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Curricular Innovations in Building College Readiness: A Comparative Study

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Introduction

College readiness of students is one of the determinants of college success and higher education student learning outcomes (An & Taylor, 2019). Attention to college readiness has sparked reforms to students' transitions from high school to higher education (Domina & Ruzek, 2013). The two great innovations to promote college readiness took curricular reform approaches and college readiness assessment approaches (Kolluri & Tierney, 2020; Tierney & Duncheon, 2015; Tierney & Garcia, 2011; Venezia & Voloch, 2012). The curricular innovations intend to expose students to a college preparatory curriculum. A college preparatory curriculum involves minimum coursework in core academic subjects (e.g., four years of English language and at least three years of math) that make students eligible for higher education entrance (Venezia & Jaeger, 2013). Traditionally, underrepresented students have been less likely than their higher-income counterparts to be ushered into the college preparatory track and more likely to be steered into vocational courses.

Recently, policymakers have aimed to challenge this trend and started cultivating college-going culture by implementing stricter curricular requirements and reforms (Venezia & Jaeger, 2013). The recent reforms aim to ensure that all high school graduates meet the course-taking requirements for entrance into higher education institutions (HEIs). Studies reported that schools whose students take college preparatory coursework achieve better in higher education and have more equitable learning opportunities for low-income students (Lee et al, 1997). The accelerated learning programs, e.g., Dual Enrollment (DE) and Advanced Placement (AP) expose high school students to college-level academics and the opportunity to earn college credits. Those studies comparing the outcomes of AP or DE course-takers with non-course-takers revealed that participation in college-level classes increases the probability that students will enroll and succeed in college (Iatarola et al, 2011).

Even though recent college-readiness policy encourages the participation of all students in college preparatory programs, some study reports raise criticisms. Firstly, the critics stated that the higher over-restrictions based on course-taking requirements highly reduce the number of degree holders the future job openings need. Also, by mandating course-taking patterns required for entering selective institutions, current reforms de-emphasize educational and vocational alternatives and potentially disadvantage students geared for non-selective colleges (Barnes & Slate, 2013). Rather, enabling students to pursue multiple postsecondary

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pathways is recommended. In addition, opponents of tracking indicate that different paths result in the marginalization of traditionally underrepresented youth, which is a legitimate concern. To solve these problems, the current transition conversations are focused on aligning college readiness standards and college expectations in terms of both quality and equity (Brown, 2015; Harklau, 2001; Musoba, 2011; Savage et al, 2014).

Even though the countries have embarked on developing the college readiness of students, studies reported that the number of students who need remediation after college access has increased than before (An & Taylor, 2019; Kallison, 2017). Also, the issue of student dropouts has remained a problem (Dinsdale, 2016). Inappropriate high school curriculum reform resulted in high student drop out (Görlitz & Gravert, 2016)

The current college readiness curriculum also emphasized the configuration of non-cognitive and career skills (Savitz-Romer & Rowan-Kenyon, 2020). The major college cognitive and non-cognitive readiness factors are integrated into the school curriculum from lower grades (Allen et al, 2019). The college readiness innovation also includes schools' counseling services and co-curricular activities that promote the development of college readiness skills and attitudes (Martinez et al, 2017).

The Ethiopian education system has also implemented education policies to deal with college readiness. These attempts were reflected in 1) curricular changes; for example, implementation of the Ethiopian Preparatory for Higher Education (Prep) curriculum that is aimed at exposing students to the college experience through the curriculum; 2) addressing equity issues in the transition to HE, e.g., applying Affirmative Action policy, use of mother tongue as a language of instruction in elementary schools and middle schools. Although numerous international trends are reflected in the Ethiopian college readiness program, a number of factors widened the gap between theory and practice. Ethiopia's Prep curriculum shares similarities with other college readiness curricular innovations, such as DE, AP, and International Baccalaureate (IB) that award college credit transfer (i.e., college readiness badging) even though it does not badge college readiness. These curricula deal with the objectives of both badging and building college readiness.

Objectives of the Review

The major objectives of this review are to: 1) Compare and contrast the Ethiopian Prep curriculum with some college readiness curricula around the world using some criteria; 2) Analyze the strengths and weaknesses of the Ethiopian Prep curriculum depending on the existing college readiness curriculum theories and practices to recommend the implications for improvement.

Review Questions

The study was guided by these review questions: 1) how the Ethiopian Prep curriculum differs from the existing college readiness curricula in terms of the given parameters? 2) What are the major strengths and weaknesses of the Ethiopian Prep curriculum when it is seen through the lens of the existing college readiness curricula's theories and practices?

Sample of Literature and Methods of the Review

The resources, such as journal articles, books and book chapters, policy documents, and government reports were the major resources used for the review. These resources were collected from online international research databases, local libraries, and offices. The literature used for review is a mix of quantitative, qualitative, and mixed methods research reports.

The international research databases, e.g., Scimago Country and Journal Rank, Web of Science, Directory of Open Access Journals (DOAJ), Directory of Open Access Books (DOAB), and Googe Scholar were used for searching the resources. All relevant sources found in these databases were selected for the review. The purposive and selective online and hardcopy search of the local literature was also conducted.

A critical in-depth analysis and synthesis of the literature followed the following two major criteria: 1) Comparative analysis of the college readiness curricular innovations in terms of course development, assessment, instructor illegibility and professional development, instructional process, the setting for delivery, funding, and student participation, 2) The extent to which the resources focused on experiencing students to college, the inclusiveness of the programs, their impact, and emphasis on the student learning outcomes were major aspects of the resources analyzed in the review.

Theoretical Frameworks

The ecological theory of college readiness

Urie Bronfenbrenner's ecological theory of human development is also known as the Process-Person-Context-Time (PPCT) model (Bronfenbrenner & Morris, 2006; Kitchen et.al, 2019; Williams, 2016) is a prominent college readiness model. Ecological college readiness theory considers the role of student individual characteristics and personal agency; the characteristics of multiple, interacting levels of context; the effects of chronological and historical time, and the processes through which all these elements bring about change in students (Arnold et al, 2012; Williams, 2016). Real college readiness occurs through a reciprocal relationship between the student and the context. Being in the heart of the environment, the individual student interacts with the proximal contexts (microsystems, such as teachers, peers, parents, and others) that play their direct interactions with the student, and the development of college readiness is realized through what Arnold, Lu, and Armstrong (2012) call the proximal processes that happen as a result of these natural interactions. Through DE experience in a college, the student has a chance to experience the college environment and teaching-learning process that allows the student to bring the college to his/her microsystem where real experiences can occur. Generally, studies used ecological systems theory to study how contexts and environments affect the different aspects of college readiness including the teaching-learning process of college-going students (Hines et.al, 2014; Williams, 2016).

The Input-Environment-Outcomes model

Astin's input–environment–outcomes (I–E–O) model considers the impact of institutional characteristics and student characteristics on student development. Taking into account characteristics and qualities the students bring to university as inputs, and the experiences students develop when they are in college as environments, the I-E-O model describes outcomes as the developmental endpoints that occur for students as a result of their experiences with the environment (Astin & Antonio, 2012; Mukhopadhyay & Tambyah, 2019). A fundamental purpose of the I–E–O model is to allow higher education researchers to examine a less biased estimate of the effects of environments on an outcome after the researcher controls for the differences in characteristics students bring to college (Astin & antonio, 2012; Pike et al, 2014). Therefore, studies assume that dual-enrolled students have prior exposure to curricula, teaching-learning experiences, communications with lecturers and college students, and the physical factors around the DE programs in college (Kim & Bragg, 2008; Pike et al, 2014).

Theory of role and socialization

'Role and socialization' theory has gained attraction in DE research as an explanation of how DE prepares students for college beyond academic preparation. According to role and socialization theory, individuals inhabit roles or positions within a social structure. These roles reflect patterns of behaviors and attitudes that provide actors a strategy to deal with recurrent sets of situations (Atherley et al, 2016; Turner, 1990). Students gather information on the roles of the university community, such as faculty and peers during the interaction period. They use this information to predict the expectations others hold for them (Lile et al, 2017; Richards, 2015). These role-based identities become integrated into individuals' self-concepts, which helps shape their future actions and interactions with others (Karp, 2007).

Roles are dynamic, and they may change over time (An & Taylor, 2019; Turner, 1990). During their transition to higher education, students' social structures change. Therefore, students will be in a position to adjust their cultural repertoires and how they behave and understand the university environment and teaching-learning circumstances. The problem is that this process is not immediate and it may require a trial period in which the students may need to adjust and conform to the normative expectations (An & Taylor, 2019). Studies state that DE program works as a socialization organization in which students get rid of their inappropriate understanding of the college environment and teaching-learning experience by providing students with a transition period in which they learn the normative rules and behaviors of being a university student (An & Taylor, 2019). Also, DE allows students to develop skills and coping strategies, such as critical thinking and help-seeking that are important for college success (An & Taylor, 2019; Kanny, 2015).

The Major College Readiness Curricular Innovations

The major three primary curricular innovations to promote college readiness are AP, IB, and DE. These curricular approaches are the most utilized innovations (National Research Council, 2002; Tobolowsky & Allen, 2016). Studies discussed contributions of curricular approaches in promoting college readiness on one hand and indicated their demerits on the other hand. The major objectives of these curricular approaches are: 1) preparing students for college so that they will require less remediation, taking a shorter time to a degree, hence reducing costs, and being more competitive in the global economy; 2) In addition, college readiness programs are aimed at providing realistic information about the skills that students will need to succeed in college, increasing students' motivation, and; 3) building relationships between high schools and colleges (Hemelt et al, 2019; Jenkins, 2018). The programs accomplish two general activities: badging college readiness and bridging transitions to higher education.

The AP

AP programs offer college-level courses to high-achieving students in high school (Geiser & Santelices, 2007; Lewis, 2011). Normally, students take the course, and they may choose to take an exam, which is developed and is administered by the College Board (CB). The student has to earn at least three out of five on their high school AP course exam to count toward their college course requirements, and to be placed in more advanced college courses (Lea, 2016; Tobolowsky & Allen, 2016; Warne et al, 2015). Some researchers have noted that even though these courses are considered to be quite rigorous, they are taught in a high school setting by high school teachers. For this reason, they do not introduce the students to college-level work or the college environment (Lea, 2016; Lewis, 2011). Tinto (1993) and Kuh et al (2005) found that students who have a more realistic understanding of the campus atmosphere

are more likely to have a successful adjustment to college. This shows a lack of giving important exposure to the college campus as one of AP's demerits.

Even though numerous studies support the effect of AP on college readiness, there are mixed results on who gains from the AP experience and the value of these courses in promoting students' success in college. AP has less benefit for college entering students and its GPA has non-significant correlations with college GPAs (Warne et al, 2015). Jenkins (2018) lists the weaknesses of AP courses: 1) the determination of the course content by the high school, and college administrators' reluctance regarding the rigor of the AP courses, and 2) the fact that instructors for AP courses are all high school teachers. The CB lacks clearly defined selection criteria for selecting and recruiting AP teachers.

The IB

The IB offers a complete curriculum structured around a set of ideas that are both academic and philosophical, unlike the AP which offers students the opportunity to take specific advanced coursework (Hughes, 2006; Jenkins, 2018; Rehm, 2014; Tobolowsky & Allen, 2016). The goal of IB is to develop true global citizens who are academically strong, principled, open-minded, and caring individuals who want to create a more just and peaceful world. Although IB was designed for high school seniors years ago, today, there are the Middle Years, Primary Years, and Career-related programs in addition to the Diploma Program. Thousands of schools in many countries around the world offer IB programs (Caine & Wimmer, 2014; Jenkins 2018; Tobolowsky & Allen, 2016). Like AP, IB Diploma Program targets high achieving students and helps them get college-ready by providing a standardized curriculum and tests, which assure colleges and universities of their academic excellence (Hughes, 2006; Caine & Wimmer, 2014).

In receiving an IB diploma, students require to complete studies in six subjects: foreign language, literature, the arts, mathematics, experimental sciences, and computer sciences. In addition, students need to submit an essay of 4,000 words and should complete the extracurricular of the 150 hours and community services. Then, students are examined in the core courses on a 7-point scale. To graduate with an IB diploma, students should attain a minimum score of 24 so that they can be eligible to receive college credit for introductory-level college courses (Jenkins, 2018; Suldo et al, 2018).

The DE

The DE is used interchangeably with initiatives such as concurrent enrollment, joint enrollment, or dual credit. Accelerated learning options or credit-based transition courses, the more general terms that show the curricular approaches for college readiness, often include DE. DE was defined as courses high school students take where they earn both high school and college credit simultaneously without having to take a standardized test to gain the credit (An & Taylor, 2019; Tobolowsky & Allen, 2016). College credit courses fall into two different categories: A) Advanced College Credit courses (ACC courses) that have been approved by various local colleges/universities; and, B) AP courses designated by the CB. ACC/AP courses are transferable to most colleges/universities. Students are advised to check with a college's counselors on all ACC/AP courses available or needed (Suldo et al, 2018; National Research Council, 2002).

The differences of DE from AP and IB are 1) Unlike AP and IB, which are college-level courses or preparatory courses, DE is a college course; 2) DE courses are often more accessible in colleges in rural areas while AP and IB courses are not offered in a rural area; 3) DE courses are flexible and easily accessible that they can be taken at a high school or in university campuses; 4) While DE is based on a course grade, earning college credit with AP

is based on standardized exams (Jenkins, 2018; Suldo et al, 2018). The DE, unlike AP and IB which target high achieving students, targets a wide range of students. However, DE's quality is lower compared to AP and IB (Hughes, 2006; Tobolowsky & Allen, 2016).

DE courses can be individual courses or a complete high school curriculum. They can be taken at high schools, colleges, universities, and online. These courses differ by rigor, content, instruction, structure, and design within and between countries. The variability of its offerings is its major characteristics (Hughes, 2006; Rowett, 2012).

The benefits of DE are: 1) It is purported to reduce the cost of college and the time-to-degree; 2) When courses are offered at a college campus, DE also serves as an introduction to the full college experience, which assists students in their college adjustment when they transfer to higher education (Rowett, 2012; Tobolowsky & Allen, 2016). Regarding student benefits, it is well-known for its tangible benefits. For instance, research suggests that first-for-college students in their families and students from low-income backgrounds seem to get greater advantages than students whose parents did earn a college degree or come from a higher income background (An & Taylor, 2019; Tobolowsky & Allen, 2016).

Because of quality problems, some institutions will not accept all (or any) DE. To alleviate this problem, an optimum number of courses that offers maximum benefits to students is required; as well as an introduction to the college environment and rigor was suggested (Tobolowsky & Allen, 2016).

Areas of variability for DE

DE programs are possibly the most unique of the credit-based transition programs mentioned here. These courses have a difference not only with the other pre-college initiatives but also between each other in terms of delivery, funding, student participation, instructor eligibility, and course content. For this reason, DE looks quite different (An & Taylor, 2019; Hughes, 2006; Tobolowsky & Allen, 2016).

The first area of variability is the *setting for delivery*. Most of the time, these courses are offered in a larger part of academic settings. They are often taken in traditional high schools, online, at universities, or in unique high schools such as Early College High Schools that are focused on offering a DE curriculum starting from late junior ninth grades (Karp et al, 2004). Criticisms state that courses offered at high school may lack college-level standards. Also, courses offered at universities may lack rigor. In some cases, some colleges use DE courses for attracting high achieving students to apply to their colleges after high school graduation to increase the college retention rate (Hunter & Wilson, 2018). However, the lack of quality in some course contents has resulted in universities' refusal to accept some DEs after students matriculate as freshman college students (Borden et al, 2013). Therefore, issues of course quality and course transferability are associated with the variability in course content and the course setting (Hughes, 2006; Tobolowsky & Allen, 2016).

Funding is the second area of variability. Funding sources for these courses vary. In some cases, the cost of one or all DE courses is paid by the government and, in other instances, there may be reduced or waived fees for some courses (Tobolowsky & Allen, 2016). Both the high school and the college can receive government funds to cover the cost of these courses (Karp et al, 2004). In some instances, the students are responsible for the entire cost of the courses (Tobolowsky & Allen, 2016).

The third area of variability is *student participation.* As the primary purpose of DE coursework is to promote the success of the high achieving high school students (Edwards et al, 2011), there are still limited studies that argue all students (for instance, underrepresented populations, medium and low achieving, low-income, remedial students) benefit from taking these courses (Bailey et al, 2003).

Participation in DE programs is stated by the admission criteria set by a university or a high school (Hughes, 2006). Most DE programs have eligibility requirements. The minimum scores on Scholastic Aptitude Test (SAT) or American College Test (ACT), grade level, class rank, and/or high school GPAs are among the requirements needed. In some cases, letters of recommendation are required (Tobolowsky & Allen 2016). Borden and associates (2013) also stated that some institutions offering DE courses had requirements that were not identified. Generally, great variability in student eligibility has been reported (Tobolowsky & Allen, 2016).

Some studies question the assumption that students who qualify for these courses are ready to enroll, especially when these courses are taught on a university campus (Tinberg & Nadeau, 2013). Some researchers found that students may have the academic preparation to enroll in these courses but may lack sufficient maturity to manage in the less structured college environment (Ferguson et al, 2015). Although studies show that participation in DE courses is traditionally biased for high-achieving students, Whites, and peoples with higher Socio-economic Status (SES) and the problem tends to continue, countries have been implementing different measures to make the participation more inclusive (An & Taylor, 2019). For instance, Early College High Schools are created to make these courses more inclusive.

As the fourth area of variability, *instructor eligibility* is also used to compare the programs. One of the most controversial issues with DE courses is the lack of uniform quality assurance practices and policies in place regarding the quality of instruction (Hughes, 2006; Tobolowsky & Allen, 2016). Policies regarding teacher selection, training, and credentials for these courses should be there (Borden et al, 2013), and there should be national standards. These criteria should require the high school instructors to meet the same standards as adjunct community college faculty, including a master's degree and expertise in the subject (Borden et al, 2013).

When the fifth area of variability, *course content*, is observed, states determine which courses should be offered as DE in some countries (Karp et.al, 2004). Most of the time, a college or a high school approves the course syllabus, textbooks, and/or exams. However, on some occasions, the responsibility of approving the syllabi is left to the state (Tobolowsky & Allen, 2016). Because the course content is not standardized, it may not guaranty that students take the same subject or they cover similar material.

For the reason that DE course content can vary significantly depending on the nature of the DE program, and the students it is opted to serve, there is no standard content. Some specific DE courses target medium to low achieving students and others are related to vocational students. Although initially many of the offerings were designed to provide college-level content to high-achieving high school students, this is not always true (Golann & Hughes, 2008).

Witkowsky and Clayton (2019) supported the significance of DE for promoting college readiness while they also emphasized the high contribution of high school counselors in mediating the success of DE students. Also, DE significantly increases student retention at college (Hunter and Wilson 2018). Lile et al (2017) reported that participation in DE increases the clarity of college student roles. On the contrary, Lawrence and King (2018) revealed that students who participated in the DE program were less likely to complete the Associate of Arts and Associate of Applied Science degrees. Additionally, a lack of quality control concerning DE courses leads to problems with the transferability of course credit. Modarelli (2014), who studied the transfer of credits from DE programs, found that "competitive" and "highly competitive" universities were 78% likely to accept associate degree credits from other institutions whose degrees are non-DE whereas the probability of

acceptance for the degrees earned from DE programs is (19%). The more competitive the institution, the less likely they were to accept the credits (Tobolowsky & Allen, 2016). When compared with other accelerated learning options, AP credits were more likely to be accepted by the most competitive institutions (70%) followed by IB (59%) and then DE (33%) (Tobolowsky & Allen, 2016). Generally, the authors stated that this was a puzzle for students who want to be admitted to universities they want and for policymakers.

Understanding that policies and implementations of DE have varieties across counties, An and Taylor (2019) illustrated some commonalities and convergences that have emerged in the literature as best practices to facilitate the success of DE. These are leadership, partnerships, funding and finance, structure, and stakeholder perceptions. These authors identified the effective leadership approaches, namely, visionary, progressive, strategic, and reflective. Helping students to develop a sense of purpose and value, and transforming the school culture to a college-going culture (e.g., which includes early assessment for DE eligibility and hiring more bilingual teachers for core curriculum) were some of the characteristics of progressive leadership. Partnerships between schools, colleges, and other significant members of the community on the implementation of DE are indicated as some of the key factors for the success of the DE program. Also, inadequate funding created differences in participation in DE courses between the rich and the poor. The problems of qualified teachers to teach DE in high schools and differences in stakeholders' perceptions and support for DE are discussed as some factors that impact the implementation of DE. The environmental factors (staff, counselors, school type, and the college type) have also been associated with the success of the DE program (Witkowsky & Clayton, 2019). The challenge of increasing equitable college access while increasing effectiveness through the application of AP, DE, and IB programs has remained a problem. This is partially caused by the challenge to make the courses more inclusive (Gagnon & Mattingly, 2016; Kolluri, 2018).

Studies also used *student learning outcomes* to compare these curricular innovations. Studies reported findings on the relationship between DE and student outcomes, such as college matriculation, college academic performance, college persistence, degree completion, time to degree completion (Evans, 2018; Witkowsky & Clayton, 2019). To begin with, a significant number of studies associated a significant relationship between participation in DE and college matriculation as a degree-seeking student. The largest evidence on the effect of participation in DE and student outcomes is evident in the relationship between participation in DE and student college academic performance. The most important point for policy-makers is the effect of participating in DE on degree completion or degree attainment. In this case, similar to DE's effect on college academic performance, studies confirmed that participation in DE was also found to have a significant effect on degree attainment. Also, a significant number of empirical works reported that participation in DE reduces time to degree through the accumulation of college credits before college entry (Evans, 2018).

Another advantage of the DE is the fact that it reduces the need for remediation at college. Studies revealed that students who participate in DE are less likely to participate in remedial education in college than students who did not participate in DE (Kolluri & Tierney, 2020). For this reason, it is believed that participation in DE primarily tackles the college readiness problem of college-entering students. Studies also show that students who participate in DE tend to be more motivated and persevered in their school work than those who are not dual-enrolled.

Studies also reported the effect of DE by course type. Although all DE courses have a significant effect on college student outcomes, Mathematics DE course has the strongest effect. Scholars also studied the DE course effects depending on course differences based on academic and Career and Technical Focus courses. Indicating the recent curriculum emphasis

on Career and Technical Education, studies show a significant effect of Tech Prep courses on college outcomes than academic DE courses (Judson, 2017; Warne et al, 2019).

Studies also compared the difference between the DE and AP in affecting student college outcomes. Generally, the largest number of studies reported that AP students are more likely successful at college than DE students. Overall interest in increasing AP course taking emerged from the urge to promote college readiness particularly in the fields of science, technology, engineering, and mathematics (Judson, 2017; Warne et al, 2019).

The Ethiopian Prep curriculum

The Ethiopian Prep curriculum has evolved from the former Socialist Regime's 6-2-4 structure, in which the middle two years belonged to the lower secondary program. The 1994 Education and Training Policy (ETP) revised the curriculum to become an 8-2-2 structure. Then, grades 11 and 12 were reserved for the Prep schooling program that prepares students for a three-year university undergraduate program. Following this change, many topics previously taught in the first year of undergraduate programs were moved down to grades 11–12, and consequently, topics from grades 11–12 were moved down to grades 9–10. This change resulted in the overall difficulty of grades 9 -12 curricula (Joshi & Verspoor, 2013).

The grades 11 and 12 curricula have been categorized into 2 major streams: social science and natural science. The social science curriculum includes major courses, such as Geography, History, Economics, and General Business whereas the natural science curriculum consists of major courses, such as Biology, Chemistry, Physics, and Technical Drawing. The English language, Civics, Physical Education, Mathematics, and ICT are the common courses that are taken by both of the streams. The Mother Tongue and Amharic are electives (Joshi & Verspoor, 2013; MOE, 2009).

Areas of variability for the Ethiopian Prep curriculum

Compared to the major DE courses in terms of delivery, funding, student participation, instructor eligibility, and course content**,** the Ethiopian Pep curriculum has differences from others.

Regarding the *settings for delivery*, unlike the other DE courses that can be delivered in a traditional high school setting, online, at a college or university, or in a unique high school setting, Ethiopian prep courses can only be taught in recognized private or governmental Prep schools. There is no university interference in Prep course delivery. This is one difference from the other DE programs. Therefore, the course setting has no significant variety compared to the other DE courses. However, the difference in quality of course delivery may be observed between types of schools (e.g., private, governmental, rural, and urban).

The government *funds* the governmental Prep schools. Governmental Prep schools make free delivery of the courses for all regular students who formally attend the governmental Prep schools. The private for-profit Prep schools, however, receive money for their service. Not-for-profit Non-Governmental Organization schools also provide free education. There is also uniformity in funding compared to the international trends in funding DE courses.

When *student participation* is observed, the eligible students to join Prep schools are only those who score greater than or equal to a cutting score of the Ethiopian General Education School Leaving Certificate Examination (EGESLCE). This cutting score is lowered for females, students from the remotest regions of the country whose families live on rearing cattle only, and students with special needs. Although the ministry applies an Affirmative Action to include gender, minorities, and special needs in the admission process, the enrollment to preparatory education is very low compared to the other peer countries. Compared to the peer countries such as Kenya, Tanzania, Uganda, and Burundi, enrollment to

upper secondary school is very low (17.7 for Ethiopia, and 31.2 for peer countries) (Donnenfeld et al, 2019; Joshi & Verspoor, 2013).

The *eligible instructors* for Prep school are those who are trained at universities for three years in a major field and obtained a bachelor's degree. They also have to take an additional one year of professional teacher training to receive an additional Post-Graduate Diploma in Teaching (PGDT). PGDT consists of training in educational foundations, pedagogy, and school-based practicum experience. Besides, teachers take additional Continuous Professional Development (CPD). English language teachers have also to receive additional language training. Aimed at raising the qualification of preparatory school teachers to Master's Degree (Masters for Prep School Teachers), the Ministry of Education (MOE) has already been training Prep teachers during the summer times since previous 6 years ago. Therefore, the objective is to make all preparatory school teachers MA holders (Joshi & Verspoor, 2013; MOE, 2009).

When it is compared with the international college readiness trends, Ethiopia's Prep school instructor eligibility system is unique. In another world, instructors are either assigned from university faculties or assigned from high school teachers to teach the courses. In the case of Ethiopia, Prep teachers are the only teachers for Prep schools. Since the Prep courses were moved down from university to Prep schools, the invitation of university instructors would have been mandatory. This may have been a demerit. In one or another way, the university-Prep-school partnerships are important.

The Prep school course *contents* are prepared by MOE. The courses are three types: the major courses, common courses, and electives. All Prep schools, both private and governmental, teach similar courses that are prepared by MOE in order to eligibly prepare students for college. In the case of other international DE college readiness courses, the approval of the syllabus revolves around the state, the college, and the school. For this reason, there is a similarity and difference in quality among the courses (Tobolowsky & Allen, 2016).

Generally, the Ethiopian Prep program is more similar to DE courses. Firstly, in terms of course content, like some DE courses, the Ethiopian Prep courses are believed to be college freshman introductory courses. Secondly, the Ethiopian Prep uses both continuous classroom course assessment and the nationally prepared national testing assessment without awarding college credit. However, DE courses use course grading assessments that award college credit. Similar to Ethiopian Prep courses, DE courses are more prescriptive and the role of teachers is low in course development and adjustment of the courses to the real teaching-learning contexts at schools.

When it is compared with AP courses, the Ethiopian Prep courses have many differences. For example, firstly, unlike the Ethiopian Prep courses, AP courses are not university courses. AP courses are prepared by CB in collaboration with high school teachers and college instructors while Ethiopian Prep courses are prepared by the MOE participating teachers also. Compared to the Ethiopian Prep courses, AP courses are more challenging. Also, the role of the teacher in course development is very high for AP courses than the Ethiopian Prep courses that are more prescriptive and has low teacher participation in course development. In the case of AP, the exams are standardized examinations, unlike Ethiopian Prep exams that are nationally prepared by MOE.

Similar to IB, the Ethiopian Prep courses are a fully-fledged curriculum. Unlike IB, Ethiopian PP courses are local. IB is an internationally prepared and recognized curriculum. Also, the IB curriculum is so broad that it is designed for elementary school, junior school, and secondary schools while the Ethiopian Prep curriculum is prepared only for grade 11 and 12 students. Compared to the Ethiopian Prep, the IB curriculum is challenging. IB courses have college credits, unlike Prep courses. Also, the assessment system for IB uses

standardized testing while Prep is not. The role of teachers in curriculum development is very high for IB compared to Ethiopian PP.

The effect of the Ethiopian Prep curriculum on *students' learning outcomes* is also studied by some studies in Ethiopia. Since the Ethiopian Prep curriculum has been applied in Ethiopia, very few studies have been conducted on its effect on student preparedness for college. These studies reported controversial findings on its rigor in preparing ready students for college compared to the former Socialist system's Freshman Program Complete (FPC) curriculum. For example, Regassa (2005) compared the reading ability of the former FPC students and Prep complete students and found that FPC students outperformed Prep complete students in reading comprehension. Demewoz et al (2005) also conducted a comparative study on the Prep and FPC students on their self-efficacy and academic achievement and reported that Prep students and FPC students differed to a statistically significant extent in academic self-concept and academic achievement in favor of the latter.

The assessment

The *AP's exam development procedure* was observed in this study**.** The content specifications are determined for the courses during the development of AP courses. Deciding the general content of the examination and the ability level to be tested for each AP course is the responsibility of the test Development Committee (DC). The examination is constructed by being guided by the topic percentages from the AP course descriptions for the distribution of questions. The representative committee from secondary schools, college, and university level teachers work in cooperation with Educational Testing System (ETS), content specialists, and psychometricians to validate that the exam scores are meaningful from year to year and from student to student (Hughes, 2006; National Research Council, 2002).

The validity studies are conducted for the AP curriculum to validate the AP courses for college credit by measuring the comparability of content knowledge and processes required for the students to master the introductory-level college courses. The multiple-choice tests are constructed and pre-tested by DC in university classes to obtain some measure of the difficulty level and comparability with university courses. The AP's DC works to design a multiple-choice section so that the average raw score is between 40 and 60 percent of the maximum possible raw score. During test development, test items with varying levels of difficulty are included in the examination. To make it clear that distinctions will be made between students earning grades of 2 and 3 on the one hand, and 3 and 4 on the other, many questions of medium difficulty are used (Hughes, 2006; National Research Council, 2002).

In order to create a linkage between the current form of the examination and the previous forms, a few previously administered test items are included. This is also aimed at maintaining reliability from year to year and examination to examination. The committee writes, selects, reviews, and refines free-response questions (Hughes, 2006; National Research Council, 2002).

AP's DC members work with AP content experts and ETS statisticians to determine which item type and format is best for assessing a given topic or skill area. As questions are being written and refined, the DC proposes preliminary scoring standards that are based on consistent criteria from year to year. In addition, the committee develops a formula for assigning composite scores based on differential weights for the multiple-choice and free-response questions (Hughes, 2006; National Research Council, 2002).

Another issue discussed in AP's assessment is *scoring AP examinations*. During scoring, the number of correct and incorrect answers in the multiple-choice section of the AP exam is identified. A correction for guessing is also applied. During AP readings, usually held at college campuses, faculty consultants score the free-response questions. The creation of

detailed scoring guidelines is given due attention to ensure a consistent scoring system for free-response items. All faculty consultants are trained for this purpose, and various 'checks and balances' are applied throughout the AP reading. Composite scores are created using formulas developed by DC. A five-point scale for awarding final grades on the examinations is used in AP assessment. Those who earn a score of 3, 4, or 5 are described as qualified for the credit and/or enrollment in advanced courses at colleges and universities. Boundaries for awarding AP grades, however, are reset annually at a grade-setting session for each examination (Hughes, 2006; National Research Council, 2002).

The *IB's assessment procedure* is also studied**.** The written external assessment is administered globally in May of each year. The external examination opts to assess core knowledge and optional contents. The teacher's formative assessment of the student's practical skills (i.e., laboratory works in science subjects and portfolios in mathematics subjects) is analyzed against established assessment criteria. The teachers conduct the formative assessments during the teaching-learning process at schools being externally moderated by the International Baccalaureate Organization (IBO). The external and internal assessments are 76% and 24% of the final exam mark, respectively, in the experimental sciences. The IB teachers submit both internal assessment marks and a predicted final examination grade of all students they teach. The internal assessment component covers skills that cannot be demonstrated satisfactorily within the context of a written examination (Hughes, 2006; National Research Council, 2002).

An issue discussed in the IB assessment procedure is *developing IB assessments*. Exams for all IB courses are written by chief examiners and deputies and are checked and approved by the exam board. Within a situation that is organized and managed by the IBO academic staff, examination teams prepare the exams for each of the administrations. For Standard Level (SL) and Higher Level (HL) courses in a subject area, separate exams are prepared. Single senior examiners normally write individual exam questions. These exam questions are directly linked throughout the exam development process to the assessment and the objectives to be measured as outlined in the program guides for each subject (National Research Council 2002). For some reasons, such as the difficulty of finding an appropriate trial group of test-takers without the probability of compromising security, the test questions are not field-tested. Rather, new test questions are written for each examination period. The test items are not banked, and for this reason, the examination team plans to prepare a different form of examination for each session of exams. Also, the new examination needs to be the same standard of demand as in previous sessions. Both the CB and the IBO do not make use of systematic validity studies on the cognitive characteristics of the exams. The IB curriculum team specifies and describes the internal assessment criteria as a part of the curriculum development and review process in each subject. The examiners in each subject periodically meet to develop common understandings on how to assess each of the criteria. Through program materials and training, the IBO describes the assessment procedures to teachers and moderators in each subject (Hughes, 2006; National Research Council, 2002).

Periodically, the assessment structure for each subject is reviewed as a part of an overall curriculum review. The Curriculum Review Committee (CRC) also develops proposals for revisions of the assessments following a procedure similar to that is stated for curriculum review. Then, the proposals are reviewed by the Diploma Review Committee (DRC). The chief examiners representing each subject group and senior academic staff from the IBO are members of DRC. After each exam session, students' responses are analyzed to determine that they fit expectations for each question. In addition, all IB teachers are asked to complete feedback forms after the examinations. They answer question items about both the emphasis of the exam and the content and form of individual items. Emphasis is given to teachers'

feedbacks on the appropriateness of exam papers in hitting the intended objectives. The information gained in this way contributes to the exam development process for future sessions (Hughes, 2006; National Research Council, 2002).

The second issue raised under the IB assessment procedure is *scoring IB assessments*. The IB follows a criterion-referenced grading system. Each test taker's performance is measured depending on seven scale grade descriptors. These grade descriptors are prepared in the form of levels of achievement that students are required to achieve. The levels of achievement are strongly related to the objectives of the course and are specified for experimental sciences and mathematics areas. The descriptors apply in the same manner to both HL and SL exams. Grade descriptors are, for example, 7 (excellent performance), 4 (satisfactory performance), and 1 (poor performance) for the experimental sciences are used (Hughes, 2006; National Research Council, 2002).

Reporting IB examination results is the third issue discussed under the IB assessment procedure. The IB Curriculum and Assessment Centre (IBCA) sends exam results directly to secondary schools. The schools ensure the communication of the test results to students. Also, the IBO office of a country communicates the results to colleges and universities. A profile of students' grades is also available to schools for each examination period. The profile is available only for candidates whose examinations are entered by a corresponding school and includes predicted grades; examination grades, including marks for each paper; and internal assessment grades, showing any adjustments made. Twenty-four hours after the testing date, teachers are allowed to use all sections of the exam in their classrooms (Hughes, 2006; National Research Council, 2002).

Assessments in the Ethiopian Prep program were also compared with others. The grade 11 and 12 classroom assessment is accomplished in two ways. Firstly, the continuous assessment that monitors students' learning throughout a semester is applied in the class. This assessment accounts for 60% of all classroom assessments. The final exam (i.e., 40%) is also administered at the end of a semester. For grades 11 and 12, these procedures of formative and summative assessments are applied to make up the final preparatory school transcript of the students (MOE, 2009).

The second exam is prepared by the National Educational Assessments and Evaluations Agency (NEAEA) at the end of grade 12. This assessment is aimed at screening the students for higher education entry. When it is compared to AP and IB, the Ethiopian Higher Education Entrance Examination (EHEEE) has differences. Firstly, the EHEEE is all objective type examination, unlike AP in which 50 percent of the mark is given for essay items. Secondly, EHEEE is totally centrally prepared. In the case of IB's experimental sciences, however, the external and internal assessments make up 76 percent and 24 percent of the final exam mark, respectively.

The process of developing the EHEEE is also discussed in the assessment procedure in the Ethiopian Prep program. The EHEEE is prepared by the NEAEA. The two directors, Exam Preparation and Placement Directorates monitored by NAEA's Vice Director are accountable for EHEEE preparation, validation, administration, and scoring and placement decision. A committee consisting of the test preparation specialists, subject specialists, curriculum specialists, and experienced teachers prepares the EHEEE. The test items are constructed depending on the objectives of courses and content sampling using the table of specifications. In addition, the percentage of the items with their difficulty level, for instance, 30 % easier items, 50% items with medium difficulty level, and 20% of items with high item difficulty index, are included in the examination. Before administration, the items are pilot tested and item analysis is conducted in order to maintain the test quality. During the item

analysis, the test experts and the experienced teachers in each subject carefully observe the quality of the items (NAEA, 2009; MOE, 2009).

Unlike IB, AP, and Ethiopian Prep courses, the assessment of DE courses is through course grading that is accomplished by the instructors. This is because the DE courses are college courses. As college courses, Ethiopian prep courses' assessment process must also have any relation with colleges like DE courses. However, it is completely disconnected from its ties with the college experience. The Ethiopian Prep curriculum reviews that have been conducted in five years interval, did not describe any criteria by which the college standard of these courses have been maintained.

The *EHEEE test administration* process was also discussed. The administration process is accomplished by selected coordinators and invigilators assigned to every school in the country. After administration, the answer sheets are collected and categorized by the type of exam taker, subject type, and by booklet code and packed by the invigilators. Then, the carefully packed answer sheets are submitted to the NEAEA (NEAEA, 2009).

The *scoring system* in the Ethiopian EHEEE is accomplished through a computerized system. The Optical Mark Reader assists the scoring system. The *evaluation* is, like IB, a criterion-referenced. In the EHEEE's case, rather than calculating the Cumulative Grade Point Average (CGPA) for each examinee, the total percentages of marks earned from each subject are added, converted to percent for each of the courses, and added up to become the final score. Then, the cutting score is determined depending on the intake capacity of universities, resource availabilities, gender, special need students, and the minorities by region (NAEA, 2009).

Instructional process. When the *instructional process in the AP program* is studied, what to teach and how to teach is decided by teachers every day. Many factors influence these decisions: teaching philosophies, experience, the teacher's educational background and familiarity with various topics in a discipline, and student outcomes (Hughes, 2006; National Research Council, 2002).

The *AP's course descriptions and teachers' guides* are unique when they are compared with others. The *AP course description* prepares content outlines and the descriptions of course objectives, while still encourages teachers to flexibly develop their own lesson plans, syllabi, and then bring their creativity to the AP classroom. The guidelines given to the DC for AP science courses include a charge to assess knowledge about laboratories and experimentation. For instance, one of the free-response questions on each AP science examination will be a laboratory question (Hughes, 2006; National Research Council, 2002).

The *instructional process in the IB program* is also studied. The instructional process differs from classroom to classroom concerning what is taught in an IB course, how much of the topic list is covered, how much time is budgeted to different topics in IB courses, and what instructional methodologies are used. However, the detail provided in the IB guide in terms of expected student outcomes directs teachers toward the use of specific instructional strategies. Whenever possible, teachers are made responsible for building internal assessment tasks into classroom teaching. Internal assessment activities ought to form a part of the learning experience of the learners and should not be regarded as additional to the teaching schedule (Hughes, 2006; National Research Council, 2002).

The *IB Programme guides and teaching notes* are used by IB teachers in teaching**.** The general guidance on instruction is given by IB program guides but the guides also offer detailed suggestions about instructional strategies. The objectives for students are listed in the program guides. Notes for teaching each topic in all subjects offer suggestions for teachers while underlining that it is not a must that these suggestions be accurately followed.

The use of action verbs in the science assessment statements informs teachers about the depth of treatment required. Depending on that, teachers make decisions about the best way to prepare their students for the required outcomes (Hughes, 2006; National Research Council, 2002). In specifying aspects of a subject to be assessed, the IB internal assessment criteria require that teachers should structure the classroom and laboratory environment so that students have the chance to acquire and practice the skills needed (Hughes, 2006; National Research Council, 2002).

When the *instructional process in the Ethiopian Prep* is compared with others, unlike the AP and IB courses, encouraging the teachers' decision-making is minimal in Prep instructional guides. The teachers follow the prescribed curriculum. They add a lower contribution to the context of students' learning. The rigidity of the Prep curriculum made the teachers the followers of the prescribed curriculum and the teaching-learning process non-adjustable to the pace of student learning.

Teachers have two guides that use during their preparation for a class: the Plasma TV Teacher Guide and students' textbook teacher guide. Using these guides and other references, teachers prepare themselves for the class depending on the lesson objectives and contents of the day. The teachers also have to prepare their lesson plan that corresponds to the plasma TV lesson or they can prepare their lesson plan and teach without the Plasma TV.

The Ethiopian prep curriculum follows the student-centered outcomes-based philosophy. The minimum expected competencies for each topic are stated in the syllabus. The teachers are expected to skillfully organize their teaching towards enabling the students to meet these minimum learning standards or outcomes. The assessment process is stated to be a continuous assessment with a percentage of assessment to be shared by a summative final exam test.

One of the strong sides of Plasma TV is that it demonstrates some teaching experiences that are not accessible to the teachers. Some laboratory experiences and other learning experiences that cannot be presented in the class by the teacher are demonstrated by the Plasma TV teachers.

The weakness is that the Plasma TV learning experiences are rigid and not adjustable to the pace of student learning. For this reason, the students are always felt boring because they skip many Plasma lessons without understanding well. On the other hand, the English language proficiency of the students also highly determined the extent to which the students understand what is taught by the Plasma TV teachers.

Conclusions

The Ethiopian Prep curriculum was compared with other college readiness curricula depending on the criteria, such as the curriculum, settings for delivery, student participation, instructor eligibility and training, course content, assessment, and instructional process.

These college readiness curricula are compared depending on their *theories of curriculum*, the shift from the traditional content-based curriculum theory to the modern holistic and competency approach to curriculum development is reflected in all college readiness curricula including the Ethiopian Prep curriculum. Regarding this, Gray et al (2014) stated that most of the curriculum reforms emphasize assessment-driven, goal-directed, competency, and fact-based forms of learning. All of the accelerating programs are also gradually transforming from elite to more inclusive.

In order to prepare young people for the changing needs of adult and working life, an increasing emphasis is now given to new "key" skills and knowledge. Approaches to ensure that the "essential" elements are included in school curricula include student entitlement, establishing compulsory requirements, and mobilizing consumer pressure (Hughes, 2006). In Ethiopia, the curriculum revision (MoE, 2009) was guided by the identification of the core

competencies, curriculum standards, deriving of the contents, and assessment from these standards depending on the minimum competencies that should be achieved.

The researchers also tried to observe the breadth of high school curriculum maps in some high schools over the world compared to the Ethiopian Prep curriculum contents. The general interpretation shows the researchers that the breadth and depth of the curriculum contents show variety from country to country. For instance, one of the curricula observed was china's current holistic competency-based curriculum (Wang, 2019) in which the breath of the curriculum touches almost all holistic nature of modern human development. In addition to the breadth of the curriculum, china's curriculum highly emphasizes closing the gaps between theory and practice. For instance, high school students take a long time in practicum. Gray et al (2014) also stated that most developed countries around the world give great emphasis to Language (Literacy), Mathematics, and Science. This is also true in the Ethiopian case, although the depth, breadth, and level of experiencing these courses may be affected by so many contextual factors. Compared to other programs, the IB, in addition to its emphasis on Language (Literacy), Mathematics and Science, is specifically opted to produce inquiring, knowledgeable and the young who cares for people and who creates a suitable, more peaceful world through intercultural respect and understanding.

Regarding the breadth and depth, the Ethiopian Prep curriculum shows problems. For instance, some contents such as theology, music, and fine arts are very important ones that are missed. The depth of the curriculum is not to the expected standard. For instance, regardless of their high importance for students, the depth of technology courses such as IT, and computer science is not adequate in the Ethiopian Prep curriculum. This is also partially caused by the shortage of resources. For these gaps, schools and universities are facing problems in responding to the effect of COVID-19 in their teaching-learning at this time. It is found so difficult to train teachers and students to use technology at this time. For these reasons, as a holistic competency-based curriculum, the Ethiopian Prep curriculum did not reach an expected breadth and depth; and it is not in the standard of closing the gap between theory and practice.

Another big problem in the Ethiopian Prep curriculum theory is observed in its role of exposing students to the college experience. Compared to the other three curricular innovations for college readiness, the Ethiopian Prep is completely detached from the college experience. Although the Prep courses moved down to grades 11 and 12 with the intent that they expose students to college academic rigor and expectations, in practice, they are completely disconnected from the college experience.

As a *curriculum*, the Ethiopian Prep is a fully-fledged curriculum like IB, and unlike AP and other DE courses. Unlike the AP and IB courses that are developed by CB and IBO respectively, the Ethiopian Prep courses are assumed to be the former university introductory freshman courses. Also, the AP and IB courses have similar pre-requisite courses in grades 9 and 10 (e.g., AP Math for grades 9 and 10) whereas the Ethiopian Prep has no such pre-requisite similar courses in the lower grades. Additionally, AP and IB course development has another significant difference from the Ethiopian Prep curriculum design and implementation. Guided by clear objectives, content outlines, and assessment processes, the schools implement, add, and reshape the curriculum in their local context during the implementation in the case of IB and AP. For these reasons, for IB and AP, the curriculum may show differences across schools.

Although the curriculum can show differences in design and implementation, the IB and AP standardized assessment is centrally prepared depending on the objectives of the curriculum contents. The central development of the objectives, the course contents, and assessment criteria is updated year to year depending on the timely inputs from local schools

contexts, unlike the Ethiopian Prep curriculum revision that is accomplished once in five years. For these reasons, the curriculum is highly flexible and adaptable to the local contexts compared to the Ethiopian Prep curriculum. The vertical design of the IB and AP curriculum is also very strong compared to the Ethiopian Prep curriculum. The Ethiopian Prep curriculum seems weakly built on its pre-requisites since the curriculum is said to be migrated down to grades 11 and 12 from college. Almost all responsibility of the curriculum revision is rested on the shoulder of the MOE and the teachers have low contributions in curriculum development, unlike the IB and AP courses in which the teachers have the highest role in curriculum design and implementation. Thus, the Ethiopian Prep curriculum is a more prescribed one compared to the others.

The *setting for the delivery* of the courses is also another factor that differentiates these courses. For instance, DE courses are college courses that can be delivered either in college or in high school settings. Similarly, the Ethiopian Prep courses are college courses that migrated down to grades 11 and 12 and are taught by high school teachers. The IB and AP courses, like Ethiopian Prep courses, are taught by high school teachers. However, DE courses are taught either by college instructors on college campuses or taught by college instructors in high schools. The critics on AP and IB courses are also there on their potential to expose the students to the college experience. The critics stated that, firstly, the courses are taught in high schools by high school teachers. In addition, although the courses are believed to be rigorous enough and equivalent to college courses, some critics doubt these courses' role as preparing the students for college.

The DE courses, however, expose students to the college experience for the reason that they are delivered in college or high schools by college instructors, though they may lack a vertical design. In Ethiopia's case, the Prep courses have a disconnected nature from the college experience, although the courses are said to be moved down from college to high school. Moving the college introductory courses down to high school by itself did not guarantee the exposure of students to the college experience. These are due to: 1) the courses are not horizontally designed depending on their pre-requisites; 2) the students are taught by high school teachers although the courses are believed to be college courses; 3) unlike IB and AP, and DE, there are no partnerships between university, the MOE, and schools in terms of curriculum development and test development. To cover this gap, the teachers of these courses should be either trained in college teaching qualification level or they should be the college instructors themselves. The former Ethiopian Socialist regime's Freshman Program curriculum allowed the students to take these migrated courses in college by college instructors. Also, the students stayed in college experiencing college for one year before choosing their fields of study. They also had enough time and adequate information to think about and choose their fields that correspond to their career interests.

Another parameter by which the Ethiopian Prep is compared with other college readiness programs is the *student participation or eligibility criteria*. Regarding student eligibility and participation criteria, the Ethiopian Prep has homogeneous criteria for all schools. The eligibility for Prep school entrance is set by the MOE for all schools depending on the gender, the region, and the special need. Depending on these criteria, the MOE decides the cutting GPA of the EGESLCE GPA for these groups. However, the IB and AP course participation and eligibility criteria are targeted to high achieving students. One of the weaknesses of the Ethiopian Prep program is its sole focus on Affirmative Action that targeted lowering college entry scores to support the underrepresented and disadvantaged group's college access. The modern models of college readiness, however, in addition to using empirically developed Affirmative Action models, focus on research-oriented early warning intervention systems

and multidimensional, organized support systems to make these groups college-ready (Bragg & Taylor, 2014; Gansemer-Topf et al, 2018).

The IB and AP programs are often criticized for their discrimination against minority groups and low achieving students (Lakes & Donovan, 2018). Compared to AP and IB, DE courses are well known for participating low-achieving and disadvantaged groups in college preparatory experiences. To cover the discrimination nature of IB and AP against low achieving and disadvantaged groups, the enhanced comprehensive DE programs, such as middle and early college high schools have been established (Edmunds et al, 2010). These schools are targeted on the inclusive tendency in exposing all members of citizens to the college experience. They take on a holistic approach to support students to experience college. On the contrary, although early college students graduate from high school at a higher rate than those students from traditional schools, they are generally considered similarly prepared for higher education with students from traditional high schools (Edmunds et al, 2017).

In addition, the *instructor eligibility* and training was taken as one of the criteria by which these college readiness programs have been compared in this study. For IB schools, the profile of teachers is taken along with the schools' profiles at the time when these IB schools apply to become IB schools for IBO. For this reason, the IBO assumes that these schools have competent teachers to teach IB courses. However, before teaching these courses, IB teachers must take a 3-to-5 days' workshop at IBO. Generally, IBO depends on the quality of the schools that deliver IB courses in determining the competency level of teachers to teach the courses. Also, CB does not certify teachers to teach AP courses. CB delivers some 1- to -2 day workshop to teachers, counselors, and administrators on the rudiments of AP courses' teaching. Also, the AP teachers attend summer institutes to receive some training on the pedagogy of AP courses. For these reasons, AP and IB programs are criticized for their less emphasis on teachers' quality.

The Ethiopian Prep teachers are normally those who are graduated with a three-year Bachelor's degree in teaching. The Ethiopian Prep teachers are not assigned to Prep classes as soon as they are graduated. The teachers need some experience in teaching and a one-year PGDT diploma in teaching before teaching Prep courses. The English language teachers also need some training in language and language teaching before teaching Prep English language courses. Years ago, the Ethiopian MOE started upgrading the Prep teachers' qualification to MA and this is good progress in the professional development of Prep teachers. This move aligns with the assumption that if the Prep courses are college-level courses, the teachers should be either college instructors or those teachers who have got college-level qualifications.

The *course content development* also varies across these programs. Regarding the AP program, the course description and topic outline for each of the contents is prepared by the curriculum development committee summoned by CB. The major AP course topics on the outline are accompanied by percentages. The subtopics are listed and provided for each major topic. The objective of the topic outlining is to indicate the scope of the course; however, the depth of contents and the orders in which the courses are taught are balanced and achieved by the teachers. Depending on these outlines and other guides, the teachers take a major role in shaping and implementing the curriculum. The major areas of emphasis are given for teachers in the AP course development process especially in percentages. The percentage of the items included in the examination also depends on this emphasis and percentage.

Internationally selected CRC takes responsibility for developing, implementing, and achieving a vision in each subject. The primary responsibility for curriculum development is also is rested on the shoulder of the IBCA. During curriculum reviews, IBCA staff works with

the IB teachers who are selected from IB member schools from around the world. The committees for all subjects in a discipline meet jointly at IBCA. The CRC identifies topics to be included, reviews the assessment structure, and writes the assessment statements for each topic. A major feature of IB curriculum review is the systematic participation of subject classroom teachers in a consultative process. The teachers' responses to questionnaires start IB's curriculum review process. In the questionnaire, the teachers are asked about the instructional time spent on each topic in the syllabus and on laboratory work for each topic, as well as about the technology resources accessible and available to them. The curriculum committees in all subjects make revisions to the diploma guides for each subject. The revised versions of the curriculum guides are posted on a password-protected Website for further teacher review and comment before being published.

Generally, the Ethiopian prep curriculum revision follows four major steps: Needs assessment; curriculum development, or writing the curriculum; implementation; and monitoring, and evaluation. During the needs assessment, firstly, the task force that will conduct and oversee the curriculum development is established. Secondly, this group will conduct a situational analysis through desk research. Thirdly, this group conducts the needs analysis and identifies the gaps to be filled in the new curriculum revision or development (MoE 2009). The process of writing or developing the curriculum includes tasks such as developing the national curriculum framework; determining minimum learning competencies, flow charts, and syllabuses for each subject; and developing textbooks and teacher guides. The activities accomplished during the implementation stage are delivering training of the trainers (TOT) workshops to introduce the curriculum framework and the new curricular materials. Monitoring and evaluation include the activities, such as conducting formative evaluations of the curriculum and invitation of external evaluators for summative curriculum evaluation.

Regarding the assessment process, the AP exam allocates 50 percent of the total time to multiple-choice questions and the rest to free-response, essay, or problem-solving questions. Students elect the colleges to which their AP scores can be reported for future admission. This exam makes students show the mastery of the concepts and skills learned in the course, enabling some students to continue, as freshmen, second-year work in the sequence at their institution. They can also be registered for courses in other fields of study for which the general course is a prerequisite.

Another criterion by which the programs were compared was the *assessment* process. In the test development process, the AP test DC consists of university instructors whereas the Ethiopian Prep CRC does not include college instructors. The AP course content is strictly matched against the college introductory courses during development. The AP tests are also pilot-tested and validated in the university campuses. Other than the assumption that the Ethiopian Prep courses are college introductory-level courses, there are no tracks that show the alignment of Prep courses with college introductory courses during the Ethiopian Prep curriculum review. The curriculum revision at the five-year interval is also another weakness compared to the IB and AP programs in which the yearly revisions guide continuous curriculum updating. Also, both AP and IB standardized assessment formats have percentages for objective and subjective items whereas EHEEE is totally objective type.

The DE courses, which are college courses like Ethiopian PP courses, have also a significant difference from the Ethiopian PP program in their assessment system. DE courses do not have an identity crisis in their belongingness. This means that they are college courses as they are said to be; they are taught by university instructors, and their assessment is completed through instructor course grading.

Regarding the instructional process, the AP and IB give the highest responsibility for teachers to shape, adjust, and implement the curriculum in the classroom settings. The teachers are given general guidelines that include objectives, lists of contents, methods of teaching, and assessment suggestions leaving the largest job to teachers. Compared to these programs, the Ethiopian Prep follows a more prescriptive instructional process where teachers' role in reshaping and contextualizing the curriculum is low.

Notes

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