MARCH 2016

MYP IMPLEMENTATION IN TURKEY

Final report

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EXECUTIVE SUMMARY

The purpose of this study was to investigate the outcomes of implementation of the International Baccalaureate (IB) Middle Years Program (MYP) in Turkish schools. To learn what contributed to the outcomes, we analyzed the implementation process and the alignment of program materials from the Ministry of National Education Program (MoNEP) with the MYP guiding principles, including IB learner profile attributes. We used an embedded multiple case study approach to conduct an in-depth analysis of three schools that are authorized to implement the MYP and have been successfully implementing MYP for at least two years.

Data sources included interviews with school heads (*N*=4), the MYP coordinators (*N*=6), and teachers. Teachers participated in focus group (11 groups with five teachers on average per group) and they also completed a questionnaire about school culture and classroom learning environments (*N*=155). To further examine classroom climate, 22 lessons were observed using a rubric that helped identify IB learner profile attributes, teacher attitudes, and student behaviors. Descriptive statistics and factor analysis helped give insights into the teacher questionnaire results that were triangulated with findings from the qualitative data analysis. Another source of data was student scores and their rankings on a national exam, which provided insights into student academic performance on an external measure. For the program alignment, *MYP: From principles into practice (IBO, 2014),* other MYP documents, and some IB subject guides were compared to the *Turkish Ministry of National Education Fundamental Law* (including the amendments) (MoNE, 1973) and *Turkish Ministry of National Education Law for,* and *primary (MoNE, 2013c) and middle schools (MoNE, 2013d).*

The research revealed that school heads chose to implement MYP because they value the development of students who are open-minded, critical thinkers, and international-minded. The MYP coordinators and teachers told us that student projects are especially important in helping students become more caring and creative. They appreciate the importance of developing interdisciplinary units and using formative assessment to monitor learning. Participants reported that students are eager to ask questions in class and they make connections among their subject

areas and with their lives. Although students are more motivated to learn, the teacher still plays a central role in guiding educational activities.

One of the biggest challenges with implementing the MYP is perhaps one of its key assets. The challenge is that schools are required to simultaneously meet the requirements of MoNEP and the MYP. However, the asset is that MYP coordinators have come to view the MYP as a framework that guides them in making the Turkish national program more innovative and interdisciplinary in its implementation. They are encouraged to use new strategies (such as flipped classrooms) and technologies (such as tablets) to efficiently enhance student involvement in their learning process. Although MoNEP is more content-based than the MYP is, the document analysis found many alignments between the two programs that facilitate integration. The MYP helps the national program achieve its goal to develop creative students who are responsible for their own learning.

Another challenge facing the MYP implementation also results in a positive outcome. In the eighth grade, all students in Turkey take the national Transition from Primary to Secondary Education (TPSE) exam. The results of this exam affect student eligibility for high school enrollment: higher scores qualify students to enroll in higher-ranking schools. School heads and the MYP coordinators emphasized that parental and student pressure is intense during exam time, and often lessons revert to more content-based, memorization formats. Investigation into the national exam results of the MYP students in the case study schools showed that most of their scores are among the top four percent of scores in the country. These results indicate that the MYP students perform well academically on external measures of academic performance.

This report identifies and reviews other challenges, as well as the strategies teachers use to overcome them or even benefit from them. It concludes with suggestions to improve implementation, including opportunities for future research.

INTRODUCTION

Education in Turkey

When the Republic of Turkey was created in 1923, education was mandatory for only the primary grades, but over the years the amount of schooling required of students has gradually increased. From 2012, 12 years of education became mandatory: four years of elementary school, four years of middle school and four years of high school. This division is notable for the creation of a distinct period of middle school, from fifth grade to eighth grade. In middle school, students have ten compulsory subjects (physical education, information communication and technologies, religion, science, art, mathematics, music, social studies, Turkish, and foreign language, and at eighth grade Turkish Republic Revolution History and Kemalism[1]) and three subjects as an elective.

High school education starts at ninth grade and ends at twelfth grade. Students take 15 to 18 subjects that vary from one to six lessons a week at each grade level. As of 2014, grades nine and ten are foundation years during which all students take the same coursework and may choose one or two electives. In the last two years of high school, students have only language, religion, and history subjects in common. The rest of the courses are selected based on their preferred area of study. In addition to regular public and private high schools in Turkey, there are schools that specialize in certain areas, such as science high schools, social science schools, multi-program high schools, high schools for aspiring *İmams* and preachers, and vocational and technical schools.

Educational practices in Turkey have varied from the early days of community-based village schools focused on experiential learning modeled after Dewey's approach to education (Uygun, 2008) to the more standards-based practice of today's schools, which are focused on high stakes testing. Pressure to perform well on university entrance exams has been influencing teaching approaches and student learning in Turkish high schools. The outcomes of the exams determine which university and what area of study students can pursue.

With new regulations starting in 2013, students' transition from middle school to high school is also determined by an exam. The Transition from Primary to Secondary Education (TPSE) exams are held twice a year in the eighth grade (November and April). The exam consists of

[1] This course includes the history of the Turkish Republic and also the life, goals, vision, policies and military approaches of Mustafa Kemal Atatürk who is the founder of the Turkish Republic. Kemalism stands for the features Atatürk (MoNE, 2012).

multiple-choice questions based on the published learning outcomes of the Ministry of National Education Program (MoNEP) in six subject areas (Turkish, foreign language, mathematics, religion and ethics, science, and Turkish republic revolution history and Kemalism). Scores that are used for student placement into high schools are calculated based on their TPSE exam scores plus the sixth, seventh and eighth grade averages. All students in Turkey must take this exam, whether they are in a public or private school. With this new examination to measure the eighth grade student level of achievement, middle school administrators, teachers, and students now have exam preparation concerns similar to those in high schools.

The controlling body for education in Turkey is the Ministry of National Education (MoNE) that decides when and how schools will be established and ensures compliance with national norms and standards. Of the schools in Turkey, only around four percent are private and they too must conform to the rules and regulations of MoNE. All schools must obtain approval from the ministry if they wish to add different elements, such as an international program like the MYP, to their program. In these cases, the new component does not replace MoNEP; both programs' standards must be met simultaneously.

The IBO's Middle Years Programme

According to the IB website (www.ibo.org/programmes/middle-years-programme), the Middle Years Programme is one of the four programs of education offered by the International Baccalaureate Organization. It is designed for students age 11 to 16. For younger students there is the Primary Years Programme and for older students the IB offers either the Diploma Programme or the Career-related Programme.

The curriculum framework of the MYP includes eight subject groups, with a minimum requirement of 50 hours of teaching time per group for each year of the programme. The MYP helps students gain an understanding of who they are and develop an appreciation for their potential role in the community. Integral to the programme is the IB learner profile with its ten attributes listed in Table 1 below.

Table 1. IB learner profile attributes

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.
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.
Thinkers	We use critical and creative thinking skills to analyse and take responsible action on complex problems. We exercise initiative in making reasoned, ethical decisions.
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.
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.
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.
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.
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
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.
Reflective	We thoughtfully consider the world and our own ideas and experience. We work to understand our strengths and weaknesses.
Source: http://www.ibo.org/contentassets/fd82f70643ef4086b7d3f292cc214962/learner-profile-en.pdf	

To ensure that students develop the IB learner profile attributes, the MYP emphasizes the following concepts for teaching and learning:

- Teaching and learning in context, the idea that students learn best when their education is related to their lives and real-world experiences;
- Global contexts, developing an understanding of humanity and stewardship of the planet;
- Conceptual understanding, big ideas that connect subject areas; these concepts help students inquire into the importance and meaning of their learning experiences;
- Approaches to learning, involving students in activities that help them develop and apply their social, thinking, research, communication and self management skills;

- Service as action, students become responsible and valuable members of their community when develop and participate in projects to improve the well-being of other beings.

MYP is implemented in about 1,150 schools in over 100 countries around the world. Depending on the structure of the country's middle years schooling, the MYP is offered for two, three, four, or five years. The following section explains how the MYP is implemented in Turkey.

The MYP in Turkey

In Turkey, the MYP is currently offered in nine private schools. All are located in western Turkey: seven in Istanbul, one in Bursa, and one in Edirne. The first MYP school was authorized in 1999. As of this report, there are three candidate MYP schools (schools that are in the process of becoming MYP authorized schools) and five schools that have expressed interest in implementing MYP but have not yet officially applied for candidacy.

To facilitate MYP implementation, "heads and coordinators" meetings are held four times a year in one of the IB schools. The meetings are voluntary for heads and coordinators in the authorized, candidate and interested schools. For these meetings, an agenda is created beforehand and everybody's input is welcomed. The decisions and the discussions are written as a report for each meeting and available to all attendees.

The MYP is for students from grade six through grade ten. Turkish middle schools includes grades five through eight; grades nine and ten are part of the high school, meaning that in some cases adjustments need to be made to MYP implementation. With IBO approval, middle schools use the fifth grade as a preparation year for the MYP. Students start the MYP the following year and end in grade eight, a practice approved by IBO for schools throughout the world in similar situations. If there is an associated high school, MYP continues in grades nine and ten for these students. However, some of these MYP middle school students, based on their TPSE exam results, may go to a different high school without the MYP. Figure 1 illustrates how the MYP is implemented in Turkey. The 4+4+4 format of the Turkish school system indicates the number of years for primary, middle, and high school respectively. The diagram also indicates when the national TPSE exam occurs.

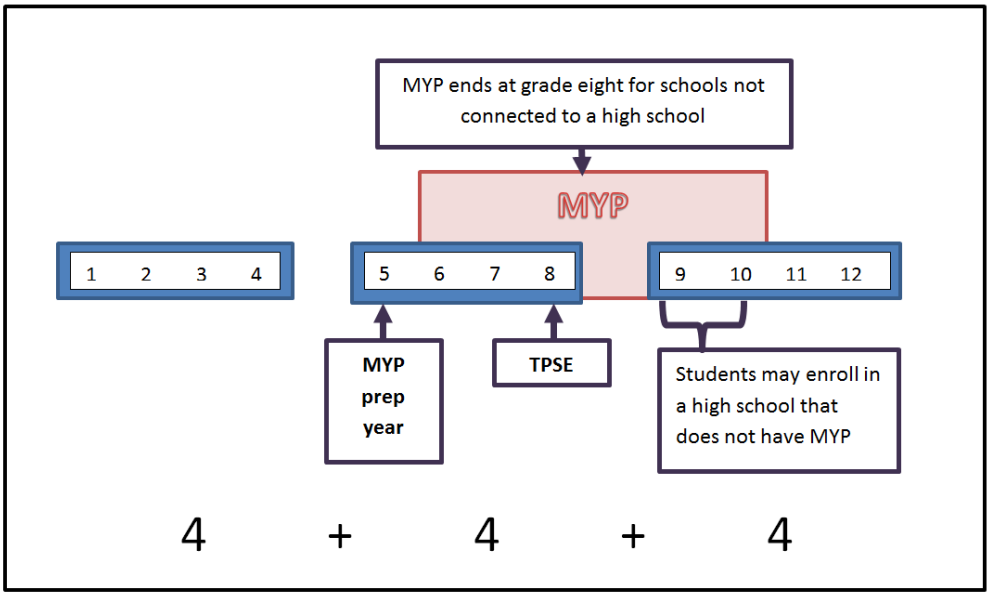

Figure 1. MYP implementation in the broader Turkish school system

Purpose

The purpose of this study was to investigate the context and outcomes of implementation of the MYP in Turkish schools. In addition, we analyzed the implementation process and the alignment between MYP and MoNEP standards.

Organization of the report

This report is composed of three main sections based on the research questions.

Section I – Outcomes of MYP implementation

- Insights into the outcomes of MYP implementation, focusing on school culture, classroom climate and learning environments

Section II – MYP implementation process

- Exploration into the reasons why the MYP was chosen and the process used to implement the MYP, including strategies to facilitate implementation and overcome barriers

Section III – Program alignment

- Comparative analysis of MYP and MoNEP documents

Each section includes key findings followed by information about data sources, collection and analysis. The findings are then reviewed in further detail, including a general discussion.

Research questions

Outcomes of MYP implementation

1. What evidence is there that the IB learner profile attributes emphasized in MYP are considered important indicators of success in middle and high school?
2. What does the classroom learning environment look like in MYP Turkish schools?
3. What does school culture (school leadership, teacher beliefs and practices, classroom climate) look like in MYP Turkish schools?
4. What type of high schools do MYP students select and enroll in?
5. How do MYP students perform on external measures of academic performance? Where do MYP student scores fall within nationwide TPSE exam results?

MYP implementation process

6. What are the reasons schools have chosen to implement the MYP?
    - What are the reasons schools, especially those with the PYP and DP, have chosen not to implement the MYP?
7. What are the barriers and facilitators of successful implementation of the MYP in Turkish schools?
    - What role do the MYP coordinators' meetings play in helping schools communicate and collaborate regarding MYP implementation?
8. What evidence is there that successful MYP implementation fulfills Turkish national educational requirements? What changes, if any, have been made to MYP implementation to ensure that the program addresses the MoNEP requirements?

Program alignment

9. How closely do the attributes of the IB learner profile align with MoNEP?
10. How do attributes of MYP (approaches to learning, global contexts, key concepts, assessment principles) align with MoNEP?

Methodology

For this investigation, we used the embedded multiple case study approach (Merriam, 1988) to conduct an in-depth analysis of MYP implementation, including program alignment, barriers and facilitators, and outcomes. The cases were schools that have been authorized to implement the MYP for at least two years.

There were only four schools out of nine that met all the selection criteria. One of these four schools was unable to take part because of staff changes and scheduling issues; however, we did interview their former MYP coordinator to address research questions related to the implementation process. The cases for this study are reflective of the schools that have implemented MYP thus far, and are not necessarily representative of the Turkish education population in general. Following is an overview of the three private schools in Istanbul selected for this study. Each has a different school culture, classroom learning environment and unique student profile.

- The first school has been an IB World School since 2011, starting with MYP. The Primary Years Programme (PYP) and Diploma Programme (DP) followed in 2015. Since IB programs are offered at all grade levels, it is a Continuum School. The school was founded in 1990 as an elementary and high school. It has a student body of 206 students and 35 teachers. In 2005, the high school specialized in social science is opened. In 2007, they opened a science high school. In 2012, as part of government changes, it became primary, middle and high school.
- The second school has been an IB World School since 2013, with MYP being the only IB programme implemented. The school was founded in 1873 as a middle school and high school, with 765 students and 70 teachers at the time of the study. Although it is a private school in Turkey, it is supported through public donations rather than funding from a corporation or foundation. It is a boarding-only school, and nearly half of its students come from the Anatolia region of Turkey, where access to quality education is limited. Enrolment is limited to students who have lost one or both of their parents and who pass an exam given at the fourth grade that assesses creative thinking skills and cognitive development. All students receive full scholarships.
- The third school has been an IB World School since 1995. It started with the DP, followed by MYP in 1999 and PYP in 2005; thus, it is also a Continuum School. The school was founded in 1985 to provide secondary level education and became a science high school in 1993. The middle school and elementary school were added in 1998 and a kindergarten was created in 2005. There were 730 students and 96 teachers at the time of data collection. The school is part of a foundation that has two other elementary schools and four more kindergartens in other parts of the city (bringing the total to seven kindergartens citywide).

Each school was treated as a separate unit. However, we will discuss the findings from each case in relation to the others, synthesizing the findings to address the research questions comprehensively. Through these case studies, we gained a broad understanding of MYP implementation and its outcomes while also learning specific information about how to improve its effectiveness.

To investigate the perceived importance of the IB learner profile in Turkish education, we conducted interviews with administrators from middle and high schools (**research question 1**). We gained insights into how the MYP affects the classroom learning environment and school culture through a teacher questionnaire, observations, and focus group interviews (**research questions 2 and 3**). We examined student graduate records to identify what types of high schools MYP students select and enroll in (**research question 4**). Through quantitative analysis, we learned how MYP students perform on external measures of academic performance (**research question 5**). In particular, we compared the exam results of MYP students in this case study to the results of all Turkish students who took the TPSE exam in 2013-2014 and 2014-2015.

Through in-depth interviews with MYP coordinators and school heads, we examined the reasons why schools have chosen to implement MYP (**research question 6**). We approached coordinators and heads of schools that have PYP and DP to learn why they have not enrolled in the MYP. During the interviews with MYP coordinators we explored the perceived barriers and facilitators to successful MYP implementation (**research question 7**). These interviews were semi-structured, which allowed participants to expand upon issues that are important to them.

Recognizing that the MYP coordinators' meetings play an important role for MYP schools, we conducted participant observations during the meetings to learn how members communicate and collaborate. These insights also shed light on how the schools recognize and overcome barriers to MYP implementation. A key element of these observations as well as the interviews with the MYP coordinators was to learn if and how the MYP has been adjusted to meet Turkish national requirements (**research question 8**).

Through a document analysis, we compared how IB learner profile attributes and various MYP principles are aligned with MoNEP (**research questions 9 and 10**). The MYP

coordinators conducted this comparison using the MYP guide *MYP: From principles into practice* and other documents with the *Turkish Ministry of National Education Fundamental Law* (including the amendments) and *Turkish law for pre-school, primary and middle schools*. The IB learner profile was used as the framework for the document analysis, with emphasis on the MYP guiding principles: global contexts, approaches to learning, and key concepts.

Data analysis involved transcription of interviews and the use of coding software, NVivo, to key major themes and subthemes. Descriptive statistics from the questionnaires were triangulated with the qualitative data from interviews and observations to verify the themes. For example, research question 6, which seeks evidence that successful MYP implementation addresses Turkish national educational requirements, was addressed through the MYP coordinator interviews as well as through assessments of school culture and classroom climate through lesson observation forms.

SECTION I: OUTCOMES OF MYP IMPLEMENTATION

Section background

This section presents findings related to the outcomes of MYP implementation on school culture, classroom climate and learning environments, and student academic performance on external measures. For this report, school culture is defined as the values, shared beliefs, behaviors, and ways in which teachers and other staff members work together (ASCD, 2016). The climate of a classroom refers to student behavior and learning; it includes learning environments the teacher creates and provides to the students. Student responsiveness to the teacher and interest in learning are part of classroom climate as well. Teacher dispositions and competencies, like student actions and attitudes, affect the classroom climate. Teachers' inclination and capacity to provide positive classroom climate and learning environments are influenced by the school culture (Ambrose, et al., 2010; Van Houtte, 2005).

How students perform academically is a key stakeholder interest when it comes to investigating program outcomes. In Turkey, given the pressure to perform well on national exams such as the TPSE exam taken by eighth grade students, it is important to investigate how MYP students score in relation to national trends.

The results of the TPSE exam affect the type of high school for which students qualify (e.g., public or private high school versus a public or private science school). Students may select to stay within their current school system or enroll at a different type of high school. Therefore, we also investigated into which high schools MYP graduates registered. The middle school years in Turkey start with grade five and end with grade eight; with the MYP continuing through grade ten, it is not guaranteed (not even likely) that a student in an MYP middle school will enroll in a high school that also has the MYP.

Highlights

<u>School culture</u>

In the MYP case study schools:

- School heads who are experienced in pedagogy and who understand the importance of IB workshops and trainings support the efforts of teachers and MYP coordinators to implement the MYP.

- Two thirds of the MYP teachers reported being enabled by the school heads to pursue proper training in the MYP.
- Most of the teachers felt empowered to make decisions in their schools.
- School heads recognized the achievements and accomplishments of teachers on a regular basis.

Classroom climate

In the MYP case study schools:

- The most commonly observed IB learner profile attributes of MYP students are open-minded, reflective, and inquirer.
- MYP students have well-developed communication, presentation, research, and organization skills.
- MYP students seemed to appreciate classroom rules, instructions, and teacher expectations.
- Teachers felt that the interdisciplinary approach used in the MYP supports meaningful learning.
- Teachers used diverse teaching methods and student-centered approaches.
- Teachers endorsed differentiated learning, although little evidence of this was seen during classroom observations.

Learning environment

In the MYP case study schools, classroom observations showed that:

- Students had opportunities to develop their own voice.
- Students had advanced communication and presentation skills.
- Students showed awareness of social issues in their school community.

Student academic performance

In the MYP case study schools:

- Approximately half of the MYP students scored on the TPSE exam in the top 4% nationally, in Turkey.
- Of the 293 students in the case study, around a third continued in the MYP in grades nine and ten.
- More than two thirds (71%) of the MYP students finishing grade eight enrolled in private high schools, which are the most prestigious type of high school in Turkey.

Data sources, collection, and analysis

To examine the outcomes of MYP implementation, we interviewed three school heads (one per case study school) and six MYP coordinators (three current coordinators, two past coordinators[2], and one from a non-case study school[3]). We developed the following data collection tools: teacher questionnaire, lesson observation protocol, and interview protocols for heads, MYP coordinators and MYP teachers. To learn how the MYP students performed on an external measure, we contacted the MYP coordinators and schools' guidance departments to provide us with the students' TPSE exam scores, their success percentile, and placement records. The national averages are not publicly available.

Teacher questionnaire on school culture and classroom climate

After a review of the literature, we identified the following constructs related to school culture and classroom climate:

- Agency
- Behavior
- Belongingness
- Community values
- Conformity with IB principles
- Emotional behaviors
- Equality
- Motivation
- Performance
- Professional development and resources
- Professional development and support
- Respect

To identify items to address each construct, we examined several reliable and validated existing tools (Pintrich & De Groot, 1990; Reeve & Sickenius, 1994; Reeve & Tseng, 2011; Skinner & Belmont, 1993; Williams & Deci, 1996). The questionnaire contained 37 items (Appendix A). The items were slightly adjusted for the purpose of this study. After a few

[2] These individuals changed their jobs (one became a deputy principal and the other one became IB DP coordinator at a different school); we wanted to include them because of their past experience with the MYP.

[3] As previously noted, one of the case schools needed to remove themselves from the study, but the coordinator still wanted to take part in interview since she was an experienced MYP coordinator.

demographic questions, teachers were asked questions about their school culture and classroom climate. Most of the items had a five-point Likert response scale (strongly agree to strongly disagree). In addition, seven items had a seven-point response scale (very true to not at all true).

The survey was translated into Turkish. Both versions (English and Turkish) were put into a Google Docs online questionnaire that was given to the MYP coordinators to administer via email to their teachers. Teachers were assured that their responses would be anonymous. They were given three weeks to respond.

The questionnaire was administered to 253 teachers and completed by 155 teachers (response rate 61.2%), 142 of who were Turkish and 13 of whom were foreign nationals. We used the Statistical Package for Social Sciences (SPSS) for descriptive statistics and data analysis. The subjects taught by the respondents included science, mathematics, Turkish language and literature, language arts and social sciences. A high proportion of the respondents (45%) had been teaching for over ten years. A comparable proportion (43%) indicated that they had been teaching the MYP for two years or less (Table 2).

Table 2. Teaching experience of the respondents

Years	**Total teaching experience (*N*)**	**Total teaching experience (%)**	**IB MYP teaching experience (*N*)**	**IB MYP teaching experience (%)**
0 – 2	13	8.38	67	43.23
3 – 4	15	9.68	49	31.61
5 – 10	58	37.4	39	25.16
11 – 20	54	34.8	0	0
21 or more	15	9.68	0	0
Total (*N*)	155	100	155	100

The subject areas taught by the respondents include science, mathematics, Turkish language and literature, language arts, and social studies as shown in Table 3.

Table 3. Subject areas taught by the respondents

Subject area	Number of teachers (*N*)	Percentage of teachers (%)
Foreign languages	32	20.65
Science	25	16.13
Mathematics	22	14.19
Social studies	19	12.26
Turkish language and literature	22	14.19
Physical education	8	5.16
Information Technologies (computer teachers)	4	2.58
Ethics	1	.65
Visual arts	4	2.58
Librarian	1	.65
Psychological advisor and guidance	6	3.87
Design & technology	2	1.29
Music	5	3.23
Others	4	2.58
Total	155	100

The questionnaire results were combined from all three schools and descriptive statistics were computed (Appendix B). Certain data were compared to each other to identify trends or indices. The results of the questionnaire were used to revise the interview questions.

Further, we conducted exploratory factor analysis (Costello, Jason, 2005; Fabrigar, Wegener, MacCallum, Strahan, 1999) to identify the underlying unobservable (latent) variables reflected in the questionnaire responses. Three factors were revealed: School culture; Learning supports for students; and Students' behaviors. Factor analysis results tables are provided in Appendix C.

- School culture: This factor includes 16 items (items 1-16) (α=.962).
- Learning supports for students: This factor consisted of 14 items (items 17-30) (α=.972).
- Students' behaviors: This factor includes seven items (items 31-37) (α=.918).

Lesson observation rubric

We developed a lesson observation rubric (Appendix D) in which the IB learner profile attributes served as the primary observation criteria. Given that the tool was designed to observe classroom climate, additional criteria were based on items from the teacher questionnaire. Another set of criteria focused on teacher interactions relating to classroom management and understanding student needs.

The factor analysis of the teacher questionnaire facilitated triangulation of the results during data analysis. The following attributes were also included on the rubric and helped give insights into classroom climate and learning environments:

- Classroom setting is in order and organized
- Teacher sets clear rules
- Teacher has overall control in classroom
- Teacher provides positive support
- Task orientation
- Positive, healthy competition is evident among students
- Students are actively involved in coursework
- Differentiated learning is evident

After the lesson observation rubric was created, it was piloted in a nearby school to ensure its ease of use and ability to capture desired data. Then, it was revised slightly to allow for the recording of general observations related to student behavior, emotions, and cognition.

To organize the observations, we sent an e-mail to the MYP coordinators before our visit to the schools. We asked them to arrange (if possible) at least one lesson from eight different subject areas: Language acqusition (English), Language and literataure (Turkish), individuals and societies, sciences, mathematics, arts, physical education, design. The lesson observation rubric was used by a single observer in each of the case study schools in September and November 2015. The research assistant looked for evidence of how each of the learner profile attributes was supported in the classroom. She observed twenty-two lessons in the following subjects: Turkish language and literature, language acquisition, Spanish (modern languages), mathematics, science, individuals and societies, chemistry, design, arts, physical education, and music. Each lesson was observed for 40 minutes, the approved duration for a lesson by

MoNEP. The lessons at the middle school level were in Turkish and the lessons at the high school level were in English.The observation results from all the cases were amalgamated, analyzed and triangulated with findings from the teacher questionnaire and teacher interviews.

Interviews

We developed semi-structured interview protocols for school heads (Appendix E) and MYP coordinators (Appendix F), and semi-structured focus group protocols for MYP teachers (Appendix G). A semi-structured format allowed the participants to expand upon their ideas on particular issues. In total, four school heads and six MYP coordinators were interviewed. The interviews lasted about 45 minutes each. There were 11 teacher focus groups, with around five teachers in each group. The groups were comprised of mixed subject areas, the makeup of the groups being based on which teachers were available for a meeting time.

The interview/focus group questions were reviewed by the IB Senior Research Manager for the project and tested through a pilot interview with a new MYP coordinator at an interested school in Ankara. In addition, an experienced MYP coordinator reviewed the questions for accuracy and clarity. A thematic analytical approach was followed to analyze the qualitative data. Interviews were first recorded and transcribed. The data was analyzed using NVivo to determine major themes. We created a provisional coding list before the analysis based on the research questions (Miles & Huberman, 1994). While reading the transcriptions, we noted where terms in this list occurred and identified recurrent additional codes. The codes were put into categories and then grouped under major themes (Strauss & Corbin, 1990). While the transcribed material was in Turkish, the codes and themes were in English. Finally, we selected and translated quotations that exemplified the themes.

TPSE exam scores

To examine how MYP students performed on external measures of academic performance, we secured the TPSE exam scores of 293 students from each of the schools for fall and spring of 2013-2014 and 2014-2015. The scores included how each student's results compared to the national rankings (percentile). We compiled the students' rankings to determine how many scored within various percentiles.

Results and discussion

School culture

Regarding school culture, results of the qualitative analyses showed that the schools in this study showcase many ideals of the IB learner profile attributes. Student work is displayed on the walls, teacher camaraderie and collaboration is encouraged, and school heads willingly share stories of their school's success.

The school culture of MYP case study schools was positive. Teachers and coordinators agreed that their heads supported the MYP and teacher professional development for the MYP. They also noted that it is advantageous to have administrators who experienced IB programmes when they were teachers or coordinators; this helps them empathize and understand the importance of particular trainings to support teachers' efforts to implement the MYP.

Figure 2. Student artwork displayed on the walls

The questionnaire results showed that of the teachers surveyed, 66% agreed that their schools ensure teachers had proper MYP preparation before they start implementing the program. Nearly 59% strongly agreed or agreed that their schools empower them to make decisions under given circumstances. Well over half (57%) strongly agreed or agreed that their achievements and accomplishments are recognized by their schools.

School heads, coordinators, and teachers all commented about attributes of the student body. They described their students as reflective and inquirers who also have very good communication and presentation skills, research, and organization skills. They see evidence of the attributes listed in the IB learner profile, as well as global contexts and MYP key concepts. They also note that their students are respectful and caring. These attributes were especially apparent when discussing community involvement.

> *Students showed their exhibition to their parents and to other participants from the school community. Students raised awareness in the community they live. They were independent when trying to reach their goals. MYP deserves credit for motivating us to provide students with this opportunity.*
>
> ***Focus Group 7 participant***

The teacher questionnaire results show that 85% of the teachers either strongly agreed or agreed that their school gives students opportunities to make a difference by helping other people, the school, or the community (e.g., service learning). Involving students in the community and projects to help others was therefore regarded as extremely important. According to participants, the MYP provides students with many opportunities to develop their communication skills, such as attending competitions and conducting international projects.

> *We have highly **communicative students** who also have considerable stage experience. During the MYP evaluation visit we had recently, the visitors noted that the students helpfully translated meanings of lessons spoken in Turkish. More than being skilled at speaking English, students employ their skills with **confidence** and **enthusiasm**.*
>
> ***MYP Coordinator 1***

Projects that have local and global impact, such as protecting animal rights, also help students consider ethical issues and practice balanced thinking. This spirit of serving and being responsible promoted engagement and helpfulness among the student body. These qualities contributed to a "can do" atmosphere of the school that fully reflects the culture and goals of the IB.

> *The reason for implementing MYP is that we decided to **change our direction from national to global** because we recognized the importance of international education ... We realized that our students will need to **communicate with the world** and we decided to **revise our mission and vision** to educate individuals who have the abilities and skills to live anywhere around the world.*
>
> ***MYP Coordinator 2***

One exemplary project conducted several years ago in one of the schools aimed to raise awareness of athletes with disabilities. The students decided to conduct interviews with

athletes with disabilities in Turkey and abroad. They visited local athletic clubs and were able to photograph practice sessions and athletes from distant places sent their own photos or videos. All the images were organized into an exhibition. These projects increased students' awareness of the needs of others; they created a school culture of caring, empathy, and respect. Students learned that their actions could help improve the well-being of other members of their community.

Classroom climate and learning environment

When visiting MYP classrooms, one of the most striking teaching techniques observed by the research assistant was questioning. Teachers asked questions to guide student learning and to check for understanding (adeptly using the Socratic Method) and, more importantly, students themselves were asking questions. It was clear that learners were encouraged to inquire and to think critically. Teachers praised students and encouraged group work and student-to-student learning.

Of the 22 classes observed, only three classes were teacher-centered (individuals and societies, language, physical education where teacher introduced fitness equipment to students). In those three classes, over 75% of the time spent on direct instruction. Teacher direction was especially needed with younger students. For example, teachers outlined the learning activities and guided instruction for each lesson. Nonetheless, the emphasis was on inquiry rather than memorization, and students were motivated to take charge of their own learning.

> *Their inquiry skills have improved. They not only listen to what the teacher says in the lesson, they question why. They find connections among their lessons to improve their understanding.*
>
> ***Focus group 5 participant***

Analysis of the teacher questionnaire data revealed that support of student learning is important to teachers. Positive responses to items in the factor *learning support for students* indicate that teachers report providing guidance and encouragement to students for their learning. For example, 96.2% of the respondents strongly agreed or agreed to the following two items: "during my classes I encourage students to ask questions" and "during my classes I make it clear what I expect of students." In interviews, teachers told us that they encourage

students to ask questions so that they can help students improve their inquirer learner profile attribute. As stated above, the lesson observations provided evidence that supports these responses.

Teachers were less inclined to report positive classroom experiences for the *Students' behavior* factor. Items in this factor, specifically related to behavior, indicate whether students are actively involved in their learning. There were around 44% of teachers who agreed that "in my classes students try very hard." The behavior factor includes items that are concerned with students' effort to learn material. Around half of the teachers (52.9%) agreed or strongly agreed that "in my classes students try to learn as much as they can."

During interviews, some teachers also enthusiastically told us that the MYP is activity-based, providing students with the opportunity to inquire and apply their knowledge. Several emphasized that rote memorization is discouraged while the interdisciplinary approach provides context for meaningful learning. Teachers always try to help students make connections between what they learn in the classroom and their daily life. Reflection is also an essential part of MYP lessons. It is notable that while all the teachers interviewed had positive views of student learning behaviors, the survey results show that only around half of the teachers believe their students try very hard. We were unable to determine why questionnaire responses were not reflected in the interviews and observations. It could be that teachers were more frank in the survey and more positive in the interviews. Students could have demonstrated better performance in the classroom because they knew they were being observed.

In addition, the teachers said that the MYP provides them with a systematic platform to organize their lessons. The criterion-based format of the program helps them set clear expectations for their students.

MYP teachers reported during the interviews that they do not have a routine flow of MYP lessons. They reported the most commonly used activities and techniques in their lessons, to give an understanding of a typical MYP lesson. Following are some instructional methods teachers indicated they used to promote student involvement; these were also observed during the lessons.

- Brainstorming
- Cooperative learning activities such as jigsaw reading
- Design-based thinking
- Differentiated learning to address different learning styles of students
- Discussion
- Exit evaluations (for example, KWL chart)
- Flipped classrooms (where students were responsible for listening to lectures or doing readings prior to class, and the classroom was used for discussion and debate)
- Inquiry-based learning
- Interactive teaching methods to promote critical thinking
- Planning investigations
- Presentation support applications (e.g., drama and digital platforms such as sketch, Google Classroom, iPad apps, inspiration)
- Problem-based learning
- Project-based learning
- Reading strategies (such as predict-set-purpose, monitor-check, graphic source, shared-reading, prepare questions)
- Reflection

All teachers reported that they usually start with a brief review of previous lessons and then share the list of expected learning outcomes to prepare students for the lesson. This technique was observed during each lesson. The teachers shared that their learning materials are based on real-life situations to help students make connections with their previous experiences. During the lessons, teachers monitored students to address their needs and provide answers to questions. After each lesson, students were assigned homework and the lesson materials notes were shared with students through a course management system such as Moodle.

> *Before MYP, teachers used to give direct instructions and the students passively listened to the teacher. But now the students are actively engaged, they think and inquire very often. They do not ask "where do we use Mathematics in real-life?" since we let them see where and how to use it in real-life.*
>
> ***Focus group 3 participant***

Figure 3. Poster from a science classroom that includes some MYP key concepts, inquiry question, and topics

While some teachers reported that the implementation of MYP made radical changes to the classroom environment and their own teaching methodologies, there were others who disagreed that the MYP was a completely new approach. These teachers reported that they designed lessons with very similar approaches even before they met with the MYP or other IB programs. However, they agreed that the MYP framework helped them recognize how they use inquiry-based learning, differentiated learning, global awareness, and an interdisciplinary approach in their lessons. They felt that MYP requirements in the unit plans encouraged them to develop debatable and conceptual questions to arouse students' curiosity. One teacher noted that if there were no such requirement to include debatable questions in her plan, she may not have thought of including them. So, even for experienced and talented teachers, it seems that the MYP helps hone their skills and incorporate new creative strategies into their practice.

References to the IB learner profile attributes and other MYP principles were posted in many classrooms and many teachers referred to them during the lessons. Although in the lesson observations it was not explicitly evident that students had inquiry skills, it was clear that students were actively involved in coursework. Younger children were often off-task as they could easily become distracted. The classroom management skills of teachers helped to reduce disruptive behaviors.

For the most part, we observed healthy competition among students as they sought to answer questions and challenge each other's thinking, especially in grades six, seven, and eight. They were respectful, and the teacher monitored discussions by calling on students who raised their hands. This attribute of caring seems to develop as students grow older within the MYP: younger students were seen to be blunter and were less apt to consider the feelings of their classmates.

Teachers took the time to provide students with individual feedback on their assignments or coursework. They inspired students to be more creative and they respected different ideas generated by the students. They made their expectations clear to students, using phrases such as, “I would like to see how you think and discuss this topic” and “I wonder how you would convince each other of that.” Teachers were also observed to be responsive to student learning needs. For instance, in a physical education lesson, the teacher encouraged a new student to build confidence by giving her a leadership role in a small-group activity. In art lessons, students were provided with an opportunity to make their own decisions and state preferences for their work. However, this level of independence was not observed in other subject areas.

In many classes, teachers used technology in interesting and innovative ways. For example, tablets and smart-notebooks were used to post questions, collect student answers, and share opinions. However, extra rules were required since students (especially young ones) were enthusiastic and excited about using their technological devices. Rather than focusing attention, at times, the technology became distracting and disrupted the classroom environment. Teachers had to provide clear instructions and monitor the class carefully. Nonetheless, the technology did spark interest and has potential for promoting student creativity.

Explicit evidence of differentiated learning was not observed even though the teachers agreed in interviews that they use differentiated learning strategies. It is possible that teachers do use these strategies and the observed lessons did not allow for or did not require the use of such strategies.

> *MoNEP is product-oriented and what we try is to make it a more **process-oriented** with the help of the MYP. As a physical education teacher, I really like the **differentiated learning** which gives the students the chance to see their own progress at their own paces in the end of a learning activity. While I am teaching how to play basketball my aim is not to have all students shoot a layup but to make progress at their own pace with the ability they have. I want them to make it one step further and I want them to compare themselves with nobody but their own.*
>
> ***Focus group 1 participant***

It was possible to see how classroom behaviors exemplified most of the IB learner profile attributes. There were some attributes that were demonstrated more overtly. Specific examples of these are listed below and in Appendix G. Others attributes were either not observed or could only be inferred from student behaviors. For example, in a chemistry lesson, students were encouraged to consider multiple sides of an issue (balanced), they made connections with their previous experiences (reflective), they were often observed to consider other people's perspectives (open-minded), and were willing to express opinions and pose ideas for projects (risk-takers). Following are descriptions of how other IB learner profile attributes were observed.

- Caring: Students were observed showing empathy as they tried to understand other students' feelings and respect their thoughts. The community service project seems to foster a commitment to serve members in their school and surrounding area. There were some instances when they could have been more respectful, however. Caring was pervasive in the school culture in one of the case studies because of the students' unique situation. In this school, all the students have lost one or both of their parents and have been accepted to the school with a full scholarship. This school is an example of commitment to service; therefore, students are always encouraged to be involved in supportive activities. For example, middle school students had a project aimed to raise awareness of the outcomes of leaving food on their plates when they left the cafeteria. A group was responsible for giving a kind warning to their peers for wasting food. In this way, they raised awareness of people who are suffering from hunger.
- Communicators: Overall, students were able to express themselves confidently and creatively in more than one language, although they reverted to their native language when talking with their peers. Interestingly, younger students were braver about practicing their foreign language speaking skills, while older students were more reserved. Although all students listened to each other in most of the classes, they may still need help to develop more advanced collaboration skills.
- Inquirers: Many of the classrooms are set up to encourage student interaction. Teachers were observed asking more questions than students were. Nevertheless, such questions were intended to allow students to think and nurture their curiosity. In every classroom, at least two students were observed asking questions to the teacher based on their real life experiences and observations.

- Knowledgeable: Most students in observed classrooms made an attempt to answer the teacher's questions. The interdisciplinary approach was evident in many classes where students actively used knowledge they gathered from other lessons, but in some situations this was limited to merely using terminology from other disciplines. Even students in grade five (who were in an MYP preparatory year) appeared knowledgeable while using conceptual understanding they had developed. This knowledge seemed to help them make the interdisciplinary connections in almost every lesson observed.
- Thinkers: While students need time to develop all the IB learner profile attributes in the MYP preparatory year grade five, it is apparent that even they are thinking seriously and questioning the information they gather during their classwork. They seem to be comfortable sharing their thoughts and examining the reasoning behind their thinking. In all grades observed, students were making connections with what they were learning in the classroom and what they experienced out of the classroom. They discussed with their peers how to do coursework and then took actions to complete the task. Some of them even used voting to make group decisions. In general, the schools' achievements provide evidence (although not directly observed) that students are willing to take responsible actions on complex problems.
- Principled: Students were observed taking responsibility for their own preferences and decisions. They respected each other's opinions and different cultures. However, some lack of respect was seen when students were intensely involved in a competitive class activity. Although students generally seem to show respect to each other and the rights of people, they still need to improve this particular learner profile attribute. Also there was not enough data to show whether students would act fairly and take responsibility for the consequences of their actions.

Academic performance related to external measures

To give insights into the academic performance of MYP students on external measures, the case study schools provided TPSE exam scores from two academic years, 2013-14 and 2014-15. These scores showed how their students were placed in the nationwide rankings. In these rankings, student exam scores are grouped based on their results; a certain percentage of students received scores within the same range. Top ranking students are qualified to apply to the more rigorous high schools in Turkey, most of which are private, but there are also some top ranking public high schools.

The information presented by the case study schools showed that in the 2013-14 TPSE exam results, on average 42% of their eighth grade MYP students were among the top four percent ranked students; in 2014-15 the average was 46%. That nearly half of the case study students were among the top four percent is an indicator of the MYP's success in the national context. None of the student scores in the study population was ranked below 50%, and only a few scored in the 45-49th percentile (1% in 2013-14 and 0.5% 2014-15). Table 4 includes students from both academic years.

Table 4. Performance of MYP students on TPSE exam in 2013-14 and 2014-15 academic years

Percent rank from the top	Total number of MYP case study students who scored within this ranking 2013-14	Total number of MYP case study students who scored within this ranking 2014-15
1-4%	70 (42%)	59 (46%)
5-9%	39 (24%)	27 (21%)
10-14%	17 (10%)	13 (10%)
15-19%	17 (10%)	13 (10%)
20-24%	8 (5%)	8 (6%)
25-29%	5 (3%)	1 (0.5%)
30-34%	4 (2%)	3 (2%)
35-39%	3 (2%)	2 (2%)
40-44%	2 (1%)	2 (2%)
45-49%	1 (1%)	1 (0.5%)
Total	166 (100%)	129 (100%)

After learning that most of the students were qualified to apply to top ranking schools in Turkey, we were curious to learn in which type of school they actually enrolled. Table 5 shows this information (data from two students is missing).

As noted earlier, the MYP is for students grade six through ten, and Turkish middle schools end at grade eight. At grade nine, they become high school students. This usually involves physically moving to a different school building. For continuum schools, students may continue MYP in grades nine and ten. In other cases, students may choose a school that does not offer MYP. Furthermore, within the same high school there may be different high school programs (such as social science, science, or vocational). Students may opt to attend one of these programs, which results in leaving MYP even if it is offered at the high school level.

Table 5. Type of high schools in which MYP students (from the case study schools) enroll

Type of school	Total number of students
Private high school	208 (71%)
Public high school	41 (14%)
Private science high school	20 (7%)
Private social sciences high school	6 (2%)
Private school abroad	5 (2%)
Public science high school	4 (1%)
Multi-program high school	4 (1%)
High school for aspiring *Imams* and preachers	3 (1%)
Social science high school	1 (0.5%)
Vocational and technical high school	1 (0.5%)
Total MYP case study students	**293 (100%)**

The data about student high school enrollment given by the case study schools revealed that of the 293 eighth grade graduates, 119 (40.61%) stayed within their system, that is, a high school that continued the MYP. Of these 119 students, however, 20 left the MYP to participate in an intensive program offered at their school (Table 6). Therefore, of the 293 students in the case study, only a third (N=99; 33%) continued with the MYP in grades nine and ten.

Table 6. Types of schools in which MYP students enrolled, when they stayed at their own schools

Type of schools	Total number of students
Private high school	99 (83%)
Private science high school	14 (12%)
Private social sciences high school	6 (5%)
Total:	119 (100%)

The MYP student performance on this external measure provided evidence that the programme supports academic achievement. It can also be implied that student experience in the MYP enables them to enroll in a variety of top-ranking high schools in Turkey.

SECTION II: MYP IMPLEMENTATION PROCESS

Section background

In Section I, we discussed findings regarding the outcomes of MYP implementation. In this section and the next, we consider the process and resources that supported MYP implementation. We focus on reasons why schools decided to implement the MYP along with any barriers they faced and how they overcame challenges. In Section III, we analyze how the MYP aligns with MoNEP.

Findings for this section come from the interviews we conducted with the heads, MYP coordinators and teachers. MYP coordinators and teachers shared their perceptions of the extent to which MYP implementation addresses MoNEP requirements.

Highlights

<u>School heads and coordinators reported the following reasons for deciding to become an MYP school</u>:

- To help shape their educational philosophy; in particular, they valued the IB learner profile, key concepts, approaches to learning, interdisciplinary units, and global contexts.
- To gain professional guidance in shaping their mission within an international platform.
- To develop confident and responsible students who are beneficial to their own communities, country, and the world.

<u>Schools that have the PYP and DP, but do not have the MYP, reported the following reasons and beliefs for not implementing the MYP.</u>

- Some schools were following another international program.
- The MYP was considered too challenging by heads to implement because of its project-based nature.
- The IB professional development workshops and trainings for implementation seemed too expensive.
- Some participants believed that MoNEP and the MYP would not be compatible with each other.
- Some participants thought that the MYP would not address the requirements of TPSE exam.

Coordinators and teachers reported the following barriers to successful MYP implementation.

- The MYP and MoNEP have different structures; the MYP provides general guidelines but MoNEP has specific content and standards.
- The MYP and MoNEP have different assessment policies.
- The TPSE exam creates conflict between parents' expectations and schools' expectations of students.
- MoNE does not allow schools in Turkey to include the IB in addition to other programs.
- Documents and workshops are not provided in Turkish.
- Some teachers are resistant to the MYP when they are introduced to it; in particular writing inquiry statements as part of MYP planning is difficult.

Facilitators of MYP implementation identified by school heads and MYP coordinators:

- Teachers who are role models, modeling all the attributes of the IB learner profile and approaches to learning skills.
- Teachers who are inquirers, communicative, collaborative, and life-long learners.

Facilitators identified by MYP coordinators and teachers

- Communication among IB World Schools, including the "IB Day," provides teachers with a platform to exchange ideas and best practices.
- The coordinators' meeting (held four times a year in Turkey) provides the coordinators with a platform to exchange ideas and best practices of MYP implementation.

Facilitators identified by teachers

- Personal projects and community projects are important to the MYP.
- Administrative support is provided for teachers to attend MYP workshops and trainings.
- The OCC is a valuable resource, although language is a barrier.

Strategies MYP schools use to overcome barriers

- Recognize and improve alignment between MoNEP and the MYP; for example, find ways to synchronize the MYP's personal project and MoNEP's performance assignments.
- Employ other teachers to provide after-school cram courses for national exams.
- Prepare future teachers for the IB during pre-service teacher education.

Changes that have been made to address MoNEP requirements

- Teachers hold horizontal and vertical meetings to prepare interdisciplinary unit planning.
- Teachers share effective class practices to widen each other's perspectives and benefits regarding efforts to implement the MYP.

Data sources, collection and analysis

The sources of data for this study included those used for Section I, namely questionnaire and interviews with school heads, MYP coordinators, and teachers. (See Section I for information about the development of the interview questions and qualitative data analysis).

This section draws on data from the focus groups and interviews focusing on reasons why participants' schools chose to implement the MYP. In addition, we contacted coordinators and heads in three schools that have chosen the PYP and DP but not the MYP, to learn why they have not sought authorization for the MYP. All interviews were recorded, except on the request of one head interview and one teacher focus group, where the research assistant took detailed notes. After transcription, the interviews were imported into the NVivo software program for analysis. Using a thematic approach to data analysis, the data was coded and organized to create themes. These themes were used to address the research questions. For this section, the findings relate to perceptions of the process of MYP implementation. Further information was gathered through our participation in coordinators' meetings. By observing these meetings we learned how members communicate and collaborate to facilitate the process of MYP implementation.

Results and discussion

Reasons for deciding to become an MYP school

The process for deciding to become an MYP school is different for each school. For the most part, it starts with the principals, deputy principals, and directors of the school expressing interest. If they agree they want to pursue this, they meet with the school board. The board accepts or rejects the proposal.

When school heads and MYP coordinators were asked about why their school chose to implement the MYP, they frequently mentioned student academic and personal development. The most notable MYP features of interest are the IB learner profile attributes, approaches to learning skills, global contexts, and interdisciplinary nature. One head was so impressed with

the IB learner profile attributes that his school decided to implement the PYP and DP as well, also stating that MoNEP does not address these learner attributes.

> *We were looking for the ways to enhance our teaching and curriculum components. We thought that IB programmes are the most suitable ones to achieve our aim.*
>
> ***School head 3***

Coordinators and heads reported that MYP helps to raise confident and responsible students who are open-minded, inquiring, and good communicators. One coordinator said that their school had a diverse student profile with different ethnicities and varied family histories from all around the country. Many of the parents were poor and did not have a high school education. The school wanted to help those students to be internationally- and open-minded. The MYP coordinator and teachers mentioned that the global contexts help make the school experience more meaningful to students. Several commented that MoNEP is not interdisciplinary and students are not encouraged to make connections across their learning areas.

Therefore, the MYP was chosen because of its benefits to both students and the school community. School heads sought professional guidance to develop an international platform that enriches their educational philosophy. They look for a program to fit into their mission and vision: to educate individuals who are able to live anywhere in the world.

> *We decided to implement the MYP since we wanted to educate children who were not only successful at examinations, but are successful as humans. We would like to raise* ***well-educated and well-behaved humans*** *who can be successful anywhere around the world . . . We were seeking ways to make our students* ***responsible global citizens****. We would like to involve them in* ***community service projects****. We would like them to know themselves and the world, and take* ***responsible actions*** *to make it a better place.*
>
> ***MYP Coordinator 3***

School heads and coordinators reported that the MYP promotes educating modern, responsible, and self-regulated learners who will benefit their own country as well as the world. They agreed that the MYP helps their school to be more student-centered and to encourage students to have fun while they are learning.

Several heads and coordinators commented on the merits of the revised MYP, titled **MYP: The next chapter**. They mentioned that it was difficult at first addressing all the new criteria, but they now appreciate the additions related to approaches to learning and global contexts that further support their mission to develop well-rounded, creative, and open-minded students.

> *When we understood that MYP is not different than MoNEP, everything was much easier. The only thing is to implement MoNEP with the IBO's philosophy and perspective. However, we also have to integrate MYP's components such as (approaches to learning) ATL skills, service as action projects and ten attributes of IB learner profile. Basically we enriched MoNEP with MYP components.*
>
> ***MYP Coordinator 3***

Reasons for not implementing the MYP

With these positive statements about the MYP, we were curious to learn reasons why schools might choose not to implement the MYP. We know that there are currently more PYP and DP schools in Turkey than there are MYP schools. In particular, there are three schools that have the PYP and DP, but not MYP. We decided to contact these schools to learn their reasons for not implementing the MYP. Among the reasons they listed, concerns about TPSE exam were mentioned by all three. They talked about the need to devote much of their students' seventh and eighth grades preparing for this exam, and MoNEP is better suited for this purpose.

In addition, there were concerns about the lack of compatibility between the MYP and MoNEP. Participants believed that teachers would need to address both programs during instruction. In some cases, this means adding extra hours to the school day which was not possible (MoNE allows extra periods to be added at the high school level only). Overall, they believe adding the MYP meant extra work for administrators and teachers.

Another reason for not implementing the MYP, even in a school that had the PYP and DP, was that the MYP would be hard to implement because of its project-based nature. However, with **MYP: the next chapter**, they now consider that implementation of the MYP would be much easier for them. One coordinator reported that they hold strong beliefs in the benefits of being a continuum school since the students would continue to be engaged with an international curriculum after the PYP in middle school. The break after PYP had caused some problems regarding preparation for the DP.

Additionally, although the MYP was considered an attractive program for some schools, one participant mentioned that the costs of training the teachers and getting authorization were a deciding factor for not implementing the MYP. Another school head stated that they were already following a different international preparatory program for students in grades 9 and 10, stating that this program is strong in language and literature and had been found to prepare students for the DP. They did acknowledge that the science content was not as strong and for this reason were considering the MYP. Likewise, another participant recognized the benefits of being a continuum school, and last year the administrative board decided to apply to the IBO to become a candidate MYP school.

Barriers to implementing the MYP

Turkish schools are faced with some challenges and difficulties while they are implementing MYP in a national context. The heads, coordinators, and teachers emphasized that the objectives of the MYP and MoNEP are different. The former focuses on developing creative, independent thinkers, while the latter is content-based. MoNEP is very intense with many expectations; therefore, it is difficult to cover all the topics in a school year. Furthermore, the assessment strategies were considered very different for the two programs (see Section III), therefore addressing the expectations of both programs was deemed challenging.

> *The problem is that MYP and MoNEP **assessment criteria are different than each other**. We try to do both types of assessments and we have to enter the grades in the system for both. So we are looking for the ways to match MYP assessment with MoNEP assessment. For instance, we make quizzes and use the results as students' project grades in MoNEP. We develop some tools to calculate and transform the different marking system of MYP assignments to MoNEP exam results.*
>
> ***MYP Coordinator 5***

Some school heads and MYP coordinators acknowledged there was some teacher resistance when they started the MYP implementation at their schools. Teachers new to the program are hesitant because MYP has a different philosophical approach and they are accustomed to a more teacher-centered classroom. Their pedagogical background may be different from that required for MYP and it takes time to learn how to develop units for the program. Rather than being content-based, MYP teachers need to develop an inquiry focus for their units and identify activities to engage students. At the same time, however, despite this MYP requirement to create student-centered activities, they must cover MoNEP content in their

classes. Teachers said that MYP implementation is almost an extra job since they have to add it to the demands of MoNEP, which gets worse around national exam time.

> ***Teachers complain about the lack of time when TPSE exam approaches****. They say that they need to give multiple choice tests to the students for more practice and they do not have time for learning activities that are required in MYP. Teachers feel pressured to have the students succeed in the exam and* ***put the projects and learning activities aside until the TPSE exam is finished****.*
>
> ***MYP Coordinator 4***

In addition, classroom management is a challenge to MYP implementation. Students who enter MYP without prior IB experience are not accustomed to the more flexible approach to learning. Being used to teacher-directed lessons where memorization and conformity are the norm, younger children may lack the discipline to direct their own learning as required by the MYP. Teachers are challenged to transition students to become more responsible when given such freedom.

Of course, a frequently mentioned barrier was the TPSE multiple choice exam required by MoNE for all eighth grade students to transition from middle to high school. If students score well on this exam, they may be eligible to register for a top ranking high school in Turkey. Therefore, there is parental pressure for the coverage of MoNEP and, according to our participants some parents even express concern that the MYP may compromise preparation for this exam. Often, they feel that they have to enroll their children in after-school crash courses to provide extra content. To address the demands of exam preparation, teachers tend to administer multiple choice exams in their classes during certain times of the year, which counters the open-minded MYP approach to student learning. Many admit to putting the MYP aside for a while when exam time approaches.

> *Well, it is obvious that the* ***TPSE exam pushes our limits*** *and causes some problems for all of us. However, the equation is simple.* ***Teachers just need to see the similarities between these two programs****.*
>
> ***MYP Coordinator 1***

A disappointment expressed by several MYP coordinators is that high schools in Turkey do not recognize MYP completion as a criterion for high school acceptance. In general, students do not receive any certificate or diploma on graduation from MYP. A DP certificate, on the other hand, can benefit students when enrolling in a university as it may enable them to choose or change their area of study (Ateşkan et.al, 2015).

One coordinator reminded us that the MYP continues into grades nine and ten, which in Turkey is part of high school. MoNE does not allow MYP components to be implemented in some high schools, especially if they are already including other nationally-recognized programs, such as science or social science schools. This restriction applies even if they are authorized by IBO to implement the MYP.

Besides the challenge of meeting the demands of two programs, MYP coordinators and teachers mentioned that language is a critical barrier to MYP implementation. Most IB workshops and training are in English and teachers with insufficient English need to learn about the program requirements from others who were able to attend workshops and trainings. Documents need to be translated for them and sometimes there is not enough time for this. Without first-hand experience of MYP preparation, it may compromise their inclination to appreciate and internalize the MYP's philosophy.

> *There are **no sample unit plans or learning activities**. We cannot provide new teachers with examples to understand the philosophy of the program and how we implement it. This is one of the challenges we face as physical education teachers.*
> MYP: the next chapter *was a nightmare for us since there were no examples of how to integrate and implement the curriculum available to us. We overcame these problems with the help of trainings. The subject guides were translated by our coordinator for us to understand.*
>
> ***Focus group 7 participant***

Facilitators for implementing MYP

Coordinators and teachers identified a number of factors that facilitate the implementation of the MYP. They reported that the greatest support for their implementation of the MYP is school administrators and founders who value their professional development. They shared that IB professional development workshops along with in-service trainings help prepare them to implement the MYP. In addition, they value "IB days" that are held every other year in

Turkey and are open to all teachers from IB schools. They provide samples of best in-class practices, a platform to exchange ideas, and opportunities to learn from each other. These opportunities are especially important for novice teachers. In addition, some schools create orientation programs for new hires.

> *I experienced lots of difficulties when I first started and I hardly comprehended the program.* ***It would have been far easier for me if I had had an education background with a parallel philosophy to IB****. This experience would have prepared me to make my lesson plans and learning activities that are more inquiry-based.*
>
> ***Group interview 7 participant***

MYP coordinators emphasized that another key facilitator to MYP implementation was to employ teachers who can exemplify the attributes of the IB learner profile, utilize approaches to learning skills, and are inquiring, communicative, life-long learners who are always open to improvement. They acknowledged that having successful teaching experiences and strong content knowledge is important as well.

> *For an MYP teacher, the very first condition is to be a* ***researcher****. An MYP teacher must inquire before giving lessons to the students. The teacher must have comprehensive knowledge and use of technology. It is important to have a second language to communicate with international teachers.* ***The MYP teacher must show all of the IB learner profile attributes*** *and* ***must be open to collaboration****.*
>
> ***MYP Coordinator 2***

Participants shared that strong communication among IB schools and MYP teachers help address many challenges. For the coordinators, one of the best resources available is the coordinators' meeting, held four times a year in Turkey. The coordinators attend these meetings with enthusiasm since they experience similar challenges and can share strategies to overcome them. The coordinators' meetings have helped them appreciate the value of collaboration.

> *These meetings help me to stay on the track. We have very strong collaboration among MYP coordinators and teachers.* ***We translate documents and share best practice*** *from our schools. We also discuss ways to overcome the problems we experience.*
>
> ***MYP Coordinator 1***

The meetings are organized by one coordinator who agrees to host the event at his or her school. Prior to the meeting, an agenda is created by asking participants to send items. Topics from past meetings include the following:

- Upcoming conferences
- Workshops and other professional development opportunities
- Interdisciplinary unit planning practices
- Documentation and requirements for IBO verification and evaluation visits
- Translated documents
- Approaches to learning planning
- Candidate registration procedures
- OCC orientation and issues
- Integration of the MYP into school curriculum
- Addressing MoNEP objectives
- TPSE exam requirements, challenges and recommendations

Participants include representatives from authorized schools, interested schools, and candidate schools; all are welcome to submit agenda items. Minutes are taken and a report is written after the meeting, and then mailed to everyone on the MYP coordinators' mailing list.

Teachers shared that student enthusiasm and eagerness to learn help them overcome challenges of integrating the MYP into MoNEP. Student reactions validate their efforts and encourage them to continue working to develop meaningful and interesting lessons. They agreed that personal projects and community projects are especially motivating.

Another valuable resource mentioned by teachers is the Online Curriculum Center (OCC) website hosted by IBO. Unfortunately, its benefits are limited to those who speak English. Turkish language and literature teachers, social studies teachers, art teachers, and physical education teachers generally need the MYP coordinator to translate materials. Another shortcoming of the online site mentioned by MYP coordinators is the open access format of the OCC forum. Sometimes low quality and incorrect materials end up being uploaded by teachers (worldwide, not just in Turkey). There have been times when erroneous postings have misguided teachers, resulting in the coordinator needing to assist the teacher. Some participants felt that it would be better if documents were peer-reviewed prior to posting.

Evidence that MYP implementation addresses MoNEP

MYP coordinators and teachers were asked whether the MYP addresses the requirements of MoNEP. They noted that there were many areas of strong alignment, but at times they have to make changes to the MYP during unit planning to meet the demands of MoNEP, which is content-based as opposed to inquiry-based. One strategy discussed was to place MoNEP topics within the MYP's themes.

Some MYP coordinators and teachers consider combining the MYP and MoNEP an opportunity rather than a challenge. The MYP provides schools with a framework to implement MoNEP with a more student-centered and activity-based approach. Their schools are subject to the same MoNE laws and regulations as every other Turkish school; however the MYP provides them with a more creative framework to meet these requirements.

Figure 4. Students working collaboratively on a project

Teachers and coordinators find ways to relate the two programs. For example, the MYP's assessment criteria can be applied to MoNEP's performance assignments. Formative assessments are important in the MYP, and teachers can use certain MoNEP requirements to assess student progress. MoNEP requires teachers to assign student projects, which in turn can support students' MYP personal projects. Participants noted, however, that this is not a perfect fit since MoNEP projects are single-subject based while the MYP is interdisciplinary.

This interdisciplinary approach provides another opportunity for schools to creatively integrate MoNEP into the MYP. The schools hold multi-disciplinary collaborative meetings to plan units. During these meetings, held during days when students are not in school, teachers conduct their vertical and horizontal planning. These meetings help teachers to identify overlapping elements among their units; for example, they may learn about velocity in science class during November. In the spring, the physical education teacher will revisit the concept during swimming lessons.

*An MYP teacher must be collaborative so that s/he can work with not only his/her own colleagues but also other department teachers. S/he can help students to built their skills and knowledge and design lesson while also having fun. So I would say that an **MYP teacher must be risk-taker and creative**.*

MYP Coordinator 1

Computing technology has been one of the creative strategies used to better achieve the MYP goals and requirements (global contexts, key concepts, and interdisciplinary units) while simultaneously addressing MoNEP criteria. Three common approaches are flipped classrooms, learning management systems (such as Moodle), and mobile devices (such as tablet applications).

School heads know they will be visited by MoNE inspectors to ensure they are in compliance, and they want to feel confident they are addressing all regulations. The results of the TPSE exam, which is viewed as a challenge to MYP implementation, may also be an asset showcasing its success. So far, MYP student results are among the top scores in Turkey, showing that the schools are indeed meeting and exceeding the MoNE requirements.

Many of the coordinators and teachers we interviewed admitted that despite these creative efforts, the MYP is sometimes put on hold when it comes to preparing for the TPSE exam. As noted earlier, there is parental pressure for their children to perform well. Representatives from one school said they overcame this challenge by hiring teachers to offer after school crash courses for TPSE exam preparation. Another coordinator said their school administered questionnaires to the school community to learn more about their concerns and suggestions.

In conclusion, the coordinators and heads acknowledged that there were barriers to implementing the MYP. The main barrier was meeting the demands of the national program in conjunction with the goals of the MYP. They identified resources that facilitated the process and especially noted that the coordinators' meetings were opportunities to provide with support. They provided suggestions to further improve the process and to better implement MYP in Turkey (listed under the Implications).

Overall, school heads and the MYP coordinators valued the addition the MYP to their school programming. They explained that once they became familiar and experienced with the

program, the MYP actually improved their ability to address MoNEP criteria. By using innovative teaching strategies, they became more efficient at teaching subject area content while promoting student inquiry and creativity. They emphasized that the MYP provides them with a framework to design interdisciplinary programs of study. The next section further illustrates how the national program and the MYP are aligned.

SECTION III: PROGRAM ALIGNMENT

Section background

A key finding in Section II showed that MYP coordinators and teachers view MYP as a framework for planning student learning experiences. Although they noted some challenges in addressing both the national requirements and those of the MYP, they stated that the MYP supports their creativity and resourcefulness. In Section III, we discuss an analysis of how the national program aligns with the MYP to further examine how the programs are related to each other.

Highlights

- There is a strong alignment between the following IB learner profile attributes and MoNEP: balanced, knowledgeable, principled, and caring.
- There is a strong alignment between the following MYP global contexts and MoNEP: identities and relationships, orientation in space and time, personal and cultural expression, and globalization and sustainability.
- There is a strong alignment between the following MYP approaches to learning and MoNEP: communication and thinking.
- The MYP key concepts are not defined in MoNEP since it is not a MoNEP requirement to plan interdisciplinary units; however, they are covered within certain subject areas of MoNEP.
- The MYP has criterion-based assessment; MoNEP assessment criteria are not specifically defined for each discipline.
- In the MYP, reflection on implementation and personal development opportunities are emphasized but these are limited in MoNEP.
- In the MYP there are more opportunities for students to conduct an interdisciplinary project, whereas in MoNEP there is a yearly required project dependent on a single subject area.
- In the MYP, teachers plan the unit in collaboration with their colleagues; in MoNEP there are no specific guidelines for collaborative planning.
- The MYP provides specific guidelines and requirements for personal projects, but in MoNEP there are no specific guidelines for their projects.

- The IB concept of international-mindedness is also encouraged in MoNEP, although it includes a more national perspective as it is written for Turkish citizens.
- MoNEP is more focused on developing content knowledge than skill development.

Data sources, collection, and analysis

In 2013, IBO announced a transition from the current applications of MYP to a revised version called, MYP: The next chapter. The documents in this new version were used to examine the alignment in this study.

To learn the extent to which the national program aligns with the MYP, we created an alignment tool (Appendix I) using the following concepts of the MYP:

- IB learner profile attributes
- MYP global contexts
- MYP approaches to learning (ATL)
- MYP key concepts

For each area, we reviewed the MYP guide to identify and list criteria to specify comparison. We used the terms of "weak," "medium," and "strong" to indicate the extent of alignment.

During a coordinators' meeting, we shared the tool with the MYP coordinators and sought their feedback. In addition to the concepts we selected, they recommended we add the following areas to the tool:

- Assessment principles
- General comparison of other document formatting and communication

We discussed how to use the tool, including rating the extent of the alignment. Alignment meant that educators could address the MYP goals using MoNEP. We agreed that "weak" meant that no or only one or two examples could be found of how the national program aligned with the MYP. If the coordinators could find several examples in the national documents that mirrored the wording found in the MYP guides, they were to code it as strong alignment. If they could find examples, but the wording or explanation was not clear or explicit, this meant that the alignment was medium, neither weak nor strong.

The MoNEP documents that were compared to MYP included the following:

- Milli Eğitim Bakanlığı temel eğitim kanunu (MoNE Fundamental education principles) (MoNE, 1973)
- İlköğretim kurumları yönetmeliği (Regulations of primary education institutions) (MoNE, 2013c)
- Ortaöğretim kurumları yönetmeliği (Regulations of secondary education institutions) (MoNE, 2013d)
- Milli Eğitim Bakanlığı ilköğretim ve ortaöğretim kurumları sosyal etkinlikler yönetmeliği (MoNE Regulations of Social Activities for Primary and Secondary Education Institutions) (MoNE, 2011c)
- Subject-based programs and plans

MYP coordinators were given two months to complete the alignment and write a report. The report included key areas of alignment, identified significant gaps, and reflected on their efforts as coordinators to align the programs in their practices. They gave information about student projects, which are common to both programs but have different planning needs and requirements. They discussed the challenges and opportunities they faced when implementing both curricula (Section II).

After receiving the alignments and reports from the coordinators, we reviewed the results, looking for consensus and discrepancies. We followed up with the coordinators when necessary to examine the Turkish and IB documents more in depth.

During interviews with coordinators and heads, we asked for their perceptions on how the two programs related to each other. Their comments about how they integrated the programs are discussed in the previous section and we were able to use their responses to confirm (triangulate) the findings of the alignment analysis.

Results and discussion

The following is an overview of the results of MoNEP and MYP comparison. The tables in this section are derived from the alignment tool. Each table includes the attribute that was compared, indications of whether the alignment was weak, medium, or strong, and an explanation or excerpt from the Turkish document to justify the alignment. Only the

consensus is reported here; for more detail about the entire alignment, see Appendices I through N.

Design, planning, and oversight

MoNEP is designed by a governing body, the Turkish Board of Education and Discipline, within the Turkish Ministry of Education. Any changes or revisions can be made only by this board. Each school is expected to plan and teach activities following the yearly plan outlined in the program. The plan includes content, specified learning objectives, and the grade level(s) at which they should be addressed (i.e., scope and sequence). Teachers are not allowed to make any changes to the plan, and they may only teach topics assigned to their grade level. Other general comparisons between the MYP and MoNEP are found in Appendix J.

Unlike MoNEP, the MYP does not list content or topics teachers are required to teach. The MYP provides a general and flexible framework that allows teachers to integrate their own items into the global contexts and key concepts and to choose or mix objectives that are provided within subject guides. Reflection and personal development opportunities are emphasized. The objectives, learning and teaching activities, assessments and inquiry should be evident in unit planning.

> *Global contexts help us to achieve the comprehensiveness of the curriculum which makes the curriculum meaningful to the students. In MoNEP, there are no such curriculum components to gather different subject areas under the same roof. The MYP provides the learner with different perspectives in different subject areas with the help of interdisciplinary approach.*
>
> ***MYP Coordinator 5***

One of the notable differences between MYP and MoNEP program planning is that in the MYP there is horizontal and vertical planning to promote interdisciplinary instruction. No such planning is required in MoNEP. Horizontal planning involves teachers of the same grade level working together between and within subject areas to plan the learning scope for a particular year. Vertical planning is made to sequence learning in a way to ensure its progression and continuity from the beginning of MYP to the end of the program and beyond. MYP key concepts are part of the horizontal planning and are a requirement for collaborative planning. Such planning allows teachers to use interdisciplinary approaches and

work together in the MYP. Although collaborative planning is encouraged in MoNEP, there are no explicit opportunities or guidelines such as those provided to teachers in the MYP.

While MYP is an international program, MoNEP is clearly a national program. MYP encourages making connections with real life situations and teaches lifelong learning skills, whereas MoNEP is more focused on content knowledge. Since they are subject area focused, interdisciplinary units are not part of MoNEP. There have been some revisions to the national program, however, to promote open-mindedness and inclusiveness.

> *MYP has another significant difference which is the interdisciplinary approach between subject areas.* ***In MoNEP, every subject area is distinctly different from each other****. The connections among subject areas are missing. A general framework is not visible in MoNEP as it is in MYP.* ***Every subject area's curriculum is written and planned by different commissions with different perspectives; however, in MYP there is a standard approach in every discipline.***
>
> ***School head 3***

The MYP teachers plan their units with colleagues and all ideas and contributions are welcomed. Interdisciplinary planning, which should be integrative and purposeful, is essential and there should be at least one interdisciplinary unit plan in each year of the program. Each unit has its own criteria and the students are assessed against the criteria. The unit plans should support holistic learning. In the MYP, teaching and learning activities are to be inquiry-based, relevant to the key concepts, and related to global contexts chosen for a particular unit. All these activities are expected to lead students to a culminating activity, the community and/or personal project, which is used for summative assessment.

Often MYP coordinators and teachers will incorporate MoNEP activities into their unit plans, thus meeting the criteria of both programs. Teachers are encouraged to be creative and think of additional ways to engage students and foster the IB learner profile.

> *With the MYP, I need to plan lessons that* ***encourage inquiry*** *and helps students to comprehend. I need to create a learning environment for students to show their* ***creativity****. When we look into general aims of Turkish education, it clearly matches with the MYP but creativity is not often promoted.*
>
> ***Focus group 2 participant***

MoNEP inspectors visit schools once a year (middle school) or once every two years (high school) and check the school's documents; visit classrooms; provide feedback; and conduct interviews with administrators and teachers, but rarely with students. With the MYP, there are monitoring or moderation standards conducted through evaluation visits once every five years. Consultants visit schools, check documents, visit classrooms, provide feedback, and conduct interviews with the school community such as administrators, teachers, students, and parents.

Student projects

There are two types of projects in the MYP: community projects and personal projects. Their requirements for completion depend on whether the school is a three-year or five-year MYP. If three years, the community project is mandatory and students are not required to develop a personal project. If it is a five-year program, the personal project is mandatory, while the community project is optional. MYP students in Turkey may integrate their personal project criteria with the projects required by MoNEP, described below. In turn, the ministry allows this integration as long as the ministry project criteria are met.

Figure 5. Students presenting their project

In MoNEP, students have to work on at least one project each year that is related to a specific subject area. The project topics are usually pre-determined by the subject area teachers and assigned to the students. The mark for this project is added to the student's overall performance in that particular subject area.

In addition to these subject area projects, MoNEP students must participate in a service learning project. These are similar to the community projects in the MYP. However, while the MYP provides specific guidelines to their projects, besides requiring that students spend at least 15 hours on the project, MoNEP provides no other direction.

> *The students found it very challenging to prepare a **personal project** which is course-independent and requires interdisciplinary work. With the help of sample projects we tried to change their perspective of a project assignment and they managed to use their knowledge and skills from different subject areas to produce an interdisciplinary project. When we realized that MoNEP has a **project lesson,** we integrated these two projects so that MYP's personal project also addresses the requirements of MoNEP.*
>
> ***MYP Coordinator 2***

Assessment

When the MYP coordinators compare how they assess students for the MYP and MoNEP, they report that assessment is important for both programs, but planning and reporting is different. Both programs have assessment principles, but their emphasis is influenced by the respective program's mission and vision. Appendix K gives more detail and explanation about assessment alignment provided by MYP coordinators.

In the MYP, assessment is based on the unit's statement of inquiry in every unit, which is developed by the teacher. A summative task, also teacher-designed, measures student understanding. In MoNEP, the program identifies what is to be assessed based on content knowledge.

The MYP identifies specific criteria for each subject area that support inquiry-based teaching and learning. Teachers need to identify assessments within their yearly plans, subject-based and interdisciplinary unit plans, and vertical and horizontal planning. The assessment criteria for MoNEP are less detailed; only a yearly plan with an outline for assessments for each subject area is required. MYP coordinators report that it takes more time to plan for assessment in the MYP than for MoNEP.

In the MYP, each school is allowed to design its own grade recording system. Teachers are required to keep records of their MYP criterion-based assessment achievement levels, and to use a certain format to report final achievement grades.

MYP teachers note that the grade reporting format for MoNEP and the MYP are very different and they end up preparing two separate documents. The MYP annual report card is more narrative than just a letter or number grade; the explanation reflects assessments of student projects, approaches to learning skills, and learner profile attributes. These marks are

justified through teacher comments and recommendations on the report. Students and parents are usually provided with this report card at the end of the year.

In MoNEP, reporting occurs at the end of each semester via a printed report card of final marks. MoNEP has a nation-wide, web-based electronic recording system, called E-school, where every school is officially registered. Schools are required to register all the information relevant to their students in this system. In some cases, with IBO permission, they may convert some MoNEP grades to MYP assessments but often this is not realistic.

IB learner profile attributes and MoNEP

The document analysis revealed strong alignment between the following IB learner profile attributes and MoNEP: Balanced, Communicators, Knowledgeable, Principled, Caring. None of the attributes had a weak alignment, and there was some alignment for the attributes of Reflective, Risk-taker, Thinker, Inquirer, and Open-minded. In Table 7, we show three of the learner profile attributes that were compared in the alignment tool (for the results of the entire comparison, see Appendix L). This review supported the perceptions of coordinators and teachers that MYP implementation endorses open-mindedness more than MoNEP does. However, the coordinators were able to identify ways MoNEP does develop other MYP learner profile attributes, including Communicator, Balanced, Knowledgeable, Principled, and Caring.

Table 7. Alignment of IB learner profile attributes with MoNEP

IB learner profile attributes* **As IB learners we strive to be…**	**Level of alignment with MoNEP**			**Explanation. Including exemplary Turkish standards or MoNEP content that illustrates alignment (if applicable)**
	Strong	**Medium**	**Weak**	
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.	√			*MoNEP aims to educate individuals who are balanced in terms of body, mind, morals, and emotions; have developed a healthy personality and identity by having free and scientific thoughts along with a worldwide vision, by being respectful regarding human rights, responsible regarding society, creative and productive and by appreciating the personalities and efforts of others* (Ministry of National Education (MoNEP) Basic Law: General Aims, Article 2/2, MoNE, 1973). *The aim of secondary education institutions is to prepare students, who have the knowledge and skills related to innovations of our era, for the future by helping them develop in terms of physical, intellectual, ethical, social and cultural attributes. They also aim to teach them to be respectful to human rights and democracy* (Regulations of Secondary Education Institutions, Article 7/1a, MoNE, 2013d)
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.		√		*MoNEP aims to educate individuals who have developed a healthy personality and identity by having free and scientific thoughts along with a worldwide vision, by being respectful to human rights, responsible to society, creative and productive and by appreciating personality and efforts of others* (Ministry of National Education (MoNEP) Basic Law: General Aims, Article 2/2, MoNE, 1973).

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.	√			*Teaching and learning activities are planned to educate individuals who have developed scientific thinking skill and life-long learning skills. Students are also taught to internalize national, global and human values and expected to be productive, communicative, and knowledgeable on how to use information technologies to access knowledge itself, and are actively engaged in their own learning process* (Regulations of Secondary Education Institutions, Article 8/1b, MoNE, 2013d). Specifically in the Language Arts curricula, students are expected to improve their communication skills, to express themselves, develop collaborative skills, and enhance their problem solving skills. The mathematics curriculum also supports correct and efficient use of mathematical language and terminologies (MoNE, 2015).

*http://www.ibo.org/globalassets/digital-tookit/flyers-and-artworks/learner-profile-en.pdf

MYP global contexts and MoNEP

Table 8, we present two examples of strong alignment between MYP global contexts and MoNEP (see Appendix M for the complete alignment analysis). The MYP encourages the integration of global contexts into the unit planner, whereas in MoNEP concepts/contexts are subject area based. We found strong alignment for the following global contexts: Identities and Relationships, Orientation in Space and Time, Personal and Cultural Expression, and Globalization and Sustainability. There was some alignment for Scientific and Technical Innovation as well as Fairness and Development. The interdisciplinary nature of the MYP allows for global connections among subject areas and key concepts and also encourages international-mindedness and global engagement.

Table 8. Alignment of MYP global contexts and MoNEP

MYP global contexts	**Level of alignment with MoNEP**			**Explanation. Exemplars that illustrates alignment (if applicable)**
	Strong	**Medium**	**Weak**	
Identities and relationships Explores identity, beliefs and values; personal, physical, mental, social and spiritual health; human relationships including families, friends, communities and cultures; what it means to be human.	√			*… to educate citizens who love their families and the country and work hard to help its development…citizens who are aware of their responsibilities to their countries…* *To educate individuals who are balanced in terms of body, mind, morals, and emotions; and have developed a* ***healthy personality*** *and identity by having free and scientific thoughts along with a worldwide vision. Students are also expected to be* ***respectful*** *regarding human rights,* ***responsible*** *regarding society, creative and productive by also appreciating the personality and efforts of others* (Ministry of National Education (MoNE) Basic Law: General Aims, Article 2/1 & 2/2, amendment: 16/6/1983 – 2842/1, MoNE, 1973).
Globalization and sustainability Explores interconnectedness of human-made systems and communities; the relationship between local and global processes; how local experience mediate the global; the opportunities and tensions provided by world-interconnectedness; the impact of decision-making on humankind and the environment.	√			The MoNEP Vision Of Science and Technology curriculum emphasizes the development of scientifically literate individuals who are problem solvers, decision makers, self-confident, collaborative, and effective communicators. They should well be aware of the importance of sustainability (MoNE, 2013d).

MYP approaches to learning and MoNEP

The approaches to learning provide flexible support to both teachers and students for individual learning needs. Although MoNEP is more subject area focused, the coordinators were able to identify elements of MoNEP that support approaches to learning outlined by the MYP. In Table 9 we show two examples; further examples can be seen in Appendix N.

Table 9. Alignment of MYP approaches to learning and MoNEP

MYP Approaches to learning	**Level of alignment with MoNEP**			**Explanation. Exemplars that illustrates alignment (if applicable)**
	Strong	**Medium**	**Weak**	
Communication	√			*Teaching and learning activities are planned to educate individuals who have developed scientific thinking skills and life-long learning skills. Students are also taught to internalize national, global and human values and expected to be productive, **communicative**, and knowledgeable on how to use information technologies **to access** knowledge itself, and are actively engaged in their own learning process* (Regulations of Secondary Education Institutions, Article 8/1b, MoNE, 2013d). Students are expected to use mathematical language in problems and algebraic expressions. The curriculum emphasizes group work methods and strategies. Communication is further enhanced through interdisciplinary studies and community and service activities (MoNE, 2011).
Thinking (including critical thinking, creative thinking, and transfer)	√			*Activities are expected to improve students' **critical thinking, problem solving**, reading comprehension, conducting research, and cognitive, affective and psychometric skills* (Regulations of Primary Education Institutions, Article 4d, MoNE, 2013c). *Performance assignment: this can either be individual or group work which is under the teacher's supervision. Students are expected to share the outcomes of the following attributes stipulated in the curriculum; **critical thinking, problem solving, reading comprehension, creativity** and research, in written or oral assessment* (Regulations of Secondary Education Institutions, Article 4/s & 4/ş, MoNE, 2013d). *Secondary education institutions' aim is to help students to develop **critical and creative thinking skills*** (Regulations of Secondary Education Institutions, Article 7/1e, MoNE, 2013d). *Teaching and learning activities are planned to educate individuals who have developed scientific*

				thinking skill *and life-long learning skills. Students are also taught to internalize national, global and human values and expected to be productive, communicative, and knowledgeable on how to use information technologies to access knowledge itself, and are actively engaged in their own learning process* (Regulations of Secondary Education Institutions, Article 8/1b, MoNE, 2013d).

MYP key concepts and MoNEP

MYP coordinators and teachers use the MYP key concepts for planning disciplinary and interdisciplinary units of work. The document analysis found these concepts in MoNEP, but they are subject specific. Furthermore, although encouraged, there is no indication that interdisciplinary unit planning is required in MoNEP.

There was a strong alignment between the following MYP key concepts and MoNEP: Change, Communication, Connections, Global Interaction, Relationships, Systems, and Time, Place and Space. There were weak alignments for the following concepts: Aesthetics, Communities, Form, and Identity (Appendix O). Table 10 shows a few examples of strong and weak alignment.

Table 10. Alignment of MYP key concepts and MoNEP

MYP key concepts	**Level of alignment with MoNEP**			**Explanation. Exemplars that illustrates alignment (if applicable)**
	Strong	**Medium**	**Weak**	
Systems are sets of interacting or interdependent components. Systems provide structure and order in human, natural and built environments. Systems can be static or dynamic, simple or complex.	√			There are topics directly related to ecosystems, solar systems, and organ systems to help students understand the complexity of systems and how all systems provide order in human and nature. (Science curriculum for primary education institutions; MoNE, 2013b).
Time, place and space The intrinsically linked concept of **time, place and space** refers to the absolute or relative position of people, objects and ideas. Time, place and space focuses on how we construct and use our understanding of location ("where" and "when").	√			In the science curriculum, students are expected to understand that scientific knowledge can change over time. The relation of our planet's rotation to time is to illustrate the relative position of the world and its place in space. (Science curriculum for primary education institutions, MoNE, 2013b).
Aesthetics Deals with the characteristics, creation, meaning and perception of beauty and taste. The study of aesthetics develops skills for the critical appreciation and analysis of art, culture and nature.			√	*The aim of fine art lessons in high schools is to develop students' basic knowledge and skills in fine arts and to guide educating qualified individuals in this area* (Regulations of Secondary Education Institutions, Article 7/2c, MoNE, 2013d). No further exemplary section was available in the Turkish curriculum to support this concept.

CONCLUSIONS

The MYP schools in this study educate students who are open-minded, inquiring, and skilled communicators. In addition to building their character, the MYP helps students academically, as indicated by student performance on external measures of success. This study found that approximately half of the MYP students scored in the top 4% on the national Turkish exam for transitioning to secondary education. Therefore, we conclude that MYP enrollment is associated with high levels of student learning and achievement.

This study shows that the barriers of operating two different education programs simultaneously can be overcome by supportive administrators, dedicated coordinators, and creative teachers. The school staff collaborates and devotes time to find ways to align the goals of the two programs, while keeping the students' best interests in mind.

The integration of the programs is supported if one program is used as a framework for the second, allowing for the comprehensive, open format of one (in this case, the MYP) to guide where and how the more content-based program (MoNEP) can be implemented. In fact, because the MYP is an international program designed to be implemented in concert with the national program, its alignment with MoNEP is no accident. Coordinators and teachers in this study reported that the MYP strengthens and enhances aspects of the national program to promote student creativity and critical thinking.

More schools in Turkey are recognizing the merits of MYP implementation; there are three candidate schools and five interested schools as of the beginning of 2016. Overall, the findings from this study provide information and strategies to facilitate the implementation of MYP in new schools. Most importantly, we learned that despite its alternative approach, MYP coordinators and teachers appreciate the MYP framework and use it to effectively enhance the mission and goals of both programs.

IMPLICATIONS

The top scores earned by the MYP eighth grade students in this study qualify them to enroll in Turkey's top ranking high schools. Ironically, this qualification resulted in 40% of the students enrolling in a high school that does not offer MYP in grades nine and ten. It appears that the low number of MYP high schools in Turkey has implications for students' continued participation in the MYP in grades nine and ten. This implication may be of particular concern if these high schools have the IB DP in grades 11 and 12.

The challenges reflected in this study may contribute to the low uptake of the MYP in schools in Turkey. In particular, study participants mentioned issues with combining a national and international program, teachers overcoming the language barrier, and dealing with pressure from parents to perform well on TPSE exam. Furthermore, students do not receive any diploma or certificate upon graduation from the program, nor does MoNE provide students with MYP experience any merit for high school enrollment.

As noted, the staff at the MYP schools work collaboratively and creatively to overcome the challenges. Following are recommendations that could help to further address these issues and support the MYP implementation in more schools in Turkey.

Recommendations

Recommendations for the MYP schools

- Highlight the benefits of using an international program to expand and enrich the national program.
- Hire teachers who exhibit IB learner profile attributes.
- Recognize and improve alignment between MoNEP and the MYP; for example, find ways to synchronize the MYP's personal project and MoNEP's performance assignments.
- Employ other teachers to provide after-school intensive courses for national exams.
- Provide new teachers with orientation to the MYP.
- Support teachers in collaboratively planning interdisciplinary units.

Recommendations for MoNE/MoNEP/Turkish higher education council

- Adopt a more interdisciplinary approach to curriculum design and implementation.
- Provide middle and high schools with more flexibility to implement the MYP.
- Provide MYP students with a certificate of completion or diploma that is recognized by high school programs.
- Encourage more teacher preparation programs in Turkish universities to become recognized by the IBO to provide the IB certificate.

Recommendations for IBO

- Provide logistical support for IB meetings in Turkey.
- Translate more MYP documents into Turkish, and conduct more workshops in Turkish.
- Explore offering a four-year IB program for Turkish middle schools (grades five through eight).
- Consider a special IB DP preparatory program for students in grades nine and ten (for high schools that do not have MYP).
- Assign an IB representative to Turkey to oversee program implementation.

Recommendations for future research

- Investigate academic outcomes of students who do not complete the last two years of a five year MYP.
- Research how different middle school programs in Turkey prepare students for the IB DP

Limitations

This embedded case study provided a number of important findings. As with any case study approach, there are limitations to consider.

- Only three of the nine current MYP schools were investigated; those which had implemented MYP for at least two years were chosen because they were able to provide more extensive data based of their longer MYP experience.
- Observations in classrooms and meetings with school staff took place within a short time frame. Therefore, we relied on the MYP coordinators to provide us with both broader and deeper insights into the implementation process. However, even though the timeframe

was limited, by observing a relative large number of classrooms in different subject areas and grade levels, we gained a variety of examples of classroom learning environments.

- There was limited TPSE exam data available to us; for example, information about national or regional averages was unavailable. Nonetheless, the data we did receive allowed us to address the research question about MYP student performance on external measures.

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APPENDIX A: TEACHER QUESTIONNAIRE

Thank you for taking the time to complete this questionnaire. Teachers' perceptions of school culture and classroom climate are important insights into how school programs and classroom practices support student affective and behavioral learning domains. This questionnaire asks you to assess your school culture and classroom learning environment, including areas such as academic achievement, school connectedness, and learning supports. Please keep in mind, we are investigating the effect of MYP implementation; therefore, if you would like to provide specific comments related to the MYP, we have provided spaces for you to do that. We will also interview some teachers and if you are interested in participating, please let your MYP coordinator know.

Demographic Information:

I have been a teacher for:

- o 0-2 years
- o 3-4 years
- o 5-10 years
- o 11-20 years
- o 21 or more years

I have been a teacher at this school for:

- o 0-2 years
- o 3-4 years
- o 5-10 years
- o 11-20 years
- o 21 or more years

I have been teaching with the MYP for:

- o 0-2 years
- o 3-4 years
- o 5-10 years

What is the highest degree you earned? a) College b) Master's c) Doctorate

My primary teaching area is

- o Science
- o Language Arts
- o Social Studies
- o Mathematics
- o Turkish Language and literature
- o Other:

Please review the following statements and select the response that best reflects your beliefs.

I believe that my school…	**Strongly disagree**	**Disagree**	**Neither agree, nor disagree**	**Agree**	**Strongly agree**
communicates a sense of purpose that reflects IB learner profile	1	2	3	4	5
leadership implements the MYP mission	1	2	3	4	5
is a supportive and inviting place for students to learn	1	2	3	4	5
sets high standards for academic performance for all students	1	2	3	4	5
emphasizes teaching lessons that address the MYP Global Contexts	1	2	3	4	5
gives all students equal opportunity to participate in numerous extracurricular and enrichment activities.	1	2	3	4	5
values empowering teachers to make decisions that are sensible given circumstances they face	1	2	3	4	5
values a "we" spirit and feeling of ownership in the school	1	2	3	4	5
values MYP key concepts for teachers and students	1	2	3	4	5
recognizes the achievements and accomplishments of teachers	1	2	3	4	5
invests in teacher development and resources that support student learning	1	2	3	4	5
recognizes the achievements and accomplishments of students	1	2	3	4	5
gives students opportunities to "make a difference" by helping other people, the school, or the community (e.g., service learning)	1	2	3	4	5
ensured I had proper training in MYP before implementing changes to my practice	1	2	3	4	5
provides the materials, resources, and training (professional development) I need to do my job effectively	1	2	3	4	5
MYP personal projects benefit the school and community	1	2	3	4	5
Space for comments					

During my classes…	Strongly disagree	Disagree	Neither agree, nor disagree	Agree	Strongly agree
I provide students with choices and options regarding coursework	1	2	3	4	5
I ask students how they would like to do the lesson	1	2	3	4	5
I understand students' feelings	1	2	3	4	5
I convey confidence in students' ability to do well in the class	1	2	3	4	5
I understand students' understanding of goals and topics	1	2	3	4	5
I accept students' approaches to learning the topic	1	2	3	4	5
I encourage students to ask questions	1	2	3	4	5
I understand students' interest in the topic	1	2	3	4	5
I answer students' questions fully and carefully	1	2	3	4	5
I trust my students to take the subject matter seriously	1	2	3	4	5
I make it clear what I expect of students	1	2	3	4	5
When students run into problems, I show them different ways to solve the problem	1	2	3	4	5
I make sure students understand what we have already covered before moving on to a new topic	1	2	3	4	5
The IB MYP has had a strong influence on my classroom practices such as those listed above	1	2	3	4	5

In my classes…	Not at all true						Extremely true
students pay attention	1	2	3	4	5	6	7
students try very hard	1	2	3	4	5	6	7
students enjoy the activities	1	2	3	4	5	6	7
students try to learn as much as they can	1	2	3	4	5	6	7
students express their preferences and opinions	1	2	3	4	5	6	7
students show interest	1	2	3	4	5	6	7
the MYP key concepts contribute to students' positive learning experience	1	2	3	4	5	6	7
Space for comments							

APPENDIX B: TEACHER QUESTIONNAIRE WITH FREQUENCIES

School Culture

Item no	Items: I believe that my school…	Construct		Scales				
				1	2	3	4	5
1	communicates a sense of purpose that reflects IB learner profile attributes	Conformity with IB Principles	n	5	9	16	62	63
			%	3.2	5.8	10.3	40.0	40.6
2	leadership implements the MYP mission	Conformity with IB Principles	n	5	13	2	73	44
			%	3.2	8.4	12.9	47.1	28.4
3	is a supportive and inviting place for students to learn	Equality	n	3	7	27	64	54
			%	1.9	4.5	17.4	41.3	34.8
4	sets high standards for academic performance for all students	Performance	n	4	14	22	64	51
			%	2.6	9.0	14.2	41.3	32.9
5	emphasizes teaching lessons that address the MYP Global Context	Conformity with IB Principles	n	6	7	29	55	58
			%	3.9	4.5	18.7	35.5	37.4
6	gives all students equal opportunity to participate in numerous extracurricular and enrichment activities.	Equality	n	4	13	22	56	60
			%	2.6	8.4	14.2	36.1	38.7
7	values empowering teachers to make decisions that are sensible given circumstances they face	Professional development & support	n	8	19	37	49	42
			%	5.2	12.3	23.9	31.6	27.1
8	values a "we" spirit and feeling of ownership in the school	Belongingness	n	7	9	18	75	46
			%	4.5	5.8	11.6	48.4	29.7
9	values MYP key concepts for teachers and students	Conformity with IB Principles	n	7	8	26	68	46
			%	4.5	5.2	16.8	43.9	29.7
10	recognizes the achievements and accomplishments of teachers	Belongingness	n	12	14	40	54	35
			%	7.7	9.0	25.8	34.8	22.6
11	invests in teacher development and resources that support student learning	Resources	n	7	4	37	61	46
			%	4.5	2.6	23.9	39.4	29.7
12	recognizes the achievements and accomplishments of students	Belongingness	n	5	4	15	74	57
			%	3.2	2.6	9.7	47.7	36.8
13	gives students opportunities to “make a difference” by helping other people, the school, or the community (e.g., service	Community values	n	4	7	12	76	56
			%	2.6	4.5	7.7	49.0	36.1

	learning).							
14	ensured I had proper training in MYP before implementing changes to my practice	**Professional development & support**	**n**	6	14	33	55	47
			%	3.9	9.0	21.3	35.5	30.3
15	provides the materials, resources, and training (professional development) I need to do my job effectively	**Professional development & resources**	**n**	7	13	26	66	43
			%	4.5	8.4	16.8	42.6	27.7
16	MYP personal projects benefit the school and community	**Community values**	**n**	4	7	16	74	54
			%	2.6	4.5	10.3	47.7	34.8

Learning support for students

Item no	**Items: During my classes**	**Constructs**		**Scales**				
				1	**2**	**3**	**4**	**5**
17	I provide students with choices and options regarding coursework	**Equality**	**n**	4	2	6	97	46
			%	2.6	1.3	3.9	62.6	29.7
18	I ask students how they would like to do the lesson	**Agency**	**n**	2	9	26	76	42
			%	1.3	5.8	16.8	49.0	27.1
19	I understand students' feelings	**Support**	**n**	5	1	4	65	80
			%	3.2	.6	2.6	41.9	51.6
20	I convey confidence in students' ability to do well in the class	**Support**	**n**	4	1	3	62	85
			%	2.6	.6	1.9	40.0	54.8
21	I understand students' understanding of goals and topics	**Performance**	**n**	4	1	4	71	75
			%	2.6	.6	2.6	45.8	48.4
22	I accept students' approaches to learning the topic	**Respect**	**n**	4	1	8	82	60
			%	2.6	.6	5.2	52.9	38.7
23	I encourage students to ask questions	**Support**	**n**	5	0	0	40	110
			%	3.2	0	0	25.8	71.0
24	I understand students' interest in the topic	**Performance**	**n**	4	1	2	54	94
			%	2.6	.6	1.3	34.8	60.6
25	I answer students' questions fully and carefully	**Support**	**n**	3	4	3	52	93
			%	1.9	2.6	1.9	33.5	60.0
26	I trust my students to take the subject matter seriously	**Agency**	**n**	2	5	24	77	47
			%	1.3	3.2	15.5	49.7	30.3
27	I make it clear what I expect of students	**Support**	**n**	2	3	1	48	101
			%	1.3	1.9	.6	31.0	65.2
28	When students run into problems, I show them different ways to solve the problem	**Support**	**n**	4	1	5	56	89
			%	2.6	.6	3.2	36.1	57.4
29	I make sure students understand what we have already covered before moving on to a new topic	**Support**	**n**	4	1	5	54	91
			%	2.6	.6	3.2	34.8	58.7
30	The IB MYP has had a strong influence	**Conformity**	**n**	2	12	23	72	46

	on my classroom practices such as those listed above	**with IB Principles**	**%**	1.3	7.7	14.8	46.5	29.7

Student behaviors

Item no	Items: In my classes	Constructs		Scales						
				1	**2**	**3**	**4**	**5**	**6**	**7**
31	Students pay attention	**Behavior**	**n**	1	1	4	7	35	76	31
			%	.6	.6	2.6	4.5	22.6	49.0	20.0
32	Students try very hard	**Behavior**	**n**	1	2	4	24	5	47	22
			%	.6	1.3	2.6	15.5	35.5	30.3	14.2
33	Students enjoy the activities	**Emotional behaviors**	**n**	1	0	4	5	27	58	60
			%	.6	0	2.6	3.2	17.4	37.4	38.7
34	Students try to learn as much as they can	**Motivation**	**n**	3	4	7	19	40	52	30
			%	1.9	2.6	4.5	12.3	25.8	33.5	19.4
35	Students express their preferences and opinions	**Agency**	**n**	1	0	1	7	17	58	71
			%	.6	0	.6	4.5	11.0	37.4	45.8
36	Students show interest	**Behavior**	**n**	1	0	2	13	34	55	50
			%	.6	0	1.3	8.4	21.9	35.5	32.3
37	The MYP key concepts contribute to students' positive learning experiences.	**Emotional behaviors**	**n**	2	3	4	8	35	53	50
			%	1.3	1.9	2.6	5.2	22.6	34.2	32.3

APPENDIX C: TEACHER QUESTIONNAIRE FACTOR ANALYSIS TABLES

Rotated Component Matrix[a]			
	Component		
	1	2	3
V15	**.834**	.163	.156
V8	**.803**	.222	.158
V7	**.802**	.201	.191
V3	**.790**	.294	.143
V14	**.786**	.226	.104
V9	**.779**	.328	.264
V10	**.768**	.161	.271
V2	**.766**	.337	.101
V12	**.738**	.405	
V5	**.716**	.439	
V1	**.700**	.445	
V11	**.689**	.241	.322
V6	**.683**	.367	.155
V13	**.674**	.396	.108
V4	**.663**	.326	.131
V16	**.613**	.455	.116
V24	.200	**.882**	
V23	.225	**.879**	
V27	.280	**.862**	
V21	.285	**.859**	
V29	.268	**.855**	
V28	.283	**.839**	
V20	.315	**.834**	
V22	.280	**.803**	
V25	.269	**.797**	.116
V19	.255	**.780**	
V17	.400	**.734**	
V26	.359	**.690**	.221
V30	.522	**.573**	.225
V18	.453	**.531**	
V36	.114		**.854**
V31	.117		**.840**
V33	.113	.111	**.836**
V35			**.834**

V32	.177		**.824**
V34	.263		**.747**
V37	.372		**.700**
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 5 iterations.			

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.941
Bartlett's Test of Sphericity	Approx. Chi-Square	5918.692
	df	666
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	18.245	49.310	49.310	10.531	28.461	28.461
2	4.970	13.433	62.743	10.419	28.161	56.622
3	2.885	7.797	70.539	5.149	13.917	70.539
4	1.061	2.867	73.406			
5	.857	2.315	75.722			
6	.736	1.989	77.710			
7	.630	1.704	79.414			
8	.590	1.596	81.010			
9	.546	1.475	82.485			
10	.479	1.294	83.779			
11	.472	1.276	85.055			
12	.440	1.190	86.245			
13	.400	1.082	87.327			
14	.379	1.024	88.352			
15	.367	.991	89.343			
16	.357	.964	90.307			
17	.330	.893	91.200			
18	.298	.804	92.004			
19	.262	.707	92.711			
20	.253	.684	93.395			
21	.236	.637	94.032			

22	.224	.605	94.637			
23	.217	.585	95.223			
24	.201	.544	95.767			
25	.190	.514	96.281			
26	.179	.484	96.764			
27	.155	.419	97.184			
28	.154	.417	97.601			
29	.138	.372	97.973			
30	.130	.351	98.324			
31	.122	.330	98.654			
32	.107	.289	98.943			
33	.092	.250	99.193			
34	.086	.233	99.426			
35	.078	.210	99.636			
36	.071	.191	99.828			
37	.064	.172	100.000			
Extraction Method: Principal Component Analysis.						

APPENDIX D: LESSON OBSERVATION RUBRIC

Date: _____ Case no. _____ Observation No. _____
Class:_____ Observed by: _____
Observation Duration: _____ Subject Area: _____
Lesson Topic: _____

IB learner profile attributes	Yes/No	Comments
Inquirers		
Knowledgeable		
Thinkers		
Communicators		
Principled		
Open minded		
Caring		
Risk-takers		
Reflective		
Balanced		

Classroom Environment	**Yes/No**	**Comments**
Classroom setting is in order and organized		
Teacher set clear rules		
Teacher has overall control in classroom		
Teacher provides positive support		
Task orientation		
Positive competition is evident among students		
Students are always actively involved in coursework		
Differentiated learning is evident		

Teacher Interaction	Yes/No	Comments
Helpful/friendly		
Understanding students' needs		
Classroom Management		
Students' responsibility		
Disciplined		
Shared control		

Students'	Comments
Behaviors	
Emotions	
Cognitive	

APPENDIX E: INTERVIEW QUESTIONS FOR THE SCHOOL HEADS AT MYP SCHOOLS

Introduction

1. Please tell me a little bit about your professional background.
    a. How did you become the director/principal at this school?
    b. How long have you been at this school?
    c. Have you worked at other IB schools?

2. Please tell me a little bit about your school, the type of student it serves, and the families they come from.
3. What evidence can you share with me to indicate that MYP students are successful?
    a. Have you recognized any differences between non-MYP students and MYP students in IB DP? (RQ 3)

Reasons for implementing the MYP (RQ 4)

4. What are the reasons your school has chosen to implement the MYP?
5. Please tell me about the decision making process. Who was involved and what did the process entail?
6. What is the most significant feature of the MYP as far as your school is concerned?

Barriers and facilitators for MYP implementation (RQ 5)

7. What resources have been available to help you to implement MYP curriculum?
    a. How were these resources developed or made available to you?
8. When hiring new classroom teachers for the MYP, what do you look for?
    a. What skills, dispositions, or characteristics do you think are essential for an MYP teacher?
    b. To what extent have you been able to hire teachers with these skills?
9. Please describe the most significant successes your school has experienced that can be attributed to the MYP.
10. Has the implementation of the MYP resulted in specific challenges or needs that are unique to this school?

Successful MYP implementation (RQ 6)

11. Do you believe that successful MYP implementation addresses Turkish national education requirements? Please describe specific examples.

APPENDIX F: INTERVIEW QUESTIONS FOR MYP COORDINATORS

Introduction

1. Please tell me a little bit about your professional background.
    a. How did you become the MYP coordinator at this school?
    b. How long have you been at this school?
    c. Have you worked at other IB schools?
2. Please tell me a little bit about your school, the type of students it serves, and the families they come from.

Reasons for implementing the MYP (RQ 4)

3. What are the reasons your school has chosen to implement the MYP?
4. Please tell me about the decision making process. Who was involved and what did the process entail?
5. What is the most significant feature of the MYP as far as your school is concerned?

Barriers and facilitators for MYP implementation (RQ 5)

6. What difficulties have you faced while bringing MYP and MoNE curricula together for implementation? Please tell me about specific examples.
7. How have you overcome the challenges you have faced while implementing the MYP curriculum? Please describe specific examples.
8. Please share some success stories you have experienced as an MYP coordinator this year.
9. What has supported your efforts to implement the MYP curriculum?
10. What resources/support services have been available to help you to implement MYP curriculum?
    a. What are the most useful PD opportunities that the school and IBO have provided?
    b. What are the least useful PD opportunities that the school and IBO have provided?
    c. What resources/support services you wish you had to implement MYP to help you overcome challenges?

11. How have the coordinator meetings supported MYP implementation at your school?
12. Please tell us a little bit about the teachers in the MYP and the way(s) that they approach instruction.
    a. What skills, dispositions, or characteristics do you think are essential for an MYP teacher?
    b. To what extent have you been able to hire teachers with these skills?

Curriculum alignment (RQ 3) and successful MYP implementation (RQ 6)

13. How does the IB learner profile inform your work in the MYP?
    a. From your perspective, how has the learner profile been implemented in classrooms?

b. How do MYP teachers become familiar with the IB learner profile attributes?

14. Do you believe that successful MYP implementation addresses Turkish national education requirements? Please describe specific examples.
15. What changes, if any, have been made to ensure that the MYP addresses the requirements?

APPENDIX G: INTERVIEW QUESTIONS FOR MYP TEACHERS

Introduction

1. Please tell me a little bit about your professional background and how you become involved in the IB.

   Possible questions to ask:
   - How did you become a teacher at this school?
   - How long have you been here?
   - Have you worked at other IB schools?
   - What brought you to or drew you to this school?

2. This past spring we asked teachers in your school to complete a questionnaire about school culture and classroom learning environments. Here is a copy of the questionnaire and the compiled results; do you have any further insights you would like to share about school culture and learning environments? (RQ 7 & 8)

   Follow up questions to ask:
   - Please tell me a little bit about the students in your classroom.
   - Which instructional activities do you tend to use most frequently with your students?
   - Please describe from start to finish a typical day in the MYP classroom.
   - If you taught before the MYP, what are the most important changes that the MYP brings into the classroom?

Barriers and facilitators for MYP implementation (RQ 5)

3. What difficulties have you faced while bringing the MYP and MoNEP together for implementation? Please tell me about specific examples.
4. How have you overcome the challenges you have faced while implementing the MYP curriculum? Please describe specific examples.
5. Please share some success stories you have experienced as an MYP teacher this year.
6. What has supported your efforts to implement the MYP curriculum?
7. What resources have been available to help you to implement MYP curriculum?
8. From your perspective, what are the distinctive characteristics or qualities of being an MYP teacher?
   a. What are the most useful PD opportunities that the school and IBO provided?
   b. What are the least useful PD opportunities that the school and IBO provided?

Successful MYP implementation (RQ 6)

9. Do you believe that successful MYP implementation addresses Turkish national education requirements? Please describe specific examples.
10. What changes, if any, have been made to ensure the MYP addresses the requirements?

APPENDIX H: OBSERVED EXAMPLES OF ATTRIBUTES MENTIONED IN IB LEARNER PROFILE ATTRIBUTES

IB learner profile attributes	Observed behavior	Class activity
Balanced	Recognizing their interdependence with other people and with the world they live.	Chemistry lesson discussing alternatives to cyanide extraction of gold and its significant impacts on human health and on nature itself.
Open-minded	Asking for feedback to learn more from their experiences. Enthusiasm about hearing the feedback to improve their work. Sharing cultural backgrounds and listening to each other's traditions. Asking questions of their peers about their values and traditions. Examining, understanding and appreciating differences and similarities by comparing cultures and personal histories to appreciate differences. Trying to understand each other's different views. Seeking and evaluating a range of points of views. Listening to and evaluating different points of views as they were doing an activity which involves peer assessment in a high school English lesson. Developing attributes of open-mindedness by listening to different points of views from the interviews.	Mathematics and Arts lessons History lesson where students were assigned a task to collect information about their cultural practices A discussion on global and ethical issues related to animal rights practices Peer assessment in an English lesson Design lesson Assignment is to conduct interviews with their parents as a part of an awareness project.
Communicators	Expressing themselves confidently in all the lessons in their first language Communicating comfortably in second language. Collaborating with each other to solve the problem introduced by the teacher. Expressing themselves confidently and creatively in more than one language. Students also communicate through designing posters, music and art pieces to share information.	All classes English class Physical education lesson In grade 5 Spanish, students were using their second language (English), rather than Turkish, when they needed clarification or support Design lesson: students were expected to interview their parents to collect data and prepare posters
Inquirers	Questioning the current situation about global warming; justifying the precautions they would take.	Language acquisition lesson with grade 5 students explicitly provided students with the opportunity to think like world leaders to produce solutions for global issues. The lesson design has nurtured curiosity and

		enthusiasm.
Knowledgeable	Applying interdisciplinary knowledge from history, geography, and science to discuss global warming and its consequences and how the leaders would produce solutions for such issues. Using conceptual understanding from the basic principles of chemistry and applying this to real life issues. They were also using their knowledge from biology lessons to discuss possible health issues related to a chemical technique used in industry. Sharing different opinions about what disabled means; they were not clear about what makes a person with disabilities. Developing conceptual understanding; they had difficulties determining for whom the term handicapped should apply to their community project.	Language acquisition lesson Chemistry lesson In design lesson students were working on an interdisciplinary project in which they produce songs in music and visuals in art lessons to design a project to raise awareness on handicapped people having a local and global significance. Design lesson, MYP year 2 (7th graders)
Thinkers	Making reasoned decisions while converting verbal expressions into mathematical expressions. Making ethical decisions on giving a credit for the information that they were using for their small projects. Trying to make ethical decisions and justifying their solutions for global issues. Discussing alternative ways to obtain gold instead of using cyanide which is known to be harmful. Conferring with their peers to produce different solutions. Caring about local and global issues and trying to produce solutions by using critical and creative thinking skills. Taking initiative in making reasoned and ethical decisions. Providing peers with feedback on how to improve their work. Using critical thinking skills to analyze human actions and making ethical decisions.	Mathematics lesson: solving mathematical problems with the teacher Grade 5 students Language acquisition lesson Grade 10 chemistry lesson: using local examples and thinking about their global impacts 10^{th} graders in English lesson, literature reviewDiscussing a global and ethical issue
Principled	Working for the rights of disabled people through a project in which theydesigned equipment for them Considering the rights of people and acting with honesty and a strong sense of justice during their	Design lesson Turkish lesson,

	project Feeling responsible for their actions by doing their homework. Making choices and taking responsibility. The teacher left it up to students what project to conduct and students took the assignment seriously and responsibly.	Music lesson Arts lesson
Caring	Discussing the necessity of gold and the ways to obtain it without damaging nature and human health. Showing empathy when discussing the situation in which people were living.	Chemistry lesson Literature piece written about war
Risk-takers	Proposing and producing new strategies during an activity in which students were asked to plan an ideal world in which all the problems were addressed with solutions. Exploring new ideas by discussing with their peers and teacher. Trying to make connections with the world they currently live in. Growing from their experiences. The students told the teacher that they knew their potentials but would still like to try harder and show their performances to their peers.	Language acquisition lesson History lesson Music lesson
Reflective	Evaluating their peers by showing their intellectual capacity. Using their own words to share their thoughts and to analyze written text. Discovering what they need to learn to strengthen their knowledge during activity review. Comparing their performance and reflecting on their experiences after watching a video of international students their own age in a professional choir. Making connections with their experiences in other languages.	Language lessons Turkish lesson Science lesson Music lesson Spanish class

APPENDIX I: ALIGNMENT OF THE MYP TO MoNEP

Thank you for agreeing to create a document that illustrates how aspects of the MYP program align with the Turkish national curriculum. The Turkish documents that will be compared to *MYP: from principles into practices* and include the following:

- Milli Eğitim Bakanlığı temel eğitim kanunu (MoNE Fundamental education principles) (MoNE, 1973)
- İlköğretim kurumları yönetmeliği (Regulations of primary education institutions) (MoNE, 2013c)
- Ortaöğretim kurumları yönetmeliği (Regulations of secondary education institutions) (MoNE, 2013d)

We know you are familiar with documents from both programs so we appreciate your expertise and insights. The following charts are designed to outline the comparisons. In particular, we'd like you to showcase the following:

- How the IB learner profile attributes align with the Turkish national standards, in particular attributes of "balanced," "open-minded," and "communicators" that relate to the guiding principles of holistic learning, international-mindedness, and communication.

- How the MYP key concepts and six global contexts align with the Turkish national standards.

After you compare the documents using the alignment tool, you will write a one to two page report. The report will include key areas of alignment, identify significant gaps, and reflect on your efforts as a coordinator to align the curriculum in your practice. Discuss the challenge and opportunities you face when implementing both curricula; it would be worthwhile for IB to learn of your experiences.

The final report and filled in alignment tool due date: **30 September 2015.** We encourage you to send preliminary drafts in August to share your progress.

IB learner profile attributes	Level of alignment with Turkish national curriculum			Explanation. Including exemplary Turkish standards or curriculum content that illustrates alignment (if applicable)
	Strong	Medium	Weak	
Balanced				
Open-minded				
Communicators				
Inquirers				
Knowledgeable				
Thinkers				
Principled				
Caring				
Risk-takers				
Reflective				

MYP Global Contexts	Level of alignment with Turkish national curriculum			Explanation. Exemplary Turkish curriculum that illustrates alignment (if applicable)
	Strong	Medium	Weak	
Identities and relationships				
Orientation in space and time				
Personal and cultural expression				
Scientific and technical innovation				

Globalization and sustainability				
Fairness and development				

MYP Approaches to learning	Level of alignment with Turkish national curriculum			Explanation. Exemplary Turkish curriculum that illustrates alignment (if applicable)
	Strong	Medium	Weak	
Communication				
Social (including collaboration)				
Self-management (including organization, affective, reflection)				
Research (including information literacy and media literacy)				
Thinking (including critical thinking, creative thinking, and transfer)				

MYP Key Concepts	Level of alignment with Turkish national curriculum			Explanation. Exemplary Turkish curriculum that illustrates alignment (if applicable)
	Strong	Medium	Weak	
Aesthetics				
Change				
Communication				
Communities				
Connections				
Creativity				
Culture				
Development				
Form				

Global interactions				
Identity				
Logic				
Perspective				
Relationships				
Systems				
Time, place and space				

Assessment principles, criteria, planning, recording and reporting, etc.		
	MYP	Turkish national curriculum
Principles		
Criteria		
Planning		
Recording		
Reporting		
Other		

General Comparison		
	MYP	Turkish national curriculum
Teaching and Learning Activities		
Projects		
Curriculum formats		
Collaborative Planning		
Service as Action		
International-Mindedness		
Other		

APPENDIX J: GENERAL COMPARISON OF MYP WITH MoNEP

General Comparison		
	MYP	**MoNEP**
Teaching and learning activities	Teaching and learning activities should be inquiry-based, relevant to the key concepts and related to the global context chosen for the particular unit. All these activities are supposed to lead students to a culminating activity which is a summative assessment. Students are encouraged to take an action at the end of all teaching and learning activities which are all designed by the teachers. Differentiation is essential to ensure that students' needs are addressed during the planning and implementation processes of these activities. These teaching and learning activities can be more open-ended and student-centered activities which are designed according to the MYP criteria to develop ATL skills appropriate to IBO's mission and vision. In addition to all of these, there are phase-specific language acquisition objectives under 4 categories (criteria A to D).	There is a prescribed curriculum that teachers have to follow for their activities in the classroom. MoNE publishes teachers' guide books which include prescribed activities for each discipline to be applied throughout the year. All activities are designed to help students to get better marks on their final exams. Regulations of primary education defines the expected student participation in the course activities as follows; *Activities are expected to improve students' critical thinking, problem solving, reading comprehension, conducting research, and cognitive, affective and psychometric skills* (Regulations of Primary Education Institutions, Article 4d, MoNE, 2013c).
Projects	There are two types of projects (community projects and personal projects) in MYP. Although the community projects	Students have to complete at least one project each year which is related to a particular subject area that they are interested in.

	are optional for schools which run the MYP for 5 years, it is compulsory for schools which do not have the MYP in 9th and 10th grade. The personal project is compulsory for each MYP school that ends the program at the end of year 5 (grade 10). Students are supposed to demonstrate their understanding and skills that they have developed for five years in the MYP with the help of the personal project. It should be on a relevant topic or a question for which students shall seek a solution. Project topics are not supposed to have a direct link to the material, but to be appropriate to students' own interests. The projects are supervised by teachers and evaluated against particular criteria. There are also subject based projects in which the students decide the subject area. Another kind of project is the community project, which aims to help students to reflect on all ATL skills but is not directly related to the classroom material. There are also interdisciplinary projects and language acquisition projects.	The project topics are usually pre-determined by teachers and given to the students and are directly related to course material. The mark for this project is added to students' overall grade in that particular subject area.
Curriculum formats	There is no specific curriculum format. MYP does not stipulate any curriculum or topics to teach. However, vertical and horizontal planning must be done and shown in unit planners. The objectives, learning and teaching activities, assessments and inquiry should be evident in curriculum planning. The MYP provides a general and flexible framework which allows teachers to integrate their own curriculum items with IB	The curriculum format is designed by MONEand each school is supposed to conduct their planning and teaching activities based on this curriculum. MoNEP provides a specific yearly planning format for schools to use. The MoNEP format is prepared by a governmental board called the Turkish Board of Education and Discipline which is also the only board to revise the curriculum content and format to make further

	components such as global contexts and key concepts and to choose or mix objectives that are provided within subject guides.	changes. Learning objectives are pre-determined and they have to be taught in a particular grade level that is determined by the Turkish Board of Education and Discipline. Teachers are not allowed to make any changes or produce their own format to teach anything other than the determined plan across the grade-level.
Collaborative Planning	The MYP promotes collaborative planning. MYP teachers are supposed to plan their units with their colleagues and all ideas and contributions are appreciated. Interdisciplinary planning, which should be integrative and purposeful, is also essential and there should be at least one interdisciplinary unit plan in each year of the program. Each unit has its own criteria and the students are assessed against the criteria. The unit plans should support holistic learning. (IBO, 2014). In addition to this, vertical and horizontal planning must also be done.	Although collaborative planning is also encouraged, there are no specific guidelines about this. *… department teachers who are teaching the same subject area need to have some regular meetings throughout the semester to evaluate teaching and learning activities, to monitor progress of these activities, to decide on common exam preparation criteria and to analyze the examination results…* (Regulations of Secondary Education Institutions, Article 111/2, MoNE, 2013d) , Regulations mention the importance of department meetings and exchange of ideas amongst subject area teachers. Subject area teachers may engage in collaborative planning depending on their choices and needs.
Service as Action	MYP students in each year of the program are supposed to take part in service projects based on several criteria that should also be linked with the curriculum. The expectations regarding understanding and action can differ from year to year. Students	Service is compulsory in MoNEP. However, there are not specific guidelines or monitoring system for the activities at the middle school level. However, high school students are expected to fulfill at least 15 hours of service each year for which no specific link to curriculum is

	should perform a Service as Action activity either individually or in group in order to develop their ATL skills. Service as Action is expected to be an organized activity in which each student is monitored and provided with feedback. In the end, development should be evident.	required. The students are provided with a certification upon graduation indicating that they have met this requirement. Other than this award mechanism, there are no extra points available for this. There are social activity board at each school which implement and control service as action, club and social activities. *According to the Regulations of Primary and Secondary Education Institutions Social Activities published in 13/1/2005 in an official newspaper with the number 25699, every school is required to establish a board to run clubs and service for society activities* (Regulations of Primary and Secondary Education Institutions: Social Activity Board, Article115, MoNE, 2011c).
International-Mindedness	International mindedness is the core element of the program which should be evident in every step of implementation regarding learning and teaching. It is also fostered by every component of the program.	The evidence for international mindedness can be found in official documents as follows: *Secondary education institutions shall function according to the general and specific aims of the Turkish National Education along with its basic principles with the understanding of a democratic institution, compatible with universal laws, democracy and human rights as well as supporting student-centered education and active learning* (Regulations of Secondary Education Institutions, Article 5/1, MoNE, 2013d). *One of the aims of secondary education institutions in vocational and technical institutions is to develop a labor force in the business market and healthcare fields which will meet the standards of both the national and international arena…* (Regulations of Secondary Education Institutions, Article 7/2d-1, MoNE, 2013d)

		The regulations and laws provide the schools with the opportunity *to offer science and mathematics courses in English if at least twelve students agree to do so. In IB schools there is no "at least twelve students must agree" condition, and those schools are already allowed to offer courses in the first foreign language* (Regulations of Secondary Education Institutions, Article 10/1g and 10/1ğ, MoNE, 2013d). *… students are allowed to participate in international projects as long as they can find a sponsor for themselves…* (Regulations of Secondary Education Institutions, Article 125/1, MoNE, 2013d) *Education institutions are welcoming to everyone without granting any privileges based on language, gender, religion or race* (Ministry of National Education (MoNE) Basic Law: Goals: Section 2: Basic Principles: Article 1/4, MoNE, 1973). MoNEP includes a more national perspective particularly written for Turkish citizens but there are some attempts to include international mindedness. However, it is less often mentioned in the written curriculum.
Other	MYP allows making connections with real life situations and teaches lifelong learning skills. There should be some necessary school policies such as Assessment, Language, Special Education Need (SEN), and Academic Honesty.	*The school takes precautions for its students who have special educational needs* (Ministry of National Education (MoNE) Basic Law: Goals: Section 2: Basic Principles: Article 8, MoNE, 1973). MoNEP is more focused on content knowledge than on skill

	Standard B1: Leadership and structure 5.b *The school has developed and implements an inclusion/special educational needs policy that is consistent with IB expectations and with the school's admissions policy.* **S*tandard B2: Resources and support*** *The school provides support for its students with learning and/or special educational needs and support for their teachers.*	development. MoNE does not require a school to have school policies, but schools can define their specific policies if needed. There are assessment requirements and standards (BEP-individualized education program) for students who need special education.

APPENDIX K ALIGNMENT OF MYP AND MoNEP REGARDING ASSESMENT PRINCIPLES, CRITERIA, PLANNING, RECORDING AND REPORTING

Assessment principles, criteria, planning, recording and reporting		
	MYP	**MoNEP**
Assessment principles	Each school has its own assessment policy which is based on IBO's mission and vision. Formative and summative tasks and backward planning are essential. These are also supposed to be identified in unit planners. After the statement of inquiry is formulized, a summative task is designed to test whether students have internalized the statement of inquiry.	The formative and summative assessment principles are described but not compulsory. Two or three written common exams within the school and in-class performance marks are provided each term.
Assessment criteria	Criterion-based assessments are done according to the MYP criteria IBO has published. Each discipline has its own criteria along with formative and summative assessment tasks which are supposed to address these criteria (IBO, 2014). For 8 subject groups there are 4 different assessment criteria: A, B, C, D. Although these criteria are fixed for subject groups, activities can still be designed by teachers.	Primary education institutions consider the following criteria for evaluation and assessment of students' achievement level; *Evaluation and assessment are planned considering the aims and outcomes determined in subject area curricula* (Regulations of Primary Education Institutions: Principals of Assessment and Evaluation; Article 20/1b, MoNE, 2013c). Minimum requirements of written and oral exams, performance evaluation and project grades are all determined by MoNE. *Students in 4th grade of primary schools, as well as the students in middle school and religious schools, are provided with three written examinations if the weekly course hours are more than three hours and with two written examinations if the weekly course hours are less than or equal to three hours…* (Regulations of Primary Education Institutions: Qualities and Numbers of Assessment and Evaluation: Article 22/1a, MoNE, 2013c).

		There are also assessment criteria determined to evaluate students' behaviors. The components of these criteria are provided in the official document for the primary school classroom teachers, and for guidance teachers of each class in middle schools and religious schools. Guidance teachers of each class in the aforementioned schools ensure that each teacher teaching that particular class agrees on the performance of students. Available achievement level descriptors are as follows: 1: Needs improvement, 2: Good, 3: Very good. (Regulations of Primary Education Institutions: Principals of Assessment and Evaluation; Article 29/1a, MoNE, 2013c). *Students are awarded with different kinds of achievement certificates according to their model behaviors and achievements as follows:* a) *Certificate of achievement* b) *Certificate of high achievement* c) *Certificate of honor* d) *Certificate of Excellence* (Regulations of Secondary Education Institutions: Awards and Discipline: Article 159, MoNE, 2013d). Type of activities, examinations, and projects are allowed to be determined by teachers and individual schools. *… Primary education institutions consider the following criteria for evaluation and assessment of students' achievement level:* *c) Exam questions are prepared considering the learning outcomes and aims of each subject area curriculum.* *ç) Teachers are responsible for monitoring students' performance and evaluating the progress considering whether the student has gained the intended outcomes and developed skills and knowledge or not.* *e) The assessment tools which allow measurement of critical and creative thinking skills, research skills and problem solving skill must be considered in planning*

		stages… (Regulations of Primary Education Institutions: Qualities and Numbers of Assessment and Evaluation: Article 43/1, MoNE, 2013c). Primary education institutions consider the following criteria for evaluation and assessment of students' achievement level: *The evaluation and assessment of those who are registered in the combined classroom program is prepared by the Individualized Learning Program Development Unit* (Regulations of Primary Education Institutions: Principals of Assessment and Evaluation; Article 20/1c, MoNE, 2013c).
Planning	Planning requires more time than in MoNEP since assessment is planned according to the objectives of the aforementioned four criteria. The planning stage consists of preparing yearly plans, subject based and interdisciplinary unit plans, and vertical and horizontal planning.	Planning requires less time compared to the MYP since interdisciplinary unit plans are not required and subject based planning for a year is enough to be accepted. There is also no requirement for preparing vertical or horizontal plans. However, the yearly plans need to be approved by the school principal.
Records	Each school is allowed to design its own recording system. Teachers are required to keep record of their MYP criterion based assessment results in order to ensure standardization as well as to have an easier time while finalizing report cards. Students have portfolios. All the documents are uploaded on IBDOCS to be checked by examiners before or during verification and evaluation visits.	MONE has an e-school system where every school is officially registered and required to submit all the information relevant to their students. This includes every single exam date and awarded grade for each exam. Teachers and students have their usernames and passwords to access the system where teachers enter the grades, and students and parents can access the provided information on students' achievements (Regulations of Primary Education Institutions: students' e-files: Article 16, MoNE, 2013c). In MoNEP, there is no specific regulation or recommendation in terms of record-keeping, except that teachers use the e-school system to record the available marks and absences for students.

		All exam papers, submitted projects and homework are required to be kept in archives for a determined period of time. Once every two years, official inspectors from MoNE pay visits to schools. They check the aforementioned documents to evaluate the school.
Reporting	MYP schools are required to report the final achievement levels of students in a certain format designed by the school. Final MYP marks for each criterion are visible on report cards and these lead to final mark for that discipline. These marks are explained through teachers' comments and recommendations. MYP report card is more narrative than the MoNEP one, and they reflect grades on assessments, projects, ATL skills and learner profile attributes. Students and parents are usually provided with this report card at the end of the year.	*The results of measurement and evaluation are reported within ten working days following the examination date. Examination papers are distributed to the students for them to view and then collected back from the students to be kept in archives for a year…* (Regulations of Primary Education Institutions: reporting measurement and evaluation results: Article 25/1, MoNE, 2013c). Reporting is essential and at the end of each term a report card involving all final marks of a student is printed. One may not use this format for MYP report cards and MoNEP has its own format for reporting. The system and marking scheme is completely different. Conversion between the two marking systems is possible;however, this is strictly moderated by IBO and it may not be possible in many cases as MYP assessment is criterion-based.
Other	Reflection and personal development opportunities for students are emphasized. There are monitoring or moderation standards (once in 5 years). Consultants visit schools, check documents, visit classrooms, provide feedback, and conduct interviews with school community members such as administrators, teachers, students, and parents.	Reflection and personal development opportunities for students are limited. MoNE inspectors visit schools periodically one in every two years and check documents, visit classrooms, provide feedback, and conduct interviews with administrators and teachers, though rarely with students.
Other	Formative assessment is as important as summative.	Summative assessment is more important than formative.

APPENDIX L: ALIGNMENT OF IB LEARNER PROFILE ATTRIBUTES AND MONEP

IB learner profile attributes*	Level of alignment with MoNEP			Explanation. Including exemplary Turkish standards or curriculum content that illustrates alignment (if applicable)
	Strong	Medium	Weak	
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	√			*MoNEP aims to educate individuals who are balanced in terms of body, mind, morals, and emotions; and have developed a healthy personality and identity by having free and scientific thoughts along with a worldwide vision, by being respectful regarding human rights, responsible regarding society, creative and productive and by appreciating the personalites and efforts of others* (Ministry of National Education (MoNEP) Basic Law: General Aims, Article 2/2, MoNE, 1973). *Secondary education institutions' aim is to prepare the students, who have the knowledge and skills related to innovations of our era, for the future by helping them develop in terms of physical, intellectual, ethical, social and cultural attributes. It also aims to teach them to be respectful of human rights and democracy* (Regulations of Secondary Education Institutions, Article 7/1a, MoNE, 2013d).
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		√		*MoNEP aims to educate individuals who have developed a healthy personality and identity by having free and scientific thoughts along with a worldwide vision, by being respectful against human rights, responsible against society, creative and productive and by appreciating personality and efforts of others* (Ministry of National Education (MoNEP) Basic Law: General Aims, Article 2/2, MoNE, 1973).

experience.				
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.	√			*Teaching and learning activities are planned to educate individuals who have developed scientific thinking skill and life-long learning skills. Students are also taught to internalize national, global and human values and expected to be productive, communicative, and knowledgeable on how to use information technologies to access knowledge itself, and are actively engaged to their own learning process* (Regulations of Secondary Education Institutions, Article 8/1b, MoNE, 2013d). Specifically in language curricula students are expected to improve their communication skills to express themselves, collaborative skills and problem solving skills. Addition to language curriculum, mathematics curriculum is also supporting students to use mathematical language and its terminologies correctly and efficiently.
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.		√		*The aim of secondary education institutions, particularly "science high schools" in science and mathematics areas and "social science high schools" in literature and social sciences areas, is to guide the students to become scientists* (Regulations of Secondary Education Institutions, Article 7/2a, MoNE, 2013d).

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.	√			*Secondary education institutions' aim is to prepare the students, who have the knowledge and skills related to innovations of our era, for the future by helping them develop in terms of physical, intellectual, ethical, social and cultural attributes. It also aims to teach them to be respectful of human rights and democracy* (Regulations of Secondary Education Institutions, Article 7/1a, MoNE, 2013d). *Teaching and learning activities are planned to educate individuals who have developed scientific thinking skills and life-long learning skills. Students are also taught to internalize national, global and human values and expected to be productive, communicative, and knowledgeable on how to use information technologies to access knowledge itself, and are actively engaged to their own learning process* (Regulations of Secondary Education Institutions, Article 8/1b, MoNE, 2013d). Specifically Mathematics, Turkish language and literature and geography curricula refer the importance of conceptual understanding in these subject areas. For instance, in geography, the students are expected to use conceptual understanding and methodological knowledge to conduct research and report the results. And in mathematics, the emphasis is on a constructive approach where the students actively participate in discussion on mathematical concepts (MoNE, 2011a).
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.		√		*MoNEP aims to educate individuals who are balanced in terms of body, mind, morals, and emotions; and have developed a healthy personality and identity by having free and scientific thoughts along with a worldwide vision, by being respectful regarding human rights, responsible regarding society, creative and productive and by appreciating the personalites and efforts of others* (Ministry

				of National Education (MoNEP) Basic Law: General Aims, Article 2/2, MoNE, 1973). Regulations of primary education defines the expected student participation in the course activities as follows: *Activities are expected to improve students' critical thinking, problem solving, reading comprehension,, conducting research, and cognitive, affective and psychometric skills* (Regulations of Primary Education Institutions, Article 4d, MoNE, 2013c). Regulations of secondary education institutions define the performance and project assignments as follows: *Performance assignment: this can either be an individual or group work which is under the teacher's supervision. Students are expected to share the outcomes of the following attributes stipulated in curriculum; critical thinking, problem solving, reading comprehension, creativity and research, in written or oral assessment* (Regulations of Secondary Education Institutions, Article 4/s & 4/ş, MoNE, 2013d). *Secondary education institutions' aim is to help students to develop critical and creative thinking skills* (Regulations of Secondary Education Institutions, Article 7/1e, MoNE, 2013d). *Teaching and learning activities are planned to educate individuals who have developed scientific thinking skill and life-long learning skills. Students are also taught to internalize national, global and human values and expected to be productive, communicative, and knowledgeable on how to use information technologies to access knowledge itself, and are actively engaged to their own learning process* (Regulations of Secondary Education Institutions, Article

				8/1b, MoNE, 2013d). However in the general documents there is a missing link to emphasize ethical decisions, which is specifically mentioned in IB learner profile.
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.	√			*Secondary education institutions shall function according to the general and specific aims of Turkish National Education along with its basic principles with the understanding of a democratic institution, compatible with universal laws, democracy and human rights as well as supporting student-centered education and active learning.* (Regulations of Secondary Education Institutions, Article 5/1, MoNE, 2013d). *Secondary education institutions' aim is to prepare the students, who have the knowledge and skills related to innovations of our era, for the future by helping them develop in terms of physical, intellectual, ethical, social and cultural attributes. It also aims to teach them to be respectful of human rights and democracy* (Regulations of Secondary Education Institutions, Article 7/1a, MoNE, 2013d). However, in the general documents there is a missing link indicating the expectation of students to face with the consequences of their decisions.
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.	√			*MoNEP aims to educate individuals who are balanced in terms of body, mind, morals, and emotions; and have developed a healthy personality and identity by having free and scientific thoughts along with a worldwide vision, by being respectful regarding human rights, responsible regarding society, creative and productive and by appreciating the personalities and efforts of others* (Ministry of National Education (MoNEP) Basic Law: General Aims, Article 2/2, MoNE, 1973). *Secondary education institutions have a goal and duty in accordance with the National Education's general aims and basic principles that all the students*

				will be provided with a general common culture to understand the individual's and society's problems, to search for solutions and to contribute to the social and cultural development of the country (Ministry of National Education (MoNE) Basic Law: Aims and Duties, Article 28/1, MoNE, 1973). *… students are expected to be honest, respectful and decent to the people around them.…* (Regulations of Primary Education Institutions, Article 52/1, MoNE, 2013c) *Secondary education institutions shall function according to the general and specific aims of the Turkish National Education along with its basic principles with the understanding of a democratic institution, compatible with universal laws, democracy and human rights as well as supporting student-centered education and active learning* (Regulations of Secondary Education Institutions, Article 5/1, MoNE, 2013d). *Secondary education institutions' aim is to prepare the students, who have the knowledge and skills related to innovations of our era, for the future by helping them develop in terms of physical, intellectual, ethical, social and cultural attributes. It also aims to teach them to be respectful of human rights and democracy* (Regulations of Secondary Education Institutions, Article 7/1a, MoNE, 2013d). *…students are expected to be responsible toward society.…* (Regulations of Secondary Education Institutions: expected student behaviors, Article 157, MoNE, 2013d). However, in the general documents there is a missing link to emphasize empathy.

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.		√		*Secondary education institutions' aim is to help students to develop critical and creative thinking skills* (Regulations of Secondary Education Institutions, Article 7/1e, MoNE, 2013d). *Students are expected to develop a project by using their knowledge and skills to produce knowledge* (Regulations of Secondary Education Institutions, Article 7/1g, MoNE, 2013d).
Reflective We thoughtfully consider the world and our own ideas and experience. We work to understand our strengths and weaknesses in order to support our learning and personal development.		√		*Students' multi-dimensional thinking related to events must be improved without compromising the learning outcomes* (MoNE 2011a). *For the activities; …. With the help of backward thinking the answers to the question "what would happen if there was no agriculture?" are given* (MoNE 2011a). *Teachers engage the students with dialogues in which they can express their opinions, ideas with the support of different justifications in order to confute their peers' arguments* (Science curriculum for grade 3-8).

APPENDIX M: ALIGNMENT OF MYP GLOBAL CONTEXTS AND MoNEP

MYP global contexts	Level of alignment with MoNEP			Explanation. Exemplary Turkish curriculum that illustrates alignment (if applicable)
	Strong	Medium	Weak	
Identities and relationships Explores identity, beliefs and values, personal, physical, mental, social and spiritual health, human relationships including families, friends, communities and cultures, what it means to be human.	√			*… to educate citizens who love their families and the country and work hard to help its development…citizens who are aware of their responsibilities against their countries…* *To educate individuals who are balanced in terms of body, mind, morals, and emotions; and have developed a* ***healthy personality*** *and identity by having free and scientific thoughts along with a worldwide vision. Students are also expected to be* ***respectful*** *regarding human rights,* ***responsible*** *regarding society, creative and productive by also appreciating the personality and efforts of others* (Ministry of National Education (MoNE) Basic Law: General Aims, Article 2/1 & 2/2, amendment: 16/6/1983 – 2842/1, MoNE, 1973). Although it is not explicitly written in general regulations, it is still evident in subject-wise regulations that MoNE recognizes the importance of identities and relationships as a global context. For instance, it has been emphasized in Geography curriculum that teachers are expected to guide the students by fulfilling his/her responsibilities such as caring about national, cultural and moral values.
Orientation in space and time Explores personal histories; homes and	√			Although it is not explicitly written in general regulations, it is still evident in subject-specific regulations that MoNE requires students to improve their knowledge and understanding of the world. Particularly in

journeys; turning points in humankind; discoveries, explorations and migrations of humankind; the relationships between, and the interconnectedness of, individuals and civilizations, from personal, local and global perspectives.				history and science curricula, students are provided with opportunities to explore different eras and discoveries in time. For instance, Anatolia in the Hittite period is discussed in history and investigating how the concept of "atom" has been developed throughout the history of physics can be given as specific examples (MoNE, 2013da, 2013b).
Personal and cultural expression Explores the ways in which we discover and express ideas, feelings, nature, culture, beliefs and values; the ways in which we reflect on, extend and enjoy our creativity; our appreciation of the aesthetic.	√			Although there is no direct evidence in the general regulations of MoNEP, there are some strong examples supporting this context in the mathematics and Turkish language and literature curricula. For instance, in mathematics it has been encouraged to use some cultural patterns and shapes used in old traditional Turkish carpets in the geometry unit to make this connection with the context. In the Turkish language and literature curriculum, *students are expected to understand and comprehend how the Turkish culture has developed though the history and how works of literature have played a role in this.* (Ministry of National Education, 2011f). Turkish language and literature curriculum for secondary education institutions, Articles 15&16, p3).
Scientific and technical innovation Explores the natural world and its laws; the interaction between people and the natural world; how humans use their understanding of scientific principles; the impact of scientific and technological advances on communities and environments; the impact of environments		√		*Finds solutions to problems that they observed during exploring the nature and human-nature interaction by using scientific research approaches* *To increase awareness how science effects communities and technology mutually (Ministry of Education science curriculum for primary education (MoNE, 2013b)* *All the teaching and learning activities, methodologies and materials in every subject area are continuously required to be developed and improved according to the scientific and technological developments, and*

on human activity; how humans adapt environments to their needs.				*innovations to address the needs of the country* (Ministry of National Education (MoNE) Basic Law: Article 13, MoNE, 1973). *Secondary education institutions' aim is to prepare the students, who have the knowledge and skills related to* ***innovations*** *of our era, for the future by helping them develop in terms of physical, intellectual, ethical, social and cultural attributes. It also aims to teach them to be respectful of human rights and democracy* (Regulations of Secondary Education Institutions, Article 7/1a, MoNE, 2013d).
Globalization and sustainability Explores interconnectedness of human-made systems and communities, the relationship between local and global processes, how local experience mediate the global, the opportunities and tensions provided by world-interconnectedness, the impact of decision-making on humankind and the environment.	√			In the vision of science and technology curriculum in MoNEP, it has been emphasized that the aim is to develop scientifically literate individuals who are problem solvers, decision makers, self-confident, collaborative, and effective communicators as much as they are very well aware of the importance of sustainability (MoNE, 2013d)
Fairness and development Explores rights and responsibilities; the relationship between communities; sharing finite resources with other people and with other living things; access to equal opportunities; peace and conflict resolution		√		In the geography curriculum, *it students are expected to understand and appreciate the importance of development that is compatible with nature.* (MoNE, 2011a). Geography curriculum for secondary education institutions, Articles 10, p8) *…students must be encouraged to be caring about developing and protecting the values such as peace, tolerance, mutual understanding, democracy and human rights.* Geography curriculum for secondary education institutions, Articles 9, p4). (MoNE, 2011a).

APPENDIX N: ALIGNMENT OF MYP APPROACHES TO LEARNING AND MoNEP

MYP approaches to learning	**Level of alignment with MoNEP**			**Explanation. Exemplary Turkish curriculum that illustrates alignment (if applicable)**
	Strong	**Medium**	**Weak**	
Communication	√			*Teaching and learning activities are planned to educate individuals who have developed scientific thinking skill and life-long learning skills. Students are also taught to internalize national, global and human values and expected to be productive,* ***communicative****, and knowledgeable on how to use information technologies* ***to access*** *knowledge itself, and are actively engaged to their own learning process* (Regulations of Secondary Education Institutions, Article 8/1b, MoNE, 2013d). Students are expected to use Mathematical language in problems and algebraic expressions. Methods and strategies that **involve group work** are emphasized. And **communication** is further enhanced with interdisciplinary studies and community and service activities (MoNE, 2011b)
Social (including collaboration)	√			*…students are expected to attend* ***social and cultural activities*** *in school, to protect and foster natural and historical beauties and art pieces around themselves …* (Regulations of Primary Education Institutions, Article 51/1, MoNE, 2013c) *… students and teachers work* ***collaboratively*** *to organize a commemoration corner for the founder of the Turkish Republic on relevant commemoration days …* (Regulations of Primary Education Institutions, Article 85/2, MoNE, 2013c) *… students are expected to collaborate with the school administrators, teachers, counseling service, parent-teacher association and other stakeholders in order to support their own development…* (Regulations of Secondary Education Institutions, Article 157, MoNE, 2013d). Also, there is a student council run by the students and monitored by the teachers.

				Student performances at festivals and ceremonies and peer education activities along with club activities are also considered to enhance social collaboration.
Self-management (including organization, affective, reflection)	√			The regulations of primary education define the expected student participation in the course activities as follows; *Activities are expected to improve students' critical thinking, problem solving, reading comprehension, conducting research, and cognitive, **affective** and psychometric skills* (Regulations of Primary Education Institutions, Article 4d, MoNE, 2013c). *Secondary education institutions aim to improve students' self-confidence, **self-control** and sense of responsibility* (Regulations of Secondary Education Institutions, Article 7/1ç, MoNE, 2013d).
Research (including information literacy and media literacy)	√			*Students are expected to use information technologies for the sake of their own personal benefit, society's benefit and educational purposes in general* (Regulations of Primary Education Institutions, Article 52ı, MoNE, 2013c). *Teaching and learning activities are planned to educate individuals who have developed **scientific thinking skill** and life-long learning skills. Students are also taught to internalize national, global and human values and expected to be productive, communicative, and knowledgeable on how to **use information technologies** to access knowledge itself, and are actively engaged in their own learning process* (Regulations of Secondary Education Institutions, Article 8/1b, MoNE, 2013d). *Activities are expected to improve students' critical thinking, problem solving, reading comprehension, **conducting research**, and cognitive, **affective** and psychometric skills* (Regulations of Primary Education Institutions, Article 4d, MoNE, 2013c). Students are encouraged to conduct experiments in class, conduct research for homework and complete projects by using technology.

Thinking (including critical thinking, creative thinking, and transfer)	√			Regulations of primary education defines the expected student participation to the course activities as follows; *Activities are expected to improve students' **critical thinking, problem solving**, reading comprehension, conducting research, and cognitive, affective and psychometric skills* (Regulations of Primary Education Institutions, Article 4d, MoNE, 2013c). Regulations of secondary education institutions define the performance and project assignments as follows; *Performance assignment: this can either be an individual or group work which is under the teacher's supervision. Students are expected to share the outcomes of the following attributes stipulated in the curriculum; **critical thinking, problem solving, reading comprehension, creativity** and research, in written or oral assessment* (Regulations of Secondary Education Institutions, Article 4/s & 4/ş, MoNE, 2013d). *Secondary education institutions' aim is to help students to develop **critical and creative thinking skills*** (Regulations of Secondary Education Institutions, Article 7/1e, MoNE, 2013d). *Teaching and learning activities are planned to educate individuals who have developed scientific thinking skill and life-long learning skills. Students are also taught to internalize national, global and human values and expected to be productive, communicative, and knowledgeable on how to use information technologies to access knowledge itself, and are actively engaged to their own learning process* (Regulations of Secondary Education Institutions, Article 8/1b, MoNE, 2013d). MoNEP aims to develop and improve students' creative and critical thinking skills which they are expected to transfer to the other areas they study.

APPENDIX O: ALIGNMENT OF MYP KEY CONCEPTS AND MoNEP

MYP key concepts	Level of alignment with MoNEP			Explanation. Exemplary Turkish curriculum that illustrates alignment (if applicable)
	Strong	Medium	Weak	
Aesthetics deals with the characteristics, creation, meaning and perception of beauty and taste. The study of aesthetics develops skills for the critical appreciation and analysis of art, culture and nature.			√	*The aim of fine art lessons in high schools is to develop students' basic knowledge and skills in fine arts and to guide educating qualified individuals in this area* (Regulations of Secondary Education Institutions, Article 7/2c, MoNE, 2013d). No further exemplary section was available in the Turkish curriculum to support this concept.
Change is a conversion, transformation or movement from one form, state or value to another. Inquiry into the concept of change involves understanding and evaluating causes, processes and consequences.			√	*Secondary education institutions' aim is to prepare students, who will have the knowledge and skills related to innovations of our era, for the future by helping them develop in terms of physical, intellectual, ethical, social and cultural attributes. It also aims to teach them to be respectful of human rights and democracy* (Regulations of Secondary Education Institutions, Article 7/1a, MoNE, 2013d).
Communication is the exchange or transfer of signals, facts, ideas and symbols. It requires a sender, a message and an intended receiver. Communication involves the activity of conveying information or meaning. Effective communication requires a common "language" (which may be written, spoken or non-verbal).	√			*Secondary education institutions provide the students with an opportunity to **learn a foreign language** which will allow them to follow global innovations and developments* (Regulations of Secondary Education Institutions, Article 7/1f, MoNE, 2013d). *Teaching and learning activities are planned to educate individuals who have developed scientific thinking skill and life-long learning skills. Students are also taught to internalize national, global and human values and expected to be productive, **communicative**, and knowledgeable on how to use information technologies to access*

				knowledge itself, and are actively engaged to their own learning process (Regulations of Secondary Education Institutions, Article 8/1b, MoNE, 2013d).
Communities are groups that exist in proximity defined by space, time or relationship. Communities include, for example, groups of people sharing particular characteristics, beliefs or values as well as groups of interdependent organisms living together in a specific habitat.			√	*The courses offered in secondary education institutions aim to teach students with a common general knowledge which will improve their responsibilities toward* ***society*** *in general and toward their country's economic, social and cultural development in particular and to prepare them for higher education* (Regulations of Secondary Education Institutions, Article 10/1c, MoNE, 2013d). No further exemplary section was available in the Turkish curriculum to support this concept.
Connections are links, bonds and relationships among people, objects, organisms or ideas.	√			There are topics directly related to ecosystems, the solar system and organ systems to help students understand the complexity of systems and how all the systems are providing order in human and nature. (MoNE, 2013b). Science curriculum for primary education institutions) In the natural sciences curriculum for primary education institutions, there is a topic called "relationship between human and nature" where students are expected to inquire about the reasons for problems with the environment (Science curriculum for primary education institutions, MoNE, 2013b).
Creativity is the process of generating novel ideas and considering existing ideas		√		The regulations of primary education define the expected student participation in the course activities as follows:

from new perspectives. Creativity includes the ability to recognize the value of ideas when developing innovative responses to problems; it may be evident in process as well as outcomes, products or solutions.				*Activities are expected to improve students' critical thinking, problem solving, reading comprehension, conducting research, cognitive, affective and psychometric skills* (Regulations of Primary Education Institutions, Article 4d, MoNE, 2013c). *Teachers' roles and responsibilities include providing the students with opportunities to learn by experience, investigation and research. Teachers are expected to organize the learning environment in a way to promote independent thinking and* ***creative thinking*** *processes of students, and help them to draw conclusions, interpret results, express their free thoughts in discussions and respect each other* (Regulations of Secondary Education Institutions: Teachers' roles and responsibilities, Article 86/4b, MoNE, 2013d).
Culture encompasses a range of learned and shared beliefs, values, interests, attitudes, products, ways of knowing and patterns of behavior created by human communities. The concept of culture is dynamic and organic.		√		*The basic laws of the Ministry of National Education promote development of an* ***intercultural understanding*** *within the limits of protecting* ***national cultural understanding*** (Ministry of National Education (MoNE) Basic Law: Atatürk's Principles and Reforms; Article 10, amendment: 16/6/1983 – 2842, MoNE, 1973). *In the Turkish language and literature curriculum, students are expected to understand how the Turkish language has been enriched through history with the help of different civilizations and become a literature language.* (Ministry of National Education, 2011f). Turkish language and literature curriculum for secondary education institutions).
Development is the act or process of growth, progress or evolution, sometimes through iterative improvements.		√		*Students are provided with opportunities to learn a foreign language at a required level to follow* ***global developments*** (Regulations of Secondary Education Institutions: Article 7/1f, MoNE, 2013d).

Form is the shape and underlying structure of an entity or piece of work, including its organization, essential nature and external appearance.			√	No exemplary section was available in the Turkish curriculum to support this concept.
Global interactions, as a concept, focuses on the connections among individuals and communities, as well as their relationships with built and natural environments, from the perspective of the world as a whole.	√			*One of the aims of secondary education institutions in vocational and technical institutions is to develop a labor force in the business market and healthcare fields which will meet the standards of both the* ***national and international arena****…* (Regulations of Secondary Education Institutions, Article 7/2d-1, MoNE, 2013d)
Identity is the state or fact of being the same. It refers to the particular features that define individuals, groups, things, eras, places, symbols and styles. Identity can be observed, or it can be constructed, asserted and shaped by external and internal influences.			√	*MoNEP aims to educate individuals who are balanced in terms of body, mind, morals, and emotions; and have developed a healthy personality and identity by having free and scientific thoughts along with a worldwide vision, by being respectful regarding human rights, responsible regarding society, creative and productive and by appreciating the personalities and efforts of others* (Ministry of National Education (MoNE) Basic Law: General Aims, Article 2/2, MoNE, 1973). No further exemplary section was available in Turkish curriculum to support this concept.
Logic is a method of reasoning and a system of principles used to build arguments and reach conclusions.		√		In mathematics, students are expected to express their reasoning processes (Mathematics curriculum for secondary education institutions, MoNE, 2013b).

Perspective is the position from which we observe situations, objects, facts, ideas and opinions. Perspective may be associated with individuals, groups, cultures or disciplines. Different perspectives often lead to multiple representations and interpretations.		√		*In the Turkish language and literature course, students are expected to develop their listening, reading, speaking and writing skills, and considering the outcomes of this curriculum they are also expected to* ***interpret*** *the different texts that they read or listen to* (Ministry of National Education (MoNE) Basic Law: Article 10/2b, MoNE, 1973). In Turkish language and literature curriculum, students are expected to evaluate the theme, structure, language, expressions and meanings of a text within the era that it has been produced. The different **perspectives** must also be acknowledged (Ministry of National Education, 2011f). Turkish language and literature curriculum for secondary education institutions) Specifically in the foreign language curriculum, students are expected to know the **cultural values** of the countries of which they are learning the language (Ministry of National Education, 2011d). English language curriculum for secondary education institutions)
Relationships are the connections and associations between properties, objects, people and ideas—including the human community's connections with the world in which we live. Any change in relationship brings consequences—some of which may occur on a small scale, while others may be far-reaching, affecting large networks and systems such as human societies and the planetary ecosystem.	√			In the natural sciences curriculum for primary education institutions, there is a topic called "relationship between humans and nature" where students are expected to inquire about the reasons for problems with environment (MoNE, 2013b). *… students are expected to understand the role of economics in international* ***relationships****… students are expected to use the conceptual understanding while they are explaining the relationship between the society, individuals and the governments…* (Social studies curriculum for secondary education institutions, Articles 8 &13; MoNE, 2013a).

Systems are sets of interacting or interdependent components. Systems provide structure and order in human, natural and built environments. Systems can be static or dynamic, simple or complex.	√			There are topics directly related to ecosystem, solar system and organ systems to help students understand the complexity of systems and how all the systems are providing order in human and nature. (Science curriculum for primary education institutions; MoNE, 2013b)
Time, place and space The intrinsically linked concept of **time, place and space** refers to the absolute or relative position of people, objects and ideas. Time, place and space focuses on how we construct and use our understanding of location ("where" and "when").	√			In science curriculum students are expected to understand that scientific knowledge can change through time. And the relation of our planet's rotation to time is also covered in curriculum for the students to understand the relative position of world and its place in space. (). Science curriculum for primary education institutions; MoNE, 2013b)