A COMPARATIVE STUDY ON THE EFFECTS OF INTERNATIONAL BACCALAUREATE AND NATIONAL EDUCATIONAL PROGRAM ON STUDENTS SELF-DIRECTED LEARNING SKILLS

Özge Alpaslan Kayıkçı

181182101

MASTER THESIS

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Thesis Advisor: Asst. Prof. Jale Onur
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ULUSLARARASI BAKALORYA DİPLOMA VE MİLLİ EĞİTİM PROGRAMLARININ ÖZ-YÖNETİMLİ ÖĞRENME BECERİLERİ KAZANDIRMA ETKİSİ ÜZERİNE KARŞILAŞTIRMALI BİR ÇALIŞMA

Özge Alpaslan Kayıkçı
181182101
ORCID: 0000-0002-5190-9092

YÜKSEK LİSANS TEZİ

Eğitim Bilimleri Anabilim Dalı
Eğitim Yönetimi ve Denetimi Tezli Yüksek Lisans Programı/
Uluslararası Bakalorya İleri Liderlik Araştırmaları Sertifikalı
Danışman: Dr. Öğretim Üyesi Jale Onur

İstanbul
T.C. Maltepe Üniversitesi
Lisansüstü Eğitim Enstitüsü
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JÜRİ VE ENSTİTÜ ONAYI

Bu belge, Yükseköğretim Kurulu tarafından 19.01.2021 tarihli *"Lisansüstü Tezlerin Elektronik Ortamda Toplanması, Düzenlenmesi ve Erişime Açılmasına İlişkin Yönerge"* ile bildirilen 6689 Sayılı Kişisel verilerin Korunması Kanunu kapsamında gizlenmiştir.

ETİK İLKE VE KURALLARA UYUM BEYANI

Bu belge, Yükseköğretim Kurulu tarafından 19.01.2021 tarihli *"Lisansüstü Tezlerin Elektronik Ortamda Toplanması, Düzenlenmesi ve Erişime Açılmasına İlişkin Yönerge"* ile bildirilen 6689 Sayılı Kişisel verilerin Korunması Kanunu kapsamında gizlenmiştir.

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For all the girls of the world who cannot have opportunity to study…

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Özge Alpaslan Kayıkçı

Şubat, 2022

ÖZ

ULUSLARARASI BAKALORYA DİPLOMA VE MİLLİ EĞİTİM PROGRAMLARININ ÖZ-YÖNETİMLİ ÖĞRENME BECERİLERİ KAZANDIRMA ETKİSİ ÜZERİNE KARŞILAŞTIRMALI BİR ÇALIŞMA

Özge Alpaslan Kayıkçı
Yüksek Lisans Tezi
Eğitim Bilimleri Anabilim Dalı
Eğitim Yönetimi ve Denetimi Tezli Yüksek Lisans Programı / Uluslararası Bakalorya İleri Liderlik Araştırmaları Sertifikalı
Danışman: Dr. Öğretim Üyesi Jale Onur
Maltepe Üniversitesi Lisansüstü Eğitim Enstitüsü, 2022

Bilgi teknolojilerinin gelişmesi, dünyanın işleyiş biçimini çeşitli şekillerde değiştirmiştir. Teknolojinin gelişimi bilgiye erişimin hızlanmasına sebep olmaktadır. Bu bağlamda kullanılan platformların çeşitlenmesi ile dezenformasyon süreci başlamıştır. Güvenilir bilgi bulma zorluğu ve bilgiye erişimdeki yeni yöntemler insanların, geçmişe göre farklı beceriler geliştirmesini ihtiyaç haline getirmiştir. Doğan ihtiyacın bir sonucu olarak iş alanlarında aranan çalışan profillerindeki beklentiler, yenilenmiş ve yeni nesil becerilerle donanımlı olmayı zorunlu kılmıştır. Bu durum, öğrencilerin hem mesleki hem de özel yaşamlarında başarılı olabilecekleri becerilerle donanmalarını ve değişime uyum sağlayabilmelerini gerektirmektedir. Eğitim kurumları da öğrencilerine çağa uygun becerileri kazandırmak için, öğretim yaklaşımlarında, programlarında ve ders tasarımlarında değişiklikler yapma ihtiyacı duymaktadır. Öz-yönetimli öğrenme becerileri (ÖYÖB), bu beceri setlerinin en önemlilerinden biridir. ÖYÖB öğrencilerin öğrenme sürecinin merkezinde olmasını ve öz düzenlemeyi teşvik ederken, öğrenme sürecinin kontrolünün de öğrenende olmasını vurgular. Doğru bilgiye ulaşmanın zor olduğu, bilgi kaynaklarının çok hızlı değiştiği, hızlı bir adaptasyon ve değişim yönetimi gerektiren bu dönemde, şartlar ne kadar hızlı değişirse değişsin uyum sağlayabilen, öğrenme ve gelişimi üzerinde kontrol sahibi olmak isteyen bireyler için ÖYÖB son derece önemli hale gelmiştir.

Bu çalışmanın amacı, Türkiye'de lise eğitimi seviyesindeki iki programın (UBDP ve MEB), öz-yönetimli öğrenme becerisine katkısını incelemektir. ÖYÖB ölçeği ile bir özel okuldaki 64 UBDP+MEB ve 88 yalnızca MEB olmak üzere 152 öğrenciden programın başında ve sonunda toplanan nicel veriler, yarı deneysel yöntemlerden kontrol gruplu öntest- sontest araştırma deseni ile incelenmiştir. Çalışmada kontrol grubu ulusal lise programına devam ederken, deney grubu diploma programı ile eğitim görmüştür. Ayrıca, nicel veriler ile ilişkilendirilmek üzere, iki programın resmi dokümanları ÖYÖB becerisi odaklı olarak analiz edilmiştir. Elde edilen nicel ve nitel verileri ilişkilendirmek ve/veya karşılaştırmak için yakınsayan paralel dizayn kullanılmıştır.

Araştırmanın sonucunda ulusal program ile diploma programını birlikte alan öğrencilerin öz-yönetimli öğrenme becerilerinin, yalnızca ulusal programda olan

öğrencilerinkinden daha fazla olduğu ortaya çıkmıştır. Buna paralel olarak, yapılan belge analizinde en temel farkın, ÖYÖB'u destekleyen öğrenen profilleri, özyönetim becerisi gibi becerileri kazandıracak müfredat dışı unsurlar diploma programının merkezinde iken, ulusal programda merkezde dersler ve akademik kazanımların olduğu tespit edilmiştir. Ayrıca, diploma programında, ulusal programa göre öz-yönetimli öğrenme becerisini destekleyecek daha fazla öğe olduğunun, öğretmen materyallerinin ve beceri odaklı çalışmaların daha net belgelendiği ve dokümanlarda verilen kazanımların nasıl uygulanacağı ile ilgili daha kapsamlı yönergelerin olduğu saptanmıştır. Nicel bulgularda açığa çıkan farkın, belge analizdeki hangi bulgulardan kaynaklandığı tartışılmıştır.

Anahtar Sözcükler: Öz-yönetimli Öğrenme Becerisi, Uluslararası Bakalorya, Diploma Programı, Milli Eğitim Ortaöğretim Programı, UBDP.

ABSTRACT

A COMPARATIVE STUDY ON THE EFFECTS OF INTERNATIONAL BACCALAUREATE AND NATIONAL EDUCATIONAL PROGRAMS ON STUDENTS SELF-DIRECTED LEARNING SKILLS

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In numerous ways, the advancement of information technologies has altered the way the world operates. With the acceleration of access to information and the frequent use of digital platforms, it has become necessary for everyone to develop different skill sets due to the challenge of reaching reliable information in an age of increasing disinformation. As a result of this shift, businesses have adjusted their expectations from new employees to ensure that they are fully equipped with new skills. These changes necessitate the students to be equipped with these skills to be successful in both their professional and personal lives. As a matter of fact, educational institutions have inevitably been forced to adapt to these changes. Schools have adjusted their instructional designs and programs and their teaching methods in order to equip their students with up-to-date skill sets. Self-directed learning skills (SDL) is one of the most prominent of these in encouraging self-regulation and imply that students should be at the center of the learning process and have control over it. The SDL skill has become extremely important for individuals who want to find their own path and have control over their learning and development.

The purpose of this study is to analyze the effects of SDL skills on two high school education programs in Turkey (IBDP and MoNEP). Quantitative data were collected from 152 students comprising of 64 IBDP+MoNEP students and 88 MoNEP students in a private school. The SDL scale with pre-test post-test quasi-experimental method are used in the research study. The control group was in the national high school program (MoNEP), while the experimental group received the IBDP+MoNEP education. The official documents of the two programs were also analyzed with a focus on SDL skills to be then associated with quantitative data. Convergent parallel design was used to correlate and/or compare the obtained quantitative and qualitative data.

As a result of the research, it was concluded that the SDL scale score of the students who took the Diploma Program together with MoNEP were higher than the students who were only in the MoNE program. Parallel to this result, the document analysis findings reveal that the fundamental difference is the learner profiles that

supports the SDL, the skills-based design and extra-curricular elements that will provide self-directed learning skills are at the center of the diploma program, whereas subjects and subject-specific academic objectives are at the center of the MoNEP. In addition, it was concluded that in comparison to MoNEP, there were more elements to support SDL skills in the IBDP. Teacher materials, student-oriented studies and extra-curricular components which support SDL skill are documented in detail in IBDP. It was also discussed that the results of the quantitative data may be related with more comprehensive instructions on how to implement the objectives given in the IBDP documents as well as the difference in quantitative findings in the document analysis.

Keywords: Self-Directed Learning, International Baccalaureate, IBDP, Ministry of National Education, MoNEP, Connectivism, Upper Secondary Education.

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ABBREVIATIONS

ATL: Approaches to Learning

ATT: Approaches to Teaching

CAS: Creativity, Activity Service

CP: Career- Related Program

EE: Extended Essay

DP: Diploma Program

HEC: Higher Education Council

IB: International Baccalaureate

IBDP: International Baccalaureate Diploma Program

IBDP: Students age between 16-18 who studies IB program in Turkish National Education System.

IBDP +MoNEP:

IBO: International Baccalaureate Organization

LC: Learner-centered

MoNE: Ministry of National Education

MoNEP: Ministry of National Education Program

MYP: Middle Year Program

PYP: Primary Year Program

TOK: Theory of Knowledge

SES: Socioeconomic Statue

SL: Standard Level

HL: Higher Level

OCDE: Organization for Economic Co-operation and Developmen

RESUME

Özge ALPASLAN KAYIKÇI

Educational Science

Education

Bc.	2016	Boğaziçi University, Computer and Education Technology
High School	2005	Malatya Anadolu Lisesi

Work Experience

Year	
2016 - 2017	Computer Science Teacher - Üsküdar American Academy
2017 -	Terakki Foundation School - ITGS and Computer Science Teacher
2020 -	Terakki Foundation School - CAS Coordinator

Association Membership

Year	*Association*
2014 -2016	Üye: Boğaziçi Üniversitesi Eğitim ve. Araştırma Kulübü (EREC)

Scholarship

Year	
2010 - 2016	Boğaziçi University Education Scholarship

PART 1. INTRODUCTION

1.1 Problem

Societies have encountered several environmental, economic, and social challenges in recent years. Individuals are already being impacted by certain global issues; therefore, countries need to find local and global solutions for a better world. Education has a critical role in developing a wide range of solutions to respond to the changing problems and needs of humanity. To shape the world and create a well-being for humankind, education systems need to be transformed. Some skill sets and approaches, such as learning "how to learn something", having clear and purposeful goals, working with people with different perspectives, and identifying multiple solutions to significant problems will be essential in the upcoming years (OECD, The Future of Education and Skills Education 2030, 2018). To shape the world and bring prosperity to society, education systems must evolve in parallel to the changing nature of the problems that people face on a daily basis.

In traditional learning, students are passive learners; they mainly focus on learning the facts provided by their teachers. The emphasis is on remembering facts, including themes and concepts, so that the students will provide the expected answers later in the exams, and hopefully apply them to real-life situations (Siemens, 2005). In the learner's path to knowledge acquisition, learning content and materials are not adequately aligned with the needs of modern society. Furthermore, students do not tend to ask many questions and are not encouraged to do so; instead, they are required to listen carefully and repeat it afterwards to memorize. People tend to conceptualize education as solely *schooling*. In this perspective, education is defined as a one-way relationship in which there is only information flow from teacher to student. The former *educates* the latter, in other words, a kind of giving and taking (Bertini, 2018). However, any meaningful discussion of education requires considering it as something more comprehensive than schooling. In order to understand the shift in the meaning and scope of education in the 21st century, it is essential to discuss the developments in technology and its effects on our lives.

Information technologies are widely defined as all-inclusive, interactive, electronic-based systems such as computers, mobile devices, the World Wide Web, artificial intelligence technology and so on (Büyükbaykal, 2015). These technologies are used by governments, businesses, and health organizations for leisure, and undoubtedly, for education. At some point, using these technologies effectively is no longer a choice, rather a necessity, simply because they alter our way of thinking, greatly intertwine with our daily lives, and offer lots of opportunities to improve the ways we handle things (Bergen, Davis and Abbitt, 2015).

Accordingly, these technologies not only shape our world but also transform the way the world operates. Many workplaces are now "flatter" organizations, meaning that the order of business requires less and less hierarchy and less supervision, indicating worker autonomy and individual responsibility (Lee & Edmondson, 2017). Instead of managers, the industry is looking for leaders who are adaptable to change and eager to learn. Working places are designed to become much more collaborative with an increasing number of self-managing teams that are responsible for major challenging projects (Jerald, 2009). At the same time, jobs have become less predictable and stable. Workers in this new era must therefore be equipped with strong foundational skills in order to confront novel problems (Jerald, 2009). They must be able to think, identify and solve problems on their own, as well as improve their knowledge and skills while maintaining a collaborative relationship with their colleagues. According to Economic Co-operation and Development Organization's 21st century technologies report, the rapid evolution of technological developments, from the early scientific revolution to the modern Internet era, has transformed the skills and competencies required of modern workers, demanding them to stay current, versatile, and responsive. The expectations of the digital age indicate the need to pursuing the education of the workforce (Candy, 2004; Houle, 1988). In this regard, there is growing support for the claim that information technologies have great potential for future change in terms of child education. Because the environments in which students are currently taught and will graduate from in the future will be highly different (Hamidi et al., 2011), it is necessary to adapt to the changes carried by such technologies by teaching students to develop new skills.

Today's students must improve themselves to become successful learners in the information age and under the less predictable and stable conditions mentioned above because they are entering a dynamic and competitive world. They are expected to be part of a demanding and ever-changing workforce in an uncertain future (The American Association of Colleges of Teacher Education, 2010). According to Schleicher, it is critical to make meaningful connections between various fields of information and to create something new based on those connections (Schleicher, 2010). Based on the evidence currently available, it seems reasonable to suggest that adaptation to change is inevitable for students, even at younger ages, in order to succeed. As Lyman and Varian (2013) state, they need to acquire these skills for "*living in a multi-faceted world as an active and engaged citizen with personal and social responsibility*."

Students must adapt to new challenges and expectations as they progress from one project to the next and with each passing year, indicating an emphasis on individual learning and collaboration (OECD, 2018). As a result, there is a rapidly growing body of literature on 21st century skills. Students with greater access to knowledge and opportunities to improve themselves should be aware of current information platforms and methods of accessing accurate information, and they should develop a more comprehensive and fluid perspective by gaining knowledge in various fields. As a result, students are expected to have greater control over their learning process than they previously did.

Subsequently, with their materials and methods, today's educational systems should respond to these changes. They should offer ways of working through communication and collaboration as well as using the necessary tools to gather information and form meaningful connections. The emphasis is shifting from lecturing to analyzing facts, making meaningful connections, and creating something new with a more comprehensive approach. As Nobel laureate Herbert Simon (1996) states, "*The definition of knowledge has shifted from being able to remember and repeat information to being able to effectively locate, evaluate, and use information.*" Even though most schools still focus on teaching an old-fashioned set of basic skills, there have been some positive changes in accordance with current developments in technology (Jerald, 2009). Due to the abundance of data, teachers are no longer the main source of information, and

although it is now easier for learners to access information, it is more difficult to understand which ones are relevant, valid, and reliable. Therefore, more innovative teaching styles which consider teachers, as Johnson and McElroy state, as guides who create sustainable education and inspire students to be active learners are in practice (Johnson & McElroy, 2012). Jerald supports the conception that teachers should be leaders who guide the learning process to help students validate the information they gather from a range of sources (Jerald, 2009). The aim should be to develop students' ability to learn on their own and work as a team.

Moreover, during the COVID -19 pandemic, which first started in China and spread all over the world in 2020, educational processes were highly affected and distance learning became a necessity (Koçoğlu&Tekdal, 2020). Throughout the world, students need to have certain abilities to follow online lessons. Considering the wide access provided by technological developments, the flexible demands of business life and the effects of the Covid-19 pandemic, self-regulated and self-directed learning skills have gained more importance among 21st century skills (Hsu and Shiue, 2005). Current literature, as discussed throughout the presented paper, appears to validate the view that the acquisition of new skills such as Self- Directed Learning (SDL) is one of the key elements of student success. Several studies show that learners who lack self-direction are more likely to fail when placed in the rich and complex environment of an information technology-based learning process, such as distance learning. (Abar&Loken, 2010; Brooks, Gallagher, & Nolan, 1997). Autonomy, therefore, is a necessity for students to be able to adapt to the current needs and expectations.

SDL can broadly be defined as people taking the lead, with or without the help of others, to map out learning needs, identify goals, determine, and implement proper learning strategies. As learners can apply their skills to numerous situations and experiences to gain new competencies, they can also use them to establish relationships and assume novel roles. These roles require the capability of adaptation and the ability to learn and improve individually in an ever-changing world influenced by technology (Jerald, 2009). Hartley and Bendixen (2001) have argued that SDL is a critical learning skill which enables students to adapt to changing learning platforms and achieve their goals. Accordingly, today's learning approaches should also be updated. In an

environment where access to knowledge has increased so much and information is constantly updated, it has become a necessity for students to have the capacity to manage their learning processes on their own.

1.2. Literature Review

1.2.1. Self-Directed Learning (SDL)

Although it may be considered a concept of the modern era, the term "self-directed learning" exists as a phenomenon in the antique ages. The Greek philosophers Socrates, Plato, and Aristotle were the first known self-learners. They used this phenomenon in their life-long learning disciplines, emphasizing self-direction in learning and teaching (Kulich, 1970). When Socrates describes wisdom, he defines it as *"the man who has mastered self-control"* and he declares himself as a "*self-learner who is not ashamed to learn from everyone around him*." Plato claims that the purpose of education should be to teach the young how to become self-educated adults. Furthermore, Aristotle points out the principle of self-realization, or *entelechy*, which is the fact that each living being has a potential for wisdom that can be developed both through self-education and under the guidance of a master (Kulich, 1970). Literature shows that the consensus on the idea of developing a higher autonomy in learning has always attracted the thinkers, scholars, and educators of the past.

Since the term "self-directed learning" has been coined, research has shown that it has been broadened and changed not only in meaning but also in the group it targets. A conceptual framework for self-directed learning started as a part of adult education (Knowles, 1975). It implies freedom and autonomy; in other words, taking responsibility for your development with intrinsic motivation. The source of motivation for adult learning comes from their opportunity to choose the learning path and learn through experience (Brookfield, 2009). This autonomy gives the learner a chance to understand their learning needs, to be free while choosing the sources and implementing methods. After these assumptions, Knowles agrees that SDL may also apply to learners in various degrees, such as primary and secondary school level (Knowles, 1970; Merriam, 2001). In early literature, SDL is rather regarded as "self-regulating" skills for primary and middle years. Self-regulation can be defined as the application of those techniques, tactics, and

strategies that may be used towards students' self-identification and self-learning (Vohs and Baumeister, 2004). In time, self-directed learning has developed, and as a result of these changes and developments, the term SDL has also started to be used for the education of children and young learners. Accordingly, this resulted in an increase in support for research on SDL regarding the K-12 field.

Malcolm Knowles, a doctoral student of Houle, was the first to use the term self-directed learning (SDL). He defines SDL as the ability of a learner, with or without guidance, to recognize the learning process in accordance with their learning needs, to identify learning goals, to access appropriate sources and implement effective strategies using various methods and equipment (Knowles, 1975). Subsequently, Rogers [27], at the beginning of the knowledge era, state that:

> We are ,…, confronted with an entirely new educational situation in which the goal of education, if we are to survive, is to facilitate change and learning. The only educated man is one who has learned how to learn Rogers [27].

This view of Roger argues that learners should always be suspicious, and one can only be considered educated if they learn how to learn.

In a more comprehensive definition of SDL, Skiff and Beckendorf (2009) state that *"SDL is the process of defining learning needs,"* mentioning a self-directed learner's need to plan learning aims, explore learning resources, and implement required learning methods and strategies. Adults are naturally expected to be able to self- assess their learning. For younger learners, their assessment could be carried out by their teachers. The one consistent characteristic of the majority of definitions of self-directed learning is control over the learning process and all educational decisions. Learners are expected to initiate and design all these processes related to SDL skills by themselves. In the traditional learning process design, these steps are provided by the teacher. Additionally, each definition focuses on active engagement with and awareness of the process. Awareness indicates that the learner is aware of the goals of learning, resources and methods to be used, and the criteria to evaluate successful learning. These are the decisions that rest in the learner's hands. This emphasis on who decides what is right and how these things should be pursued is also at the core of self-education. As Knowles states,

> Today's learners can easily access a large amount of information at one time and are exposed to a vast amount of information, and there is a greater need for each individual to self-learn, independent of teachers or classroom settings, than in the past (1975).

Students' ability to decide what to learn, become aware of the learning process, access accurate information, and improve their access to knowledge seems to be critical for learning as well as personal and professional development.

Arguably, in today's world, these theoretical descriptions have their place in practice. The business community emphasized the importance of educational leadership in assisting youth in becoming more autonomous, so that tomorrow's workforce can deal with rapid changes in knowledge (Castells, 2005; Houle, 1988; U. S. Department of Education, 2010; Warschauer&Matuchniak, 2010). Companies are likely to be looking for candidates who are eager to learn and adapt to change. Since the validity and accuracy of knowledge may change over time, depending on the discovery of new contributions to a subject, self-directed learning skills are crucial in keeping up with the current state of information. In light of the aforementioned, SDL has its place in literature, highlighting the importance of learning how to learn and adapting to rapid change.

1.2.2. Self-Directed Learning and Connectivism Theory

Behaviorism, cognitivism, and constructivism were the three fundamental learning theories when technology was not discussed as regards to learning (Siemens, 2005). Learners of the past would graduate and begin a career that would often last until retirement, as it is commonly observed in Turkey. At that time, information was slowly developing and long-lasting. As previously stated, today's foundational principles have evolved in response to the changing educational and working environments. For more than a few decades, technology has been shaping how we live, work, communicate, and learn (Siemens, 2004). Based on evidence currently available, it seems fair to suggest that sources of knowledge are growing exponentially and the tools to access these sources vary. On the other hand, in many fields, the lifespan of a fact is now measured in months and years. Correspondingly, Gonzalez (2004) describes the challenges of some rapidly diminishing trends in learning. Throughout their lives, many students will encounter a variety of different, possibly unrelated fields. Learning now takes place in a variety of contexts, such as multimedia mediums, communities of practice, personal networks, and

the completion of work-related tasks. Informal learning is a crucial aspect of the learning experience at the moment. Vaill emphasizes that:

> Learning must be a way of being—an ongoing set of attitudes and actions used by individuals and groups to try to keep up with the unpredicted, novel, messy, obtrusive, recurring event (Vaill, 1996, p. 42).

Subsequently, he highlights the importance of being connected with the environment in terms of learning, and therefore, learning theories should also consider the underlying social environments where learning occurs.

According to a rapidly growing literature, many of the processes previously explained and outlined by learning theories (particularly in cognitive information processing) can now be off-loaded to or resolved by technology. Hard drives and cloud technologies are replacing the concept of memorizing facts. Software and elaborate algorithms have greater processing power than our minds. The emergence of the Internet, particularly the developments in information technologies, provided the opportunity to access a variety of opinions and to communicate. This indicates that in addition to know-how and know-what, know-where, which is knowing the place to look for relevant information, comes forward (Kop and Hill, 2008). Old ways of searching and eliminating information are likely to become ineffective in the face of these new contexts (Kop and Hill, 2008). There is overwhelming evidence for the notion that there should be a new learning theory to meet these new changes and expectations. In this section, the discussion will indicate connectivism as a new learning theory and its relationship with SDL.

Connectivism, as a relatively new learning theory, highlights the importance of being able to make meaningful connections among thoughts, theories, and general information. George Siemens and Stephen Downes initially introduced the theory in 2005. The theory regards learners as "nodes," like those in a network. Nodes may indicate any object that can be connected to another object, such as books, webpages, other people, etc. Siemens and Stefan Holzman summarize that the theory views learning as the process of creating connections and developing networks in which knowledge accumulates (2006). In sum, connectivism is based on the idea that people learn when they make connections, or "links," between various nodes of information.

Their studies address the vital role of technology in today's learning process, mentioning the fact that the digital age accelerated the process by which learners access the source of information. It recognizes technology as a crucial part of the learning process and that the connectedness provided by information technologies offers us the opportunity to decide on our own. As a result, the two critical skills that contribute to connectivism learning theory are:

- the ability to look for current information,
- the ability to locate secondary and extraneous information from various sources.

Connectivism puts forward a view similar to Vygotsky's activity theory, which claims knowledge can be accessed through active participation. The ability to make decisions based on information gained is regarded as essential to the learning process. As a result of this active engagement and participation emphasis, the connection between SDL and connectivism gets even stronger, which is investigated by W.P Conradie (2014). According to Conradie's study, the relationship between these two notions can be interpreted as being complementary or convergent, depending on the perspective, such as the active engagement and control of the learning process. The essence of connecting knowledge is essentially predictable because connectivism aims solely to characterize the connections between nodes, which must already have predefined contents. The perspective of connectivism is seen in the study of scientific reasoning, where research is not linear, and knowledge is connected to previous knowledge and allows for new insights. However, it is risky to assume that students are able to handle connectivism without participating in it. The knowledge needed to exploit the system may not necessarily be directly available to them. Even if they already have the knowledge related to the targeted source, if the relationship is not connected to their existing mental schemes, they ought to use their imagination to create new related links or acquire additional information. This is the reason why, even if knowledge is specified, students should also be able to use the environment to generate new knowledge (Conradie, 2014). Furthermore, this perspective claims that people should be motivated by what they find personally interesting instead of relying on outside forces such as prodding, money or pressure. It allows individuals to explore their passions and, by doing so, build knowledge. It also considers interactive spaces involved in constructing knowledge, such

as collaborative spaces and formal or informal learning networks, indicating an encouragement for people to share information and create communities.

1.2.3. Self-Directed Learning and Academic Performance

Recent studies reveal that there is a positive correlation between the academic performance of students and their self-directed learning skills (Hsu & Shiue, 2005; Stewart, 2007). For example, Khiat (2017) investigated adult students' self-directed learning skill and found that it is linked to certain abilities such as goal setting, time management, procrastination management, note-taking and research capability, online class and technical readiness, and stress management. In other research, Cazan and Schiopca (2014) investigated the relationship between self-directed learning skills, personality traits, and academic performance, and they found that, without discrimination among the personality traits, self-directed learning skills pave the way for better academic performance. Research indicates that improving self-directed learning skills has a positive influence on students' academic performance by improving a variety of abilities. As a result of deep literary investigation, it can be clearly stated that there is a direct or indirect positive relationship between self-directed learning skills and academic performance.

Certain studies on the relationship between self-directed learning skills and academic performance in Turkish students independently verify the findings of this study. Sönmez (2016) and Ozer and Yükselir (2021), for example, investigated the relationship between self-directed learning skills and academic performance of students attempting to learn English as a foreign language. The researchers indicated that as the level of SDL increases, the performance of the students is also enhanced. They indicated that self-directed learners express higher levels of motivation, and motivation directly influences academic performance when learners are self-controlled and motivated. Furthermore, they stated that self-directed learners appear to be more flexible learners, develop better analytical skills, and exhibit higher levels of creativity, all of which have a positive impact on their academic performance. From a different perspective, Tekkol and Demirel (2018) also state that self-directed learning skills enhance the learning process, not only in the classroom but also at home, where students individually decide what to do. Another reason is that self-directed learners show equal or higher performance in required

coursework and do not suffer the long-term academic effects of not being equipped with certain skills or experiences (Durnalı, 2020).

The effects of SDL skills on academic performance can be explained in different terms. Two different types of self-directed skills exist: those that are connected to the subject matter being learned and those related to the learning process. Regarding the first trait, learners with a high degree of these skills may better comprehend a certain subject matter. Understanding a subject matter sometimes dictates how engaging it can be for an individual. Those having a low degree of self-directed skills may have difficulty with most subjects. With regards to the second type, these skills are innovative practices with great potential to shape the next generation of self-directed learners. On the other hand, without proper guidance, these skills may not come to fruition.

As a result, a group of researchers investigated SDL as a process or ability that could be undertaken by an individual and improved through experience or instructor training. Brockett and Hiemstra (1991), Knowles (1970, 1975), and Tough (1967, 1968, 1971) were proponents of the idea that guidance is essential in increasing the learner's ability to be more autonomous and to take personal responsibility for one's own learning (Merriam, 2001). As it is mentioned in the above literature, the role of teachers has shifted from being lecturers to being guides along the learning process. Academic performance is expected to increase with the help of the changing role of the teacher and the addition of self-direction in the learning process. Merriam and Caffarella supported the model in which the concept of SDL was used to develop an instructional model to assist in the design of a curriculum that would give students control over their learning while guiding them toward greater self-direction (2001). The emphasis is, therefore, not only on the student, but also on the lesson design and curriculum in terms of improving SDL skills.

1.3. Purpose

The main purpose of this study is to investigate the effectiveness of the Turkish Ministry of National Education (MoNE) upper secondary program and International Baccalaureate Diploma Program (IBDP) on the acquisition of self-directed learning (SDL) skills on 12 grade students. The contribution of these two programs to students' SDL skills is investigated with the help of questions below.

1.3.1 Research Questions

In more specific terms, this study seeks to answer the questions:

1. Is there a significant difference between the SDL scores of the MoNEP and IBDP+MoNEP students?
   - 1.1 Is there a significant difference between MoNEP and IBDP+MoNEP students' SDL skills at the 10^{th} grade level?
   - 1.2 Is there a significant difference between MoNEP and IBDP+MoNEP students' SDL skills at the 12^{th} grade level?
   - 1.3 Is there a significant difference between the pre-test and post-test of the MoNEP students with respect to SDL skills?
   - 1.4 Is there a significant difference between the pre-test and post-test of the IBDP+MoNEP students with respect to SDL skills?
   - 1.5 Is there a significant effect of interaction between gender difference and programs (IBDP+ MoNEP and MoNEP) with respect to students self-directed learning skills when students' SDL scale scores are controlled?
   - 1.6 Is there a significant difference between the performance of males and females with respect to students' SDL skills in MoNEP at the end of the 12 grades?
   - 1.7 Is there a significant difference between the performance of males and females with respect to students' SDL skills in IBDP+ MoNEP at the end of the 12 grades?
2. What is the contribution of the curriculum structure of MoNEP and IBDP (general philosophy (mission and visions), teacher support materials, curricular and extra-curricular elements) with respect to the acquisition of SDL skills?

2.1. What is the contribution of the general philosophy (mission, and learner profile) of IBDP and MoNEP in respect to acquisition of SDL skills?
2.2. What is the contribution of the extra-curricular elements in IBDP and MoNEP in respect to acquisition of SDL skills?
2.3. What is the contribution of the teacher support materials of MoNEP and IBDP in respect to acquisition of SDL skills?
2.4. What is the contribution of the assessment methods given in the official documentation of MoNEP and IBDP in respect to acquisition of SDL skills?

1.3.2 Hypotheses

Hypotheses related with the quantitate research questions are:

$H_0$1: There is no significant difference between the pre-test mean score of MoNEP and the pre-test mean score of IBDP+MoNEP students with respect to SDL skills.

$H_0$2: There is no significant difference between the post-test mean score of MoNEP and the post-test mean score of IBDP+MoNEP students with respect to SDL skills.

$H_0$3: There is no significant difference between the pre-test and post-test of the MoNEP students with respect to SDL skills.

$H_0$4: There is no significant difference between the pre-test and post-test of theIBDP+MoNEP students with respects to SDL skills.

$H_0$5: There is no significant effect of interaction between gender difference and programs (IBDP+ MoNEP and MoNEP) with respect to students self-directed learning skills when students' SDL scale scores are controlled as a covariate.

$H_0$6: There is no significant difference between the performance of SDL skills of male and female students with respect to SDL skills in MONEP at the end of the 12 grades.

$H_0$7: There is no significant difference between the performance of SDL skills of male and female students with respect to SDL skills in IBDP+MoNEP at the end of the12 grades.

1.4. Significance

As previously stated, self-directed learning skills are critical in terms of meeting the needs of the modern world due to technological advancements, knowledge accumulation, accessibility, and their implications for education in general. SDL skills encourage students to take an active role in their learning rather than being passive observers. SDL is considered as one of the preliminary skills sets that individual in the modern world. In order to achieve long-term success throughout their life and make a positive impact on the world, students should have competence as well as individual control over accessing knowledge, making connections and planning future learning opportunities in the fast-paced world.

Since the environments in which students graduate and enter the workforce change in unpredictable ways, adjustment in education programs and teacher approaches need to be made. The teacher's role should not be to teach the subject directly, as is the case in traditional education systems. Education systems must evolve from the traditional to the progressive. Course designs should be contemporary, and assessment and evaluation methods should be unconventional. In this regard, it is critical that learning how to learn, which is related with acquisition of the SDL skills, becomes one of the most important skills, in order to keep up with the rapid changes. Since the IBDP program is relatively new in Turkey, there is no study conducted related with SDL skills on IBDP program.

Furthermore, this study is the first study on Self Directed Learning for students in IBDP and MoNE Program. Due to the limited number of studies in the literature, the research findings are expected to shed light on the researchers who will work, particularly in the field of IBDP and MoNE programs and self-directed learning skills and to bring an international perspective to curriculum development studies in Turkey. By comparing the IBDP and MoNEP curricula in terms of their approach to self-directed learning skills, as well as examining the SDL scores of students from each, this research aims decision and policy makers, scholars, and teachers to improve the curricula and students' performance by SDL, as well as develop better education programs for the future. Making

improvements based on the evaluation of the positive and negative aspects derived from the comparison of SDL skills will benefit the students of both programs.

1.5. Assumptions

Since the researcher focuses on the relationship between self-directed learning skills and the IBDP and MoNEP curricula through the use of a scale on SDL, the assumptions made are:

- The reliability and validity of the scale used, and it is assumed that measuring the SDL scores of the students using the questionnaire midway through the programs and just before graduation will reflect their actual level of self-directed learning skills,
- The test was administered under standard conditions.
- The students who participated in the research gave sincere and correct answers to the questions in the data collection tool,
- While self-directedness has been linked to academic achievement and self-efficacy, due to the similar 9th grade GPAs of the students in both groups, the students' backgrounds and readiness levels are assumed to be similar,
- Teachers, as program implementers, design lessons that are appropriate for the program's documents and objectives.

1.6. Limitations

There are certain limitations and cofounding variables to be mentioned:

- The subjects of the study were limited to 152 students.
- The source of data is limited to a private high school in İstanbul.
- Since it is not possible to control the psychosocial and developmental states of the students, the effect of these situations on the SDL skill outcome could not be investigated.
- The research period is limited to the academic year 2019-2021.
- Even though same materials for lessons and assessment are used, some of the teachers are differ for IBDP and MoNEP groups.
- Due to the conditions forced by the COVID-19 pandemic, there were difficulties in the data collection process, which affected the scope and generalizability of the experiment.
- The limitation of the convenience sampling method should also be considered:
    - The dependency of the convenience sampling (Fraenkel, Wallen, & Hyun). Dependency means that the sample items(students) are all connected to each other in some way. This dependency interferes with statistical analysis.
    - The possibility of under or over representation of the population (Fraenkel, Wallen, & Hyun, s. 100-101),
    - The results of convenience samples are hard to replicate,
- Furthermore, since the pandemic forced students to continue their education at their homes, and mainly on their own, it might be considered an extraneous variable.
- Although students are in the same age group, their developmental stages may vary, affecting their responses to the scale.
- Students from the study's sample consists solely of students from relatively high socioeconomic backgrounds. Because of the relatively better conditions at their

schools, homes and learning materials, discussions of the results and their implications for the future will especially be beneficial for students at private schools from high-income families. While this may appear to be a limitation, it is critical in terms of controlling the effect of socioeconomic level factors as cofounding variables. Students from lower and mediocre socioeconomic status (SES) families are not included in this study; thus, generalizations about MoNEP public school students might not be made as they come from a variety of socioeconomic backgrounds.

1.7 Definitions

Definitions of the words are given with dictionary definitions and operational definitions if it is necessary.

Approaches to learning (ATL): Strategies, skills and attitudes which inform the IB teaching and learning environment (IBO, 2021).

Creativity, Activity, Service (CAS): Creativity, Activity and Service (CAS) is one of the core aspects of the program that place importance on extra-curricular elements. In addition to academic responsibilities, students need to be able to improve their intellectual skills, be physically active for their mental well-being, serve the community that they live in (IBO, CAS Guide, 2017).

International Baccalaureate Diploma program (IBDP): International curriculum for students aged between 16 and 18 years (IBO, 2021).

Ministry of National Education (MoNE): The Ministry of National Education is a government ministry of the Republic of Turkey, responsible for the supervision of public and private educational system, agreements and authorizations under a national curriculum.

Turkish Ministry of National Educational Program (MoNEP): Turkish National curriculum which is designed for students aged between 14 and 18 years old (MoNE, Milli Eğitim Bakanlığı Ortaöğretim Kurumları Yönetmeliği, 2020). This term is used to describe educational programs of students who study upper secondary (high school) educational program in Turkey. It consists of a four-year program (grades 9 to 12), which became obligatory in 2012 with the advent of the 4 (elementary school) + 4 (middle school) + 4 (high school) system. High school in Turkey is called Lise.

SDL (Self- Directed Learning): SDL as the ability of a learner, with or without guidance, to recognize the learning process in accordance with their learning needs, to identify learning goals, to access appropriate sources and implement effective strategies using various methods and equipment (Knowles, 1975).

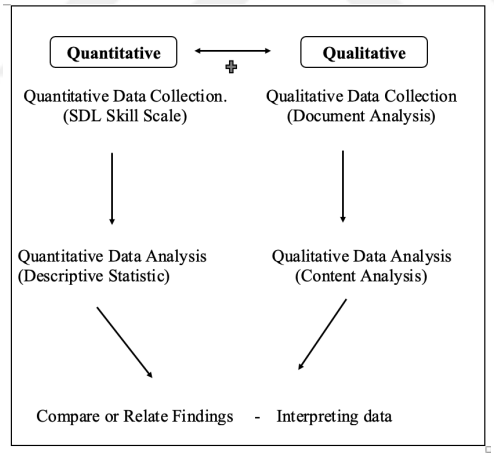
PART 2. METHOD

This section provides information regarding the model of the presented research, its population and sample, and data collection and data analysis procedures.

2.1. Research Design

A convergent parallel design approach of mixed method is used in this study to compare the effects of the MoNEP and the IBDP+MoNEP on the SDL skills of high school students (Figure 1) (Fraenkel, Wallen, & Hyun). Quantitative, and qualitative data were collected and analyzed simultaneously, and the results of the analysis were attempted to be interpreted. The researcher makes use of both qualitative and quantitative data while seeking answers to research questions. The aim is minimizing the limitations of both methods by combining qualitative and quantitative data.

Figure 1. Design of the Research



Convergent parallel design can simultaneously benefit from numerical data collected from samples and detailed data in which documents are systematically examined (Patton, 2002). In this respect, it is aimed to provide an alternative to only qualitative or only quantitative method, allowing the application of the most appropriate method to answer the research questions (Teddlie & Tashakkori, 2009).

2.1.1 Quantitative Research Design

In the first part of the research, non-equivalent control group design as a part of the quasi - experimental design was used. Quasi-experimental designs do not include the use of random assignment. Researchers who employ these designs rely instead on other techniques to control (or at least reduce) threats to internal validity (Fraenkel, Wallen, & Hyun, s. 260-263). Quasi-experiments usually test the causal consequences of long-lasting treatments outside of the laboratory (Cooper, 2015). Examining definitions by some theoreticians will clarify why this design is chosen as the appropriate methodology for this research. According to Cohen, Manion and Maison, this design is often used for educational research, when participants are not randomly assigned to conditions, the resulting groups are likely to be dissimilar in some ways. (Cohen, Manion, & Morrison, 2007).

Table 1. Quantitive research design of the study

Groups	**Pre-test (10th Grade)**	**Treatment**	**Post-test (12th Grade)**
Experiment Group	SDL Scale	IBDP	SDL Scale
Control Group	SDL Scale	MoNEP	SDL Scale

In table 1, the SDL scale represents the Self-Directed Learning scale. Using this scale, a pre-test was conducted, at the 10th grade level prior to the implementation of the program to determine the similarity between the groups. To examine the effect of the treatment (IBDP) and to compare both programs' effects on students' SDL skills, a post-test is applied at the end of the 12th grade.

2.1.2 Qualitative Research Design

Additionally, as a qualitative method, the study is based on a document analysis method of relevant literature on the curricula of MoNEP and IBPD. The document analysis method, also known as document scanning, involves the examination of written materials containing information about the concepts (Yıldırım & Şimşek, 2005). Cohen,

Manion and Morrison also define the document analysis model as a content analysis model, systematic set of procedures for the rigorous analysis, examination of the contents of written data (Cohen, Manion, & Morrison, 2007). This model includes the process of summarizing and reporting written data including the main contents of data, and their objectives. Kıral and Jiang (2020) for example, in their research, used this method and analysed Turkey and China's Ministry of National Education's strategic plans and examined the similar and different sides of the two plans (Kıral & Jiang, Comparison of the strategic plans of the ministry of national education in Turkey and China, 2021). Although document analysis is often complementary to other research methods, it can also be used as a standalone method (Cohen, Manion, & Morrison, 2007). In this research, the following sources in Figure 3, were used while examining the contribution of the two programs to SDL skills:

Table 2. List of documents analyzed

MoNEP	IBDP
1. MoNE regulation for secondary education included: • Mission-Vision Document • Assessment Method 2. MoNE Secondary Education Curricula 3. MoNE Social Activities Regulation 4. MoNE Projects and Performance Assignment Document 5. MoNE official Website 6. MoNE Vision and Mission Statement 7. MoNE Official Statistics	1. IBO Program Resource Centre 2. IBO Learner Profile Guide 3. IBO ATL and ATT Guide 4. IBO rules for IB Schools 5. IBO Official Website 6. IBO Theory of Knowledge Guide 7. IBDP CAS Guide 8. IBDP Extended Essay Guide 9. IBDP Guide to Assessment 10. IBO School Rules Guide

2.2. Sample And Population

The target population of this research private schools in Turkey that implement IB Diploma Program. In this manner, the accessible population is the private schools that implement IB Diploma Program in İstanbul. And the sample is one of the schools that implement IB Diploma Program in İstanbul. The school offers an Anatolian High School Program, and it is a November IB Diploma Program school.

The sample for this study is determined through the use of "convenient sampling". A convenience sample is a group of individuals who (conveniently) are available for study (Fraenkel, Wallen, & Hyun, s. 99-100). Convenient sampling is a non-probability sampling technique in which researchers select samples from the population based on their accessibility (Balcı, 2006). There are no other criteria for this sampling method beyond the willingness and availability of people to participate in the work. It doesn't require a random sample since the only criteria to meet is an agreement to become part of the study. The limitation of this method is given in the limitation part of the study.

Table 3. Number of students from IBDP+MoNEP and MoNEP

Group	Frequency	Female	Male
MONEP	88	58	30
IBDP	64	49	14
Total	152	107	44

Students have similar general averages (70-100), at the end of grade 9, can choose to study only MoNEP or MoNEP+IBDP, is depending on requirements and their preferences. In this study, the fact that the students' overall averages were similar was used to reduce the effect of confounding variables. At the beginning of the research process, a total of 152, 16–18-year-old students, 64 from the IB Diploma Program and 88 from the MoNE Program, were involved see Table 1. Students who study with only MoNE program is defined as the control group. Students from both groups were in the beginning of the 10^{th} grade for the first testing, and for the second one they were at the end of the 12^{th} grade.

2.3. Data Collection

2.3.1. Quantitative Data Collection Instrument

Turkish version of self - directed learning scale (SDLS) is used to collect students self-directed learning skills. The original scale assesses the extent to which individuals learn autonomously using a unidimensional structure and it is developed by J. Lounsbury in 2006 (Lounsbury, et al., An Investigation of the Construct Validity of the Personality Trait of Self-directed Learning, 2006). The scale consists of 10 items that are rated on a five-point Likert Scale from 1 (strongly disagree) to 5 (strongly agree). See **Appendix D.**

The Turkish version of the Self-Directed Learning Scale (SDLS) provided by (Demircioğlu, et al., 2018). According to a Turkish adjustment study of this scale, the SDLS test–retest correlation was 0.82, while the scale's Cronbach alpha coefficient was 0.85 in reliability analyses. Lounsbury and Gibson (2006) discovered a unidimensional factor structure of the scale in their original study. Supporting past findings, confirmatory factor analysis (CFA) results shows that the SDLS is uni-dimensional (Demircioğlu, et al., 2018). As Browne and Cudeck (Browne & Cudeck, 1993) suggested, Root Mean Square Error of Approximation (RMSEA) score obtained in SDL scale Turkish translation study was "*lower than 0.08*", conforming adequate fit model. Similarly, Goodness of Fit Index (GFI) score of the present study reached the suggested cut off score of 0.95 (Munro, 2005). "Adjusted Goodness of Fit Index (AGFI) should be higher than 0.95, but allowance value was suggested to be 0.90 (Munro, 2005). AGFI score in this study was within this range." In addition, Bentler (1990) suggested 0.90 as an allowance score of Comparative Fit Index *(CFI)*. CFI score of the current work was quite higher than this value. All these results demonstrate that the Turkish version of SDLS fit the one-factor model. The findings indicate that the Turkish adaptation of the SDLS is a valid and reliable instrument for assessing self-directed learning in Turkish populations. Individuals with higher scores demonstrate a greater capacity for self-directed learning (Gliem & Gliem, 2003).

Students were instructed by the researcher to fill out SDL scale. In this case, the MoNE group was accepted as the control group. The test was administered to both groups, at the beginning of the program, in the 10th grade. Two years later, in their last year, they

were once more instructed to fill out the same questionnaire, which aimed to investigate the participants' self-directed learning skills. Furthermore, this research examines the differences between the two survey results and the MoNEP + IBDP and MoNEP programs, which reveals students' progress in terms of self-directed learning skills and highlights the development of these skills.

The researcher uploaded the scale as a questionnaire to an online platform. For the initial testing, participants (in both conditions 10th grade) completed the questionnaire independently in a classroom setting. Due to the COVID-19 pandemic, students (12th grade) completed the second testing forms remotely. Official permission has been obtained from the school and The Ministry of Education prior to the study. The scale and the permission documents are provided in **Appendices A and B.**

2.3.2 Qualitative Data Collection

The second question of the research is aiming to investigate the contribution of the curriculum structures of MoNE and IBDP programs's (teacher support materials, mission and visions, curricular and extra-curricular elements) on student' SDL skills. To seek for an answer for this question, official documents of two program is analyzed systematically. SDL scale has sub factors such as (Demircioğlu, et al., 2018):

- defining learning needs,
- utilizing skills,
- enduring challenges,
- self-efficacy in learning,
- planning skills,
- completing tasks,
- evaluation skills, and
- internal attributions.

These factors used when documents of two program is analyzed. To accomplish document analysis method, it is systematically analyzed the programs' :

- official documents (program booklets, regulation documents),
- teacher support materials (curricula and teacher guides),

- official publications on organizations (MoNE and IBO) official websites,
- extra-curricular components,
- assessment methodology in general.

Additionally, skill-based objectives of the curricula are considered. The components of acquiring SDL skills are revealed in the basic and extra-curricular elements of these programs.

2.4. Data analysis

2.4.1 Quantitative Data Analysis

Within the scope of the first main question of the research, in order to test the related hypotheses, the following statistical analysis was performed using the Statistical Package for Social Sciences (SPSS) (version 25). First, the Shapiro-Wilk test of normality was applied to examine whether the Self-Directed Learning Scale (SDLS) scores of students from both groups were normally distributed in both measures. One of the general assumptions regarding the normal distribution is that a sample size of at least 30 ($n \geq 30$) (Cohen, Manion, & Morrison, 2007). There are opinions in the literature that the Shapiro Wilk test is a more powerful test for testing normality. The authors, who are of this opinion, recommend that the Shapiro Wilk test be used to test normality in large samples ($n \geq 30$) (Razali & Wah, 2011). In this case, the normal distribution condition of the variable is $p > 0.05$.

According to the results of the analysis, data collected from both the pre-test ($p > 0.05$, $W = 0985$, $p = 0.422$) and the post-test ($p > 0.05$, $W = 0.983$, $p = 0.293$) for MoNEP in Table 4 were found to be normally distributed. Also, for student' data from IBDP+MoNEP collected both from the pre-test ($p > 0.05$, $W = 0977$, $p = 0.272$) and the post-test, ($p > 0.05$, $W = 0.987$, $p = 0.715$) for IBDP+MoNEP in Table 5 were found to be normally distributed. Due to the normal distribution of the data for the pre-test and post-test results for the two groups, parametric tests were used.

Table 4. Test of Normality for MoNEP

	Shapiro-Wilk		
	Statistic	df	Sig.
Total_pr	.985	88	.422
Total_pt	.983	88	.293

Table 5. Test of Normality for IBDP+MoNEP

	Shapiro-Wilk		
	Statistic	df	Sig.
Total_pr	.977	64	.272
Total_pt	.987	64	.715

Independent samples t-test is used to discover whether there are statistically significant differences between the means of two groups, using parametric data drawn with a normal distribution (Cohen, Manion, & Morrison, 2007, pp. 543-550). The independent samples t-test was performed to evaluate whether there was a difference between the pre-test SDLS mean scores of the MONEP and IBDP+MoNEP groups both for 10^{th} grade. Similarly, independent samples t-test was used to examine whether there was a difference in post-test for 12^{th} grade students SDLS mean measurements between the two curricula groups and effects of gender in groups.

To compares the means of two measurements (pre-test and post-test) taken from same group (MoNE or IBDP+ MoNEP) paired sample t test is used.

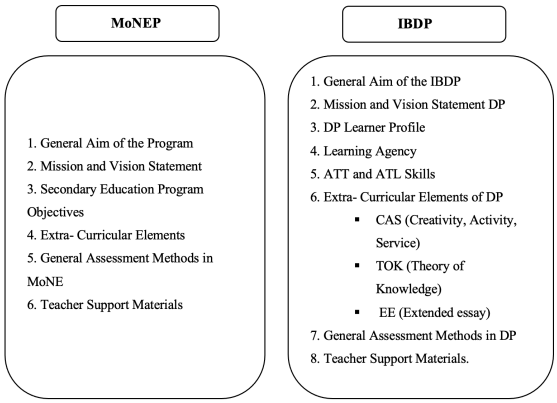
Additionally, to increase the experiment's sensitivity and success, the effect of the two factors (program and gender) on the dependent variable is also investigated. These variables include the effects of curriculum and gender on students' self-directed learning scale scores. Two Way ANOVA is a research design in which subjects are measured on the dependent variable two or more times. To apply two - way ANOVA test, samples are obtained must be normally distributes and observation for within and between groups are

independent. Rather than collecting data from different groups at the same time, multiple measurements are performed on subjects over time (Singh et al. 2013). With the gender factor here, it is aimed to statistically express the change in students' scores regardless of the group. For this reason, Two Way ANOVA test was used to reveal statistical analysis with the within-subject factors as group MoNEP and IBDP+MoNEP and gender female and male. The Bonferroni corrected statistical significance threshold was set at 0.05. In this respect, if the p values of the main effect factors are less than .05, it indicates there is significance effect of the factors on the variables (Cohen, Manion, & Morrison, 2007).

2.4.2 Qualitative Findings and Data Analysis

In this study, documents were examined according to Corbetta's (2003) classification of documents (personal and institutional). In this respect institutional documents provided by two organizations (MoNE and IBO) are used. Examples of these institutional documents are regulations, booklets, guides, support materials, and documents related to schools and institutions (Guba & Lincoln, 1981). For both programs, their contributions to SDL skills defined in the literature section are discussed in line with the information they provide in their official documents.

Figure 2. Analyzed elements in the documents



In the quantitative data analysis section, the general document contents of the programs and their connections with SDL skills are given in the following headings created by the researcher in Figure 2. Findings reveals from these documents are compared in the results and discussion section.

2.4.2.1 IBDP and MoNEP Programs

In this section, official documents of the MoNEP and IBDP and relevant literature will be reviewed. General structures of the programs are revealed, and it attempts to establish a framework for comparison. The review refers to the analysis of written materials depicting the general design and missions of both programs. Their objectives, mission and vision statements, curriculum contents, extra-curricular activities and assessment and evaluation techniques will be examined. Their focus on self-directed learning skills will be discussed in results and discussion part.

2.4.2.2 Ministry of National Education Program (MoNEP)

Turkey has a centralized educational structure that is coordinated by the Ministry of Education. The ministry determines and sees to the implementation of all policies regarding primary and secondary education (Dinçer, 2013). The mission of the Turkish Ministry of National Education is stated as:

> To provide an enabling environment and opportunities to raise ambitious, innovative, creative, peaceful, healthy and happy individuals who have developed their thinking, understanding, researching and problem solving competencies; who are equipped with the information and skills required for the information society; who internalize the national culture and the universal values of humanity and democracy; who are open to communication and sharing; who have developed a sensitivity and an ability for art; and who have high self-confidence, self-esteem, an awareness of rights, justice and responsibility (MoNE, T.C. Milli Eğitim Bakanlığı Vizyon, Misyon, 2015).

Competencies, values and 21st century skills are referred to in this statement. Additionally, the mission of the program is stated as: "*an education system that raises healthy and happy individuals who are ready for life.*" (MoNE, Vision, Mission, 2015). These documents are provided in the official website of the Ministry of The Turkish Education. General information about the program is provided to all stakeholders in The Regulations document. This information is shared with schools' managements by the ministry. It is also possible to access these resources from digital resources. Furthermore, according to the Organization for Economic Cooperation and Development (OECD) report, general aims of the Turkish National Education can be summarized as (OECD, Education at a Glance, 2017):

- raising individuals who are committed to Atatürk's reforms and principles; who adopt, protect, and improve the Turkish nation's national, moral, human, spiritual, and cultural values; who love and always elevate their families, homeland and nation; and who are aware of their duties and responsibilities to the Turkish Republic,
- trying to raise constructive, creative, and productive individuals with a moderate and healthy personality and mentality, an independent and scientific thinking power, a broad world view, a respect for human rights, enterprise and individuality, and a sense of responsibility towards society,
- preparing individuals for life by ensuring that they have professions that will contribute to the welfare of the society and make them happy by equipping them with the necessary knowledge, skills, attitudes, and the habit of working cooperatively in line with their interests, talents, and abilities,
- promoting the welfare and happiness of Turkish citizens and society, supporting, and accelerating economic, cultural, and social development in national unity and cohesion, and finally making the Turkish Nation a constructive, creative, and distinguished partner of the contemporary civilization.

The Turkish education system's goals are all comprised in its mission, vision and purpose documents. MoNE also provides syllabus documents that specify course-based outcomes and curricula in addition to these documents. On the other hand, the Turkish Ministry of Education announced plans to update the vision for teaching approaches in 2019. A new vision was developed for 2023, the 100th year of the Republic, and it declares that:

> The primary goal of the 2023 Education Visions is to raise science-loving, skilled, and ethical individuals who are interested in culture and willing to use present and future skills for the benefit of humanity. (MoNE, 2023 Vision Statement).

2.4.2.3 Secondary Education in MoNEP

Students in Turkey begin a four-year high school education after completing four years of primary school, four years of middle school, and a final high school entrance examination. High schools in Turkey cover all general, vocational, and technical educational institutions that offer a four-year compulsory education, whether formal or informal. This twelve-year period is within the scope of compulsory education. Those

who graduate from these schools are given a secondary education diploma. Secondary education consists of high schools that implement various educational programs (MoNE, Milli Eğitim Bakanlığı Ortaöğretim Kurumları Yönetmeliği, 2020). The following are the types of high schools that the Ministry of Education Provide in Turkey:

- Anatolian High School:
- Vocational High School:
- Science High School:
- Social Science High School:
- Religious (Imam- Hatip) High School:
- Fine Arts High School:
- Open (Remote) High Schools

After the central final examination at the end of middle school, students are assigned to these schools based on their scores and preferences. The Anatolian High School Curriculum is the primary focus of this research. The founding purpose of these high schools was determined to be the development of high-quality students who performed well on college entrance exams. Some Anatolian high schools offer a one-year foreign language preparatory course before starting the program. These institutions generally offer more courses per week than traditional high schools, given the fact that they provide a more comprehensive second language education. A freshman requires to take Mathematics, Turkish Literature, Religion and Ethics, Turkish Language, History, Geography, Physics, Chemistry, Biology, Hygiene, Foreign Language, Second Foreign Language, and Physical Education (MoNE, Milli Eğitim Bakanlığı Ortaöğretim Kurumları Yönetmeliği, 2020). In 9th and 10th grades, students attending an Anatolian High school follow the same general curriculum with these subjects. From 11th grade and onward, they choose electives according to their field or preference, including Science, Social Science, Turkish - Math, and Language (MoNE, Öğretim Programları).

The National Program is followed in every school. The primary aim of these schools overlaps with the general aims of upper secondary education in MoNEP. Curricula for all education levels up to upper secondary education in Turkey are prepared centrally by the relevant department of the Ministry of National Education and submitted to the approval of the Ministry by the Board of Education (MoNE, Milli Eğitim Bakanlığı

Ortaöğretim Kurumları Yönetmeliği, 2020). The Ministry of National Education publishes regulations that outline the general purposes of secondary education, program regulation, general assessment policy, and curriculum updates for schools and teachers. Apart from that, teachers can access the subject-based curriculum of the courses from the official MoNE website (MoNE, Öğretim Programları). Teachers determine the teaching methods, approaches, and instructional materials that will be used. Teachers also decide the methods in which exams, assignments, and projects will be administered, and the ways in which learning will be assessed in relation to the curriculum. Depending on these resources, only the framework of courses and assessment methods are provided, but how to do the application is at the discretion of the teachers.

Although there is limited documents and research on the MoNE high school program's (upper secondary education) objectives. The Ministry of National Upper Secondary Education's specific objectives can be summarized as follows:

- giving students a common minimum overall knowledge,
- familiarizing them with the problems of the individual and society and the ability to seek solutions,
- ensuring that they gain awareness which can contribute to the socio-economic and cultural development of the country,
- preparing students for not only higher education but also for employment and life itself, in line with their interests and aptitudes,
- developing students physically, mentally, socially, and culturally,
- raising students who respect the democracy and human rights,
- giving students an intellectual background, which will help them in their future educational life,
- developing students' self-confidence and self-regulation skills,
- acquiring students' study and collaboration skills,
- developing creativity and critical thinking skills,
- developing their language skills to help them follow the news all around the world (Milli Eğitim Bakanlığı Ortaöğretim Kurumları Yönetmeliği, 2020, p. Second Part).

Schools in Turkey implement the general objectives of the MoNE program and the specific objectives of high school education in accordance with these items. It is reasonable to state that the OECD report on Turkey's higher education specifies some aspects that are related to 21st century skill. Skills mentioned such as self-regulation, critical thinking and problem-solving serve SDL. Furthermore, promoting individuality, creativity and having control over the learning process show that the aim of the Turkish National Education provides some reflections of self-directed learning skills, aiming at improving students' autonomy and awareness. General elements and language used in these documents will be further investigated in the discussion section for a more comprehensive grasp of the pros and cons of the MoNE's perspective in terms of its focus on self-directed learning.

2.4.2.4 Students Competencies in the MoNEP

As it is stated in the MoNE curriculum documents, the education system aims to raise individuals who have the knowledge, skills, and behaviors integrated into competencies. These competencies are prepared by the Ministry of Education and the Council of Higher Education. These are given at the beginning of the subject specific syllabus of some courses (MoNE, T.C Milli Eğitim Bakanlığı Öğretim Programları İzleme Sistemi, 2021). These eight key competencies given in the MoNE subject syllabus are:

Mother Tongue Literacy:

Orally and in writing, express and interpret concepts, thoughts, opinions, feelings, and facts (listening, speaking, reading, and writing) in order to engage in appropriate and creative linguistic interaction in a variety of social and cultural contexts (MoNE, T.C Milli Eğitim Bakanlığı Öğretim Programları İzleme Sistemi, 2021).

Foreign Language Literacy and Competencies

It aims to develop communication and intercultural understanding skills in foreign languages. It is to develop listening, speaking, reading, and writing skills in foreign languages depending on the needs and interests of the individual (MoNE, T.C Milli Eğitim Bakanlığı Öğretim Programları İzleme Sistemi, 2021).

Mathematical Competence and Competence in Science

Mathematical competence is the development and application of mathematical thinking to solve a range of problems encountered in daily life. Competence in science refers to the ability and desire to use knowledge and methodology to explain scientific facts in order to define questions and produce evidence-based conclusions (MoNE, T.C Milli Eğitim Bakanlığı Öğretim Programları İzleme Sistemi, 2021).

Digital Competence

It covers the safe and critical use of information and communication technologies for business, daily life and communication. This competence is supported through basic skills such as using computers to access and evaluate information, storing, producing, presenting, and exchanging information, as well as participating in and communicating in common networks via the Internet (MoNE, T.C Milli Eğitim Bakanlığı Öğretim Programları İzleme Sistemi, 2021).

Learning Competence

It is the competence of insisting on learning so that an individual can organize his or her learning actions individually or in groups, using effective time management and knowledge management skills. This competency enables an individual to be aware of the learning needs (MoNE, T.C Milli Eğitim Bakanlığı Öğretim Programları İzleme Sistemi, 2021).

Social and Civic Competence

These competencies include personal, interpersonal, and intercultural competencies that enable individuals to keep up with the changing needs of society. It covers the forms of behavior required to resolve conflicts in social concepts (MoNE, T.C Milli Eğitim Bakanlığı Öğretim Programları İzleme Sistemi, 2021).

Taking Initiative and Entrepreneurship

It refers to the ability of an individual to transform his thoughts into action. It includes creativity, innovation and risk taking, as well as the ability to plan and manage

projects to achieve goals (MoNE, T.C Milli Eğitim Bakanlığı Öğretim Programları İzleme Sistemi, 2021).

Cultural Awareness and Expression

It emphasizes the importance of the creative expression of opinions, experiences, and emotions using a variety of mass media, including music, performing arts, literature, and the visual arts (MoNE, T.C Milli Eğitim Bakanlığı Öğretim Programları İzleme Sistemi, 2021).

The relationship of these competencies with the SDL skill will be detailed in the conclusion and discussion section.

2.4.2.5 Extra – Curricular Activities in MoNE Program

Aside from the curricula's subject content and educational programs, it includes extracurricular activities that allow students to develop some additional skills (Yiğit, 2008). According to the regulation of MoNE, these activities are given as club activities and extracurricular project activities. The aims of these activities can be stated as:

- developing a sense of self- confidence and responsibility,
- acquiring new areas of interest and skills,
- protect students from violence and harmful habits,
- keeping cultural and national values alive,
- encouraging the awareness of voluntarism,
- developing national, moral, cultural, and humanitarian values (MEB, Milli Eğitim Bakanlığı Eğitim Kurumları Sosyal Etkinlikler Yönetmeliği, 2019, pp. 3-4).

The objectives of these extracurricular elements, like those of upper secondary education, are determined by MoNE. However, the content of these extra-curricular activities is not clarified by the Ministry of Education. MoNE only provides the general aim of these activities on the regulation document. In this regard, the Ministry of National Education published the Social Activities Regulation in September 2005 (MEB, 2005). There is no assessment policy or operation guide provided for these activities. The schools are responsible for establishing and supervising these activities. As it is stated in the Social Activities regulation document:

> Each school should have a board consisting of teachers and administrators that manages social club activities in schools, and this board should set the aims and arrange the operations of clubs (MEB, Milli Eğitim Bakanlığı Eğitim Kurumları Sosyal Etkinlikler Yönetmeliği, 2019, pp. 3-4)

Schools are free to design student club contents and materials. They only need to keep the records of the syllabus that they design and use. MoNE requests that the relevant teacher records (syllabus and programs) of the activities for monitoring purposes. Occasionally, provincial inspections are conducted on a regional level. (MEB, Milli Eğitim Bakanlığı Eğitim Kurumları Sosyal Etkinlikler Yönetmeliği, 2019, pp. 3-4). The content of these activities could be related to science, culture, art, sports, music, or community service etc.

Some recent studies on the Turkish National Education Program have shown that these activities motivate students, and they are often effective in achieving the desired objectives. Practices of student clubs are in line with the interests and abilities of the students, which in turn enables them to organize various social activities for their development and growth.

2.4.2.6 Assessment in the MoNE Program

In Turkey's National Education Program, assessment is conducted internally. This means that the entire assessment process is carried out by the subject teachers, and there is only one test-based final examination for university admission at the end of the program (MoNE, Milli Eğitim Bakanlığı Ortaöğretim Kurumları Yönetmeliği, 2020). This is an external assessment prepared by the Student Selection and Placement Centre (ÖSYM), which is the institution responsible for organizing the national level university entrance examination in Turkey. The emphasis of secondary education is generally on preparing students for university by providing them with a basic general information background developed by the MoNE. The general university entrance examination is not compulsory.

An academic year in MoNEP consists of two semesters. Based on the learning outcomes of the subject curriculum, students are assessed through written exams, oral exams, performance tasks and projects. Additionally, in vocational high schools, students' end-of-term grades are determined by their training and internship scores (MoNE, Milli Eğitim Bakanlığı Ortaöğretim Kurumları Yönetmeliği, 2020, p. 24). Regardless of the number of lessons per week, at least two written exams per course are required for each

term. Exam questions cover all units of the term (MoNE, Milli Eğitim Bakanlığı Ortaöğretim Kurumları Yönetmeliği, 2020, p. 25). As it is stated in the regulation document of MoNE, the examinations should be prepared as per the assessment and evaluation criteria given in the curriculum documents of the courses. (MoNE, Milli Eğitim Bakanlığı Ortaöğretim Kurumları Yönetmeliği, 2020) Exam questions should be open-ended, and solutions of the problems must be shown in writing. However, one of the exams for each course can be constructed using multiple-choice questions, short-answer and true-false questions, matching items, or multiple-choice tests. Exam questions are created and administered by the course teachers. There is no moderation mechanism done by the ministry. The content and scope of the questions are at the teacher's discretion. For the final semester grade:

- students receive a performance grade based on the average of their performance task scores,
- at least two written exam grades (exams are administered and graded by subject teachers),
- a project assignment grade.

The average of these grades for each subject determines the end of the year grade of students. The final diploma grade point average (GPA) is calculated using the average grade of each year.

2.4.2.7 MoNEP Performance Tasks

The MoNE's performance tasks include individual or group studies, written or oral tasks, presentations, and research-based tasks that assess students' critical thinking, problem solving, reading comprehension, and creativity (MoNE, Milli Eğitim Bakanlığı Ortaöğretim Kurumları Yönetmeliği, 2020, p. 2). Each term, students must complete at least one "performance task" from each subject. Performance tasks are used to assess students' ability to apply their knowledge to real-world situations or problems. The performance tasks in the MoNE High School Program are developed and evaluated by the subject teacher in accordance with the subject's specific objectives. They are graded on a scale of 100 points. Students take a performance grade based on the sum of their performance task score.

These performance tasks are only short-term tasks which can be completed in two or three weeks at minimum. While conducting these tasks students are expected to apply what they have learned in the classroom to real-world scenarios. Each semester, students have the option of completing these assignments independently or in groups. Teachers can adapt the assignment to their students' specific needs. (MoNE, Projeler ve Performans Ödevleri, 2021, pp. 1-2) As with other assessment elements, the assessments of objectives and skills for these tasks, is solely at the discretion of the teachers. The MoNE documents do not contain any frameworks for performance tasks. There are also no guidelines for their implementation in order to acquire skills, or subject-specific assessment criteria.

2.4.2.8 MoNEP Project Assignments

Project assignments are tasks that students perform in groups or individually, with the goal of examining, researching, making comments, developing opinions, obtaining new information, producing original thoughts, and making inferences. (MoNE, Milli Eğitim Bakanlığı Ortaöğretim Kurumları Yönetmeliği, 2020, p. 22). Students are responsible for completing a project for at least one course per academic year. Either teachers can choose the topic of the project, or students can choose it based on their own interests. Some examples for project homework titles are: "Compilation of Turkish lullabies from the region students reside" and "Research of environmental pollution problems and possible solutions ".

The deadline for the project assignment may be decided by the teacher, departments, or school. Students may take more than one project from different courses during the semester. In group projects, the distribution of tasks among the group members is made by the students and presented to the teacher for approval (MoNE, Projeler ve Performans Ödevleri, 2021). The subject teacher supervises each stage. Subject teachers can also provide feedback during the process. These control periods and evaluation processes are entirely at the discretion of the teacher. Students' project grades are included in the semester grade. A rubric is used to for the assessment and evaluation criteria of the projects, which is created by the subject teacher. The scope and duration of project assignments are significantly greater than those of performance tasks. Additionally, topics may be chosen from a variety of disciplines and may be product oriented. However, the

design and evaluation of the project task are not specified in the MoNE documents. As with other assignments, these are shaped at teacher's initiative.

2.4.2.9 International Baccalaureate Diploma Program (IBDP)

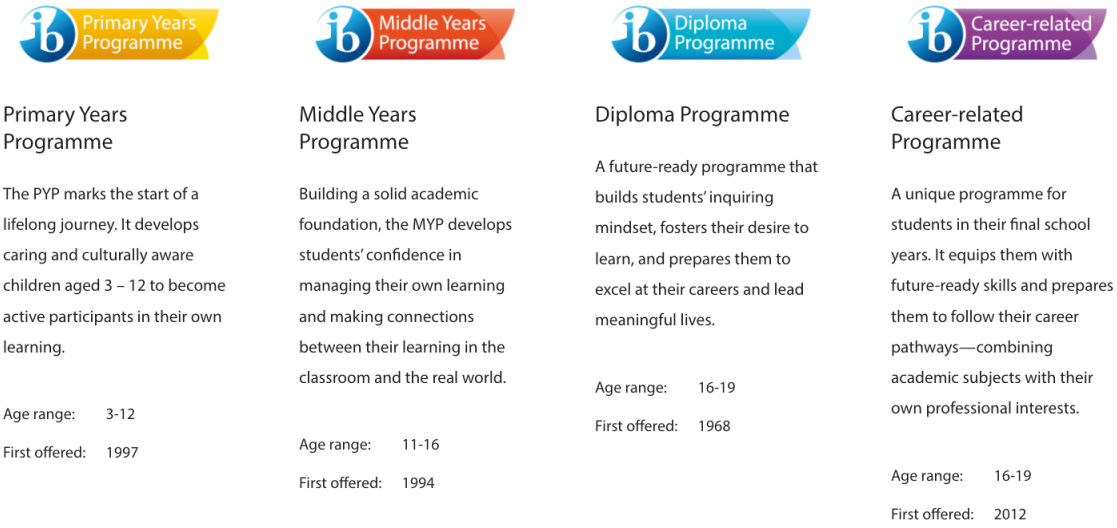
With the approval of the Ministry of National Education, schools in Turkey can implement international education programs such as International Baccalaureate (IB), International High School Education General Certificate (IGCSE) and Advanced Placement Program (AP). The International Baccalaureate Organization (IBO) is a non-profit educational foundation registered in 1968 in Geneva, Switzerland. It is an interdisciplinary program that focuses on the process of learning while promoting scaffolding strategies based on humanist and essentialist philosophies. Since the 1960s, IBO has aimed to change educational trends from traditional to progressive. To that end, the organization collaborates with schools, governments, and international organizations to create challenging international education and rigorous assessment programs.

According to the mission statement, the International Baccalaureate aims to educate inquiring, knowledgeable, and compassionate young people who will contribute to the creation of a better and more peaceful world through international understanding and respect (IBO, 2021). IBO encourage students across the world to become more proactive, caring, and passionate learners who recognize that others, with their differences, are entitled to have their own opinions. Due to the IBO's emphasis on the use of a variety of teaching and learning resources that contribute to the sustainability of instructional practices, the emphasis on developing learning styles meets the diverse needs of students. Additionally, this program ensures that the children of people who work for multinational corporations continue to benefit from the same educational system throughout the world. This philosophy underpins the values and skills that are universal, regardless of country or culture.

The IBO offers four different programs, as illustrated in Figure 5. These include the Primary Years Program, the Middle Years Program, the Diploma Program, and the Career-Related Program, each of which focuses on a particular age group in international education (IBO, Programme Resource Center, 2018). The Diploma Program (DP) is the

most popular in Turkey. This study will examine the Diploma Program's curriculum and its SDL skill-oriented objectives.

Figure 3. IB Programs (IBO, 2021)



2.4.2.10 Aims of the Diploma Program

Diploma Program of the IBO is a challenging two-year program for international education. It is designed for students aged 16 to 19 all around the world. The program offers courses from six different academic subject groups. Language and literature studies, language acquisition studies, individuals and societies studies, sciences, mathematics, and arts studies are included. Students can enroll in some subjects at the higher level (HL) and others at the standard level (SL). (IBO, 2021) The main aim is to raise young people who are knowledgeable, caring, and respectful towards others, on a global scale. Globalization's effects, the effects of technology, and the spread of international programs all contributed to a growing awareness that the goal of providing a common minimum knowledge base was no longer adequate (Ateşkan et al., 2014). New skill sets are necessary for living in the new era. Traditional and local educational methods are becoming insufficient according to the learner's needs. Consequently, accessing international education has become more widespread in recent years. Some Turkish private schools started to offer the IB Diploma Program in 1994. As of November 2021,

there are 97 IB schools in Turkey and 60 of them offer the IB diploma program for high school students (IBO, 2021).



Figure 4. Diploma Program Model (IBO, 2021)

To successfully complete the program and receive a diploma, students in the IB Program are expected to succeed at the three core elements of DP (see Figure 6). Extended Essay (EE), Theory of Knowledge (TOK) and as an extracurricular component, Creativity, Activity, Service (CAS) are the compulsory core elements within the scope of the IB Diploma Program.

In addition, students have an internal assessment project for each course, which are evaluated by the course teacher and IBO authorities. These projects are skill-oriented and based on producing a solution to a problem related to the field they decide. (IBO, A Guide to Assessment) These projects often require skills different from the curriculum content. This compels students to do research, improve their time management and problem-solving skills, and help manage their own learning processes. Role of the teacher meanwhile is guiding the process, providing the assessment requirements and criteria stated by the IBO, giving feedback during the process, and assessing students' performance in the end.

When the documents are examined, objectives, aims, assessment methods, and tools are provided for each subject. Additionally, the IBO provides specific guides for

each core elements (CAS, TOK, EE), ATL and ATT skills, and general assessment procedures. the IBO-provided DP mission, vision, learner profiles, and objectives are found in the subject guides for all program elements. This enables the program's fundamental philosophy and approaches to reach schools, administrators, teachers, and students. Internal assessment project samples, written exam samples, samples of assessed student work, and rubrics for subject teachers, coordinators, and students are all available in the official resource center. In other words, the implementation, measurement, and evaluation of the program is not entirely left to the initiative of the teachers. Programs prepared in a structured way are designed to provide targeted skills in all the schools. Furthermore, how to implement the objectives on the document in practice is also provided (IBO, Rules for IB World Schools, 2020). This provides a guideline for teachers to design their lessons and assessment tools.

2.4.2.11 IBDP's Learner Profile

The pedagogical approach of International Baccalaureate Diploma Program encourages innovative methodology and prepares students towards any possible challenges. Accordingly, IBDP points out ten learner profile attributes that reflect its holistic nature. These attributes display the values that students acquire through their education and interactions with their environment. They highlight the significance of developing valuable features such as curiosity and compassion, as well as knowledge and skills (IBO, 2021). Like the other IB Programs, the Diploma Program aims to develop students in accordance with these profile attributes. All subjects and core elements are required to assist in developing this profile. The flexibility and dynamism of the IB learner profiles allows educational processes to work in different teaching and learning situations. These learner profile attributes are (IBO, IB Learner Profile, 2017, p. 10):

Inquirers:

We nurture our curiosity, developing skills for inquiry and research. We know how to learn independently and with others. We learn with enthusiasm and sustain our love of learning throughout life (IBO, IB Learner Profile, 2017).

Open-Minded:

We critically appreciate our own cultures and personal histories, as well as the values and traditions of others. We seek and evaluate a range of points of view, and we are willing to grow from the experience (IBO, IB Learner Profile, 2017).

Caring:

We show empathy, compassion, and respect. We have a commitment to service, and we act to make a positive difference in the lives of others and in the world around us (IBO, IB Learner Profile, 2017).

Communicators:

We express ourselves confidently and creatively in more than one language and in many ways. We collaborate effectively, listening carefully to the perspectives of other individuals and groups (IBO, IB Learner Profile, 2017).

Principled:

We act with integrity and honesty, with a strong sense of fairness and justice, and with respect for the dignity and rights of people everywhere. We take responsibility for our actions and their consequences (IBO, IB Learner Profile, 2017).

Knowledgeable:

We develop and use conceptual understanding, exploring knowledge across a range of disciplines. We engage with issues and ideas that have local and global significance (IBO, IB Learner Profile, 2017).

Thinkers:

We use critical and creative thinking skills to analyze and take responsible action on complex problems. We exercise initiative in making reasoned, ethical decisions (IBO, IB Learner Profile, 2017).

Risk-Takers:

We approach uncertainty with forethought and determination; we work independently and cooperatively to explore new ideas and innovative strategies. We are

resourceful and resilient in the face of challenges and change (IBO, IB Learner Profile, 2017).

Balanced:

We understand the importance of balancing different aspects of our lives intellectual, physical, and emotional—to achieve well-being for ourselves and others. We recognize our interdependence with other people and with the world in which we live (IBO, IB Learner Profile, 2017).

Reflective:

We thoughtfully consider the world and our ideas and experience. We work to understand our strengths and weaknesses to support our learning and personal development (IBO, IB Learner Profile, 2017).

It is necessary to understand these learner profile attributes in order to comprehend the IBDP's motivation and philosophy for student development. The effects of these attributes on gaining SDL capability will be detailed in the results and discussion section.

2.4.2.12 Learning Agency in IBDP

Recently, the IB program has added a new term for learners who are actively responsible for their learning, namely “learning agency”. Active student engagement and reflection are the main focuses of the learning agency guide. The aim of this recent action is to place the student in the center of the learning process. According to learning agency, students as learners:

- are actively engaged in thinking, planning, changing, and creating the learning process,
- are involved in the discussion, questioning, and creating in a self-directed manner, rather than receiving passively,
- have an active voice,
- make connections with real-life experiences using past knowledge,
- reflect on their actions and self-regulation,
- apply their understanding (IBO, Programme Resource Centre).

As the primary stakeholder in the educational process, entrusting the student with the authority of learning ensures that the student is more engaged than in traditional education. Certain characteristics of traditional education (memorization, a teacher-centered approach, a closed classroom, and a national perspective) have reduced significance as a result of globalization. And the global importance of student-centered curriculums and lesson designs, continues to grow. In the official documents examined in this context, it is seen that the IBO worked to make the curriculum more progressive rather than traditional. Keeping up with the needs of the age and placing the student at the center of learning is important for the IB. (IBO, Programme Resource Center, 2018).

2.4.2.13 Approaches to Learning and Teaching (ATL and ATT) Skills in IBDP

There are number of characteristics of the Diploma Program that is provided in the official documents of IBDP which contribute to self-directed learning. Such as Approaches to Learning (ATL) skills are designed to lead students in the IB Diploma program to become lifelong learners by "*learn how to learn*.". They are intended to be used across the curriculum and to provide a shared language for instructors and learners to use when reflecting on and improving the process of learning (IBO, 2021). The five ATL skills are thinking, communication, research, self-management, and social skills. Even though these skill areas are presented as separate categories, there are close links and similarities between them, and it is intended that these categories be viewed as interconnected. As stated in the ATL Skill Guide provided by the International Baccalaureate Organization, the skills and attitudes allow students to become “self-regulated learners,” be able to "set and meet learning goals," generate motivation, “self-interrogate," show perseverance, be resilient, and reflect on their achievements (Managebac, 2021). All of these are related with SDL skills covered in the literature.

Developing students' ATL skills involves more than just improving their cognitive abilities (International Baccalaureate, 2021). It is also about developing affective and metacognitive skills, as well as encouraging students to see learning as something they "do for themselves in a proactive way, rather than as a covert event that happens in response to teaching" (Zimmerman 2000: 65). ATL encourages students to develop a wide range of skills that will enable them to remain actively engaged in learning even after they leave school, and these skills are allowing them to not only gain university

admission, but also succeed in life. Kaplan stated in his study, in 1998, that by developing ATL skills and the attributes of the learner profile, DP students can become self-regulated learners (Kaplan, 1998). Most importantly, self-management skills, which include organization and affective skills, play an important role during the DP process. Managing time and tasks effectively, having self-motivation, dealing effectively with setbacks and difficulties, resilience and mindfulness are key elements of self-management skills. IB aims to develop these in the students when developing the curricula. This approaches to learning should be implemented into all the subjects by teachers in their lesson so that these skills are reinforced naturally. With this approach, the learning process is centered on skills rather than on content.

Approaches to Teaching (ATT) Skills

Inquiry-based teaching is one of the pedagogical principles that underpins all IB programs, and being an inquirer is one of the, and in fact the first, IB learner profile attributes (IBO, ATL Skills Guide, 2015). Learning skills gain importance when they are supported by teaching approaches. Six teaching approaches that the IB Diploma program provides are:

- inquiry-based teaching,
- focusing on conceptual understanding,
- making connections in a local and global context,
- focusing on effective teamwork,
- differentiating to meet the needs of all learners,
- supporting learning through assessment (formative and summative).

While these methods require time and effort to implement, they have the significant advantage of allowing students to develop stronger inquiry skills, which are critical for the development of the self-managed, self-directed, self-regulated, lifelong learner who meets IB learner profile expectations (IBO, ATL Skills Guide, 2015). Students will gain research, self-management, collaborative learning, communication, thinking and problem-solving skills by engaging in effective inquiry. Students are expected to gain more control over their own learning process as well as greater insight into how to improve their motivation and performance on their own.

2.4.2.14 IBDP's Creativity, Activity and Service (CAS) Project

Creativity, Activity and Service (CAS) is one of the core aspects of the program that place importance on extra-curricular elements. In addition to academic responsibilities, students need to be able to improve their intellectual skills, be physically active for their mental well-being, serve the community that they live in (IBO, CAS Guide, 2017). All IB students are required to complete the CAS program, which can begin as early as the first day of junior year and last until the end of senior year. In addition, students are required to take part in at least one CAS project that is at least one month in duration. A CAS experience could be learning to play the piano for creativity, playing sports and organizing tournaments as an activity, and helping the elderly in nursing homes as a service. CAS implementation involves documented evidence of a determined and dedicated commitment to participation in a variety of experiences, which strikes a reasonable balance of creativity, activity, and service (IBO, CAS Guide, 2017). By the end of their CAS program, students must provide evidence that they have understood how their participation in activities has met the seven learning outcomes. The seven learning outcomes that guide for students and help coordinators assess a CAS profile (IBO, CAS Guide, 2017):

1. Development & Strength: Students are able to see themselves as individuals with varying skills and abilities, some more developed than others, and recognize that they have the ability to choose how they want to proceed (IBO, CAS Guide, 2017).

2. Challenges and skills: A new challenge could be an entirely new experience or a continuation of an existing one. The recently acquired or developed skills may be demonstrated through new experiences or increased experience and knowledge in an established area (IBO, CAS Guide, 2017).

3. Initiative and planning: Students clearly explain the stages that occur between the conception of an idea and the execution of a plan for a CAS experience or a series of CAS experiences. This could be done in collaboration with other participants. Students can demonstrate their knowledge and awareness by expanding on previous experiences or by launching a new idea or process (IBO, CAS Guide, 2017).

4. Working collaboratively with others: Collaboration can be seen in a variety of activities, such as team sports, making music in a band, or voluntary work at a kindergarten. It is necessary to complete at least one project that involves collaboration and the integration of at least two of the following: creativity, action, and service (IBO, CAS Guide, 2017).

5. Demonstrating perseverance and commitment: Students participate in CAS activities on a regular basis and actively engage in them, and they accept responsibility for dealing with problems that arise along the wa (IBO, CAS Guide, 2017)y.

6. Global engagement: Students can identify and demonstrate their understanding of global issues, make responsible decisions, and take appropriate action in response to the issue (for instance, environmental concerns and elderly care) on a local, national, or international scale (IBO, CAS Guide, 2017).

7. Recognize and consider the ethical implications of decisions and actions: Like in the other core elements TOK and EE, students demonstrate an understanding of the consequences of their choices and actions when planning and carrying out CAS experiences. Ethical decisions arise in almost every CAS activity (for example, on the playing field, in musical composition, and in relationships with others involved in service activitie*s)* (IBO, CAS Guide, 2017).

CAS learning outcomes are at the core of the CAS program, and students must improve their abilities and strive to develop their learner profile attributes over the course of eighteen months. The student is responsible for selecting their experiences, planning its implementation, carrying it out and reflecting on the outcomes throughout the CAS process. The role of adviser and CAS coordinator is monitoring the student's progress toward achieving the learning outcome.

During the eighteen-month CAS process, students take the initiative to decide what comes next for them. Through experiential learning, it is also an opportunity for students to improve their personal and interpersonal development as well as their self-fulfillment (IBO, CAS Guide, 2017). This provides valuable insight into the relationships between the curriculum and its emphasis on self-directed learning skills. Students can freely design their CAS portfolio, choosing their area of interest and changing it during

the process. The main focus is on being aware of seven learning outcomes and setting some practical aims. After planning their portfolio elements and going through the process, they need to engage in regular reflection on their experiences for each element (C, A, S) to increase their self-awareness. Reflection is encouraged to be both "in-activity" (while the experience is happening) and "on-activity" (after the experience has occurred). This enables them to evaluate their strengths and weaknesses in each aspect of CAS. For a student to complete the CAS requirement, all seven outcomes must be evident (IBO, CAS Guide, 2017). Some outcomes may be demonstrated numerous times in a variety of activities, but successful completion requires providing evidence for each outcome.

2.4.2.15 IBDP and Theory of Knowledge

The Theory of Knowledge (TOK) is a required core component of the Diploma Program that investigates questions about knowledge and the knowing process. IBDP schools all around the world must provide at least 100 hours of class time to deeply investigate the course (IBO, Theory of Knowledge Guide, 2020). By focusing on comparisons and connections between areas of knowledge, the course encourages students to become more aware of their own perspectives and others. It focuses on critical thinking and inquiry in the process of knowing rather than providing a specific body of knowledge Students in the Diploma Program emphasized the importance of the TOK course they took in the Diploma Program in this regard.

The course assists students by transforming first-order thinking into a more in-depth understanding of the real-world context (IBO, Theory of Knowledge Guide, 2020). Academic disciplines in the program also contribute to the development of the knowledge framework through the course. TOK is concerned with the knower, knowledge, and the process of knowing. In this regard, TOK syllabus is made up of three interconnected parts:

- The core theme (knowledge and the knower)
- Optional themes (knowledge and technology, knowledge and language, knowledge and politics, knowledge and religion, and knowledge and indigenous societies)

- Areas of knowledge (AoK) (history, the human sciences, the natural sciences, mathematics, and the arts.) (IBO, Theory of Knowledge Guide, 2020)

With these three components above, the IBO encourages teachers to design and deliver the TOK course with flexibility, creative thinking, and innovative thinking approaches. (IBO, Theory of Knowledge Guide, 2020). The course offers teachers a variety of options for meeting specific needs and interests of their students. As a result, rather than acquiring new knowledge, the primary focus of TOK is on assisting students in "*reflecting and contextualizing what they already know*" (IBO, Theory of Knowledge Guide, 2020).

In this regard, each person is described as a unique knower, reflecting on their own identities, perspectives, cultures, and values. Knowers are not alone; they are a part of both the local and global communities. Their values and perspectives are shaped by a variety of factors, including their families, schools, countries, socioeconomic status, and so on. (IBO, Programme Resource Center, 2018) Some knowledge-related questions raise students' (knowers in this context) awareness of their "personal knowledge" and "shared knowledge". Students are encouraged to reflect on their "personal knowledge" as well as filter and analyze the "shared knowledge" to which they are exposed.

Students (knowers) are members of both a local and a global community. They must be aware of their own cultures while also respecting those of others, which aligns with the objectives of the IB learner profile of international mindedness. The course helps in the establishment of a link between the DP mission statement, learner profiles and the six group subjects. At the end of the program, it is expected of a TOK student to know how different areas work together to produce knowledge and how they are unique and different from other areas in terms of scope and methodology used (IBO, Theory of Knowledge Guide, 2020).

Students are expected to independently analyze, and filter information gathered from various sources. By analyzing and judging the source of the knowledge, students can obtain reliable, accurate, and useful information. On the other hand, TOK could help students gain a better understanding of subjects from six different groups. Rather than first-order knowledge questions, meaning content related questions, the emphasis could

be on developing second-order knowledge questions that require students to respond with their own claims. They must improve their ability to justify their claims throughout the process. This process is overseen by teachers.

Assessment of TOK courses is different than other subjects and it has two components: the TOK essay and the TOK exhibition. The TOK exhibition is an internal component that is assessed by the teacher and moderated externally by the IBO. Students must create an exhibition of three objects, or images of objects, that relate to their personal knowledge, and each object must be analyzed using the set of questions provided in the TOK subject guide. As a result, it is strongly advised that students base their exhibition on one of the TOK themes (either the core theme or one of the optional themes).

The TOK essay, on the other hand, requires students to write a formal, sustained piece in response to one of the six titles assigned by the IBO for each examination session. These titles are in the form of knowledge questions focused on specific areas of knowledge.

All of these assessment tasks require students to be fully engaged in the learning process and serve as a foundation for other subjects, which will help students develop a more sophisticated view of subject-specific knowledge. With the help of the features of TOK mentioned above, students gain some higher-level skill sets to make them ready for their professional life and become lifelong learners (IBO, Theory of Knowledge Guide, 2020).

2.4.2.16 IBDP and Extended Essay

Last but not least, the final core element is the extended essay, which offers IB students a chance to conduct independent research on a topic of special interest in the form of a 4000-word paper (IBO, Extended Essay Guide, 2019). Students choose an area of research among Diploma Program subjects - or in the case of the interdisciplinary world studies essay, among two subjects - and gain experience with the independent research and writing skills required at university. The EE as an authentic learning experience allows students to conduct personal research on a topic of their choice while being guided by a supervisor. Students completing an extended essay will need to identify and develop the necessary self-management skills to be successful because it is a

significant independent task. (Inkelas, Swan, & Pretlo, 2012). Because the extended essay is a significant independent task, students must identify and develop the necessary self-management skills to be successful. Students are expected to be able to manage their time and workloads. So, this component of IBDP is an appropriate example for gaining SDL skills in terms of managing and having the control over the learning the process.

The EE allows students to conduct personal research on a topic of their choice while being guided by a supervisor as an authentic learning experience (IBO, Extended Essay Guide, 2019, p. 15). While supervisors provide assistance and guidance, students must navigate the EE on their own as part of the learning process. According to the IBO's EE guide, benefits from the development of self-management and research skills are recognized when students' progress to university and the workplace (IBO, Extended Essay Guide, 2019, p. 28). Since the EE process supports students in becoming life-long learners and it is a learning process independent of the curriculum, its impact on SDL skills is undeniable. During EE, students have one year to organize their research process, which is a quite long period of time to discover their interests. Students begin to explore; if something goes wrong along the way, they have the freedom to take responsibility for the process and make the necessary changes to the topic. This could be starting from the beginning, changing the research question, or changing the subject (IBO, Extended Essay Guide, 2019).The supervisor's role is to act as a facilitator and guide for determining the scope of the study, as well as to provide overall feedback in terms of EE assessment objectives. This is related with the role of teacher in 21st classrooms. EE research topics should be based on students' interests, abilities, and desires and should be expected to be supported by primary sources such as books, articles, and papers, and secondary sources like interviews, observations, etc. It is critical that students take ethical responsibility for their work while also demonstrating academic integrity and research skills in the transfer of knowledge.

2.4.2.17 IBDP Assessment

The DP assesses student performance through both internally and externally assessed components. Written examinations at the conclusion of the DP form a basis for assessment for the majority of courses due to their objectivity and reliability (Ateşkan et al., 2014). The DP curricular structure establishes the context for evaluation. The IB

employs approximately 8,500 examiners worldwide, the majority of whom are experienced DP teachers who ensure that student work is assessed fairly and consistently (IBO, 2021). Grading reliability is also ensured by the use of consistent standards supported by statistical data in determining grade boundaries. Assessment of the IB Diploma Programme is criterion-based rather than compared to the performance of other exam takers. For each DP course taken, students receive a grade ranging from 7 (the highest) to 1 (the lowest). The combined scores for each subject make up a student's final diploma score. Students who earn at least 24 points, subject to certain minimum levels of performance, including successful completion of the three core elements, are awarded the diploma. TOK and EE are given individual grades and can contribute up to three extra points to the overall diploma score. CAS does not contribute to the total number of points, but authenticated participation is required for the diploma to be awarded. (IBO, A Guide to Assessment)

Written examinations at the end of the program serve as the basis for assessment for most courses on the strength of their objectivity and reliability. Supervision of an accredited teacher is used to assess external coursework in a variety of program areas, including theory of knowledge (TOK) essays, CAS and the extended essay (EE). (IBO, A Guide to Assessment) DP assessment is summative in nature, with the goal of documenting student achievement toward the end of the course of study. According to official DP documents, the DP program includes extracurricular components that teach and assess skills other than those covered in the subjects (IBO, A Guide to Assessment). As a result, the methods for assessing g and evaluating these elements are distinct from those used in other fields. Because the skills they deliver and the skills they measure are distinct, the exam does not assess them.

Numerous evaluation tools, particularly internal assessment tasks, are, however, used in a formative manner throughout the teaching and learning process. Students complete internal assessment projects for all subjects which either externally assessed or graded by teachers and then moderated by the IB (IBO, A Guide to Assessment). Internal assessment (IA) projects for most of the subject groups necessitate the acquisition of skills like SDL that are not covered in the subject curriculum, and students are expected to gain

these skills on their own. Detailed about SDL and IBDP assessment methods will be examined in the results and discussion part.

DP exams both support and encourage the teaching and learning objectives of the curriculum, as well as serve for university admission certification. The significant impact of high-stakes assessment on teaching and learning is leveraged to benefit students and teachers alike through credible assessment instruments that promote effective pedagogy and constructive student engagement in their own learning (IBO, A Guide to Assessment). The evaluations also reflect the goal of helping students to be "inquiring, inquisitive, and caring" and to develop into "active, compassionate, and lifelong learners" (as stated in the IB mission statement).

PART 3. RESULTS AND DISCUSSION

This section presents the results of the study and provides a discussion in terms of the related literature. Quantitative data, including the mean and standard deviations for Self-Directed Learning Scale (SDLC) test scores, were analyzed using descriptive statistics. (Ceylan, 2004)Qualitative data analyzed with the help of document analysis method. The findings from both program documentations were systematically compare and relate with the SDL skill sub factors.

3.1 Results

3.1.1. Quantitative Results

Research Question 1.1:

Is there a significant difference between MoNEP and IBDP+MoNEP students' SDL skills at the 10th grade level?

In order to find students' previous level of SDL skill the self-directed learning scale were given to students before treatment at 10th grade level. The results in Table 6 showed that there was no statistical difference between the pre-tests SDLS scores of students from both curricula, (p>.05, $t(152) = -0{,}650$, $p = 0.554$). This means that there is no statistical difference between the students of the two groups at the beginning.

Table 6. Independent Sample T- Test 10th Grade

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Total_pr	Equal variances assumed	.830	.364	-.650	150	.517
	Equal variances not assumed			-.662	144.140	.509

These results revealed that students do not have any significant difference level of SDL score in the beginning of the DP program. Thus, the prerequisites for applying the post-test are met.

Research Question 1.2:

Is there a significant difference between MoNEP and IBDP+MoNEP students' SDL skills at the 12th grade level?

To answer the question posed by hypothesis 2 stating that there is no significant difference between post-test mean scores of the students from MoNEP and IBDP+MoNEP with respect to SDL skill is controlled with independent sample t test and analysis of data is summarized in Table 7. The analysis results showed that there was a statistically significant difference between the post-test score of MoNEP students and IBDP+MoNEP student. When the post-test averages of the two groups are compared, the SDLS score of the IBDP+MoNEP group in the post-test was found to be higher than those the SDLS scores of the MoNEP group, ($p<.05$, $t(150) = -3{,}569$, $p = 0.017$). Looking the analysis that were figured below there was a difference between control group and experimental group with respect to students total mean score given in post SDL scale.

Table 7. Independent Sample T- Test Summary 12th Grade

Independent Samples Test 12th Grade

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig.(2 tailed)	Mean Difference
Total_pt	Equal variances assumed	5.809	.017	-3.569	150	.000	-3.17472
	Equal variances not assumed			-3.720	149.544	.000	-3.17472

This result demonstrates that the students in experimental group who were studied in IBDP program after 10th grade had better self-directed learning skill than those in the control group who were thought by MoNE program.

Research Question 1.3:

Is there a significant difference between the pre-test and post-test of the MoNEP students with respects to SDL skills?

Paired Sample T-Test can be performed when there is only one group of people and need to collect data from them on two different occasions, and if there is sig (2 tailed) value less than 0.5 than there is significant difference between the two scores (Cohen, Manion, & Morrison, 2007). To understand the SDLS score level, students from MoNEP group are tested two times. Students had the SDL scale in the 10th grade and then at the end of the program in 12th grade. The analysis results showed, in Table 8, that there was not any statistically significant difference between the pre-test and post-test score of MoNEP students, (p>.05, t (152) = 0.763, p = 0.448).

Table 8. Paired Sample Test MoNEP

Paired Samples Test MoNEP

		Paired Differences			
		Mean	t	df	Sig. (2-tailed)
MoNEP	Pre-test - Post-test	.61364	.763	87	.448

This result demonstrates that students from MoNEP group don't have any statistically significant difference between their SDL scale score in the beginning and at the end of the program.

Research Question 1.4:

Is there a significant difference between the pre-test and post-test of the IBDP+MoNEP students with respects to SDL skill?

To test hypothesis 4 which states that there is no significant difference between the pre-test and post- test SDLS score of IBDP+MoNEP group Paired Sample T-Test was used. Students from IBDP+MoNEP group are tested two times. They had the test before

Diploma Program applied in the beginning of the 10th grade and then in 12th grade at the end of the program.

Table 9. Paired Samples Test IBDP

Paired Samples Test IBDP

		Paired Differences Mean	t	df	Sig. (2-tailed)
IBDP+MoNEP	Pre-test- Post-test	-2.01562	-3.064	63	.003

The analysis results in Table 9 showed that there was a statistically significant difference between the pre-test and post-test scores of students who are enrolled in IBDP. When the pre-test and post-test averages of the two groups are compared, the SDLS score of the IBDP+MoNEP group in the post-test was found to be higher than pre-test SDLS scores of the IBDP+MoNEP group, ($p<.05$, $t(152) = -3.064$, $p = 0.003$). Looking the analysis that were figured above, there was a significant effect of treatment (IBDP) on students' SDL score.

Research Question 1.5:

Is there a significant effect of interaction between gender difference and programs (IBDP+ MoNEP and MoNEP) with respect to students self-directed learning skills when students' SDL scale scores are controlled?

The hypothesis 5 stated in part 1.3 were tested with Analysis of Variance (ANOVA). Two-way ANOVA was used with the within-subject factors curricula (MoNEP and IBDP+MoNE) and gender (male – female) to test whether SDLS score is significantly different within the two programs across the two genders. Table 10 revealed that whether the independent variables (gender and groups) and their interactions (gender*group) have a statistically significant effect on the dependent variable (students' SDL skill).

Table 10. Gender*Group Interaction ANOVA results

Tests of Between-Subjects Effects

Dependent Variable: Total_pt

Source	Sum of Squares	df	Mean Square	F	Sig.(p)	Partial Eta Squared
Corrected Model	428.668[a]	3	142.889	4.871	.003	.090
Gender	22.189	1	22.189	.756	.386	.005
Group	249.406	1	249.406	8.502	.004	.054
Gender * Group	18.425	1	18.425	.628	.429	.004
Error	4341.411	148	29.334			

Table 10 revealed that there was no significant mean difference between male and female students in terms of SDL scale score (F=0.756; p>0.05). Male students' mean score was 39.133 and female student's score was 38.260 with respect to their total SDL scale score. Additionally, to test the interaction between gender difference and treatment (programs) on students' SDL scale score, two-way analysis of variance was run. It was found that there was no significant interaction effect between gender difference and the program that student studied (F=0.628; p>0.05).

Research Question 1.6:

Is there a significant difference between the performance of males and females with respect to students SDL skill in MoNEP at the end of the 12 grades?

To answer the question posed by the hypothesis 6 stating that there is no significant difference between the performance of males and females with respect to students SDL skill in MoNEP at the end of the 12 grades, independent sample t- test was used.

Table 11. Independent Sample T Test MoNEP Gender

Independent Sample T Test MoNEP Gender

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Total_pt	Equal variances assumed	.713	.401	-1.252	86	.214
	Equal variances not assumed			-1.180	50.176	.244

Table 11 revealed that there was no significant mean difference between male and female students with respect to students' SDL score (p>.05, (F= 0.713, *t* (152) = -1.252).

Research Question 1.7:

Is there a significant difference between the performance of males and females with respect to students' SDL skill in IBDP+ MoNEP at the end of the 12 grades?

To test hypothesis 7 which states that there is no significant difference between the performance of males and females with respect to students' SDL skill score in IBDP+MoNEP at the end of the 12 grade, independent sample t-test was run.

Table 12. Independent Samples Test IBDP Gender

Independent Samples Test IBDP Gender

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Total_pt	Equal variances assumed	.443	.508	-.057	62	.955
	Equal variances not assumed			-.052	20.569	.959

Table 12 revealed that there was no significant difference between male and female students with respect to their SDL score in IBDP program (p>.05, F=0.443, *t* (152) = -0,57).

3.1.2 Quantitative Results

Research Question 2.1

What is the contribution of the general philosophy (mission and aim) of IBDP and MoNEP with respect to acquisition of SDL skills?

Depending on the literature study in the area, a self-directed learner plans the learning process, investigates learning resources, and implements necessary learning methods and strategies on his/her own initiative. To answer the research question, 2.1 elements related to the general philosophy of two of the programs, as well as their relationship with SDL skills, are examined. The findings of document analysis can be correlated with SDL subfactors, self-directed learner characteristics, and common features of SDL definitions from the literature as follows:

Common Features of SDL definitions;

- having control over the learning process and most of the educational decisions.
- active participation and awareness of the process.
- being aware of the goals of learning,
- being aware of the resources and methods to be used, as well as the criteria for determining successful learning,

Sub Factors of SDL skills;

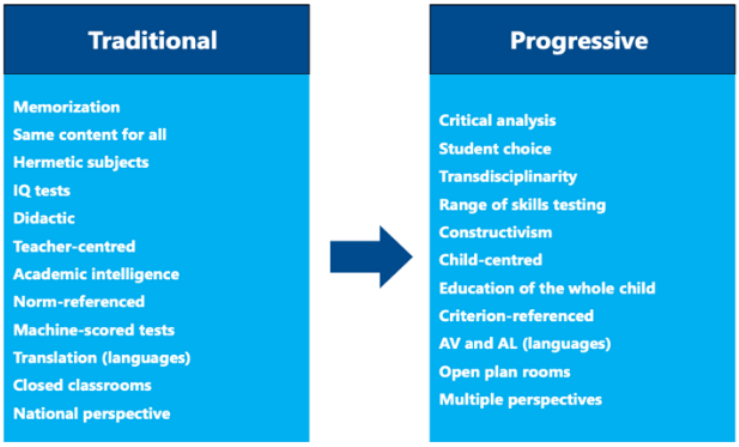
- defining learning needs,
- utilizing skills,
- enduring challenges,
- self-efficacy in learning,
- planning skills,
- completing tasks,

- evaluation skills, and
- internal attributions.

The students' ability to become aware of the learning process and improve their skills to access useful and reliable sources of information appears to be critical for self-directed learning. In this respect, it is found that in an education system, the role of the teachers and students, the design of the program, and the objectives of the programs are the most important factors in acquiring SDL skill. On the contrary, in traditional learning design, these steps are provided by the teachers and the role of the students are being passive receivers. The references to these SDL definitions, how they are applied in practice, learning design, and student-centered activities are analyzed while examining the documents, such as the syllabus, mission, and vision statements, of the two programs.

It is critical to compare the general design of the MoNEP and IBDP documents to understand the characteristics of the programs that support the development of students' SDL skill. The documents examined indicate that the IBDP's overall program design is centered on inquiry-based learning. It emphasizes "*curiosity, critical thinking, and active engagement of students"*, which helps to improve SDL skills. As it is stated in the official documents, IBO's mission is to transform traditional education into a progressive activity. As seen in Figure 5, some of the SDL skills attributes are included in this progressive education philosophy of the IBDP.

Figure 5. Education trends (by the 1960s)



Having students in the center, instead of memorization, making critical analysis, rather than giving the same content to all students, allowing them to make choices based on their interests, are some of the critical examples that allow SDL skills to improve.

While examining the documents of the two programs, it is noteworthy that in the IB Diploma Program, the learner profile, the skill-based assessment objectives, and the student-centered philosophy are to be seen at the beginning of the handbooks of all official documents. In other words, school administrators, coordinators, and teachers' attention are drawn to these components because they all have the same shared philosophy. This aids the recognition and encouragement of skills, particularly those SDL skills, by all stakeholders.

According to the findings obtained as a result of the examination of MoNE's official documents, the program is designed around content, rather than skills. Although references to skill-oriented design have increased in recent years, the focus in MoNE program documents is still content-oriented. As it is stated in official documents the emphasis of the MoNE program is on "*values of Turkish nation*" and, *"content (as subjects) and then* "*the competencies and skills*"," (MoNE, Öğretim Programları).

To understand the philosophy of the programs, their official general philosophy documents are investigated. The aim of MoNE secondary education is given in the official regulation document, and it is shared with the schools by the Ministry. It is also published on the official website of MoNE. School administrators are responsible for sharing this document with teachers. The mission and vision statement are not included in all subject syllabus. In other words, not all the subject syllabuses contain the general objectives and philosophy of the program. This complication determines whether the intended objectives reach all stakeholders, as well as whether the MoNEP's philosophy reaches all teachers. Accordingly, the skill sets needed to be acquired are listed as general objectives in these subject syllabuses. When the general design of the MoNE program is examined, the main purpose of the education system is to raise individuals with knowledge, skills and behaviours integrated with national values and competencies determined by MoNE. While curricula attempt to teach knowledge, skills, and behaviors, values and competencies serve as the link that establishes the integrity of these knowledge, skills, and behaviors.

While examining IBDP documents, one of the most significant general approaches contributing to SDL is the acquisition of ATT and ATL skills. The IBDP's learning and teaching approaches (ATL and ATT) are in the general philosophy of the program, and they contribute to the development of a framework for learning and teaching. These approaches, as important curriculum elements, are expected to help students and teachers develop SDL skills in terms of recognising and breaking down their own teaching and learning processes. According to the Knowles SDL definition given in the literature part, "self-management" and "inquiry" are two of the features that are directly referred to in ATL and ATT guides. They relate to the creation of self-direction in the teaching and learning processes and they are directly related with the sub factors of the SDL. Further examples can be found in the policy statements provided in the literature review, which, in general, imply student autonomy and self-direction in the learning process.

These approaches are presented at a more practical level in the IB guide that details ATL and ATT skills for teachers. One of the most important considerations for DP teachers is how to design teaching practices to produce effective inquiry learning given the volume of important information in each subject area that must be addressed. Inquiry-based teaching necessitates a shift in teaching style from teachers whose primary role is to give answers, to teachers whose primary role is to promote questions (IBO, ATL Skills Guide, 2015). With this in mind, the following are simple steps that teachers can take to facilitate the transition to a more inquiry-based approach:

- posing questions, outlining problems, establishing challenges, and providing clear, measurable goals,
- forming small groups of 3–4 students, assigning clear roles, and allowing for a role cycle within each group,
- enabling and assisting students in gaining access to the reliable and accurate subject-based resources,
- concentrating the students' attention on both answers they discover and the research skills they employ,

- seeing themselves as facilitators of the students' journeys instead of simply providing answers.

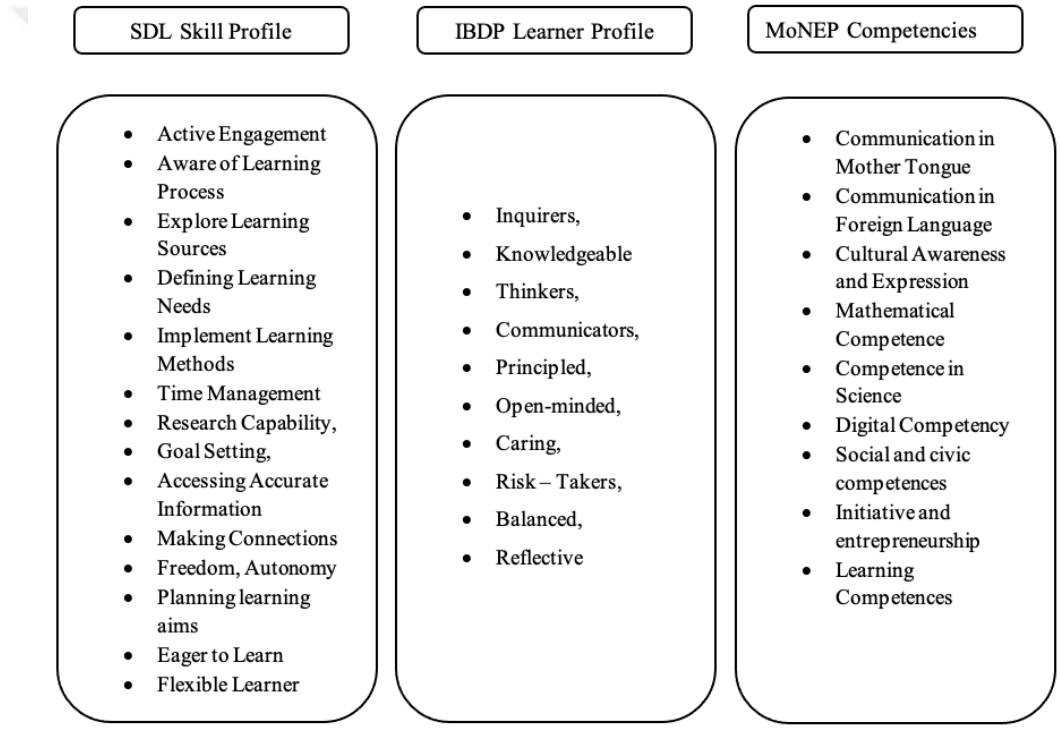
Auditing methods can also provide data to understand whether the SDL skills specified in the program documents are put into practice. To ensure that schools are adhering to the program's requirements, the IB sends school inspection staff. Five years after initial authorization, an evaluation of a school's implementation of the IB program(s) is conducted. Schools are required to conduct a self-study as part of this evaluation process and are required to conform to the IB's evaluation procedures (IBO, Rules for IB World Schools). During the inspection period archived documentations are inspected. Course materials, semester course reports, CAS portfolios, and other required documents are included in this category. Because they are reified in all these documentations, this inspection process plays an important role in putting the SDL skill into practice.

By contrast in the MoNE program, education and training activities are carried out under the supervision and control of the Ministry of National Education. Inspections of schools are conducted under the MoNE program by inspectors who visit schools when they first open, in accordance with the inspection guide (MoNE, Lise ve Dengi Okullar Rehberlik ve Denetim Rehberi). This inspection guide examines the physical condition of schools and their conformity to the Turkish Educational System. The frequency of the audit and when it will be done is not certain in the Regulation document. The process is under MoNE's control. However, there is no inspection process in place to check whether teachers design their lessons according to skill-based objectives. Schools archive their documents related to students' records, grades, exam papers, etc. for the next audit. Due to the fact that the course curriculum does not specify how these skill-based achievements will be put into practice and how they will transform the values published in the mission document into skills, the inspections are not generally focused on the course design and content, but on the general rules of the MoNE. The framework for how teachers will address these achievements and competencies in the course and how they will be supervised is not included in the documents examined. This makes it difficult to understand how the acquisition of other skills, including SDL, can be put into practice in MoNEP.

Learner Profile of MoNEP and IBDP related with Acquisition of SDL skill

In order to understand the contribution of the two programs to SDL skills, it is important to look at the student profile attributes of the programs. While this student attribute is referred to as “learner profile" in IB documents, it is given as "competencies" in the MoNE program. Understanding these learner profile characteristics provides insight into the references for SDL skills in both programs. The characteristics required of a learner who has developed SDL skills, the learner profiles of the IB diploma program, and the competencies covered by the MoNE program are shown in Figure 6.

Figure 6. SDL Skill Profile & Learner Profile IBDP & Competencies MoNEP



There are statements given at the beginning of the syllabus of some courses under the heading of student competencies in the MoNE program. According to the competency document of the MoNE program, the education system aims to train individuals equipped with the given competencies. When the competencies section of the MoNE program is examined, it is found that there are some components related directly to the SDL skills. When the descriptions related to competencies are analyzed three of them are found to be directly associated with SDL definitions in the literature, and they are:

- **Learning Competency:** It includes self-learning skills and time management skills. This skill is the ability of the student to organize his/her own learning actions, individually or as a group, by identifying learning needs and using time effectively.
- **Digital Competency:** This competence requires access to reliable information using digital tools. Additionally, this competency encompasses students' selection and use of appropriate digital resources for business, daily life and communication.
- **Initiatives and entrepreneurship Competency:** It refers to the individual's transformation of thoughts into action. This competency requires creativity and risk taking, as well as planning and project management to achieve goals.

While analyzing the documents, it was found that these expressions were only given in the syllabus of some courses, such as mathematics, literature, and science, but were not provided for others, like English, German, etc. This raises the question of whether the philosophy of the program fully reaches all subject teachers.

It is discovered that the subject guides of the International Baccalaureate Program contain all of the learner profile attributes at the beginning of each document. These attributes are related to some skill sets, and these skills, such as critical thinking, questioning, communication (socialization), cultural awareness, self-management, personal responsibility, social responsibility (duty awareness), cooperation, and decision making, are required sets of skills for a responsible learner. These attributes support the SDL skills, along with the goal of equipping students with the ability to learn independently, manage their time effectively, and think critically (Bergamin). In this respect, learner profiles have a significant relationship with self-directed learning skills and the concept of autonomy by indicating the significance of curiosity, the ability to think elaborately and comprehensively, and the importance of being knowledgeable about various subjects of interest. In addition, IBO suggests that the program aims to educate students who know how to access knowledge, are in charge of their own learning process, are not satisfied with what they have, and are hungry for more (life-long learning). When analyzed, the characteristics of six learner profile attributes are found to be associated with SDL definitions in the literature:

- **Inquirers:** With nurturing curiosity, developing skills for inquiry and research. knowing how to learn independently and with others. Learning with enthusiasm and sustaining love of learning throughout life. Actively enjoying learning, and this enthusiasm will last throughout students' lives. These attributes encourage students to actively develop their curiosity on world wound them.
- **Knowledgeable:** Developing and using conceptual understanding, exploring knowledge across a range of disciplines. Being centered of the knowing process, engaging with issues and ideas that have local and global significance.
- **Thinkers:** Using critical and creative thinking skills to analyze and take responsible action on complex problems. Exercising initiative in making reasoned, ethical decisions. Having responsibility of the decision making after thinking process.
- **Risk-Takers:** Approaching uncertainty with forethought and determination. Working independently and cooperatively to explore new ideas and innovative strategies. Being resourceful and resilient in the face of challenges and change.
- **Balanced:** Understanding the importance of balancing different aspects of life, such as, intellectual, physical, and emotional, to achieve well-being for ourselves and others. Recognizing interdependence with other people and with the world around us.
- **Reflective:** Thoughtfully considering the world, ideas, and experience. Working to understand strengths and weaknesses to support learning and personal development.

The LP in the original document provided by the IBO was described as: "We believe these attributes, and others like them, can help individuals and groups become responsible members of local, national, and global communities." (IBO, IB Learner Profile, 2017). That reflects IB's official stance related to the LP attributes. Linguistically, definitions of the attributes in original documents are in first person singular, meaning the students themselves as learners, and showing their SDL characteristics, while in this sentence, it ("we") is the adults, the teachers, administrators, curriculum authorities, who believe that these attributes will build their SDL in respect of the traits.

Language Used in the Documents of MoNEP and IBDP

The language used in the policy statements gives a clue in terms of the two curricula's perspective on students. For example, in the policy statements of IBDP, the use of the pronoun "we" and "student" indicates that the program considers students as an active constituent of the learning process, which highlights the importance given to autonomy and self-direction. On the other hand, in MoNEP's aims, it is stated that "teachers are responsible in giving students knowledge", "familiarizing them with the problems of the current world order," and "ensuring that they gain awareness of global and local issues". The use of language in these statements indicate that the MoNEP curriculum regards students as passive receivers in the learning process see Figure 7.

Furthermore, it implies that the teacher, not the student, is at the center of the documents as seen in traditional learning systems in which teachers have more control over the students' learning process. Therefore, it is safe to state that IBDP advocates a student-centred approach, while MoNEP has a more teacher-centered perspective in terms of the langue of the documents. These point out the philosophical differences between the MoNEP and IBDP programs, which consequently, has an impact on students' performance in self-directed learning skills and helps to explain the difference.

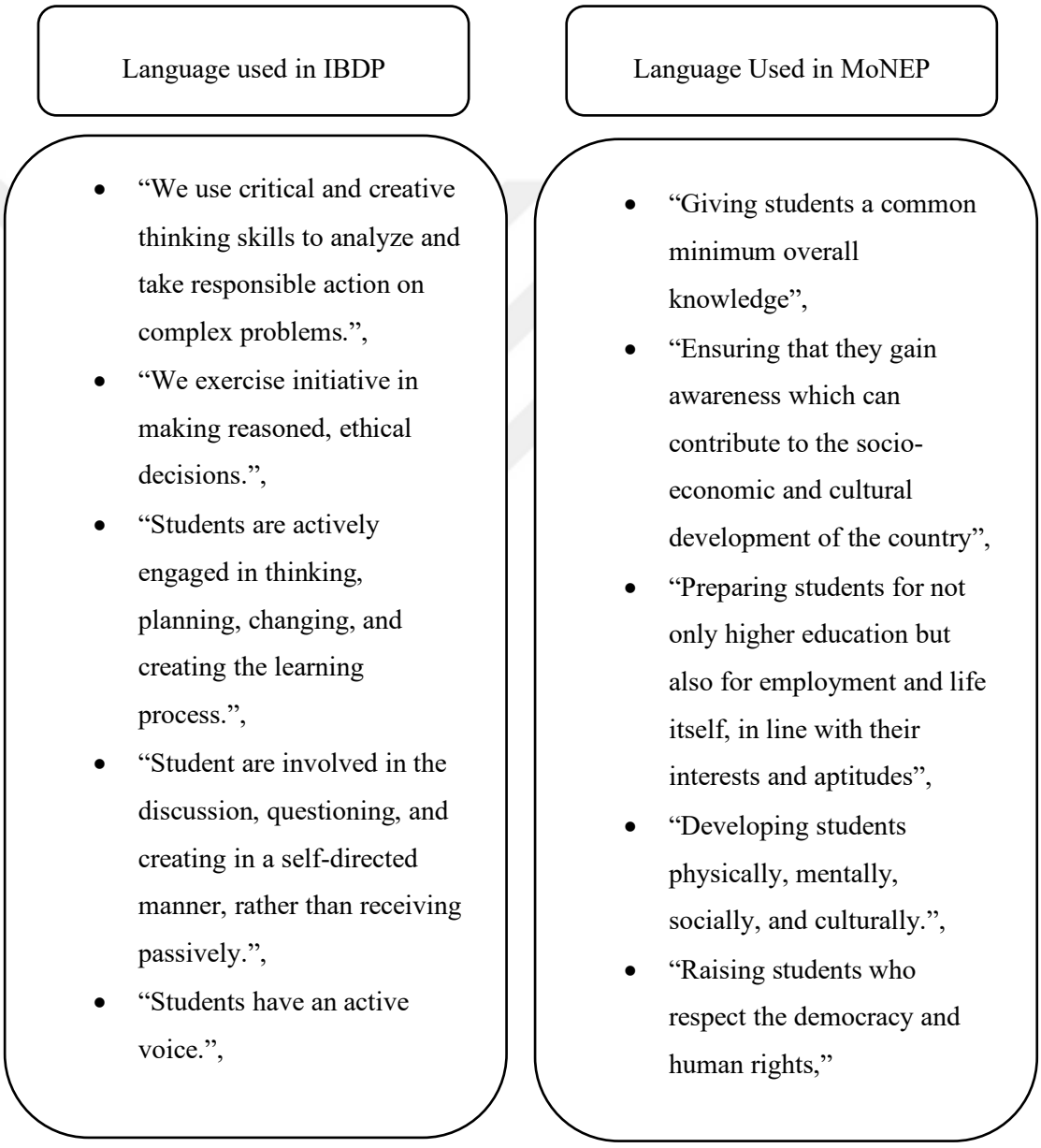


Figure 7. Language Used in the Documentation

Curriculum Updates

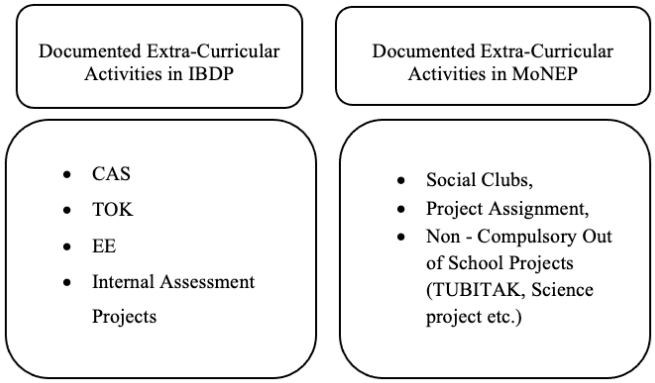
SDL skills are important to raise individuals who possess the characteristics necessary for this age, in the 21st century as it is of utmost importance for people to adapt to an ever-changing world. They need to keep up with change and know how to learn when they need to adapt regardless of the subject. For this to happen, education programs need to be up to date and easily adaptable to new situations. MoNE is updated centrally as the ministry deems necessary. The changes are made with the approval of the ministry by department of education research and development team. According to the documents examined, both programs are updated by expert teams. IB includes educators from many different parts of the world in the process, while the MoNE works exclusively with local ministry-based teams. Both programs' changes are announced centrally. IB teacher and administrator training is required, and the schools are regularly audited. These audits and practices also provide insight into the IB program's ability to adapt to globally changing times more quickly as it works with teams from all over the world. A curriculum development team from various countries, educators, and examiners from all over the world collaborate to keep the IB programs current on a regular basis on a 7-year cycle systematically.

Research Question 2.2

What is the contribution of the extra-curricular elements of IBDP and MoNEP in respect to the acquisition of SDL skills?

One of the other factors that contributed to the statistically significant improvement in students' SDL scores in the IBDP program found as the program's extra-curricular elements. Extra-curricular activities help students to think outside the box and create a better understanding of the world around them. See Figure 8.

Figure 8. Extra Curricular Activities in IBDP and MoNE



The IB Diploma Program's structure is designed in such a way that all stakeholders understand how these elements should be implemented. Extracurricular activities, like the other elements, are also well-documented in the IBDP program.

Each has its own purpose, specific handbook, and assessment procedure. IBDP also provides training workshops for each of these elements (EE, CAS, TOK) for teachers, coordinators, and other members of the school's community. Each component should be coordinated and needs to be shared with the school community by the IBDP coordinator. In other words, unlike in MoNEP, practitioners are given detailed instructions on how to put the extracurricular activities designed into practice.

One of the other important elements of DP in supporting the SDL skills of students is the Extended Essay. As it is explained in the literature, the Extended Essay is a comprehensive study of inquiry that will be chosen by the students and carried out under the supervision of their advisors. Students improve their research skills, writing skills, self-management and time management skills, all related to self-directed learning skills. The Extended Essay, which is a study that supports the students in "exploring learning resources" and "implementing required learning methods and strategies," correlates with the definition of SDL. It is a component of the curriculum that every IB DP student should successfully complete in order to receive a diploma. For the EE process, it is found that students are expected to develop time management, research, self-management, and self-directed learning skills (IBO, Extended Essay Guide, 2019). This process develops students' risk management skills. Students must also work on developing learner profile traits like risk- taker, balance, thinker, inquirer, and researcher. Most importantly, at the

end of high school, students write a well-thought-out research paper that will prepare them for future academic research processes. A group of researchers investigated the benefits of the EE for university studies. They concluded that EE influences students' research confidence and willingness to engage in future research. For example, former IB students at the University of Virginia were significantly more likely to feel prepared for college-level coursework (Inkelas, Swan, & Pretlo, 2012). All in all, the extended essay component of IBDP is found as an example of a student-centered educational process in terms of students managing the process and taking on responsibility for deciding the subject area and sources. As stated in the IB EE official guide, the expected outcome of the EE process is self-learning and the development of the ability to manage the learning process. These are the sub-elements that will support the student's SDL skills. This extracurricular component helps high school students acquire the skills necessary for academic research processes at an early age. One of the factors that contribute to the SDL skill is that the student is responsible for most of the process, and that he turns the discipline he chooses from his field of interest into a study by making connections. In the MoNE program, students who receive a project assignment can conduct research in this context, or they can be assigned research assignments based on the teacher's initiative, but there is no comprehensive student-led thesis application, similar to EE. Apart from the regulation, MoNE's official documents for the project assignment are not included with the application method and assessment procedure. The only statement given is "the rubrics for project assignments are determined by the subjects' teachers." Therefore, it is not possible to conduct a detailed analysis of the instruction given to teachers or the assessment methodology.

TOK's student-centered design of measurement and evaluation tools, and its use of inquiry-based methods rather than memorization-based education align with the characteristics associated with the acquisition of SDL skills. Because TOK focuses on the individual learning process and knowledge building process of the students, it keeps the student at the center of learning, and aims to improve the methods of accessing information in daily life, the benefits of TOK cannot be denied when acquiring SDL skills. An ideal TOK student recognizes his or her own strengths and limitations and accepts ethical responsibility for their actions while learning, creating, and sharing knowledge (Özakman, 2017). They know how to support their arguments, whatever the

topic is, and they show tolerance for counter arguments and different perspectives. They know the nature of the knowledge coming from different subject areas, evaluate the knowledge based on its methodology, and finally produce and communicate knowledge according to ethical standards.

A person's progress towards self-awareness also implies that he or she has created a personalized roadmap for his or her educational journey. Certain skill sets and approaches, such as learning "how to learn," having clear and purposeful goals, working with others with different perspectives, and identifying multiple solutions to various problems are beneficial in the acquisition and improvement of self-directed learning skills and they are all addressed in the CAS guide of IBDP. For CAS activities, students are expected to write reflections on all activities they have participated in in their portfolios. Reflecting on a CAS experience requires participating in the activity mindfully and analyzing its positive and negative effects on the individual. Throughout this process, students explain their process evaluation to their supervisors or CAS coordinators via recorded interviews at the beginning, during, and at the end of the CAS program. With this aspect, CAS, together with SDL, also contributes to students' self-evaluation skills.

According to Brodie's (2014) research on the IBDP CAS element, this extracurricular component provided by the program improves students' self-directed learning skills by motivating them to be aware of their own strengths, be responsible in planning and implementing their own educational strategies and work collaboratively with others in order to improve their own skill set. Based on the evidence used to define SDL, there are many elements of CAS that overlap with the features of SDL, emphasizing a personal journey of self-discovery that recognizes each student’s unique individual starting point, and their own strengths and weaknesses. One of the most important contributions of CAS in improving SDL skills is identifying personal and communal goals, developing strategies, and determining further actions for personal growth. It highlights the importance of self-awareness in terms of one’s own development. The process induces a greater level of reflection and understanding, which in turn paves the way for personal and professional growth, not normally expected of students at this age. It encourages students to recognize their potential beyond the definitions demarcated by

that of “school learner” and aids the identification of their own personal strengths and weaknesses outside that of a learner of curriculum.

On the other hand, there are extracurricular social club activities in the MoNEP program. Club activities in the MoNEP program are one lesson in duration (40 min) and are included in the weekly schedule. (MoNE, Milli Eğitim Bakanlığı Ortaöğretim Kurumları Yönetmeliği, 2020) These club activities may also be implemented outside class hours depending on the school. Club activities, which aim to enable students to think creatively and work in areas other than the subjects in the curriculum, are chosen by students. Students can be members of only one club, chosen according to their field of interest. The curriculum subjects covered in these clubs are at the initiative of the club teacher. The programs of the clubs are not structured. Thus, it becomes difficult to control whether theory is put into practice, regarding the skills that are intended to be taught.

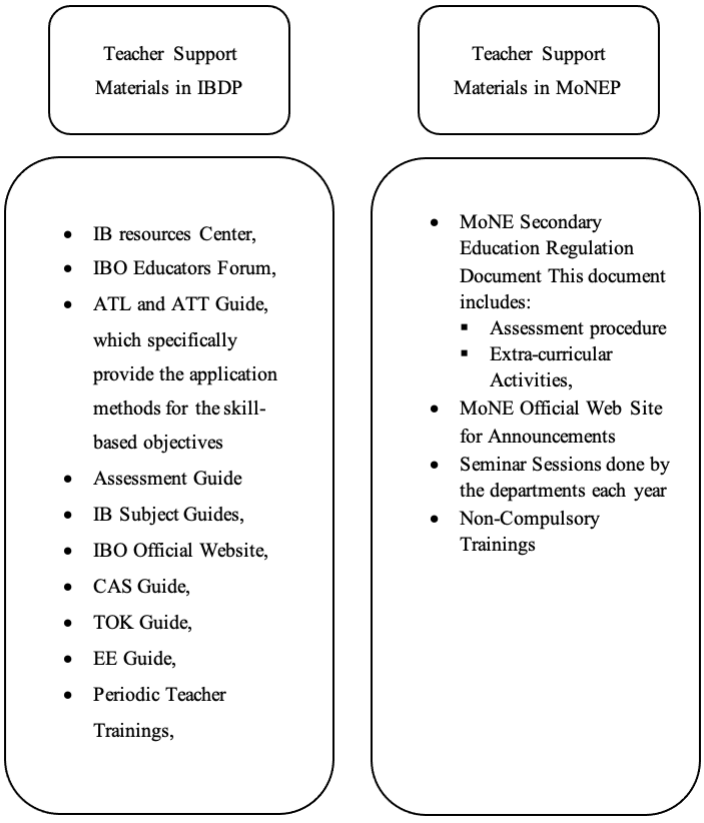
Research Question 2.3

What is the contribution of the teacher support materials of MoNEP and IBDP in respect to acquisition of SDL skills?

Another factor which affects the acquisition of SDL skill, as summarized in the literature section, is the teacher's role in the classroom, shifting from being "someone who teaches" to being a "guide in the learning process". As the teacher places the student at the center of the lesson and transforms the tasks assigned into skill-oriented ones rather than content-oriented ones, students’ awareness of responsibility for their own learning increases. In this respect, teacher support materials are one of the most important components for the education programs to fully spread the mindset of program philosophy to all stakeholders. When the documents are analyzed, it is found that the IBDP and MoNEP have teacher support materials, as seen in Figure 9. But as the most important difference, DP provided much more comprehensive documents at every stage, such as, defining the program, introducing the course, implementing, and evaluating the course, and explaining the extra-curricular practices. On the other hand, MoNE has provided only basic information in a single regulatory document. According to MoNE syllabus documents, it is stated that: *the priority in ensuring the effectiveness of measurement and evaluation practices is not in the curriculum but in the teachers. It is expected of teachers to be creative and unique while applying the MoNE program.*

(MoNE, Öğretim Programları). Teachers are free in their application, design, assessment, and evaluation methods. This gives great freedom for teachers. However, it is not easy to evaluate, how the program requirements and objectives of the lessons, especially the skill-based objectives in this context, are applied by those teachers. Also, teachers in the MoNE program have seminar periods at the beginning of each year. Rather than teacher training or professional development sessions, departments are expected to come together during these seminar periods to prepare plans, develop their curriculum designs, and other documents for the upcoming year. Although some seminars and activities are organized by the Ministry of National Education, participation is on a voluntary basis. In addition, the Ministry of National Education sends updates and innovations to school administrations (MoNE, Milli Eğitim Bakanlığı Ortaöğretim Kurumları Yönetmeliği, 2020). In other words, aside from the implementation of mandatory changes, the teachers' professional development is left to their own initiative. This makes it difficult to control whether skill-related curriculum elements are applied by subject teachers.

Figure 9. Teacher Support Materials in IBDP and MoNEP



IBDP teachers from all subject groups are responsible for implementing the IB 'approach that are included at the beginning of every syllabus document into their program. And teachers are responsible for helping students understand and internalize them.

All teachers need to establish all curricular and extra-curricular elements in their lesson design. They need to keep records and evidence of connections to these elements in their subjects. This supports the SDL skill-based objectives of the IBDP to be applied by the teachers. In this regard, IBO provides teachers with subject specific guides, assessment guide, guides for extra-curricular elements, ATL and ATT guides, teacher forums, sample assessment materials, and resource centers for all the other needs of teachers. It is found that all this material contains detailed instruction for lesson designs and assessment methodology.

Teachers are also given command terms to use in formative assessment, and it is obligatory to prepare exam questions according to these command terms. With figure 10 below, command terms of a course in IBDP are given as an example of teacher support materials for preparing students. Documents that assist the teacher, such as this command term document, are critical for the implementation and assessment of the skills given in the course objectives, in this context, SDL skills. The guides and training provided by the IB assist teachers in implementing and assessing the lesson.

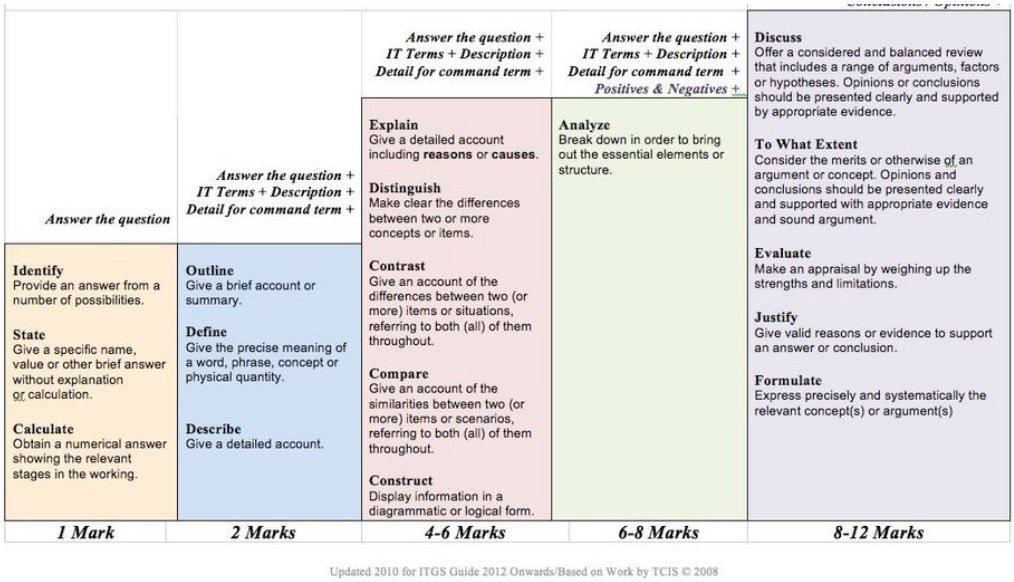


Figure 10. Command Terms of IBDP Assessment

Additionally, every three years, teachers are required to receive upskilling training in their subject areas (IBO, Programme Resource Center, 2018). They need to design their lesson plans focusing on ATT and ATL skills and document the evidence of the products. When inspecting schools, the IBO audits the evidence of the application of ATL approaches to the subjects, TOK connections, and CAS connections related to the subject areas.

Research Question 2.4

What is the contribution of the assessment methods given in the official documentation of MoNEP and IBDP in respect to acquisition of SDL skills?

Assessment is an important part of teaching and learning process. Assessment and evaluation help teachers and students to set new goals through reflexive thinking by determining what students know, understand, and can do at different stages of the learning process. According to document analyzed the general view of two programs assessment approach can be seen Figure 11.

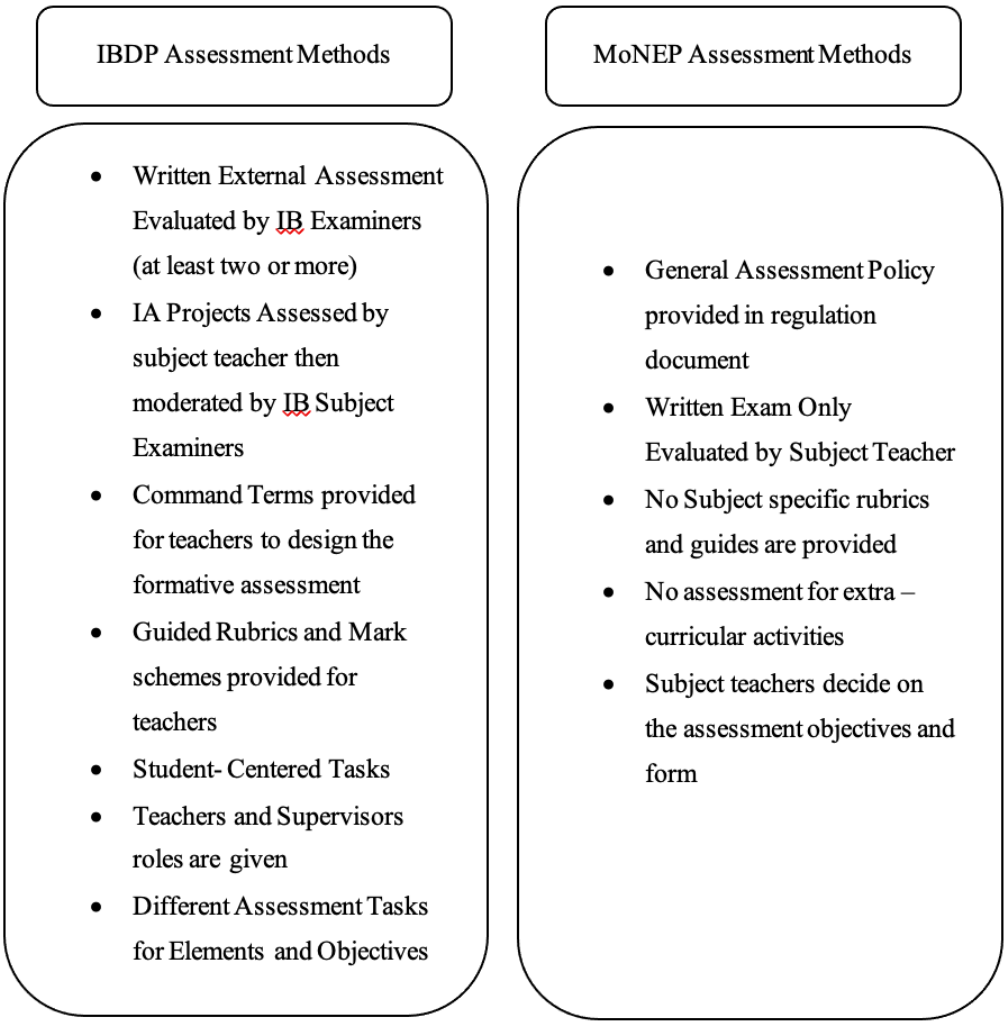


Figure 11. General Assessment Methods of IBDP and MoNEP

For the assessment methodology of the MoNE program, it is found that the ministry does not set definite boundaries for the practitioners in terms of assessment tools and methods that can be used in the measurement process, it only gives a framework. The preferred assessment and evaluation tool and method must comply with the required academic standards given in the regulation document. There is no document found on how to implement the application and how to measure skill-based objectives. The regulation document of the MoNE program describes what assessment and evaluation are but not how they should be applied. This shows that measurement-evaluation changes according to teachers' practices.

On the other hand, according to the documents reviewed, IBDP provides assessment objectives in the guidebook of each subject. Assessment methods and command terms for formative assessment are also provided at the end of the guides. In addition, sample assessed student work for internal assessment projects, exams and other extra-curricular activities are provided in the teacher resource center. An additional document containing the measurement methods for extracurricular elements as well as the IB's general assessment-evaluation approach is provided. These documents guide the teacher on how to acquire and measure the given SDL skills.

As an example of SDL assessment tool for IBDP the Internal Assessment projects are found. The internal assessment projects are significant independent tasks for which students must identify and develop the necessary self-management skills to be successful. The IBDP's internal assessment projects are one of the most important components for observing the acquisition of SDL skills. Students gain subject-related objectives as well as extra skills related to their subject area by completing these projects. Students must apply what they've learned to solve subject-specific, real-world problems. They must conduct their own research skills and self-learn skills to solve problems or find answers to research questions in the projects. Students are required to conduct experiments, document their reports, analyze a movie or novel, and prove a mathematical formula, depending on the subject (IBO, 2021).

As a specific example of gaining SDL skills by internal assessment, for the internal assessment project of the Information Technology in Global Society (ITGS) course could be given. Students are expected to find a customer and develop an IT-based solution to the customer's problem. Although the ITGS curriculum does not include website coding, coding an executable program, or creating a database, the required products must be designed using these tools (IBO, Programme Resource Center, 2018). During this process, students select one of these tools depending on the needs of their client and learn the necessary programs to create this product. The role of the ITGS teacher is to explain the project requirements and the assessment objectives and to hold a maximum of three formal feedback sessions, in the beginning, during the development, and at the end (IBO, A Guide to Assessment). The teacher grades this project, but the final grade is given by the IBO subject examiner team. In this way, the marks of the

subject teacher are also evaluated. Additionally, Project Development Life Cycle (PDLC) is one of the most important goals of the project. The goal of PDLC, which is also the foundation for self-managing a project, is to provide students with the ability to investigate current problems and inadequacies, analyze the client's requirements, create a project schedule, and design and develop the product in accordance with the client's needs, getting feedback from the client and self-evaluating the process and the product at the end. All these steps must be managed by the students. And at the end of these steps, the student is expected to develop variety of sub-skills that serve self-directed learning skills. Developing an information technology-based product from scratch, using online learning resources, preparing, and implementing their own calendar, making changes as needed and updating based on customer feedback, and implementing a solution at the end of the process are all excellent contributions to acquiring SDL skills. The ITGS course IA project is just one of the IA projects of the DP program. The projects and assessment-evaluation criteria of other subject groups that support the skills targeted by the program can be found in the documents on the IB's official website.

Each subject has its own type of IA projects. At the end of the projects, for example, they must have a well-documented report for ITGS, or a recorded text analysis for Turkish, or a presentation for TOK, etc. (IBO, A Guide to Assessment) Time management and self-evaluation skills are also required for these projects. The teachers' roles in the IA processes are clearly stated in the subject handbooks. Clarifying teachers' roles helps to ensure that students take responsibility for their own learning and manage their time effectively. The effects of these IA projects have an undeniable impact on students' SDL skills. The subject teacher plays a significant role in using reliable and valid resources, determining the scope of the research, providing feedback, and transferring the IB assessment objectives to the student while putting the student at the centre of the process. In comparison to the projects taken annually from a single course in MoNEP, these projects are clearly documented, and their scopes and assessment criteria are well-designed.

3.2. Discussion

As mentioned in related literature, self-directed learning skills are one of the most important skills to adapt to the changes in the information age. As a result, education will no longer be about "knowing," but rather about developing transferable skills, connectivity, innovative thinking, and adaptability. A variety of educational solutions to promote independent learning appear to be available. IBDP and MoNEP are two of them in Turkey. Having these skills from an early age helps students be more adaptive to fast-changing situations. In order to investigate the two main questions of this research, data related to students' SDL scale scores and program documentation are collected and analyzed. Naturally, the findings are complex and not easy to express succinctly. The research was designed around the two main research questions and related sub questions. The first question of the study aims to investigate the SDL score level of students. For this goal, in the quantitative part, it is revealed that there is no significant difference between a student's scale score at the beginning of the program at 10th grade and the end of the program. However, after applying to the Diploma Program, it is concluded that the program has significantly positive effects on the students' SDL scale scores. Additionally, another quantitative finding shows that gender does not have any significant effect on the acquisition of SDL skills. Within the scope of the first main question and sub questions of the research, the MoNE group counted as a control group in the study. However, statistically, DP contributed more to the increase in SDL skills.

Accordingly, the second main question, with the help of sub questions, aims to investigate the official documents of two programs with respect to SDL skills. Document analysis revealed that both programs have elements that help students be more self-directed in their learning journey. However, the International Baccalaureate Diploma Program is designed to be more learner-centered and designed around skills rather than content. Furthermore, the IBDP is well documented in terms of philosophy, curriculum design, lesson design, assessment methods, and extra-curricular elements. Considering the documents provided by the programs, there could be a number of possible explanations for this difference. And these can be summarized as:

- Both of the programs employ a variety of practices reflecting different educational philosophies to support student benefits and to produce citizens able to contribute to their society. Since the Diploma Program put the skill-based extracurricular elements and learner profile attributes which are directly related with the SDL skills in the center, it is safe to state this general design of the Diploma Program contributes to students' SDL skills.
- According to document analysis, the objectives and philosophy of the IB diploma program are well documented, this aids all stakeholders to better understand the program requirements. This makes it easy to ensure that the program philosophy is implemented.
- The fact that the IBDP program's mission is to transform education from traditional to progressive and to put the student at the center may have contributed to this difference.
- In terms of their position in the curriculum, they are in the core of the program, and are supported by the subjects. They come before the content in the program design of IBDP (see Figure 12). These elements aim to help students develop learner profile attributes and help them gain different skill sets. CAS, TOK and especially EE have most of the sub factors of SDL skills.
- Teacher training is more organized and well-structured in IBDP than MoNE, and this allows for personal and professional development of teachers. If the teacher improves herself, this will also affect the educational processes positively.
- In almost all the documents examined in DP, the fact that the student carried out most of the processes and that the student had the most say in the learning process also contributed significantly to the SDL skill. By contrast, MoNEP program is designed around the role of the teachers.
- Another factor is the differences in the role of teachers in both of the programs. For IBDP the teachers' role is described as mostly that of supervisors and facilitators. On the other hand, in the MoNEP, the ministry only provides the objectives and frameworks for the subjects and extra-curricular elements. Teachers are alone in preparing the course content and applying the objectives.

- The general documentation provided introduces what programs are, rather than how to implement them. This makes it difficult to understand whether references to the SDL skill in the documents is applied.



Figure 12. IB Diploma Program Structure (IBO, 2021)

As a result, trying to align the two curricula for SDL skills was not easy. When we look at the secondary school level program of MoNEP, certain changes and improvements have been made in terms of student-centered educational design for the last ten years. However, it still lacks the specificity of aims and objectives that IBDP possesses. MoNEP is mostly based on teacher practice. However, on the other hand it makes it difficult to spread the philosophy of the program and/or it makes it difficult to evaluate whether the program was applied as intended. In the five last years, it is promising to see that in the statement made by the Board of Education and Discipline in 2017, the skills targeted with the new curriculum are more related SDL skills. And they are: communicating in the mother tongue, digital competence, learning to learn, taking initiative and entrepreneurship, social and institutional competencies, cultural awareness, and expression skills. The expression of “learning to learn” is one of the main objectives of SDL. Furthermore, in order to increase the quality in education, the "2023 Education Vision" document was published in 2019. 21st century skills are frequently referred to in this document as well (MoNE, 2023 Vision Statement, 2019).

A thorough analysis of the general secondary education document provided in 2021, implies greater autonomy for students and and approaches that focus on students' interests (MoNE, Milli Eğitim İstatistikleri). Students are offered different options; for example, high schools are divided into categories such as Vocational High School, Science High School, Social Science High School, Anatolian Fine Arts High School, Multi Program Anatolian High School, Anatolian Imam and Preacher High School, Anatolian Vocational and Technical High School. Having such a variety of options is actually an advantage for the students, enabling them to have control over their own educational decisions (MoNE, National Education Statistics); yet, there are still gaps in program policies, such as that of putting the student in the center of the program, focusing on skills that will support self-learning, and the lack of professional development training given to teachers in this aspect. In addition, there are problems regarding the application of the above in leading children to improve their own skill sets and how to assess their performance. To summarize: the things that need to be done are given, but how to implement them is not clearly stated.

Few studies in the field have investigated the MoNE upper secondary program and the IBDP together, which would provide further details of the similarities and differences of the curricula and the perceptions and performance of their students. Sagun, Ateşkan and Onur (2014) investigated high school students' performance in respect of college education. Students in both MoNEP and IBDP and students from only MoNEP were compared, and the data indicated that the former group is more likely to have a higher GPA, spend fewer years in college education and that the IBDP encourages students to be more prepared for their continuing education. Furthermore, they stated that the students from IBDP were better in critical thinking skills and time management. In another study, Torun (2019) analyzed the differences among students' reflective thinking skills by comparing the curricula of information technologies in global society course of IBDP and MoNEP. The researcher indicated that the students from the former are better at reflective thinking in accordance with the emphasis given in each program. All these studies show that the results of the presented study are in line with the relevant literature, which identifies the possible reasons for the statistical difference in the SDL mean scores. The conclusions of the findings of the study revealed that SDL expands students' choices,

self-confidence, autonomy, and enthusiasm, as well as the development of various skills for continuous improvement.

PART 4. CONCLUSION

This section provides the summary and conclusions of the research and possible suggestions for future research.

4.1. Summary

Our lives have been completely transformed due to the advancement of information technologies. The scope, speed, and accessibility of the concept of information have been redefined; it has become an expression that is constantly updated and transformed. Professional life has also adapted to this change and expects new employees to benefit from these information technologies at the highest level and in the most efficient way. Likewise, the concept of learning and studentship, which has taken on a new meaning, caused the old model approaches to fall into disrepute. The old learning approaches, which can be defined as the transfer of knowledge from the teacher to the student, have undergone a transformation in which the role of the teacher has receded, and the individual efforts of the students have gained priority. The concept of autonomy has been brought to the forefront thanks to the ease in accessing information, the increasing number of information platforms, and especially to the COVID-19 pandemic, which forced students to continue their education online. For this reason, the concept of self-directed learning has gained extra popularity in recent years, although it has a very old history. Next to the concepts of "know-what" and "know-how," "know-where" has been added, an expression that underlines where and in what ways information can be accessed. When we consider all these, it is extremely vital to discover ways of obtaining information on one's own, to think and decide on learning processes, to be able to plan, to distinguish between true and false information, and to establish meaningful connections. This is an extremely important position both for the learning process and for being successful in professional life. Although it is possible to think about the concept of self-directed learning in terms of the whole lifespan in general, since learning never stops, the impact of the schooling process on the development of this skill set is undeniable. Accordingly, the aim of this study is to evaluate the curricula of two secondary education programs in Turkey, the Ministry of Education Program, MoNEP, and the International Baccalaureate Diploma Program, IBDP in terms of their focus on

SDL and how they lead students to develop this skill set. In addition to the literature review, document analysis of two programs on the subject, 88 students from MoNEP and 64 students from IBDP+MoNEP of the Terakki Foundation Schools were selected as participants for the presented experiment. The SDL levels of the students were measured using a scale given to them over a two-year interval. The purpose of this experiment was to investigate the effects of MoNEP and IBDP programs on the SDL levels of the students and to make a comparison between these two programs, both in terms of their curricula and their performance in acquiring SDL skills.

4.2.Conclusion

This research is aimed at investigating the International Baccalaureate Diploma Program's (IBDP) and MoNEP's curricula in terms of their emphasis on and approaches to eliciting self-directed learning skills and the competency levels of students from both groups in self-directed learning. Based on an investigation of the curricula and the document analysis, it was found that the IBDP offers a more well designed, and comprehensive curriculum in respects of its focus on improving SDL skills which is clear and sound. On the other hand, curriculum of MoNEP have components which help gaining SDL skills, but the program lacks the details specifying autonomy in learning. It is revealed that IBDP is more skill-based and learner centered than MoNEP. In addition, in the experiment that analyses the performance of students from IBDP and MoNEP in respect of self-directed learning skills, statistical analysis revealed that the students from IBDP+MoNEP had higher scores than the students from MoNEP, indicating higher levels of self-directed learning skills. However, in order to have a comprehensive understanding of the reasons for these differences, further investigation is necessary.

4.3. Suggestions

Since this research only investigates self-directed learning skills by comparing the IBDP and MoNEP in respect of SDL skills, further investigation regarding the differences between the performances of these programs is needed to understand the underlying reasons. An analysis covering the perspectives of the teachers of both programs will be beneficial in understanding the differences and similarities between the programs as they appear in real-life settings. Surveying teachers about their individual approaches and the curricula's instructions will provide more insight into the performance of both programs.

In addition, a research study to be conducted with the students who graduated from the two programs and the evaluation of the graduates' own SDL skills will also deepen the study.

As previously discussed in the limitations section, the participants of this research were mainly from families with a relatively higher socioeconomic status. Therefore, the results of the study may only be generalized to students with higher socioeconomic status. Even though this might be the case for students from IBDP of different institutions, MoNEP includes students from all sections of society, covering both public and private schools. Since coming from a higher socioeconomic status may facilitate self-directed learning skills by itself for several reasons, such as better access to educational and technological facilities, the next step would be to replicate the study using different participants coming from various socioeconomic statuses. In this way, a comprehensive evaluation might be possible, in which the effects of socioeconomic status on self-directed learning skills might be further investigated.

With regard to upper secondary education in Turkey, certain suggestions could be put forth. First of all, in order to keep up with the current needs and requirements of modern society, there needs to be more decentralization in the MoNE program giving opportunity to put SDL into practice. The skill-based concepts specified in the 2023 Vision document need to be put into practice instead of remaining in theory. The curricula should be student-centered and not content-oriented, emphasizing individual learning skills. The language of the program documents needs to also reflect this perspective, for example, by using expressions like "transmit" and "experienced" rather than "taught".

Furthermore, for a more meaningful instructional design supporting SDL skills, the students need to be encouraged to find the solutions to problems individually or as a group, with their teacher as their guide on the side instead of spelling out all the steps in advance to avoid mechanical adherence to the instructions. In addition to academic studies, projects and studies based on intellectual performance, physical activity, and community service requirements such as extracurricular (CAS) studies in the IB program can be made mandatory for the students of MoNEP.

Assessment and evaluation procedures for the curricular and extracurricular components of the MoNE program should not be left to only one teacher's discretion, and teachers need to be provided with supporting materials to facilitate implementation of the syllabi. Having a mechanism that checks whether the achievements and instructions given in the documents are implemented will strengthen the program's fulfillment of the targeted skills. Evaluations made by more than one authority (teacher, examiner) can also increase fairness and transparency of assessment and evaluation process.

In the information age where learning with information technology tools has become widespread, learning guides with tools that support self-learning skills should be created for both programs. Educational programs need to include the use of competencies such as online academic resources and online learning tools, accessing the right information with these tools, and learning to manage their time while learning with online tools.

4.4. Appendices

APPENDIX A: RESEARCH PERMITS:

Bu belge, Yükseköğretim Kurulu tarafından 19.01.2021 tarihli *"Lisansüstü Tezlerin Elektronik Ortamda Toplanması, Düzenlenmesi ve Erişime Açılmasına İlişkin Yönerge"* ile bildirilen 6689 Sayılı Kişisel verilerin Korunması Kanunu kapsamında gizlenmiştir.

APPENDIX B: PARENT OR GUARDIAN PERMISSION FORM

Bu belge, Yükseköğretim Kurulu tarafından 19.01.2021 tarihli *"Lisansüstü Tezlerin Elektronik Ortamda Toplanması, Düzenlenmesi ve Erişime Açılmasına İlişkin Yönerge"* ile bildirilen 6689 Sayılı Kişisel verilerin Korunması Kanunu kapsamında gizlenmiştir.

APPENDIX C: SDL SCALE USAGE PERMIT

Bu belge, Yükseköğretim Kurulu tarafından 19.01.2021 tarihli *"Lisansüstü Tezlerin Elektronik Ortamda Toplanması, Düzenlenmesi ve Erişime Açılmasına İlişkin Yönerge"* ile bildirilen 6689 Sayılı Kişisel verilerin Korunması Kanunu kapsamında gizlenmiştir.

APPENDIX D: SDL SCALE (TURKISH AND ENGLISH)

Bu belge, Yükseköğretim Kurulu tarafından 19.01.2021 tarihli *"Lisansüstü Tezlerin Elektronik Ortamda Toplanması, Düzenlenmesi ve Erişime Açılmasına İlişkin Yönerge"* ile bildirilen 6689 Sayılı Kişisel verilerin Korunması Kanunu kapsamında gizlenmiştir.

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