civic and ethical education, ICT, and physical education. On the other hand, grades 9 and 10 students took ten compulsory subjects: English, mathematics, physics, chemistry, biology, civics and ethical education, geography, history, ICT, and physical education. They have also the option to choose either only Amharic subject or both Amharic and Afan Oromo subjects. Hence, one category of grades 9 and 10 students took 11 subjects whereas the other category of the same grades took 12 subjects. These results imply two distinct types of curriculum differentiation: academic streams for Grades 11 and 12, and language subject choices (Amharic versus Afan Oromo) for Grades 9 and 10.

The observation results of the regular secondary school also confirmed that there were indicators of some available types of curriculum differentiation practices. In this school, everyone had been admitted as regular school student, and he/she had options to choose either natural science or social science stream. Moreover, there were classrooms assigned for two categories of students based on language subjects. The first category of students

was placed in "Amharic-only" classrooms, as several sections took only Amharic. In contrast, the second category was placed in mixed classrooms, where a few sections took both Amharic and Afan Oromo. However, there was no any category of students placed into classrooms as Afan Oromo group. The school services of ICT rooms, private spaces, classrooms, mini media, laboratory, field trip sites and the library were not satisfactorily utilized as options for learning or cannot be considered as learning environment differentiation. Therefore, the indicators of curriculum differentiation practices in the regular school are curriculum differentiation by stream, and by subjects based on limited language subjects. However, the regular school did not actually practice the type of curriculum differentiation in the form of differentiated instruction.

The FGD student participants from the regular secondary school confirmed that the placement of students into natural science and social science streams is based on students' interest until the specific quota set by the school for natural and social sciences satisfied. One student among the FGD participants specified:

> *I am one of the natural science stream students who joined it by their first choice. When I was promoted to grade 11 I realized that students who have higher academic score in grade 10 are placed into natural science and social science streams based on their choice or interest but other students who have medium or relatively low grade 10 academic score are placed into natural science and social science streams based on the decision of the school placement committee*.

The other FGD participant added, "I remember I was late for one day during stream choices at the beginning of grade 11. My interest was to join social science stream but the social science stream was saturated in the second day when I went to school for stream choice. Then, the school ad-hoc committee placed me into natural science stream without my interest." The FGD participant students also revealed that students in grades 11 and 12 have the chance to choose either natural or social sciences streams but all students in grades 9 and 10 attend the same subjects without having any chance of learning by

choices and interests. The results of the student FGDs imply that stream placement in regular school is heavily influenced by prior academic achievement. Specifically, only high-achieving students are assigned to streams that align with their personal choices and interests. Conversely, the school committee assigns low- and middle-performing students to either the natural or social science streams, regardless of their preferences. It appears that students in regular schools are unaware of how placement into Amharic and Afan Oromo classes is determined, as they only identified stream placement as a form of curriculum differentiation.

The interview result of Principal A also confirmed:

> *There are stream and subject differentiations in our school. In relation to stream differentiation, 70% of students join natural science stream and 30% of them also join social science stream. The criteria set to join these streams are mainly the students' interest and their previous grade academic achievement. It means that students, who have higher previous grade academic achievements in social science subjects than in natural science subjects, are advised to join social science stream and vice versa. In subject differentiation, grades 9 and 10 students who have interest and Afan Oromo language background can join the group of students who attend their grades 9 and 10 education in two separate Afan Oromo classes whereas the rest of grades 9 and 10 students who have Amharic language background are placed in other separate classes*.

Furthermore, Principal A mentioned, "Although grades 9 and 10 students are placed into separate classes for subject differentiation, the subject differentiation practice is limited to Afan Oromo and Amharic language subjects. The remaining subjects are common to all grades 9 and 10 students within these separate classes." The interview results with Principal A imply that 70% of students are permitted to enter the natural science stream based on their preferences, while the remaining 30% are allocated to the social science stream. This distribution indicates that stream-based curriculum differentiation in regular

schools is ultimately dictated by strict school quotas rather than genuine student interest. This is a form of practice that contradicts the fundamental principles of curriculum differentiation in accommodating the abilities and interests of students.

According to Principal A, there is also subject differentiation for students with visual and hearing impairments who usually join to social science streams based on their learning needs and interests. In addition, grades 9 and 10 students with visual impairments have the chance to exempt some subjects and take other subjects such as English, biology, geography, history, civics, and Amharic and/or Afan Oromo within social science streams. However, there is no chance of adding subjects to substitute the exempted subjects. Thus, students with visual impairments took fewer subjects than their peers without visual impairments. These findings from Principal A imply that while students with visual impairments are permitted to drop subjects requiring sight, they are not given the option to take substitute subjects. Consequently, this practice fails to align with the established principles of curriculum differentiation documented in existing literature.

Teacher A1 stated, "The natural science and social science stream for grades 11 and 12 students, and subject differentiation for grades 9 and 10 students who have Afan Oromo background are the observable practices within our school." Teacher A5 also mentioned, "I assure you that the natural science and social science stream for grades 11 and 12 students is common practice in our school but I do not think there is interest based subject differentiation for our secondary school students." Both Teacher A1 and Teacher A5 agreed on the practice of stream differentiation but they differ on the presence of subject differentiation. The results from the remaining teachers of School A (i.e., Teacher A2, Teacher A3, Teacher A4, Teacher A6, Teacher A7, Teacher A8, Teacher A9, Teacher A10 and Teacher A11) revealed that stream differentiation between natural science and social science is a common practice of their school but they were not aware of the presence of subject differentiation within the school. Results from most regular school teachers imply that curriculum differentiation by academic stream is common, whereas subject-based curriculum differentiation is rarely observed.

4.4.4. Quantitative results on different types of curriculum differentiation practices

This section details the second phase of quantitative data regarding curriculum differentiation practices across regular, special day, and special boarding secondary schools. Data were collected via questionnaire scales from a sample of 133 teachers and 304 students. The analysis focuses on two primary areas: curricular tracking and standard curriculum document-related practices. Table 4.7 presents the perspectives of the 133 surveyed teachers concerning tracking-related curriculum differentiation practices within their respective schools.

TABLE 4.7: TEACHERS' PERSPECTIVE ON TRACKING RELATED CURRICULUM DIFFERENTIATION PRACTICES OF SCHOOLS

S. N	Curricular tracking related items	Teachers	
		M	**SD**
1	The existing student placement practices to admit them into special day and special boarding secondary schools *offer equal opportunities to all eligible students* in Ethiopia.	2.97	1.02
2	The existing student placement practices into regular, special day and special boarding secondary schools in Ethiopia *consider their abilities and choices*.	3.14	.96
3	Our school implements student placements into natural science and social science streams on the basis of their learning abilities, interests and choices.	3.66	1.19
4	Our school implements student placements into language subjects (e.g., Amharic and Afan Oromo) on the basis of their learning abilities, interests and choices.	3.23	1.30
	Average	**3.25**	**1.12**

Table 4.7 presents descriptive statistics regarding tracking-related curriculum differentiation across or within regular, special day, and special boarding secondary schools. With an aggregate mean of 3.25 (SD = 1.12), these practices fall within the

"sometimes" range (2.50–3.50) on the five-point Likert scale. This imply participating teachers indicate that when schools group students, whether by school type, academic stream (natural vs. social science), or language sunject (Amharic vs. Afan Oromo), they only “sometimes” consider the students’ individual learning abilities, interests, and choices.

The item-by-item analysis below also presents teachers’ witness of tracking-related curriculum differentiation practices across and within regular, special day, and special boarding secondary schools. Notably, the highest-rated practice identified was the placement of students into natural and social science streams based on their learning abilities, interests, and choices (*M*=3.66, *SD*=1.19). With a mean score within the 3.50 to 4.50 benchmark range, this practice corresponds to an interpretation of "often" on the five-point Likert scale. This finding demonstrates that, according to participating teachers, secondary schools frequently base student placement into natural and social science streams on individual learning abilities, interests, and choices.

Other moderately rated practices included tracking students by school type and placing them into specific language subjects across and within regular, special day, and special boarding secondary schools. Specifically, teachers identified tracking related curriculum differentiation practices of secondary schools as: The existing student placement practices to admit them into special day and special boarding secondary schools offer equal opportunities to all eligible students in Ethiopia (*M* = 2.97, SD = 1.02); the existing student placement practices into regular, special day and special boarding secondary schools in Ethiopia consider their abilities, interests and choices (*M* = 3.14, SD = .96); and secondary school implements student placements into language subjects (e.g., Amharic and Afan Oromo) on the basis of their learning abilities, interests and choices (*M* = 3.23, SD = 1.30). Because all individual items mean scores fall within the 2.50 to 3.50 benchmark range on the 5-point Likert scale, they correspond to an interpretation of “sometimes.” Consequently, these findings indicate that the participating teachers identified secondary schools “sometimes” implement tracking related curriculum differentiation as the manners described in most parts of Table 4.7.

Complementing these findings, Table 4.8 details the experiences of the 304 sampled students regarding tracking-related practices in their respective schools.

TABLE 4.8: STUDENT EXPERIENCES ON TRACKING RELATED CURRICULUM DIFFERENTIATION PRACTICES OF SCHOOLS

S. N	Curricular tracking related items	Students	
		M	SD
1	Our government practice of our placements into separate tracks of regular, special day, and special boarding secondary schools are on the bases of our choices, needs and abilities.	2.79	1.26
2	Our school practice of grouping us into *natural science and social science streams* are on the bases of our choices, interests and abilities.	3.69	1.54
3	Our school practice of our placements into *optional language subjects* (e.g., Amharic and Afan Oromo) are according to our *learning* interests, choices and abilities.	2.55	1.50
4	Our school practice of grouping us into *various optional language subjects* (e.g., Amharic and Afan Oromo) are according to the choice and interest of our parents.	2.15	1.45
5	Our school practice of grouping us into *mother tongue, federal language, and foreign language subjects* are on the bases of the interests of local, national and international political authorities.	3.36	1.52
	Average	**2.91**	**1.45**

Table 4.8 presents the descriptive statistics for tracking-related curriculum differentiation practices as experienced by students across and within regular, special day, and special boarding secondary schools. The aggregate mean score of these five items (M=2.91, SD=1.45) falls within the 2.50 to 3.50 benchmark range on the five-point Likert scale, which corresponds to an interpretation of "sometimes." The results of these participating students indicate that tracking-related curriculum differentiation practices such as student placements into school types, natural and social science streams, and language subjects

(i.e., between Amharic and Afan Oromo and/or among mother tongue, federal language, and foreign language) across and within regular, special day, and special boarding secondary schools "sometimes" consider the students learning abilities, interests and choices.

The item-by-item analysis below also presents students' experiences of tracking-related curriculum differentiation practices across and within regular, special day, and special boarding secondary schools. Within this category, the most frequently reported practice was the school practice of grouping students into natural and social science streams based on their choices, interests, and abilities (*M*=3.69, *SD*=1.54). This item mean-score falls within the 3.50 to 4.50 benchmark range on the five-point Likert scale, which corresponds to an interpretation of "often." The finding shows that participating students experienced as secondary schools "often" practice grouping students into natural and social science streams based on their choices, interests, and abilities.

Other moderately rated tracking-related curriculum differentiation practices across and within regular, special day, and special boarding secondary schools framed them as the practices of either student placement practices into school types and/or student placements into various language subjects. Specifically, students experienced tracking related curriculum differentiation practices of secondary schools as: The school practice of grouping students into mother tongue, federal language, and foreign language subjects are on the bases of the interests of local, national and international political authorities (*M* = 3.36, SD = 1.52); the government practice of student placements into separate tracks of regular, special day, and special boarding secondary schools are based on students' choices, needs and abilities (*M* = 2.79, SD = 1.26); and the school practice of student placements into optional language subjects (e.g., Amharic and Afan Oromo) are according to our learning interests, choices and abilities (*M* = 2.55, SD = 1.50). Because all individual items mean scores fall within the 2.50 to 3.50 benchmark ranges on the 5-point Likert scale, they correspond to an interpretation of "sometimes." Consequently, these findings from the participating students indicated that secondary schools "sometimes" implement tracking related curriculum differentiation such as student

placements into mother tongue, federal language, and foreign language subjects, student placements into Amharic and Afan Oromo, and student placements into school types based on their abilities, interests and choices as the manners described in most parts of Table 4.8.

In contrast, the practice of grouping students into optional language subjects based on parental preference received a notably lower rating (M=2.15, SD=1.45). This item mean-score falls within the 1.50 to 2.50 benchmark range on the five-point Likert scale, which corresponds to an interpretation of "rarely." This finding shows that participating students identified as secondary schools "rarely" implement student placements into optional language subjects on the basis of their parents' interests and choices.

Additionally, Table 4.9 displays the perspectives of the 133 sampled teachers regarding standard curriculum document-related curriculum differentiation practices. Table 4.9 presents the descriptive statistics for standard curriculum document-related curriculum differentiation practices within regular, special day, and special boarding secondary schools. The aggregate mean score of these three items (M=3.33, SD=1.05) falls within the 2.50 to 3.50 benchmark range on the five-point Likert scale, which corresponds to an interpretation of "sometimes." The results of these participating teachers indicate that standard curriculum document-related curriculum differentiation practices such as accommodate academic abilities of every student, academic abilities of low- and medium-achievers, academic abilities of exceptional high-achievers through varying contents, instructional processes and assessment strategies of the national or standard curriculum document.

The item-by-item analysis below also presents teachers' witness of standard curriculum document-related curriculum differentiation practices within regular, special day, and special boarding secondary schools. Notably, the data for this category showed a high degree of uniformity, with no single practice emerging as significantly more or less prevalent than the others.

TABLE 4.9: TEACHER PERSPECTIVES ON STANDARD CURRICULUM DOCUMENT RELATED PRACTICES OF CURRICULUM DIFFERENTIATION

S. N	Standard curriculum document related items	Teachers	
		M	**SD**
1	Our school implements the *national curriculum to all students* but accommodates *each student's academic ability* through varying contents, instructional processes and assessment strategies.	3.40	1.09
2	Our school implements the *national curriculum to all students* but accommodates the *exceptional academic abilities of high-achievers* through varying contents, instructional processes and assessment strategies.	3.34	1.05
3	Our school implements the *national curriculum to all students* but accommodates the *academic abilities of low- and medium-achievers* through varying contents, instructional processes and assessment strategies.	3.25	1.02
	Average	**3.33**	**1.05**

Table 4.9 also shows that these moderately rated standard curriculum document-related curriculum differentiation practices within regular, special day, and special boarding secondary schools framed them as the practices of either low- and medium- achievers placement practices into differentiated instruction, every student placement practices into differentiated instruction or high-achievers placement practices into differentiated instruction. Specifically, teachers identified standard curriculum document-related curriculum differentiation practices of secondary schools as: The school implements the national curriculum to all students but accommodates each student's academic ability through varying contents, instructional processes and assessment strategies (M = 3.40, SD = 1.09); the school implements the national curriculum to all students but accommodates the exceptional academic abilities of high-achievers through varying contents, instructional processes and assessment strategies (M = 3.34, SD = 1.05); and the school implements the national curriculum to all students but accommodates the

academic abilities of low- and medium-achievers through varying contents, instructional processes and assessment strategies (M = 3.25, SD = 1.02). Because all individual items mean scores fall within the 2.50 to 3.50 benchmark ranges on the 5-point Likert scale, they correspond to an interpretation of "sometimes." Thus, these findings indicate that the participating teachers identified secondary schools "sometimes" implement standard curriculum document-related curriculum differentiation as the manners described in Table 4.9.

Following this, Table 4.10 details the corresponding results from the sample of 304 secondary school students regarding these document-related practices.

TABLE 4.10: STUDENT EXPERIENCES ON STANDARD CURRICULUM DOCUMENT RELATED PRACTICES OF CURRICULUM DIFFERENTIATION

S. N	Standard Curriculum document related items	Students	
		M	**SD**
1	Our school practice of *a common/national curriculum provision for all of us* meet each of our diverse needs and abilities by varying contents, instructional processes, and assessment in a classroom.	3.10	1.39
2	Our school practice of a *national curriculum to all of us* accommodates only the *exceptional academic abilities of high-achievers* by varying contents, instructional processes, and assessment strategies.	3.17	1.32
3	Our school practice of a *national curriculum to all of us* accommodates only the *academic abilities of low- and medium-achievers* by varying contents, instructional processes and assessment strategies.	2.81	1.33
	Average	**3.03**	**1.35**

Table 4.10 presents the descriptive statistics for student experiences on standard curriculum document-related curriculum differentiation practices across and within regular, special day, and special boarding secondary schools. The aggregate mean score

of these three items (*M*=3.03, *SD*=1.35) falls within the 2.50 to 3.50 benchmark range on the five-point Likert scale, which corresponds to an interpretation of "sometimes." The results of these participating students indicate that standard curriculum document-related curriculum differentiation practices such as accommodate academic abilities of every student, academic abilities of low- and medium-achievers, academic abilities of exceptional high-achievers through varying contents, instructional processes and assessment strategies of the national or standard curriculum document.

The item-by-item analysis below also presents students' experiences on standard curriculum document-related curriculum differentiation practices within regular, special day, and special boarding secondary schools. Notably, the data for this category showed a high degree of uniformity, with no single practice emerging as significantly more or less prevalent than the others. These moderately rated standard curriculum document-related curriculum differentiation practices within regular, special day, and special boarding secondary schools framed them as the practices of either low- and medium- achievers placement practices into differentiated instruction, every student placement practices into differentiated instruction or high-achievers placement practices into differentiated instruction.

Specifically, students experienced standard curriculum document-related curriculum differentiation practices of secondary schools as: The school practice of a common/national curriculum provision for all of us meet each of our diverse needs and abilities by varying contents, instructional processes, and assessment strategies in a classroom (*M* = 3.10, SD = 1.39); the school practice of a national curriculum to all of us accommodates only the exceptional academic abilities of high-achievers by varying contents, instructional processes, and assessment strategies (*M* = 3.17, SD = 1.32); and school practice of a national curriculum to all of us accommodates only the academic abilities of low- and medium-achievers by varying contents, instructional processes and assessment strategies (*M* = 2.81, SD = 1.33). Because all individual items mean scores fall within the 2.50 to 3.50 benchmark ranges on the 5-point Likert scale, they correspond to an interpretation of "sometimes." Thus, these findings indicate that the participating

students experience showed secondary schools "sometimes" implement standard curriculum document-related curriculum differentiation as the manners described in Table 4.10.

4.5. Student Experiences among School Types

The data obtained from the participants about schooling or academic and psychosocial experiences of students in regular, special day and special boarding secondary schools are presented hereunder.

4.5.1. Academic experiences of students among school types

One of the boarding school's FGD participants stated, "Unlike regular schools, the special boarding school gives far more focus to academic learning success than other components of success like social relationships with others." Another student also mentioned the contribution of the teaching and learning environment to their excellence in academic achievement:

> *The special boarding school's environment fosters higher academic achievements among students due to several contributing factors. These include the presence of highly dedicated and specialized teachers, easy access to the Internet for obtaining a variety of learning sources, students with extraordinary abilities that allow for cooperation and mutual assistance, a well-resourced library, functional practical facilities, and a favorable dormitory environment*.

These findings imply that the special boarding school prioritizes academic achievement over other areas of student development. Key indicators of this academic focus include highly qualified teachers, well-resourced facilities (such as libraries, dormitories, and practical learning tools), reliable internet access, and strong peer collaboration. Together, these factors help special boarding school students excel on national secondary school leaving examinations.

One of the students in the special day school also stated that "the only resource available for our academic success is our teachers' quality and their appreciable roles supplemented by well-equipped laboratories, internet access, and the presence of many high achievers who cooperate and help each other to attain our maximum potential." Compared to other regular schools, students claimed that the special day school does not offer any unique academic-related services to meet their demands and interests. They argued that their exceptional academic excellence during national school leaving exams in this special day school (compared to other students' academic achievement in regular schools) is influenced by their ability and teachers' effort to delve into the in-depth learning of academic contents.

These results imply that special day schools share the same primary focus as special boarding schools, with the main difference being that special day schools feature well-equipped laboratories. However, despite being well-resourced and outperforming regular schools on national examinations, neither special day nor special boarding schools offer unique academic services to meet students' diverse abilities, needs, or interests beyond test preparation. Ultimately, these high examination scores remain largely driven by highly able students and teacher effort in delivering core academic content.

While students are enjoying the teaching and learning environment, there appears to be frustrations and stress due to the stiff competition. Students in the special boarding secondary school agreed that the competitive environment differs significantly from that of a regular school. In regular schools, top-performing students can secure a top-three ranked with relatively modest effort. In contrast, students in special schools face stiff competition to maintain high rankings. This heightened competition occurs because special schools bring together top-three ranked achievers from various regular schools. One of the students in the special boarding school stated that "being in the special boarding school, we often feel frustrated due to the intense competition among high-achieving students to secure a position among the top three ranked high achievers in each classroom." Thus, the intense focus on academic excellence creates stiff competition among high achievers. This highlights the need for the provision of career guidance and

counseling that considers both a student's individual abilities and their national examination results to ensure long-term academic success.

Principals, Principal B and Principal C, of both the special day and the special boarding schools reiterated that the presence of quality educational inputs, teachers, and highly able students compared to other government regular schools contributed to almost all students' higher achievement during the Ethiopian secondary school leaving exams. Principal B noted, "The availability of quality resources in the special day school coupled with the students' strong academic background has consistently propelled all of our grade 12 students to achieve top-ranking results in the Ethiopian secondary school leaving examinations over the past five years." Principal C also restated that the special boarding school has better educational inputs, better teacher qualification and preparation, special care for students, and fulltime attention to students' learning compared to regular government schools. Principal C reported, "There are costs incurred by the government, teacher effort, and sacrifices made by parents and students to enhance academic achievements." Hence, the findings from Principal B and Principal C imply that the superior performance of special day and special boarding schools on the Ethiopian Secondary School Leaving Examinations is driven by high-quality resources and academically high-achieving students, rather than specialized service provisions tailored to students' diverse abilities, interests, and preferences.

Teacher C1 further confirmed, "Girls in our school are free from household tasks, and they devote their full attention to their learning. The unique benefits also include each student and teacher having access to a personal computer, as well as to the internet and a digital library. Teacher B1 of the special day school added, "Since all of our students were selected as high achievers, grouping them into special day schools helps them to cooperate and support each other in learning and searching for scholarships."

Teacher A4 also highlighted a contrast between school types, "Academic achievement in the regular school is hindered by disorganized infrastructure, a shortage of instructional materials, under-qualified personnel, and a lack of sponsorship for individual laptops."

The participant further argued that these resource deficiencies are reflected in the lower national examination results of Grade 12 regular school students compared to their counterparts in special schools. This sentiment was echoed by student FGD participants, who asserted that academic performance is influenced by systemic factors beyond their innate abilities. One FGD participant mentioned, "Financial constraints, low teacher motivation, and an unfavorable learning environment - characterized by inadequate laboratories, a lack of practical instruction, large class sizes, and negative peer pressure - as significant barriers to success."

The results from Teacher A4 imply that regular Grade 12 students perform worse on national examinations than their peers in special day and special boarding secondary schools due to lower-quality resources and a student population composed mostly of low- to medium-achievers. This disparity exists because high academic achievers and scarce educational resources are heavily concentrated in special schools rather than regular ones.

4.5.2. Psychosocial experiences of students among school types

Students in the boarding school reported that the school environment is very conducive to teaching and learning. They specifically identified the absence of peer pressure and the presence of a strong disciplinary culture in the boarding school. One of the students stated, "Unlike regular schools, our special boarding school fosters an environment free from peer pressure, abusive behavior, or negative interactions among students. Adhering to the strict school rules is paramount for students to succeed in this environment."

Students in the special boarding schools have also recognized significant improvements in their time management and self-control skills, as they are required to manage various situations independently, without the direct support of parents. One of the students reported that "at our special boarding school, we have improved our time management and self-control skills. Without the pressure of additional tasks imposed by parents, we have gained independence in managing our studies and personal hygiene practices."

Furthermore, students highly appreciate interacting with peers from diverse backgrounds and with varied behaviors.

While the boarding school students did not report feelings of detachment from their parents or stress, the Principal C, Teacher C1, Teacher C2, Teacher C3, and Teacher C4, expressed concern over the emotional detachment students may experience from their families and the presence of some degree of stress among them.

These student responses indicate that regular and special boarding secondary schools offer distinctly different learning environments. Regular schools enroll co-educational day students, whereas the special boarding school exclusively admits female students from diverse sociocultural and regional backgrounds who reside on campus during the school year. Consequently, while parents remain primarily responsible for regular students' psychosocial development, the special boarding school manages this development through strict institutional rules.

This boarding environment safeguard female students from peer pressure, abuse, and negative social interactions, frees them from domestic chores, and teaches self-reliance, time management, personal hygiene, and cultural appreciation. However, it also isolates them from daily interactions with male peers, their families, and their local communities throughout the academic year. Thus, the exchange for achieving academic excellence in the special boarding school appears to be reduced psychosocial exposure to male peers, family life, and their previous local community.

Students in the special day school appear to be stressed because of the excessive focus on academic performance. One of the students in the special day school reported that "the special day school's main emphasis is academic success or full concentration on students' academic progress. Even if some parents attempt to address this burden, such a practice disregards many of our needs and abilities outside of the academic area." Another student asserted that "the school's exclusive emphasis on academic achievements fosters a

demanding and competitive environment among students, leading to psychological stress for many of us."

These results from special day school students imply both similarities and differences between regular and special day secondary school environments. Students in both settings interact daily with their families, co-educational peers, and local communities, avoiding the social isolation associated with special boarding schools. However, because special day schools exclusively admit high academic achievers and prioritize academic excellence, they create a highly competitive atmosphere. This intense focus often causes psychological stress and leads to the neglect of holistic development beyond academics.

4.5.3. Socio-economic experiences of students among school types

Some of the students in the special boarding school are relieved from financial expenses. The Principal C of the school stated that "in our special boarding school, students need not worry about financial constraints, as the institution covers all educational expenses, including the provision of personal computers, internet access, meals, and accommodation. Additionally, students can receive financial aid from sponsors, further alleviating any financial burdens." The Principal C underlined that the special boarding school protects the students from sexual abuse or harassment as they receive proper protection in the school. Teacher C1, Teacher C2, Teacher C3, and Teacher C4 also reported the importance of providing students with dormitories, meals, internet, and other teaching and learning resources, which enables them to focus on academic tasks and excel in their performance. Additionally, Teacher C2 noted that high-achieving students often collaborate in completing assignments, fostering a supportive academic environment.

These results imply that special boarding schools offer greater support to students from disadvantaged backgrounds than regular schools by fully covering the costs of high-quality educational resources. Furthermore, the collaborative environment among high-achieving peers (paired with dedicated teaching) helps drive academic excellence.

Overall, this supportive environment makes special boarding schools more cost-effective than regular schools.

On the other hand, students in both special day and special boarding secondary schools expressed concern over the lack of equitable access. Specifically, special day school students questioned whether these special schools are truly accessible to all eligible high achievers. One of the students in the special day school proposed that "special schools in Ethiopia should prioritize enrolling all eligible high achieving students across Ethiopia, as these institutions utilize valuable public resources to provide enhanced knowledge and skills to only a small fraction of eligible students, leaving the majority excluded." Interestingly another student also argued whether enrolling small number of students in special day school is efficient and equitable utilization of resources. The student inquired that "treating only small numbers of students results in a small number of qualified graduates who are employable and a large number who are not."

One student comprehensively appears to question the usefulness of special day school for the majority of the students who have no access to special day school. The student stated that:

> *Attending this special day school enables us to learn a lot from our peers and better-trained teachers, which can positively impact our academic performance. However, it is concerning that the* school *only admits a limited number of high achievers, leaving out many exceptionally talented students due to various factors, such as a lack of access to school announcements through social media and the school's limited capacity for new students. If this trend persists, it may lead to inequality and inequity among individuals in their future societal roles, with some students being favored over the majority in terms of educational opportunities.*

The results of these special day school students imply that there are many academically gifted students who deserve equal opportunities across Ethiopia. In principle, all high-

achieving students should have equal- and equitable access to special day or special boarding secondary schools which are well equipped with high quality public resources. In practice, however, only a small fraction of them are admitted. This disparity is driven by limited school intake capacities, a lack of information (particularly in rural areas) and socio-political affiliated selection criteria. If excluding the vast majority of eligible students from utilizing these public resources becomes normalized, this persistent inequity could severely undermine the intended outcomes of the broader education system.

Besides, these results imply that admitting only a small number of students to special day schools produces a limited supply of highly qualified graduates hunted by the job market, while many regular school graduates face unemployment. Over time, this disparity risks creating deep labor market inequality and a rigid social hierarchy.

Students in the regular school perceived special day and special boarding secondary schools as being better resourced to provide high-quality education to high-achieving students. One FGD participant noted, “Many regular school students face home challenges that hinder their learning, suggesting that the special school model should be expanded and accessed to all students nationwide to reduce socioeconomic inequality.” This result implies that expanding special schools to serve all students can help address home-based challenges while also reducing societal inequality.

However, another FGD participant argued, “The current placement system benefits only a small fraction of high achievers, effectively excluding many equally capable students in the regular system, a practice they characterized as an inequitable provision of quality education.” These student perspectives align with the observations of Principal A, “Special day and special boarding schools admit a limited number of students while excluding many others who may possess superior abilities, often due to vague application and admission processes and criteria.” A further FGD participant emphasized the long-term systemic impact of this disparity, noting that:

> *If equal access to quality education is not provided for all citizens, a societal hierarchy is formed. Because students from better-resourced special schools typically achieve higher scores on university entrance exams, they gain a significant advantage in future employment and academic careers compared to their peers in the regular school system.*

These results from participants in regular schools imply that the current placement process into special day and special boarding secondary schools reflects an inequitable distribution of quality education. By favoring a small number of high achievers, this practice excludes the vast majority of eligible students from both quality schooling and future labor market opportunities. Consequently, expanding these special secondary schools to all eligible students nationwide is essential to ensuring equitable education and preventing long-term socioeconomic exclusion.

Furthermore, participants from special day and special boarding schools also mentioned the unintended impact of the expansion of special day and special boarding schools on regular school students. Some teachers questioned whether enrolling high-achieving students in special day schools could impact the teaching and learning in regular secondary schools. Teacher B3 inquired "if the focus on special boarding and special day schools would weaken regular secondary schools." Teacher C1 also suggested that "regular secondary schools could benefit from enrolling high-achieving students as they would become role models for other students."

The results from Teachers B3 and Teacher C1 imply that top academic performers from various regular schools are concentrated into a small number of special day and special boarding secondary schools. This practice deprives regular classrooms of peer role models who typically serve as 'student teachers' to support low- and average-achieving peers. Consequently, removing these high achievers undermines the overall quality of education and academic competitiveness in regular schools.

Principal A of the regular school also expressed concerns regarding the segregation of high-achieving students, stating: “If high-achievers are concentrated in separate institutions, regular schools essentially become clusters of medium- and low-achievers. This absence of high-achieving role models significantly undermines the competitiveness of the regular school environment.” Furthermore, Principal A emphasized the pedagogical value of peer influence, noting that the presence of high-performing students fosters the academic growth of their peers through informal support and collaborative learning.

These sentiments were echoed by several staff members, including Teacher A2, Teacher A3, and Teacher A5. Collectively, these participants argued that while the placement of high-achievers into special day and special boarding schools may have theoretical justification, the model faces multifaceted implementation challenges. They concluded that this segregated approach is ultimately not cost-effective within the current context of the Ethiopian secondary education system.

4.5.4. Quantitative results on the experiences of students among school types

Building upon the qualitative insights previously discussed, this sub-section transitions to the quantitative phase of the study. Using questionnaires scales administered to 133 teachers and 304 students, this sub-section presents the experiences of those participants in regular, special day and special boarding secondary school settings. The findings are categorized into academic access, psychosocial development and socio-economic experiences. As detailed in Chapter 3 (methods of data analysis sub-section), teacher and student responses were measured on a 5-point rating scale (1 = Not at all, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always). Below, the results are presented using descriptive statistics, including means and standard deviations.

Specifically, Table 4.11 highlights teacher perspectives on student access within these schools.

TABLE 4.11: TEACHER PERSPECTIVES ON STUDENT ACCESS INTO SECONDARY SCHOOLS

S. N	Items on access related student experiences	Teachers	
		M	**SD**
1	The existing student placements into special day and special boarding secondary schools *give access to their students to learn from peers and better-trained teachers* that positively impact academic performances.	3.58	1.09
2	The existing small number of student placements into special day and special boarding secondary schools lead to the *future to produce a small number of qualified graduates who are employable and a large number who are not*.	3.23	1.07
3	The existing enrolment practices of a few high-achievers into special secondary schools *negatively impact the successes of regular schools* due to regular schools lose of high-achieving role model students.	3.17	1.13
4	The existing enrolment practices of a few high-achievers into special secondary schools exclude many other outstandingly talented students that lead to inequality among students' future career opportunities.	3.47	.92
5	The existing student placements into regular, special day and special boarding secondary schools in Ethiopia lead to *equitable access and efficient utilization of resources among students*.	3.09	1.03
	Average	**3.31**	**1.05**

Table 4.11 presents the descriptive statistics for access-related student experiences in regular, special day, and special boarding secondary schools. The aggregate mean score for these five items (M = 3.31, SD = 1.05) falls within the 2.50 to 3.50 benchmark range on the 5-point Likert scale, which corresponds to an interpretation of 'Sometimes.' This indicates that, according to participating teachers, access-related experiences in regular,

special day, and special boarding secondary schools only ‘sometimes’ reflect the equitable distribution and use of public resources.

The item-by-item analysis below further details access-related student experiences in regular, special day, and special boarding secondary schools. The highest-rated item in this category indicated that placements in special day and special boarding schools provide students with access to peer learning and better-trained teachers, which positively impacts academic performance (M = 3.58, SD = 1.09). Falling within the 3.50 to 4.50 benchmark range on the 5-point Likert scale, this score corresponds to an interpretation of ‘Often.’ Therefore, participating teachers rated that these specialized schools ‘often’ grant students access to the peers and educators necessary to enhance their academic achievement.

Other access-related experiences were moderately rated, with all item means falling within the 2.50 to 3.50 benchmark range on the 5-point Likert scale (interpreted as “Sometimes”). Teachers indicated that current practices only “sometimes” reflect equitable outcomes across the four specific areas evaluated: (1) *Exclusion of Talented Students*: The selective enrollment of a few high achievers into special schools ‘sometimes’ excludes other talented students, leading to future career inequality (M = 3.47, SD = 0.92); (2) *Disparity in Workforce Readiness*: Selective placements ‘sometimes’ produce a small proportion of qualified, employable graduates compared to a much larger pool of under qualified peers (M = 3.23, SD = 1.07); (3) *Negative Impact on Regular Schools*: Removing high-achieving role models from regular schools ‘sometimes’ undermines overall institutional success (M = 3.17, SD = 1.13); and (4) *Equitable Resource Use*: Current placement practices across regular, special day, and special boarding schools ‘sometimes’ lead to equitable access and efficient resource utilization (M = 3.09, SD = 1.03). Overall, these findings demonstrate that participating teachers view access and placement practices in Ethiopian secondary schools as only occasionally aligned with social equity, system-wide academic success, and efficient resource allocation, as the manners described in most parts of Table 4.11.

Following this, Table 4.12 details the corresponding data collected from the student sample (n=304).

TABLE 4. 12: STUDENT EXPERIENCES ON THEIR ACCESS INTO SECONDARY SCHOOLS

S. N	Items on access related student experiences	Students	
		M	**SD**
1	Our government practice on our placements into special day and special boarding secondary schools *give access to us to learn from our peers and better-trained teachers* that positively impact academic performances.	3.20	1.33
2	Our government practice on the placements of a few high-achievers into special day and special boarding secondary schools *exclude many other high-achievers that lead to produce a small number of qualified graduates who are employable and a large number who are not*.	2.67	1.27
3	Our government practice on the enrolment of a few high-achievers into special day and special boarding secondary schools *negatively impact the successes of regular schools* due to regular schools lose of high-achieving role model students.	2.69	1.36
4	Our government admission practice on our placements into special day and special boarding secondary schools *offer equal opportunities to all eligible students* in Ethiopia.	3.13	1.44
5	Our government practice on our placements into regular, special day and special boarding secondary schools in Ethiopia lead to *equitable access and efficient utilization of resources among us*.	3.12	1.24
	Average	**2.96**	**1.33**

Table 4.12 presents the descriptive statistics for access-related experiences of students in regular, special day, and special boarding secondary schools. The aggregate mean score for these five items (M = 2.96, SD = 1.33) falls within the 2.50 to 3.50 benchmark range on the 5-point Likert scale, corresponding to an interpretation of 'Sometimes.' These

student responses indicate that access-related experiences in regular, special day, and special boarding secondary schools only 'sometimes' reflect the equitable distribution and use of public resources.

The item-by-item analysis below details students' access-related experiences in regular, special day and special boarding secondary schools. All items in this category fall within the moderate ("Sometimes") range, ordered by mean score: (1) *Access to Peer Learning and Highly Qualified Teachers*: Special day and special boarding placements 'sometimes' provide access to peers and better-trained teachers, positively impacting academic performance (M = 3.20, SD = 1.33); (2) *Equal Opportunity for Admission*: Admission practices for special schools 'sometimes' offer equal opportunities to all eligible students in Ethiopia (M = 3.13, SD = 1.44); (3) *Equitable Resource Allocation*: Placements across the three school types 'sometimes' lead to equitable access and efficient resource utilization (M = 3.12, SD = 1.24); (4) *Impact on Regular Schools*: Enrolling high achievers in special schools 'sometimes' negatively affects regular schools by draining them of student role models (M = 2.69, SD = 1.36); and (5) *Workforce Disparities*: Concentrating a few high achievers in special schools 'sometimes' excludes other capable peers, resulting in a small pool of employable graduates and a larger group who are not (M = 2.67, SD = 1.27).

Because the mean scores for all individual items fall within the 2.50 to 3.50 benchmark range on the 5-point Likert scale, they correspond to an interpretation of "Sometimes." Thus, responses from participating students indicate that secondary schools only 'sometimes' reflect these access-related experiences, as detailed in Table 4.12.

Furthermore, Table 4.13 details the results from the teacher sample (n=133) concerning broader academic and psychosocial student experiences.

TABLE 4.13: TEACHER PERSPECTIVES ON STUDENT ACADEMIC AND PSYCHOSOCIAL EXPERIENCES

S. N	Items on academic and psychosocial related student experiences	Teachers	
		M	SD
1	Our school *highly-qualified teachers and improved laboratory activities and modern ICT facilities* lead its students to perform exceptionally well on the national school leaving examinations.	3.56	1.18
2	Our school *students' strong/high academic background/ability* leads them to perform exceptional academic excellence on the national school leaving examinations.	3.40	.99
3	Our school *excessive focus on academic excellence and less attention to non-academic areas* lead to competition among students for top academic ranks.	3.20	1.15
4	Our school students experience frustration and stress due to stiff competition among them to secure the top three academic ranks at a classroom or school levels.	3.11	1.14
5	Our school community, including teachers and students incur high costs to promote the academic excellence of students.	3.33	1.12
6	Our school *covers educational expenses of its students*, including the provision of personal computers, internet access, pocket money, and *further alleviates any financial burdens* of students.	3.32	1.28
7	Our school protects its students from abusive behaviours and harassments as the school has strict rules and regulations.	3.62	1.03
8	Our school students *significantly improve time management, personal hygiene and self-control skills* as the school give them chances to manage various situations independently.	3.65	1.09
9	Students in special boarding secondary schools are *free from household tasks, and devote their full attention to learning* compared to students in regular and special day secondary schools.	3.77	1.05
10	Grouping the selected high-achievers into special boarding and special day secondary schools help them to cooperate and support each other in learning and searching for scholarships.	3.78	.96
	Average	**3.47**	**1.10**

Table 4.13 presents the descriptive statistics for teachers' perspective on academic and psychosocial student experiences in regular, special day, and special boarding secondary schools. Across the ten items, the overall mean score was 3.47 (SD = 1.10). Falling within the 2.50–3.50 benchmark range on the 5-point Likert scale, this average corresponds to an interpretation of "Sometimes." This suggests that, from the perspective of participating teachers, these school environments only occasionally reflect students' academic and psychosocial development.

The item-by-item analysis below further details the academic and psychosocial experiences of students in regular, special day, and special boarding secondary schools. The highest-rated items indicated that placing high-achieving students in special boarding and special day schools helps them cooperate and support one another in learning and searching scholarships (M = 3.78, SD = 0.96). Additionally, respondents noted that special boarding students are free from household chores, enabling them to focus fully on their studies (M = 3.77, SD = 1.05), and that independent school environments foster time management, personal hygiene, and self-control (M = 3.65, SD = 1.09). Furthermore, strict school regulations were seen as effective protection against abuse and harassment (M = 3.62, SD = 1.03), while qualified teachers, practical work, and modern ICT facilities were credited with strong national exam performance (M = 3.56, SD = 1.18). Falling within the 3.50–4.50 benchmark range on the 5-point Likert scale, these mean scores correspond to an interpretation of "Often." Overall, the highest-rated benefits include peer cooperation in learning and scholarship applications, freedom from household chores in boarding facilities, enhanced personal independence, protection via strict regulations, and strong exam preparation supported by qualified teachers and modern resources.

Other academic and psychosocial experiences received moderate ratings, with all mean scores falling within the "Sometimes" benchmark range (2.50 to 3.50) on the 5-point Likert scale. Participating teachers indicated that current school environments only occasionally reflect these factors. Namely, respondents moderately agreed that students' strong academic backgrounds lead to high national exam scores (M = 3.40, SD = 0.99)

and that school communities incur high costs to promote academic excellence (*M* = 3.33, SD = 1.12). Additionally, schools were seen as only sometimes alleviating financial burdens by covering expenses like computers, internet, and pocket money (*M* = 3.32, SD = 1.28). Finally, an overemphasis on academics was noted to spur student competition (*M* = 3.20, SD = 1.15), which in turn leads to stress and frustration over classroom rankings (*M* = 3.11, SD = 1.14). Altogether, these results indicate that teachers perceive secondary school placements as supporting these specific academic and psychosocial dimensions only on an occasional basis, as the manners described in most parts of Table 4.13.

Subsequently, Table 4.14 presents the corresponding results from the student sample (n=304).

Table 4.14 presents the descriptive statistics for academic and psychosocial student experiences in regular, special day, and special boarding secondary schools. Across the ten items, the overall mean score was 3.06 (SD = 1.37). Falling within the 2.50–3.50 benchmark range on the 5-point Likert scale, this average corresponds to an interpretation of "Sometimes." This suggests that, from the perspective of participating students, these school environments only occasionally reflect students' academic and psychosocial development.

The item-by-item analysis below details the moderately rated academic and psychosocial experiences of students across regular, special day, and special boarding secondary schools. All item means fall within the 2.50–3.50 benchmark range on the 5-point Likert scale, corresponding to an interpretation of "Sometimes."

Participating student respondents indicated that these school environments only "sometimes" reflect the following:- *Exam performance via ability*: Students' strong academic backgrounds drive high performance on national school-leaving examinations (*M* = 3.38, SD = 1.35). *Freedom from domestic chores:* Special boarding students are free from household tasks, allowing them to focus fully on their studies compared to day school peers (*M* = 3.21, SD = 1.36).

TABLE 4.14: STUDENT EXPERIENCES ON THEIR ACADEMIC AND PSYCHOSOCIAL EXPERIENCES

S. N	Items on academic and psychosocial related student experiences	Students	
		M	**SD**
1	Our school *highly-qualified teachers and improved laboratory activities and modern ICT facilities* lead us to perform exceptionally well on the national school leaving examinations.	3.12	1.33
2	Our *strong/ high academic background/ability* leads us to perform exceptional academic excellence on the national school leaving examinations.	3.38	1.35
3	Our school *excessive focus on academic excellence and less attention to non-academic areas* lead to competition among us for top academic ranks.	3.06	1.36
4	We experience frustration and stress due to stiff competition among us to secure the top three academic ranks at a classroom or school levels.	2.86	1.28
5	Our school community, including teachers and ourselves incur high costs to promote our academic excellence in our school.	3.10	1.40
6	Our school *covers our educational expenses*, including the provision of personal computers, internet access, pocket money, and *further alleviates our financial burdens*.	2.59	1.40
7	Our school *protects us from abusive behaviours and harassments* as the school has strict rules and regulations.	3.15	1.41
8	We significantly improve time management, personal hygiene and self-control skills as our school give us chances to manage various situations independently.	3.00	1.37
9	Students in special boarding secondary schools are *free from household tasks, and devote their full attention to learning* compared to students in regular and special day secondary schools.	3.21	1.36
10	Grouping the selected high-achievers into special boarding and special day secondary schools help to cooperate and support each other in learning and searching for scholarships.	3.12	1.47
	Average	**3.06**	**1.37**

Additionally, Table 4.14 indicates that *safety and protection:* Strict rules and regulations protect students from abuse and harassment (*M* = 3.15, SD = 1.41). *Resources and*

quality instruction: Qualified teachers, upgraded laboratory activities, and modern ICT facilities support strong national exam outcomes (M = 3.12, SD = 1.33). *Peer Collaboration:* Grouping high-achieving students in special day and special boarding schools fosters mutual learning and scholarship support (M = 3.12, SD = 1.47). *High financial costs:* School communities, including teachers and students, incur significant expenses to promote academic excellence (M = 3.10, SD = 1.40). *Competitive pressure:* An excessive focus on academics over non-academic activities triggers competition for top class ranks (M = 3.06, SD = 1.36). *Independent skill development:* Opportunities for independent decision-making improve students' time management, hygiene, and self-control (M = 3.00, SD = 1.37). *Academic stress:* Stiff competition for top three classroom rankings causes student frustration and stress (M = 2.86, SD = 1.36). *School financial coverage:* Schools cover educational expenses (such as personal computers, internet access, and pocket money) to alleviate student financial burdens (M = 2.59, SD = 1.40). Overall, no single item within this category was rated as exceptionally low or high. This indicates a relatively uniform distribution of student experiences across the surveyed items in Table 4.14

4.6. Extents of the Available Types of Curriculum Differentiation Practices in Meeting Student Learning Characteristics among School Types

This subsection employs a one-way ANOVA to determine if significant differences exist in how much the available types of curriculum differentiation (CD) practices meet student learning characteristics across regular (School A), special day (School B) and special boarding (School C) secondary schools. The student sample (n=304) rated these practices on a five-point scale (1 = not at all, 2 = rarely, 3 = sometimes, 4 = often, and 5 = always). The analysis covers the available types of curriculum differentiation practices categorized by school type, academic stream, and optional language subjects (Amharic and/or Afan Oromo). Additionally, it examines differentiated instruction (DI) based on three conceptualizations: accommodation for all students, accommodation for high-achievers, and accommodation for low- and medium-achievers (see Table 4.15).

TABLE 4.75: ONE WAY ANOVA ACROSS THE TYPES OF CURRICULUM DIFFERENTIATION PRACTICES IN MEETING STUDENT LEARNING CHARACTERISTICS AMONG SCHOOL TYPES

Types of CD Practices	Types of Schools	*N*	*M*	*SD*	*Df*	*F*	*Sig.*
Curriculum differentiation by school types	School A	212	2.63	1.25	2	6.24	.002
	School B	38	3.05	1.11			
	School C	54	3.24	1.29			
Curriculum differentiation by streams	School A	212	3.57	1.63	2	3.57	.029
	School B	38	4.29	1.41			
	School C	54	3.72	1.14			
Curriculum differentiation by language subjects	School A	212	2.54	1.43	2	20.78	.000
	School B	38	1.42	1.08			
	School C	54	3.35	1.54			
DI for all students	School A	212	3.12	1.43	2	1.41	.246
	School B	38	2.76	1.34			
	School C	54	3.24	1.23			
DI for high-achievers	School A	212	3.11	1.33	2	1.03	.359
	School B	38	3.24	1.42			
	School C	54	3.39	1.17			
DI for low- and medium-achievers	School A	212	2.90	1.38	2	13.47	.000
	School B	38	1.84	1.00			
	School C	54	3.17	1.02			

As indicated in Table 4.15, a one-way ANOVA was employed to examine specific differences in how much the available types of curriculum differentiation practices meet student learning characteristics across the three school types.

Curriculum Differentiation Practices by School Type: The mean scores for curriculum differentiation practices by school type among School A, School B, and School C ranged from 2.50 to 3.50. These values are interpreted as "Sometimes". These average mean scores in the three school types imply that the curriculum differentiation practice across

regular, special day and special boarding secondary school types (student placements into regular, special day and special boarding secondary schools) 'sometimes' consider the student learning characteristics. However, overall comparisons among these school types remain broad. To determine whether the specific differences in how these placements address student learning characteristics are statistically significant, a one-way ANOVA was conducted.

Then, the statistically significant differences in the mean scores of curriculum differentiation practices by school type in meeting the learning characteristics of students across regular (School A), special day (School B), and special boarding (School C) secondary schools were observed, $F(2,301) = 6.24$, $p<.01$. Using Tukey post hoc comparisons, there was significant mean difference between regular and special boarding secondary schools. Otherwise, there were no statistically significant mean differences between the remaining school types i.e., between regular and special day secondary schools, and between special day and special boarding secondary schools. These results indicate that while placement practices across all three school types fall within the same descriptive range (only "sometimes" meeting student learning characteristics), special boarding schools scored significantly higher than regular secondary schools. In other words, special boarding schools account for student learning needs better than regular schools do. Conversely, placement practices between regular and special day schools, as well as between special day and special boarding schools, showed no significant difference.

Curriculum Differentiation Practices by Stream: The mean scores for curriculum differentiation practices by stream (student placement into natural and social sciences) among School A, School B, and School C ranged from 3.50 to 4.50. These values are interpreted as "Often". These average mean scores within the three school types imply that curriculum differentiation practice between natural science and social science streams (student placements into natural science and social science streams) within the three school types 'often' consider or meet the student learning characteristics. However, the comparison of such curriculum differentiation practices by stream in meeting the

student learning characteristics among the three school types are more general. To examine the specific differences in how placement practices into Natural Science and Social Science streams meet student learning characteristics, a series of one-way ANOVAs was conducted.

Statistically significant differences were found among the three school types regarding how stream-level curriculum differentiation practices met student learning characteristics: regular (School A), special day (School B), and special boarding (School C), $F(2,301) = 3.57$, $p<.05$. Using Tukey post hoc comparisons, there was significant mean difference between regular and special day secondary schools. Otherwise, there were no statistically significant mean differences between the remaining school types i.e., between regular and special boarding secondary schools, and between special day and special boarding secondary schools. These results implied that though the mean scores of student placement practices into natural science and social science streams across school types found in the same range (i.e., placement practices by stream across school types 'often' meet student learning characteristics), only the mean score of student placement practices into streams within the special day secondary school was more significantly higher in meeting the learning characteristics of students than the mean score of student placement practices into streams within the regular secondary school. Specifically, placement into the Natural Science stream at the special day school met student learning needs significantly better than placements into either the Natural Science or Social Science streams at the regular school. Conversely, placement practices by stream showed no significant differences when comparing regular schools to special boarding schools, or special day schools to special boarding schools.

Curriculum Differentiation Practices by Language Subjects: The mean scores for curriculum differentiation practices by language subjects (student placement into Amharic and Afan Oromo) within School A (regular school), and School C (special boarding school) ranged from 2.50 to 3.50 which are interpreted as "Sometimes" whereas student placement into Amharic and Afan Oromo within School B (special day school)

which is interpreted as “Rarely”. These mean scores imply that language subject placement practices (Amharic and Afan Oromo) “sometimes” account for student learning characteristics in regular and special boarding secondary schools, but only “rarely” do so in special day schools. However, these descriptive comparisons remain broad. To evaluate the specific statistical differences among the three school types regarding how language subject placements meet student learning needs, a one-way ANOVAs was conducted.

Then, the statistically significant differences in the mean scores of curriculum differentiation practices by language subjects in meeting the learning characteristics of students across regular (School A), special day (School B), and special boarding (School C) secondary schools were observed, $F(2,301) = 20.78$, $p<.01$. Using Tukey post hoc comparisons, there were significant mean differences among all school types i.e., between regular and special day secondary schools, between regular and special boarding secondary schools, and between special boarding and special day secondary schools. These results indicate that language subject placement practices (Amharic and Afan Oromo) at special boarding schools met student learning characteristics significantly better than those at both special day and regular secondary schools. Additionally, regular secondary schools scored significantly higher in accommodating these learning characteristics than special day schools.

Curriculum Differentiation Practices by Differentiated Instruction (DI) for All Students with Diverse Needs and Abilities: The mean scores for curriculum differentiation practices by DI for all students with diverse needs and abilities within School A, School B, and School C ranged from 2.50 to 3.50. These values are interpreted as “Sometimes”. These average mean scores within the three school types imply that curriculum differentiation practice by DI for all students with diverse needs and abilities within the three school types ‘sometimes’ consider or meet the student learning characteristics. However, these descriptive comparisons offer only a broad overview. To evaluate specific statistical differences among the three school types in how DI practices for all

students with diverse needs and abilities meet their learning characteristics, a one-way ANOVA was conducted.

Then, the statistically significant differences in the mean scores of curriculum differentiation practices by DI for all students with diverse needs and abilities in meeting their learning characteristics across regular (School A), special day (School B), and special boarding (School C) secondary schools were not observed, F (2,301) = 1.41, $p>.05$. These results indicate that student placement practices using differentiated instruction (DI) for all diverse learners fall within the same "sometimes" range across all three school types. In other words, no single school type performed significantly better than another in meeting student learning characteristics through DI. Across regular, special day, and special boarding secondary schools, DI practices addressed all diverse student needs to a similar, moderate extent.

Curriculum Differentiation Practices by Differentiated Instruction for High-Achievers: The mean scores for curriculum differentiation practices by DI for high-achievers within School A, School B, and School C ranged from 2.50 to 3.50. These values are interpreted as "Sometimes". These average mean scores within the three school types imply that curriculum differentiation practice by DI for high-achievers within the three school types 'sometimes' consider or meet their learning characteristics. However, the comparison of such curriculum differentiation practices by DI for high-achievers in meeting their learning characteristics among these three school types are more general. So, the specific comparisons about the extent of differences among mean scores of the three school types that existed on the practices by DI for high-achievers in meeting their learning characteristics were carried out as follow by employing one way ANOVA.

Differentiated instruction (DI) practices for high-achievers showed no statistically significant differences across regular (School A), special day (School B), and special boarding (School C) secondary schools, F (2,301) = 1.03, $p>.05$. These results implied that the mean scores of practices by DI for high-achievers across school types found in the same 'Sometimes' range. In other words, there is no one better school type than the

other school type which was considering or meeting the student learning characteristics through DI for high-achievers. The practice of curriculum differentiation by DI for high-achievers within regular, special day, and special boarding secondary schools sometimes meet the learning characteristics of students in similar manner.

Curriculum Differentiation Practices by Differentiated Instruction for Low- and Medium-Achievers: Mean scores for differentiated instruction (DI) practices targeting low- and medium-achievers ranged from 2.50 to 3.50 in School A (regular) and School C (special boarding), which corresponds to "sometimes." In contrast, DI practices for these same achievement groups in School B (special day) fall into the "rarely" range. These mean scores indicate that differentiated instruction (DI) practices for low- and medium-achievers "sometimes" meet student learning characteristics in regular and special boarding schools, but "rarely" do so in special day schools. However, these descriptive comparisons offer only a broad overview. To evaluate specific statistical differences among the three school types regarding how DI for low- and medium-achievers addresses student learning needs, a one-way ANOVAs was conducted.

A one-way ANOVA revealed statistically significant differences across regular (School A), special day (School B), and special boarding (School C) secondary schools in how differentiated instruction (DI) for low- and medium-achievers met student learning needs, $F(2, 301) = 13.47$, $p < .01$. Tukey post hoc comparisons showed that both regular and special boarding schools differed significantly from the special day school. However, no statistically significant difference was found between regular and special boarding secondary schools. These results indicate that differentiated instruction (DI) practices for low- and medium-achievers met student learning needs significantly better in special boarding and regular secondary schools than in special day secondary schools. However, there was no statistically significant difference between special boarding and regular secondary schools; both implemented DI practices for low- and medium-achievers to a similar extent, falling within the "sometimes" range.

In general, the key findings based on the one-way ANOVA analysis of student responses (n = 304) across regular (School A), special day (School B), and special boarding (School C) secondary schools are presented as follow. *Curriculum Differentiation by School Type ($F = 6.24$, $p < .01$)*: There was a statistically significant difference between regular and special boarding secondary schools. Special boarding schools met student learning characteristics significantly better through school placement than regular schools. No statistically significant differences were found between regular and special day secondary schools, or between special day and special boarding secondary schools. *Curriculum Differentiation by Academic Stream ($F = 3.57$, $p < .05$)*: Student placement into natural science vs. social science streams in special day school met student learning needs significantly better than stream placements in regular schools. No significant differences were observed when comparing regular schools to special boarding schools, or special day schools to special boarding schools.

Curriculum Differentiation by Language Subjects ($F = 20.78$, $p < .01$): Significant differences were found across all school type pairings. Special boarding school performed significantly better at meeting learning characteristics through language subject choices (Amharic/Afan Oromo) than both regular and special day schools. Regular school scored significantly higher than special day school, where language differentiation rarely occurs. *Differentiated Instruction (DI) for All Learners ($F = 1.41$, $p > .05$)*: No statistically significant difference was found among the three school types. All school types implement DI for all diverse learners to a similar, moderate extent. *Differentiated Instruction (DI) for High-Achievers ($F = 1.03$, $p > .05$)*: No statistically significant difference was found among the school types. DI targeted at high-achieving students is practiced in a similar, moderate manner regardless of school type. *Differentiated Instruction (DI) for Low- and Medium-Achievers ($F = 13.47$, $p < .01$)*: Both regular and special boarding secondary schools implemented DI for low- and medium-achieving students significantly better than special day schools. There was no significant difference between regular and special boarding schools for this subgroup.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary of the study major findings aligned with their discussions in relation to the specific research objectives, theoretical frameworks, and existing literature. Particularly, following the summary of the study major findings, the discussion sub-section focuses on the following key areas: National policy intentions on curriculum differentiation, principal and teacher conceptualizations on curriculum differentiation, types of curriculum differentiation practices, academic and psychosocial experiences of students, alignments between policy, conceptualizations and practices, the statuses of curriculum differentiation practices in meeting student learning characteristics, and the status of realizing equity and excellence in special secondary schools. Moreover, the conclusions are drawn and recommendations are suggested in this chapter. Before proceeding to the discussion sub-section, summarizing the study major finings is crucial as presented hereunder.

5.1. Summary of the Study Major Findings

The comprehensive summaries of major findings of the study regarding curriculum differentiation in Ethiopian secondary education are presented hereunder.

i. Intentions of National Policy Documents

The study identifies a clear conceptual misalignment among Ethiopia's national education policy documents regarding curriculum differentiation. The *2023 Education and Training Policy* and the *2020 General Education Curriculum Framework*: These two documents intend curriculum differentiation structurally through tracking. They emphasize language subject choices (mother tongue, federal, foreign), academic streams (Natural vs. Social Sciences for Grades 11–12), technical/vocational fields of study, and specialized school types (special schools for gifted/talented students and persons with disabilities). However, they lack clarity on admission mechanics and whether placements should occur within or between schools. The *2012 Guideline for Curriculum*

Differentiation and IEP: In contrast, this guideline rejects structural tracking or separate schooling as valid curriculum differentiation. It intends curriculum differentiation as inclusive adaptation within a single core national curriculum by modifying four components: content, instructional processes, learning assessments, and learning environments.

ii. Principals' and Teachers' Conceptualizations of Curriculum Differentiation

Qualitative and quantitative data from principals and teachers revealed significant conceptual ambiguity and varied interpretations. Principals' and teachers' conceptualization of curriculum differentiation are emerged into five themes as: *A Gifted Program:* Programs tailored to small groups of naturally gifted students vs. an inclusive framework recognizing multiple intelligences in every student. *Student Placement:* Structural tracking into academic streams, fields of study, or specialized school types. *Special Curriculum Documents:* Separate curricula designed for specific achievement groups (remedial/supportive for low/medium achievers or advanced for high achievers). *Identification and Accommodation:* Institutional processes to identify exceptional giftedness and talent early to prevent underachievement. *Curricular Planning and Delivery Strategy:* Conflating curriculum differentiation with routine administrative processes like subject time allocation, nation-wide curriculum revision, or textbook design. *Quantitative Consensus*: Quantitative scale data of teachers' aggregate mean scores showed widespread uncertainty among teachers regarding whether curriculum differentiation meant structural tracking, separate curriculum documents, or routine teaching design.

iii. Types of Curriculum Differentiation Practices across School Types

The study examined available types of curriculum differentiation practices across regular (School A), special day (School B), and special boarding (School C) secondary schools are summarized below as shown in Table 5.1.

TABLE 5.1: SUMMARY OF AVAILABLE TYPES OF CURRICULUM DIFFERENTIATION PRACTICES ACROSS SCHOOL TYPES

School Type	Stream Differentiation	Subject/Language Differentiation	Differentiated Instruction (DI) and Environment
Special Boarding (School C)	Natural vs. Social Sciences in Grades 11–12.	Elective Amharic and Afan Oromo subject groupings.	Partial environmental adaptation (ICT rooms, private study spaces, library); standard classroom delivery.
Special Day (School B)	No stream choice; all students are directed exclusively into the Natural Science stream.	No language or subject choices.	Strong reliance on teacher-led content enrichment (deepening standard content) and modified learning environments (ICT labs).
Regular (School A)	Natural vs. Social Sciences in Grades 11–12 (dictated heavily by school quotas, e.g., 70% Natural / 30% Social).	Limited elective language subject placement (Amharic vs. Afan Oromo).	Minimal to no actual implementation of differentiated instruction; resource facilities are underutilized or non-functional.

iv. Student Experiences among School Types

Academic and Psychosocial Experiences

Special Boarding and Special Day Schools: Students achieve superior results on national exams. However, this is driven by high-quality resources (laboratories, internet, digital libraries), highly qualified teachers (master's/PhD level), and high student baseline ability but not specialized, individualized curricula. *Regular Schools*: Suffer from disorganized

infrastructure, material shortages, and lower teacher motivation, leading to lower exam scores. *Special Boarding School*: Offers a safe environment free from domestic chores and negative peer pressure, improving independence and time management. However, educators raised concerns over emotional detachment from families and stress from intense peer competition. *Special Day School*: High focus on academic performance causes notable psychological stress due to fierce rank competition.

Socio-Economic and Equity Concerns

Special schools fully/partially cover financial burdens, benefiting enrolled students. However, participants strongly criticized the placement system for being inequitable. Concentrating valuable public resources on a tiny fraction of high achievers excludes many equally capable students. Removing high achievers from regular schools also deprives average students of valuable peer role models, reducing overall academic competitiveness in regular schools.

v. Extent to Which Types of Curriculum Differentiation Practices Meet Student Learning Characteristics

Statistical comparisons (n = 304 students) using one way ANOVA revealed key differences across school types. *Curriculum Differentiation by School Type ($F = 6.24$, $p < .01$)*: Special boarding schools scored significantly higher than regular schools in considering student learning characteristics during placement. *Curriculum Differentiation by Stream ($F = 3.57$, $p < .05$)*: Stream placement in Special Day schools met student learning characteristics significantly better than stream placement in regular schools. *Curriculum Differentiation by Language Subjects ($F = 20.78$, $p < .01$)*: Special boarding schools performed significantly better than both regular and special day schools in accommodating student needs through language subject choices. *Differentiated Instruction (DI) for All/ High Achievers ($F(2,301) = 1.41$, $p>.05$/ $F(2,301) = 1.03$, $p>.05$)*: No statistically significant differences were found among the three school types; all three only "sometimes" implemented DI for general or high-achieving students in similar, moderate ways. *DI for Low- and Medium-Achievers ($F = 13.47$, $p < .01$)*: Both

regular and special boarding schools implemented DI for low- and medium-achievers significantly better than special day schools (which "rarely" practiced it due to their exclusive intake of high achievers).

5.2. Discussions

The major findings presented here-in-above offer empirical evidences of the status, policies, teachers' and principals' understandings, and lived experiences of curriculum differentiation within Ethiopian secondary education. Synthesizing these findings through the conceptual and theoretical lenses reveals fundamental structural tension: an ongoing struggle between systemic tracking and inclusive classroom differentiation, an unaligned policy landscape, and a stark divide between special and regular school environments. The following sub-sections are discussions based on empirical findings analyzed directly through the previous empirical literature, and theoretical and conceptual frameworks.

5.2.1. National policy intentions on curriculum differentiation

Existing literature establishes that curriculum differentiation operates across multiple administrative levels, ranging from macro-level structural curriculum differentiation between school types (LeTendre et al., 2003; Perry & Lamb, 2017) to micro-level classroom differentiated instruction (Reis & Renzulli, 2015; Tomlinson, 2014). Scholars like Eikeland and Ohna (2022) categorize these practices across four distinct levels: individual, group, classroom, and system. In Ethiopia, however, the current findings demonstrate a severe internal contradiction within national policy documents.

On the one hand, the 2023 Education and Training Policy (ETP) and the 2020 General Education Curriculum Framework (GECF) intend curriculum differentiation almost exclusively as structural tracking. Although the ETP and the GECF outline national intentions for curriculum differentiation within general education, they lack clear linkages to classroom-level differentiation practices or further empirical research. While these newer national documents frame curriculum differentiation primarily through student placement - such as stream differentiation between Natural and Social Sciences for Grades 11–12, language choices (Amharic vs. Afan Oromo), and selective placement

into special boarding or special day schools for high achievers and gifted students - they align strictly with track-based literature (Hallinan & Kubitschek, 1999; LeTendre et al., 2003; Perry & Lamb, 2017; Smyth, 2017; Terwel, 2005). This intention also maps directly onto Type 1 (School Type), Type 3 (Stream), and Type 4 (Ability Grouping) of LeTendre et al.'s (2003) typology of curriculum differentiation.

On the other hand, the 2012 Ethiopian Guideline for Curriculum Differentiation and IEP explicitly rejects structural tracking and separate schooling as valid forms of curriculum differentiation. Instead, it intends curriculum differentiation strictly as inclusive classroom practices of differentiated instruction, such as differentiating contents, instructional processes, learning environments, and assessment strategies within a common national curriculum (Eikeland & Ohna, 2022; Ireland et al., 2020; Reis & Renzulli, 2015). While the 2023 ETP and the 2020 GECF national policy documents advocate structural tracking, the 2012 Guideline insists on inclusive classroom diversity. This misalignment creates systemic confusion. Because this 2012 Guideline has not been updated to align with the 2020 GECF or the 2023 ETP, educational leaders and teachers are left without a coherent national vision. In other words, this failure to update the older guideline perpetuates a structural-versus-inclusive policy divide that confuses local educational leadership and practice.

5.2.2. Principal and teacher conceptualizations on curriculum differentiation

Gardner's (1983) Theory of Multiple Intelligences (MI) and Vygotsky's (1978) Zone of Proximal Development (ZPD) contend that effective curriculum differentiation requires a deep understanding of student profiles, readiness, and interests. However, the present study empirical findings indicate that principals and teachers possess fragmented conceptualizations of curriculum differentiation, which fall into five core themes: The gifted program perspective, the structural placement perspective, the special curriculum perspective, the identification and accommodation perspective, and the logistical/teaching strategy perspective.

The gifted program perspective views curriculum differentiation strictly as a segregated program tailored exclusively for high-ability learners, rather than an inclusive framework for all students that are contrasting Gardner's (1983) assertion that every student possesses a dynamic MI profile. The structural placement perspective equates curriculum differentiation strictly with sorting students into tracks, streams, or specialized school types (LeTendre et al., 2003). The special curriculum perspective assumes curriculum differentiation requires distinct, pre-packaged national curricula tailored to high-, medium-, and low-achieving tiers. This aligns with traditional literature conceptualizing curriculum differentiation as assigning student groups to distinct tracks and learning settings with distinct curricular offerings (Ayalon, 2006; LeTendre et al., 2003; Ware et al., 2011). The identification and accommodation perspective treats curriculum differentiation as an institutional triage system designed to identify exceptional talent early to prevent underachievement. While this perspective aligns with Gardner's (1983) MI theoretical framework regarding individual strengths, accommodating these strengths effectively requires an inclusive classroom-level micro-differentiations rather than institutional tracking (Reis & Renzulli, 2015; Tomlinson, 2014). Finally, the logistical/teaching strategy perspective conflates curriculum differentiation with administrative scheduling, general textbook revisions, or nationwide curriculum reform. This view is absent from scholarly literature and represents a fundamental misunderstanding of the concept of curriculum differentiation.

Beyond qualitative findings, quantitative survey data confirm that teachers experience significant ambiguity regarding whether placing students in separate schools constitutes genuine curriculum differentiation or merely structural sorting. Furthermore, practitioners regularly conflate general academic achievement (high exam marks) with innate giftedness, lacking standardized diagnostic tools to evaluate multifaceted intelligences. This operational misunderstanding connects to broader theoretical perspectives on tracking curriculum differentiation identified by Terwel (2005): genetic and sociological perspectives. Historically, the genetic perspective of curriculum differentiation relies on early academic outcomes to place students into rigid track hierarchies that dictate career

paths and socioeconomic outcomes. The sociological perspective views curriculum differentiation as reserving specific tracks based on cultural, national, or familial backgrounds, institutionalizing categorical boundaries. Here, curriculum differentiation serves to maintain boundaries between elite and non-elite groups as resources are monopolized by the elite (Terwel, 2005). Ethiopian practitioners may similarly misinterpret curriculum differentiation as an institutional mechanism designed to preserve elite privileges rather than accommodate individual learning profiles.

Ultimately, Ethiopian secondary school principals and teachers hold narrow, fragmented conceptualizations. While international literature frames Differentiated Instruction (DI) as an inclusive classroom-level practice driven by student readiness, interests, and learning profiles (Tomlinson & Imbeau, 2010) to nurture MI across all learners (Gardner, 1983), local practice frequently defaults to macro-level structural curriculum differentiation or tracking (LeTendre et al., 2003) or administrative logistics (e.g., subject time allotments and national curriculum development). Measurable uncertainty persists regarding whether special programs for a select few align with the core mandate of a common, inclusive curriculum adapted through curriculum components - content, instruction, assessment, and learning environments (Eikeland & Ohna, 2022). Whereas global literature frames curriculum differentiation as a tool to reduce educational inequality (Ayalon, 2006), local reliance on segregated placements (special schools and streams) risks exacerbating inequality by excluding non-admitted students from high-prestige career pathways.

5.2.3. Types of curriculum differentiation practices

The LeTendre et al.'s (2003) six-part typology of curriculum differentiation and Tomlinson's (2014) Differentiated Instruction (DI) model provide key frameworks for examining Ethiopian secondary education practices across regular, special day, and special boarding schools.

In the global literature, Type 1 curriculum differentiation involves structural variation where distinct school types offer specialized curricula tailored toward specific post-

secondary careers, such as Germany's multi-tiered system or South Korea's specialized science high schools (Bol & Van de Werfhorst, 2013; Choi & Hon, 2009). However, findings reveal that Type 1 curriculum differentiation in Ethiopia is an illusion driven by resource allocation rather than specialized curricular design. Special boarding, special day, and regular secondary schools all deliver the identical standardized national curriculum. Grades 9 and 10 students across all school types take identical core subjects, and Grades 11 and 12 students complete national examinations based on identical syllabi. The primary variance lies not in *what* is taught (content differentiation), but in *where* and *with what resources* it is taught. Special boarding and special day secondary schools possess functional laboratories, high-speed internet, well-stocked libraries, and master's- or PhD-level teachers, whereas regular schools suffer from severe infrastructure constraints.

Choi and Hon (2009) highlight South Korea's specialized boarding secondary schools for mathematically gifted students as a benchmark for Type 1 curriculum differentiation. South Korea employs three distinct curricular models: The accelerated model, the holistic/innovative model, and the enrichment model. The accelerated model compresses a three-year mathematics curriculum into one year to facilitate rapid university entrance. The holistic/innovative model also merges core academic studies with specialized non-academic courses in leadership, performing arts, and athletics. The enrichment model integrates national standards with advanced research coursework in STEM fields. By contrast, Ethiopian special schools fail to implement any of these structural models. They do not offer accelerated pathways, research-level enrichment, or specialized artistic/vocational tracks. High national examination pass rates in Ethiopian special schools are driven primarily by selective baseline student admission and superior physical infrastructure rather than specialized curricular pathways. Without structural adjustments to the curriculum itself, these schools fail to nurture advanced giftedness beyond standard textbook expectations.

Regarding other curriculum differentiation types in LeTendre et al.'s (2003) typology, Type 2 curriculum differentiation by fields of study remains largely unimplemented in

practice although the 2020 GECF envisioned multiple vocational and technical pathways. Type 3 curriculum differentiation by stream placements are heavily restricted especially in Grades 11–12 stream placements. In regular schools, placements are often dictated by rigid administrative quotas (e.g., forcing a 70% natural science to 30% social science enrollment split) rather than student aptitude or interest (mandated by the Ministry of Education in February 2023). Within special day schools, choice is eliminated entirely because all students are funneled exclusively into the natural science stream, shutting down social science and humanities options.

While federal and regional leaders claim special schools provide specialized STEM education that regular schools cannot offer, significant curricular uniformity persists. Although special day school teachers sometimes introduce informal classroom-level content depth and leverage advanced laboratories - aligning with Differentiated Instruction (DI) frameworks (Reis & Renzulli, 2015; Tomlinson, 2014) - the formal curriculum remains identical. Furthermore, because special school students represent the highest achievers from Grade 8 regional examinations, their high Grade 12 examination scores are frequently misattributed solely to institutional quality rather than their initial academic strength. Future research must empirically isolate the true effect of special school attendance relative to student baseline capability.

In summary, secondary curriculum differentiation in Ethiopia operates primarily as structural tracking via rigid streaming (LeTendre et al., 2003) and environmental/resource variation rather than pedagogical differentiation. While enriched environments support learning within Vygotsky's (1978) Zone of Proximal Development (ZPD), quantitative findings confirm that pedagogical, classroom-level DI occurs only sometimes, leaving individual student learning profiles and interests systematically unaddressed (Eikeland & Ohna, 2022).

5.2.4. Academic and psychosocial experiences of students

Global research typically identifies family deprivation, homesickness, and peer abuse as the primary psychological stressors associated with special boarding school environments (Ahmed et al., 2019; Bass, 2014; Behaghel et al., 2017; Demirel & Kurt, 2021; Kaltsas & Gkaintartzi, 2021; Laiser & Makewa, 2016). This present study findings from special boarding and special day secondary schools in Ethiopian context present a striking departure from these global patterns by identifying hyper-competitive academic pressure as the primary psychological stressor. In Ethiopian special boarding and special day secondary schools, distress is driven not by family deprivation, but by the concentration of high achievers into single classrooms. This environment fosters intense anxiety regarding class rank and a pervasive fear of failure.

Conversely, contradicting global studies that report high rates of bullying and abuse in boarding schools (Friborg et al., 2020; Pfeiffer et al., 2016), female students in special boarding schools in Ethiopian context reported high levels of safety, autonomy, and protection from external harassment and domestic chores. This protective environment is largely attributable to strict regulatory frameworks and gender-segregated facility structures. The structured, gender-segregated special boarding environment offers female students a secure space to focus entirely on their secondary education. Nevertheless, placing high achievers in these specialized settings incurs both psychological and sociological costs. Sociologically, concentrating high achievers in elite facilities deprives regular schools of vital peer role models and creates curricular segregation - a process that Terwel (2005) establishes a sociological hierarchy wherein regular schools become clusters of medium- and low-achievers.

Furthermore, empirical findings point to a failure to maintain Vygotsky's (1978) ZPD for high achievers. ANOVA results revealed no significant difference among school types in practicing differentiated instruction for high-performing learners. Because high achievers in special schools are taught the standard national curriculum without adjustments to

academic difficulty, instruction often falls below their potential development zone, causing boredom rather than cognitive stretch (Vygotsky, 1978).

Quantitative data highlight a notable disparity between teachers and students regarding the perceived benefits and drawbacks of these special school environments: Perceived institutional advantages, psychosocial stress vs. safety, and societal and equity concerns. Regarding perceived institutional advantages, teachers generally contend that placement in special schools "often" grants students access to high-performing peers, qualified staff, advanced laboratories, and modern ICT, which they believe enhances academic outcomes and independence. Students view these advantages more conservatively, stating they only "sometimes" occur. In relation to psychosocial stress vs. safety, while both teacher and student groups acknowledge that high prior academic talent correlates with national exam excellence, they agree that the intense focus on academic results foster unhealthy competition and psychological stress. However, female boarding students consistently confirm feeling safer and protected from peer harassment - a finding that diverges from broader boarding school literature (Demirel & Kurt, 2021; Pfeiffer et al., 2016) due to the strict regulatory frameworks and female-only structures in these settings. Within societal and equity concerns, both teachers and students acknowledge that these tracking practices "sometimes" yield negative broader outcomes, including labor market disparities after graduation (benefiting a limited group of graduates), institutional undermining of regular schools, and long-term socioeconomic inequality (Terwel, 2005).

In summary, the excellence-equity debate in Ethiopia reveals that while special day and special boarding secondary schools achieve superior exam results through resource concentration and high-ability peer groups, this excellence is accompanied by significant costs, such as intense student psychological stress, undifferentiated instructional experience that fails to stretch high achievers' ZPD (Vygotsky, 1978), and systemic sociological risks that exacerbate educational inequality across the broader school system (Terwel, 2005).

5.2.5. Alignments between policy, conceptualization and practice

A fundamental misalignment exists across Ethiopia's core educational policy documents. Because the 2012 Guideline has not been updated to align with the revised 2020 GECF or 2023 ETP, a severe structural-versus-inclusive divide persists. This stagnation leaves school principals and teachers without a coherent theoretical foundation or operational vision, forcing national policy to oscillate between structural tracking and inclusive instruction. Consequently, the conflicting national policy documents lead to three distinct conceptualizations among practitioners: The inclusive perspective (classroom DI; MoE, 2012), the tracking perspective (structural curriculum differentiation; ETP, 2023; GECF, 2020) and the reform perspective (misattributing differentiation to general curriculum planning). The inclusive perspective aligned with the 2012 Guideline, viewing curriculum differentiation as catering to unique student talents or multiple intelligences at an inclusive classroom level. The tracking perspective aligned with the 2023 ETP and the 2020 GECF, viewing curriculum differentiation as structural tracking into school types, streams, and subject groups. The reform perspective is misinterpreting curriculum differentiation as general curriculum planning and development, a view lacking foundation in policy or literature. Furthermore, while policy and practitioners theoretically distinguish between giftedness and high academic achievement, actual practice conflates the two. Because schools lack formal diagnostic mechanisms to identify multi-faceted intelligence, practitioners routinely default to equating high examination marks with innate giftedness.

Despite the varied curriculum differentiation types proposed in the 2020 GECF, secondary education in Ethiopia remains heavily standardized. Grades 9 and 10 students follow a uniform curriculum with minimal language electives, while Grades 11 and 12 students are restricted to a binary choice between Natural and Social Science streams. The specialized fields of study proposed in the 2020 GECF remain largely unimplemented. Moreover, while special schools are intended to serve gifted students and those with disabilities (ETP, 2023), regular, special day, and special boarding schools all execute the exact same national curriculum. Regular schools rely solely on stream

tracking; special boarding schools add classroom DI through superior inputs and digital access; and special day schools focus on environmental resources (e.g., laboratories) while often eliminating stream choice by forcing all students into the Natural Science stream.

Ultimately, the expansion of special day and special boarding secondary schools in Ethiopian context has ignited a debate between two competing educational philosophies i.e., the excellence perspective and the equity perspective. Proponents argue that special schools offer the resources high achievers need to fulfill their potential. Critics (e.g., Terwel, 2005) contend that these schools foster social categorization and curricular segregation. By removing high-achieving peer role models from regular classrooms, the system risks creating "clusters of medium- and low-achievers," rewarding examination performance over genuine giftedness and compromising inclusive principles. As Fullan (2007) notes, a lack of teacher consultation during policy formulation has generated a profound disconnect between central policy intentions and classroom realities.

5.2.6. Statuses of curriculum differentiation practices in meeting student learning characteristics

The Vygotsky's (1978) ZPD serves as a foundational framework for curriculum differentiation. To optimize cognitive development, learning tasks must be targeted within the dynamic space between a student's actual performance level and their potential level under guidance (Polly et al., 2018; Reigeluth et al., 2017). Tasks below a student's ZPD induce boredom, whereas tasks positioned too far above it trigger frustration. The statistical findings of this study demonstrate a critical systemic breakdown in applying ZPD principles across Ethiopian secondary schools.

One-way ANOVA analysis reveals no statistically significant difference among regular, special day, and special boarding schools in delivering DI for high achievers, $F(2,301) = 1.03$, $p > .05$. Because special schools implement the standard national curriculum without structural acceleration or advanced enrichment, top-performing students are continuously assigned materials they have already mastered. Placed in environments

offering identical coursework to regular schools, high achievers are systematically trapped below their potential development zone.

Conversely, the one-way ANOVA indicates statistically significant differences regarding DI for low- and medium-performing students ($F = 13.47$, $p < .01$). Special day schools scored lowest in this measure, "rarely" practicing DI for lower-performing students due to admissions policies that exclusively select high-achieving intakes. Regular schools, by default, shoulder the primary burden of accommodating struggling students; however, their efforts remain severely constrained by non-functional or underutilized facilities and a lack of diagnostic mechanisms to scaffold learning within these students' ZPDs. While special boarding schools outperform regular schools in meeting student characteristics through physical placement, learning resources, and language options, these advantages stem from institutional inputs rather than a differentiated curriculum. The one way ANOVA results show that curriculum differentiation practices across all three school types only "sometimes" accommodate student learning profiles, primarily due to the uniform national curriculum.

Despite this standardization, specific institutional trends emerge across special boarding, special day and regular secondary schools. Special boarding school significantly outperform regular school in addressing student readiness, interests, and learning profiles, particularly through superior digital resources, private study environments, and expanded language options (Amharic and Afan Oromo). Special day school demonstrate relatively more effective differentiation within the Natural Science stream than regular schools, but make no recorded attempt to differentiate via language electives or support lower-achieving learners. Regular secondary school proves significantly more effective than special boarding and special day secondary schools in tailoring classroom instruction for low- and medium-achieving students, despite resource deficiencies. These findings suggest that placing high achievers into resource-rich special schools while delivering an undifferentiated national curriculum fails to meet their advanced potential. As Vygotsky (1978) emphasized, development requires assessing actual versus potential capability to target tasks directly within the ZPD (Polly et al., 2018). Effective differentiation requires

teachers to identify students' potential abilities to introduce new knowledge and skills (Reigeluth et al., 2017; Zuckerman, 2003).

International benchmarks, such as South Korea's specialized high schools, demonstrate that placing highly able students in separate settings must be accompanied by distinct structural curricula - such as accelerated or enriched pathways - that regular schools cannot offer (Choi & Hon, 2009). Without curricular differentiation, resource-rich special placements of fail to stretch high achievers' ZPDs (Vygotsky, 1978; Zuckerman, 2003) and risk functioning primarily as institutional mechanisms for resource monopolization and social boundary maintenance (Terwel, 2005).

Finally, Ethiopian secondary education operates in direct contradiction to Gardner's (1983) Theory of MI. While MI theory asserts that human intelligence spans nine autonomous domains - requiring multi-faceted assessment beyond traditional linguistic and mathematical metrics – Ethiopia's special school admission system relies strictly on Grade 8 regional examination scores. By screening exclusively for basic verbal and logical-mathematical performance, the system enforces a narrow definition of intelligence. Alternative domains - such as visual-spatial, bodily-kinesthetic, musical, interpersonal, and naturalistic talents - are systematically ignored during student selection and streaming, reducing the complex spectrum of human capability to a single numerical score.

5.2.7. The status of realizing equity and excellence in special secondary schools

Synthesizing the empirical findings through conceptual and theoretical frameworks perspective demonstrates that Ethiopia's secondary education system faces a critical three-fold dilemma: Policy realignment, re-conceptualization of special schools, and capacity building for universal DI. Regarding policy realignment, the Ethiopian Ministry of Education must reconcile the fundamental gap between the 2023 ETP and the 2012 Curriculum Differentiation Guideline. A unified national policy framework is mandatory to define structural tracking (macro-differentiation) and classroom-level DI (micro-

differentiation) as complementary elements of a single cohesive system rather than contradictory mandates (Gardner, 1983; LeTendre et al., 2003; Vygotsky, 1978).

If Ethiopia maintains special boarding and special day secondary schools, it is crucial to re-conceptualize these institutions and they must move beyond serving as elite facilities delivering a standard national curriculum. Following international benchmarks such as South Korea, they should implement genuine Type 1 curriculum differentiation, offering accelerated pacing, advanced STEM research coursework, and multi-dimensional talent development (Choi & Hon, 2009). To fulfill Kaplan's (2004) foundational goal of ensuring continuous learning for all students, regular secondary schools must be equipped with functional laboratories, digital infrastructure, and comprehensive teacher training in DI. Capacity building for regular schools is vital to achieving both equity and excellence, ensuring that every student across all school types is appropriately challenged within their ZPDs (Vygotsky, 1978).

In the academic literature, Terwel (2005) outlines three dominant sociological perspectives on differentiation: the genetic, sociological, and cultural perspectives. The empirical findings of this study directly reflect the tensions highlighted by the sociological perspective, which posits that tracking systems create institutional boundaries that reinforce social stratification by concentrating high-quality resources within elite tracks while depriving non-elite groups (Terwel, 2005). The findings provide striking confirmation of this critique across three dimensions: Resource hoarding, deprived peer effects, and selection bias vs. school impact.

Regarding resource hoarding, special boarding and special day secondary schools in Ethiopia absorb a disproportionate share of public educational expenditure. High-performing students benefit from master's-educated staff, modern digital infrastructure, and functional science laboratories, while regular schools suffer from severe underfunding and broken equipment. Moreover, extracting top-performing Grade 8 students out of regular secondary schools deprived it from peer effects because such process removes critical academic role models and peer mentors from regular school. As

Terwel (2005) states, this practice reduces regular schools to "clusters of medium- and low-achievers," lowering overall academic expectations for the majority of students. Finally, the selection bias vs. school impact confirm that the exceptionally high national examination results of special boarding and special day secondary schools are largely attributable to selection bias, as these institutions recruit students who are already top regional exam scorers. Attributing their high pass rates solely to institutional quality masks the underlying inequity of resource distribution.

In summary, while Ayalon (2006) emphasizes that the primary goal of curriculum differentiation should be reducing educational inequality, the current special school model in Ethiopian context mirrors Terwel's (2005) sociological critique. Concentrating public resources on a tiny fraction of high exam scorers creates "curricular segregation," converting regular secondary schools into low-expectation tracks and heightening systemic educational inequity. In other words, by rewarding examination performance over multi-faceted talent and prioritizing resource concentration over inclusive differentiated instruction, the system risks exacerbating the very educational and socioeconomic inequalities it seeks to resolve.

6.3. Conclusions

Based on empirical findings of the study, the major conclusions align with the specific objectives of the study have been drawn as follows.

There are policy contradiction and systemic misalignment because a critical structural-versus-inclusive curriculum differentiation policy divide exists within Ethiopia's national education policy documents. The 2020 General Education Curriculum Framework (GECF) and the 2023 Education and Training Policy (ETP) emphasize macro-level structural curriculum differentiation or tracking (e.g., between special schools and between academic stream), whereas the 2012 Guideline for Curriculum Differentiation exclusively emphasizes inclusive, classroom-level Differentiated Instruction (DI). Since the 2012 Guideline has not been updated, educational leaders and teachers lack a coherent, unified national vision.

Secondary school principals and teachers also hold fragmented and narrow, incomplete conceptualizations of curriculum differentiation. Practitioners frequently conflate curriculum differentiation with administrative logistics (e.g., curriculum change, textbook revisions or scheduling), view it strictly as a segregated program for the gifted, or equate high regional examination scores with innate multi-faceted giftedness without diagnostic tools. Furthermore, special boarding, special day, and regular secondary schools all deliver the identical standardized national curriculum. The superior exam results of special schools are driven by selection bias (admitting top regional exam scorers) and concentrated physical/human resources (laboratories, internet, highly qualified staff) that indicate the illusion of curricular differentiation within and between special boarding, special day, and regular secondary schools rather than genuine curricular differentiation, acceleration, or enrichment.

Because high achievers in special secondary schools follow the same standardized curriculum as regular secondary schools without academic acceleration or research depth, instruction fails to challenge their cognitive potential, trapping them below their ZPD (fails to target their ZDP). Conversely, special day schools rarely differentiate for low- and medium-achieving learners due to selective admissions of high achievers, while regular schools bear the primary burden of supporting struggling students despite lacking proper infrastructure.

The selection and placement mechanisms in Ethiopian secondary school contexts operate in direct conflict with Gardner's Theory of Multiple Intelligences; there is narrow measure of intelligence. Admitting students into special day and special boarding secondary schools exclusively through Grade 8 regional exams relies solely on basic linguistic and logical-mathematical metrics, systematically ignoring alternative talents (e.g., spatial, artistic, vocational, or interpersonal intelligences).

Finally, there is also socioeconomic equity vs. excellence dilemma in special day and special boarding secondary school practices. The current special school environment exacerbates educational inequality. By providing public resources for elite facilities and

extracting academic role models from regular schools, the system reduces regular secondary schools to “clusters of medium- and low-achievers.” While female students in special boarding schools experience high physical safety and freedom from domestic burdens, students overall suffer intense academic pressure and anxiety regarding classroom and school ranks.

6.4. Recommendations

On the bases of the study findings, the following actions are recommended:

i. Policy level for Ethiopian Ministry of Education and Regional Education Bureaus

There is a need to reconcile and update national policy documents by harmonizing the outdated 2012 Guideline for Curriculum Differentiation with the 2020 GECF and 2023 ETP. The Ethiopian Ministry of Education and Regional Education Bureaus have to develop an updated, cohesive national policy framework that explicitly defines system level curriculum differentiation (structural options) and micro-level curriculum differentiation (an inclusive classroom DI) as complementary components of an inclusive system. A unified framework is needed to bridge the gap between structural tracking and inclusive classroom instruction (differentiated instruction) to prevent practitioner confusion. This would provide practitioners with a unified definition of curriculum differentiation that encompasses both system-level tracking and classroom-level differentiation.

Moreover, Ministry of Education in collaboration with Regional Education Bureaus should restructure special schools with genuine curricular models. If special schools are to be maintained, transition them from identical national curriculum toward established Type 1 international models. Special schools should be restructured to implement distinct pathways such as accelerated model which compresses core content for rapid advancement; enrichment model that integrates the national standard curriculum with advanced STEM research and university-level coursework; and holistic/innovative model which combines academics with specialized leadership, arts, and athletics. In general, special day and special boarding schools should move beyond the common national

curriculum. Following models like South Korea, these schools should introduce acceleration systems to allow faster completion of core subjects, and advanced or innovative courses in STEM, leadership, and the arts that are not available in regular schools.

In addition, the Ethiopian Ministry of Education and Regional Education Bureaus should establish multi-faceted talent identification tools because there is a shift away from multi-faceted talent identification and relying solely on Grade 8 examination scores. They should develop standardized, multi-dimensional diagnostic instruments to assess a broader spectrum of intelligences (e.g., spatial, musical, kinesthetic) in line with Multiple Intelligences theory. Finally, the Ministry of Education should implement flexible streaming policies. They should re-evaluate rigid administrative enrollment quotas (e.g., mandatory 70/30 Natural Science vs. Social Science streams). In other words, rather than admitting students based solely on high exam scores, the system must establish formal mechanisms to distinguish between "high academic achievement" and "giftedness/talent." The education sector at national and regional state levels in collaboration with secondary schools should develop clear, academic and non-academic criteria for identifying gifted and talented students to ensure that "giftedness" is not treated interchangeably with "high test scores." This ensures that special day and special boarding schools serve their intended purpose of nurturing unique potential abilities of students.

ii. School and Administrative Level for Principals and Local Leadership

Principals and local leadership should balance resource allocation to protect regular schools; mitigate the negative peer and resource effects on regular secondary schools; and ensure regular schools receive adequate investment in functional laboratories, digital infrastructure, and learning materials so regular secondary schools do not become low-expectation facilities. In other words, to maintain equity, the schools in collaboration with the Ethiopian Ministry of Education and Regional Education Bureaus must ensure that the expansion of special day and special boarding schools does not "drain" resources (role models) from regular secondary schools. They should address the "exclusion"

concerns by ensuring regular secondary schools receive similar educational inputs (digital libraries, better-trained teachers) as special boarding and special day secondary schools to maintain competitiveness and student motivation.

Special day and special boarding should also address students' psychosocial and academic pressure through establishing structured psychological support systems, counseling services, and stress-management programs in special day and boarding schools to alleviate hyper-competitive academic anxiety and fear of failure. Besides, the girls' special boarding school and its administrative system should sustain protective environments for female students though maintaining and strengthening the strict safety, regulatory frameworks, and gender-segregated facilities in the schools that currently protect female students from external harassment and domestic burdens. In short, to mitigate the "psychological cost" of elite education, special secondary schools must implement strategies to reduce hyper-competition and academic stress, and balance academic rigor with psychosocial wellbeing to support the "whole child."

iii. Instructional and Classroom Level for Teacher Development and Practice

There should be comprehensive professional development on DI for teachers in special day, special boarding and regular secondary schools. Schools in collaboration with local and national-level stakeholders should design nationwide continuous professional development modules for secondary school teachers focusing on classroom-level inclusive curriculum differentiation - specifically differentiating contents, learning processes, environments, and assessments based on student readiness and interests. In addition, teachers should be trained to scaffold instruction within students' ZPD. Capacity building trainings for teachers in regular and special schools help them design tiered tasks that stretch high achievers beyond standard textbook material while scaffolding foundational skills for low- and medium-achieving students.

Regular, special day and special boarding secondary schools should implement targeted training for teachers and school leaders to move beyond conceptualizing curriculum differentiation as mere "time allotment" or "curriculum reform." Training should focus on practical strategies for various types of curriculum differentiation, including

differentiating instruction within inclusive, mixed-ability classrooms. In summary, teachers should be trained to identify and target the Zone of Proximal Development for high achievers. Providing tasks that students have already mastered (below ZPD) fails to promote true development, even in resource-rich environments. Shift from teaching a common curriculum to providing tasks that match students' potential ability levels, ensuring high achievers are truly challenged rather than repeating mastered content.

iv. Recommendations for Future Research

Researchers in the same field should conduct further longitudinal empirical studies comparing the academic progress of high-achieving students in special schools against equally capable peers attending regular schools to measure the true added value of special school placements and the isolated institutional impact vs. selection bias. They may also conduct further study to evaluate post-secondary outcomes, long-term career pathways, university transition rates, and labor market outcomes for graduates across special boarding, special day, and regular secondary schools.

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APPENDICES

Appendix A: Document Review Guide for Curriculum Differentiation

I) National Policy and School Documents Review Checklist for Specific Types of CD

S. N	Types or Components of CD	National policy and school level documents that indicated conceptualizations of CD								Remark
		01		02		03		04		
A	**Typology of CD**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**	
1	CD by ***school types*** is indicated in its goal/ intention/ content.									
2	CD by ***stream*** is indicated in its goal/ intention/ content.									
3	CD by ***courses of study*** is indicated in its goal/ intention/ content.									
4	CD by ***ability grouping into subjects*** is indicated in its goal/ intention/ content.									
5	CD by ***geographic location*** is indicated in its goal, intention or content.									
B	Differentiation of curriculum components									
I	***Content*** differentiation is indicated in its goal/ intention/ content.									
Ii	***Instructional process*** is indicated in its goal/ intention/ content.									
Iii	***Assessment strategy*** differentiation is indicated in its goal/ intention/ content.									
Iv	***Learning environment*** differentiation is indicated in its goal/ intention/ content.									
V	***Teacher*** differentiation is indicated in its goal/ intention/ content.									
Vi	***Other types of CD*** (if any) are indicated in its goal/ intention/ content.									

*Note***:** The national level education policy documents and the school level documents are coded as follows: The FDRE education and training policy (2023a), coded as 01; the FDRE general education curriculum framework (2020), coded as 02; the guideline for

curriculum differentiation and IEP (2012), coded as 03; and the student grade rosters from grades 9 to 12, coded as 04.

Appendix B: Interview Guide for Secondary School Principals

Part 1: Background Information about Participants

1.1. School Name: _____ Zone/city admin/sub-city: _____
1.2. School type: (a) Regular school (b) Special day school (c) Special boarding school
1.3. Sex: (1) Female (2) Male
1.4. Qualification and specialization: _____
1.5. Current position: (a) Principal (b) Vice Principal
1.6. Work experience (in years): (1) in principal/vice position ___ and (2) other: ____

Part 2: Guiding Questions for Interview with (Vice) Principals

2.1. How do secondary schools implement the national curriculum to meet academic abilities of: (a) high-, medium-, and low-achievers, (b) gifted and talented students, and (c) students with disabilities? Is CD appropriate to groups of students or individuals? Why?

2.2. What is CD for you? Who are eligible to CD? Why? Which types of CD do you know and implement to help students learn on the bases of their choices, needs and abilities?

2.3. How do secondary schools implement student placements into (a) separate tracks between regular, special day, and special boarding secondary schools, (b) natural science and social science streams in your school (c) optional language subjects in your school e.g., Amharic and Afan Oromo, and (d) mother tongue, federal language and foreign language subjects in your school? Why?

2.4. How do you help teachers to match the common national curriculum, (a) contents (b) instructional strategies (c) learning environments/classrooms, and (d) assessments, with the diverse learning profiles, readiness, interests of all students in a classroom? Which official documents guide your school to differentiate the curriculum?

2.5. Are student placements into separate tracks between secondary schools or in your school practiced based on: (a) students' diverse learning profiles, readiness, and interests, and (b) the interests of parents, and local, national and international authorities? How?

2.6. What are your experiences of student admissions into regular, special day and special boarding secondary schools in relation to: (a) offering equal opportunities to all eligible students in the country, (b) providing equitable access in future career (c) utilizing resources efficiently among students, and (d) providing students with laboratory activities, modern ICT facilities, highly able peers and better-trained teachers so as to help all students perform well in national school leaving examinations?

2.7. How does your school promote academic/non-academic areas of development of students? Which educational, psychosocial, and financial benefits and limitations are experienced by students in your school?

Thank You for Your Cooperation!!

Appendix C: Interview Guide for Secondary School Teachers

Part 1: Background Information of Teacher Participants

1.1. School name: _____ Zone/city admin/sub-city: _____
1.2. School type: (a) Regular school (b) Special day school (c) Special boarding school
1.3. Sex: (1) Female (2) Male
1.4. Qualification and specialization: _____
1.5. Grade level you are teaching: (a) 9^{th} (b) 10^{th} (c) 11^{th} (d) 12^{th}
1.6. Experience (in years): Teaching _____ and other (if any, specify): _____

Part 2: Guiding Questions for Interview with Teachers

2.1. How do secondary schools implement the national curriculum to meet academic abilities of: (a) high-, medium-, and low-achievers, (b) gifted and talented students, and (c) students with disabilities? Is CD appropriate to groups of students or individuals? Why?

2.2. What is CD for you? Who are eligible to CD? Why? Which types of CD do you know and implement to help students learn on the bases of their choices, needs and abilities?

2.3. How do secondary schools implement student placements into (a) separate tracks between regular, special day, and special boarding secondary schools, (b) natural science and social science streams in your school (c) optional language subjects in your school e.g., Amharic and Afan Oromo, and (d) mother tongue, federal language and foreign language subjects in your school? Why?

2.4. How do you match the common national curriculum, (a) contents (b) instructional strategies (c) learning environments/classrooms, and (d) assessments, with the diverse learning profiles, readiness, interests of all students in a classroom? Which official documents guide you to differentiate the curriculum?

2.5. Are student placements into separate tracks between secondary schools or in your school practiced based on: (a) students' diverse learning profiles, readiness, and interests, and (b) the interests of parents, and local, national and international authorities? How?

2.6. What are your experiences of student admissions into regular, special day and special boarding secondary schools in relation to: (a) offering equal opportunities to all eligible students in the country, (b) providing equitable access in future career (c) utilizing resources efficiently among students, and (d) providing students with laboratory activities, modern ICT facilities,

highly able peers and better-trained teachers so as to help all students perform well in national school leaving examinations?

2.7. How does your school promote academic/non-academic areas of development of students? Which educational, psychosocial, and financial benefits and limitations are experienced by students in your school?

Thank You for Your Cooperation!!

Appendix D: FGD Guide for Secondary School Students

Part 1: Demographic Information Student Participants

1.1. School Name: _____ Zone/city admin/sub-city: _____
1.2. School type: (a) Regular school (b) Special day school (c) Special boarding school
1.3. Number of participants in a group discussion: (1) Male: _____ Female: _____ Total: _____
(2) grade 9: _____ grade 10: _____ grade 11: _____ and grade 12: _____

Part 2: Guiding Questions for FGD with Students

2.1. How do secondary schools implement the national curriculum to meet academic abilities of: (a) high-, medium-, and low-achievers, (b) gifted and talented students, and (c) students with disabilities?

2.2. How do secondary schools implement student placements into (a) separate tracks between regular, special day, and special boarding secondary schools, (b) natural science and social science streams (c) optional language subjects e.g., Amharic and Afan Oromo, and (d) mother tongue, federal language and foreign language subjects? Why?

2.3. 1.5. How do your teachers match the common national curriculum (a) contents (b) instructional strategies (c) learning environments/classrooms, and (d) assessments with the diverse learning profiles, readiness, interests of all students in a classroom?

2.4. Are student placements into separate tracks between secondary schools or within a school implemented based on: (a) students' diverse learning profiles, readiness, and interests, and (b) the interests of parents, and local, national and international authorities? How?

2.5. What are your experiences of student admissions into regular, special day and special boarding secondary schools related to: (a) offering equal opportunities to all eligible students in the country, (b) providing equitable access in future career (c) utilizing resources efficiently among students, and (d) providing students with laboratory activities, modern ICT facilities,

highly able peers and better-trained teachers so as to help all students perform well in national school leaving examinations?

2.6. How does your school promote academic/ non-academic areas of development? Which educational, psychosocial, and financial benefits and limitations are you experiencing in your school?

Thank you again for your cooperation!

Appendix E: Observation Checklist for Physical Resources from Grades 9 to 12

Observation Checklist: Practices of CD in Regular, Special Day and Boarding Schools

S. No.	Items on the Types of CD Practices	Availability		
		Yes	No	Description
A	**School type differentiation**			
1	Regular school type physical environment			
2	Special boarding school type physical environment			
3	Special day school type physical environment			
B	**Stream differentiation**			
4	Allocated classrooms for social science stream students			
5	Allocated classrooms for natural science stream students			
C	**Subject differentiation**			
6	Allocated classrooms for students placed into *Amharic subject*			
7	Allocated classrooms for students placed into *Afan Oromo subject*			
8	Allocated mixed classrooms for students placed into *Amharic and Afan Oromo subjects*			
D	**Learning environment/classroom differentiation**			
9	Availability of *classrooms* that can meet diverse needs			
10	Availability of *laboratory* that can meet diverse needs			

11	Availability of *ICT rooms* that can meet diverse needs			
12	Availability *library* that can meet diverse needs			
13	Availability of *private spaces* for independent study			
14	Availability of *mini media* that can meet diverse needs			
15	Availability of *field trip sites* that can meet diverse needs			

Appendix F: Questionnaire for Secondary School Teachers

General Instruction: Dear teacher, the purpose of this questionnaire is to collect quantitative data "for the partial fulfillment of PhD study" about curriculum differentiation (CD) conceptualizations and practices that may contribute to meet the diverse needs and abilities of secondary school students in Ethiopia. The findings of this study are believed to be useful for secondary school students, teachers and educational leaders to be aware of the different types of CD appropriate to accommodate the diverse learning characteristics of students. Therefore, the information and responses obtained from you are very important for this study to meet its purpose. The study can be successfully accomplished only when you complete all the items genuinely. The information and responses obtained from you will be kept confidential and used only for the purpose of the study.

Thank you in advance for your cooperation!

Part I: Demographic Information

You are kindly requested to indicate your responses by encircling your appropriate choice or writing your appropriate information in the blank spaces provided below.

1. School Name:_____

2. Sex: (1) Male (2) Female

3. Education level: (1) Bachelor (2) Masters (3) PhD (4) Other (Specify): _____

4. The subject you are teaching: _____

5. Year of experiences in teaching: _____ and other experience (if any): _____

6. Age (in years):_____

7. Type of disability that you have (if any):_____

Part II: Teacher Conceptualizations of Curriculum Differentiation (CD)

The following items are related to your conceptualizations of CD that may or may not exist in your secondary school. Please rate your level of agreement by putting "√" mark in front of each item under the response category given in the table below; where, 1=Strongly Disagree, 2=Disagree, 3=Not sure, 4=Agree & 5=Strongly agree.

S.N	Items on conceptualizations of curriculum differentiation (CD)	Response Category				
1	**Curricular Tracking Related Conceptualizations**	**1**	**2**	**3**	**4**	**5**
1.1	CD is a system level practice of grouping *gifted and talented students* into separate tracks, like regular, special day, and special boarding schools on the bases of their choices, needs and abilities.					
1.2	CD is a system level practice of grouping *students with disabilities* into separate tracks, like regular, special day, and special boarding schools on the bases of their choices, needs and abilities.					
1.3	CD is a school practice of grouping its students into *natural science and social science streams* according to their choices, interests and abilities.					
1.4	CD is a school practice of student placements into *various fields of studies* according to their choices, interests and abilities.					
1.5	CD is a school practice of grouping its students into *various optional academic or school subjects* according to their choices, interests and abilities.					
1.6	CD is a school practice of grouping its students into *various optional language subjects* according to the choice and interest of parents.					
1.7	CD is a school practice of grouping its students into *mother tongues,*					

	federal languages, and foreign languages to fulfill the interests of local, national and international political authorities.					
2	**Curriculum Document Related Conceptualizations**	**1**	**2**	**3**	**4**	**5**
2.1	CD is a school practice to provide *different curricula for various groups of gifted students* due to a common curriculum unable to meet their exceptional abilities.					
2.2	CD is a school practice to provide *a common curriculum for all students* by varying contents, instructions, assessment strategies, and learning environments to foster inclusive classroom practices and meet diverse abilities.					
2.3	CD is a school practice to help *low-, medium-, and high-academic achievers* reach their full academic potential by attaining high-achievement status.					
2.4	CD is a program document that serves *small groups of gifted and talented students* based on their unique abilities because only small numbers of students possess giftedness and talents.					
2.5	CD is an individualized program document that serves *every student in a classroom* based on his/her unique abilities because every student has one or more unique talent and/or giftedness.					
2.6	CD is a process of *identifying various types of exceptional giftedness and talents* of students and *matching them with curriculum/curricula*.					
3	**Curricular Development and Teaching Related Conceptualizations**	**1**	**2**	**3**	**4**	**5**
3.1	CD is applying *different weight/time allotment to different subjects*, and is *planning and teaching strategies* to operate an education system.					
3.2	CD is about *curriculum change when one government of a country replaced by another* so as to respond to a common needs of a society.					
3.3	CD is the *development of a country's national curriculum* by professionals ranging from curriculum framework through teacher's guides and syllabuses to textbooks for students' learning.					

3.4	CD is *feeding the selected high-achieving students in special schools* and *providing them with quality resources* to teach a national curriculum.					

Part III: Practices and Student Experiences in Secondary Schools

The following items are related to curricular practices and students' academic and psychosocial experiences in secondary schools. Please rate your level of agreement by putting "√" mark in front of each statement under the response category given in the table below; where, 1 = Not at all, 2 = Rarely, 3 = Sometimes, 4 = Often and 5 = Always.

S. N	Items on Practices and Student Experiences in Secondary Schools	Response Category				
1	**Curricular Tracking Related Practices**	**1**	**2**	**3**	**4**	**5**
1.1	The existing student placement practices to admit them into special day and special boarding secondary schools *offer equal opportunities to all eligible students* in Ethiopia.					
1.2	The existing student placement practices into regular, special day and special boarding secondary schools in Ethiopia *consider their abilities and choices*.					
1.3	Our school implements student placements into *natural science and social science streams on the basis of their learning abilities, interests and choices*.					
1.4	Our school implements student placements into *language subjects (e.g., Amharic and Afan Oromo) on the basis of their learning abilities, interests and choices*.					
2	**Standard Curriculum Document Related Practices**	**1**	**2**	**3**	**4**	**5**
2.1	Our school implements the *national curriculum to all students* but accommodates *each student's academic ability* through varying contents, instructional processes and assessment strategies.					
2.2	Our school implements the *national curriculum to all students* but					

	accommodates the *exceptional academic abilities of high-achievers* through varying contents, instructional processes and assessment strategies.					
2.3	Our school implements the *national curriculum to all students* but accommodates the *academic abilities of low- and medium-achievers* through varying contents, instructional processes and assessment strategies.					
3	**Access Related Experiences**	**1**	**2**	**3**	**4**	**5**
3.1	The existing student placements into regular, special day and special boarding secondary schools in Ethiopia lead to *equitable access and efficient utilization of resources among students*.					
3.2	The existing student placements into special day and special boarding secondary schools *give access to their students to learn from peers and better-trained teachers* that positively impact academic performances.					
3.3	The existing small number of student placements into special day and special boarding secondary schools lead to the *future to produce a small number of qualified graduates who are employable and a large number who are not*.					
3.4	The existing enrolment practices of a few high-achievers into special secondary schools *exclude many other outstandingly talented students that lead to inequality among students' future career opportunities*.					
3.5	The existing enrolment practices of a few high-achievers into special secondary schools *negatively impact the successes of regular schools* due to regular schools lose of high-achieving role model students.					
4	**Other Academic and Psychosocial Related Student Experiences**	**1**	**2**	**3**	**4**	**5**
4.1	Our school *highly-qualified teachers and improved laboratory activities and modern ICT facilities* lead its students to perform exceptionally well on the national school leaving examinations.					
4.2	Our school *students' strong/high academic background/ability* leads them to perform exceptional academic excellence on the national school leaving examinations.					

4.3	Our school *excessive focus on academic excellence and less attention to non-academic areas* lead to competition among students for top academic ranks.					
4.4	Our school students *experience frustration and stress due to stiff competition among them to secure the top three academic ranks* at a classroom or school levels.					
4.5	Our school community, including *teachers and students incur high costs to promote the academic excellence* of students in our school.					
4.6	Our school *covers educational expenses of its students*, including the provision of personal computers, internet access, pocket money, and *further alleviates any financial burdens* of students.					
4.7	Our school *protects its students from abusive behaviors and harassments* as the school has strict rules and regulations.					
4.8	Our school students *significantly improve time management, personal hygiene and self-control skills* as the school give them chances to manage various situations independently.					
4.9	Students in special boarding secondary schools are *free from household tasks, and devote their full attention to learning* compared to students in regular and special day secondary schools.					
4.10	Grouping *the selected high-achievers into special boarding and special day secondary schools help them to cooperate and support each other* in learning and searching for scholarships.					

Thank You for Your Cooperation!!

Appendix G: Questionnaire for Secondary School Students

General Instruction: Dear student, the purpose of this questionnaire is to collect quantitative data "for the partial fulfillment of PhD study" about curriculum differentiation (CD) practices that may contribute to meet the diverse needs and abilities of secondary school students in Ethiopia. The findings of this study are believed to be useful for secondary school students, teachers and educational leaders to be aware of the different types of CD practices appropriate to accommodate the diverse learning characteristics of students. Therefore, the information and responses obtained from you are very important for this study to meet its purpose. Besides, the study can be successfully accomplished only when you complete all the items genuinely. The information and responses obtained from you will be kept confidential and used only for the purpose of this study.

Thank you in advance for your cooperation!

Part I: Demographic Information

You are kindly requested to indicate your response by encircling the choice of your appropriate answer or writing the necessary information in the blank spaces provided below.

1. School Name:_____

2. Sex: (1) Male (2) Female

3. Grade level: (1) Grade 9 (2) Grade 10 (3) Grade 11 (4) Grade 12

4. Your stream: (1) Natural science (2) Social science (3) Undecided grade 10

5. Age (in years):_____

6. Type of disability that you have (if any):_____

Part II: Practices of Curriculum Differentiation (CD)

The following items are related to the practices of CD that exist in your secondary school. Please rate the extent of your level of agreement by putting "√" mark in front of each item under the response category given in the table below; where, 1 = Not at all, 2 = Rarely, 3 = Sometimes, 4 = Often and 5 = Always.

S.N	**Items on practices of curriculum differentiation (CD)**	**Response Category**				
1	**Curricular Tracking Related Practices**	**1**	**2**	**3**	**4**	**5**
1.1	Our government practice of our placements into separate tracks of regular, special day, and special boarding secondary schools are on the bases of our choices, needs and abilities.					
1.2.	Our school practice of grouping us into *natural science and social science streams* are on the bases of our choices, interests and abilities.					
1.3	Our school practice of our placements into *optional language subjects* (e.g., Amharic and Afan Oromo) are according to our *learning* interests, choices and abilities.					
1.4	Our school practice of grouping us into *various optional language subjects* (e.g., Amharic and Afan Oromo) are according to the choice and interest of our parents.					
1.5	Our school practice of grouping us into *mother tongue, federal language, and foreign language subjects* are on the bases of the interests of local, national and international political authorities.					
2	**Standard Curriculum Document Related Practices**	**1**	**2**	**3**	**4**	**5**

2.1	Our school practice of *a common/national curriculum provision for all of us* meet each of our diverse needs and abilities by varying contents, instructional processes, and assessment strategies in a classroom.					
2.2	Our school practice of a *national curriculum to all of us* accommodates only the *exceptional academic abilities of high-achievers* by varying contents, instructional processes, and assessment strategies.					
2.3	Our school practice of a *national curriculum to all of us* accommodates only the *academic abilities of low- and medium-achievers* by varying contents, instructional processes and assessment strategies.					

Part III: Student Experiences in Secondary Schools

The following items are related to academic and psychosocial experiences of secondary school students. Please rate the level of your agreement by putting "√" mark in front of each statement under the response category given below; where, 1 = Not at all, 2 = Rarely, 3 = Sometimes, 4 = Often and 5 = Always.

S. N	**Items on Practices and Student Experiences in Secondary Schools**	**Response Category**				
1	**Access Related Experiences**	**1**	**2**	**3**	**4**	**5**
1.1	Our government admission practice on our placements into special day and special boarding secondary schools *offer equal opportunities to all eligible students* in Ethiopia.					
1.2	Our government practice on our placements into regular, special day and special boarding secondary schools in Ethiopia lead to *equitable access and efficient utilization of resources among us*.					
1.3	Our government practice on our placements into special day and special boarding secondary schools *give access to us to learn from our peers and better-trained teachers* that positively impact academic performances.					

1.4	Our government practice on the placements of a few high-achievers into special day and special boarding secondary schools *exclude many other high-achievers that lead to produce a small number of qualified graduates who are employable and a large number who are not*.					
1.5	Our government practice on the enrolment of a few high-achievers into special day and special boarding secondary schools *negatively impact the successes of regular schools* due to regular schools lose of high-achieving role model students.					
2	**Other academic and Psychosocial Related Experiences**	**1**	**2**	**3**	**4**	**5**
2.1	Our school *highly-qualified teachers and improved laboratory activities and modern ICT facilities* lead us to perform exceptionally well on the national school leaving examinations.					
2.2	Our *strong/ high academic background/ability* leads us to perform exceptional academic excellence on the national school leaving examinations.					
2.3	Our school *excessive focus on academic excellence and less attention to non-academic areas* lead to competition among us for top academic ranks.					
2.4	We experience frustration and stress due to stiff competition among us to secure the top three academic ranks at a classroom or school levels.					
2.5	Our school community, including teachers and ourselves incur high costs to promote our academic excellence in our school.					
2.6	Our school *covers our educational expenses*, including the provision of personal computers, internet access, pocket money, and *further alleviates our financial burdens*.					
2.7	Our school *protects us from abusive behaviors and harassments* as the school has strict rules and regulations.					
2.8	We significantly improve time management, personal hygiene and self-control skills as our school give us chances to manage various situations independently.					
2.9	Students in special boarding secondary schools are *free from household*					

	tasks, and devote their full attention to learning compared to students in regular and special day secondary schools.					
2.10	Grouping the selected high-achievers into special boarding and special day secondary schools help to cooperate and support each other in learning and searching for scholarships.					

Thank You for Your Cooperation!!

Appendix H: Permission Letter from the Department to Data Collection Sites

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Addis Ababa University
College of Education
Department of Curriculum
and Instruction

☎ 251 11 123 97 16 ✉ 1176 Fax: 00251(11) 242719 e-mail: ctpd@aau.edu.org.et

Date: November 23, 2022
Ref. No. C&I/42/22

To Whom it May Concern

This is to certify that Kagnew Tarekegn (ID. No. GSR/ 1521 /11) is a PhD Student admitted to the Department of Curriculum and Instruction in 2011 E.C. He has now completed course work, and successfully defended a proposal for his PhD dissertation titled, "Curriculum Differentiation in Ethiopian Secondary Education: Policy, Conception and Practices".

I appreciate any support that may be rendered to him as related to his study at the Department of Curriculum and Instruction, Addis Ababa University.

Sincerely,

Teshome Tola (PhD)
Chairperson, Department of Curriculum and Instruction

The End!