

RESEARCH SUMMARY



The International Baccalaureate (IB) Middle Years Programme (MYP): Comparing IB Diploma Programme outcomes of students who complete the MYP and other middle years courses of study

Summary developed by the IB Research department based on a report prepared by:
Australian Council for Educational Research (ACER)
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Background

The International Baccalaureate (IB) is a non-profit educational foundation that offers four holistic educational programmes. The IB Middle Years Programme (MYP) is for students aged 11 to 16 years. The programme comprises eight subject groups and utilizes inquiry-based approaches to facilitate learning within and across subject areas. The IB Diploma Programme (DP), for students aged 16-19, offers courses from six subject groups, in addition to three core elements—the extended essay, theory of knowledge (TOK) and creativity, activity, service (CAS).

The Australian Council for Educational Research (ACER) was commissioned by the IB to conduct a research study to better understand the impact and influence of middle years curriculums on student outcomes in the DP for students studying in China, Hong Kong, India, Indonesia and Japan. ACER sought to compare and contrast DP outcomes achieved by students who completed their middle years studies in: (i) the MYP, (ii) a state or national curriculum, or (iii) another international programme, by examining total DP scores and results in the core requirements. The study also compared the thoughts and perspectives of IB students and teachers regarding the extent to which completing the MYP or other middle years curriculums contributes to student performance in the DP.

Research design

A mixed-methods approach was used which involved the systematic collection and analysis of qualitative and quantitative data from second-year DP students and from DP teachers. Quantitative and qualitative data included: DP subject and overall scores; grades in theory of knowledge and the extended essay; student surveys; teacher interviews and focus group discussions with students and teachers.

The data for this study was collected in two stages. First, a survey was administered to second-year students

studying for the full diploma to understand their experiences in and perceptions of their middle years education. The students that participated in the study were from 22 schools in five different countries—China, India, Indonesia, Hong Kong and Japan (Table 1). Survey data was collected from 548 students, and DP and subject scores were obtained from 523 students. Of these 523 students, 408 had participated in the MYP, whereas the other 115 students had participated in another type of middle years curriculum (state, national or other international programme, referred to as “non-MYP” hereafter).

Country currently studying in	No. of schools	Number of students by type of middle years programme			Total
		MYP	Cambridge IGCSE	Other	
China	3	38	0	16	54
Hong Kong	5	139	3	8	150
India	6	38	24	23	85
Indonesia	6	170	13	23	206
Japan	2	23	0	5	28
Total	22	408	40	75	523

Table 1. Student respondents by country and type of middle years curriculum

In the second stage, interviews and focus groups were conducted to further explore the patterns that emerged from student survey responses. Of the students who had completed the survey, 24 students were selected from two schools in Indonesia and one school in India for focus group discussions. A majority of these students (75%) had an MYP background, reflecting the make-up of the larger survey cohort. Ten teachers from these schools were also interviewed.

Students' DP final examination scores were collected to analyse the performance in all subject groups and to compare achievement between the MYP cohort and the non-MYP cohort. For comparisons of the two groups' performances, t-test and effect size results were reported.

Findings

Final diploma scores

The DP consists of six subject groups: studies in language and literature; language acquisition; individuals and societies; sciences; mathematics and the arts. Scores from subjects within these groups contribute to the final diploma score. Analysis of student DP scores shows there was a higher mean performance for MYP students in comparison to non-MYP students. Results from an independent samples t-test indicate that the difference between the two groups is significant, with an effect size of 0.39 indicating a moderate effect (Table 2). This suggests that middle years programme type has an influence on how students perform in the IB diploma, with students who complete the MYP performing significantly better than non-MYP students in their final diploma score.

Programme type	N	Mean (Total exam points)	SD	t-ratio	P-value
MYP	408	32.64	5.58	3.69	0.00
Others	115	30.47	5.55		
Total	523	32.16	5.64		
Effect size	0.39				

Table 2. Mean final diploma scores for students according to middle years programme type and significance testing

To investigate whether the two groups differed in subject-specific performance, performance for each of the six subject groups was explored. Independent samples t-tests on subject performance for the two groups show that MYP students performed significantly better than non-MYP students in language and literature, language acquisition, individuals and societies and mathematics. Although a difference was found between groups for the arts and sciences, this difference was not found to be significant.¹

Interestingly, for students who completed the MYP, the degree of confidence in how students believed they were going to perform in their final subject exam was

¹ It should be noted that schools and students in the study came from a wide range of contexts. Moreover, the sample size of non-MYP students included in this study is small. Therefore, the difference in performance is not necessarily attributable to the MYP. Further research with a greater sample of students is needed to explore the reasons behind these differences.

positively associated with actual performance on that exam. This was found for five of the six subject areas, with arts being the only exception, where confidence in performance was not related to actual performance. For non-MYP students, the association was only found for language acquisition, sciences and mathematics.

Performance in TOK and the extended essay

In addition to diploma exam score comparisons, extended essay and TOK grades were analysed to compare how MYP students perform in these two core areas of the DP in contrast to non-MYP students. Students who complete each component are awarded a grade ranging from A to E.

A statistically significant difference between middle years programme types was found in the distribution of the grades for TOK. MYP students had a higher relative proportion of students achieving a higher grade (A or B) and a lower relative proportion receiving one of the lower three grades (C, D or E) in comparison to non-MYP students. However, no significant difference for programme type was found in the distribution of grades for the extended essay. It is important to note that any difference in grades is not necessarily attributable to the MYP and could have resulted from school level differences.

Features of middle years programmes that contribute positively to DP studies

Higher-order thinking skills

Higher-order thinking skills require cognitive processing rather than mere memorizing. Associated skills include critical thinking, understanding, applying understanding to other academic areas, applying understanding to real-life situations, analysing subject content, evaluating the merits of arguments and synthesizing ideas.

The survey included multiple-choice questions that asked students to report on the frequency of engagement with higher-order thinking skills. While both MYP and non-MYP students noted they engaged with various types of higher-order thinking, MYP students generally indicated a higher frequency of engagement with these skills (Figure 1).

In other survey responses, approximately 25% of MYP student responses cited that they had developed critical thinking, application, analysis and evaluation skills in their middle years studies which were beneficial for their DP studies. In contrast to the MYP students, only 15% of non-MYP responses to this survey question stated that higher-order thinking skills developed during their middle years studies had assisted them with the DP.

Moreover, there was broad agreement in the student focus groups that the inquiry-based focus of the MYP develops MYP students as active rather than passive learners, and that this approach had assisted MYP students in the DP. Inquiry-based learning has long

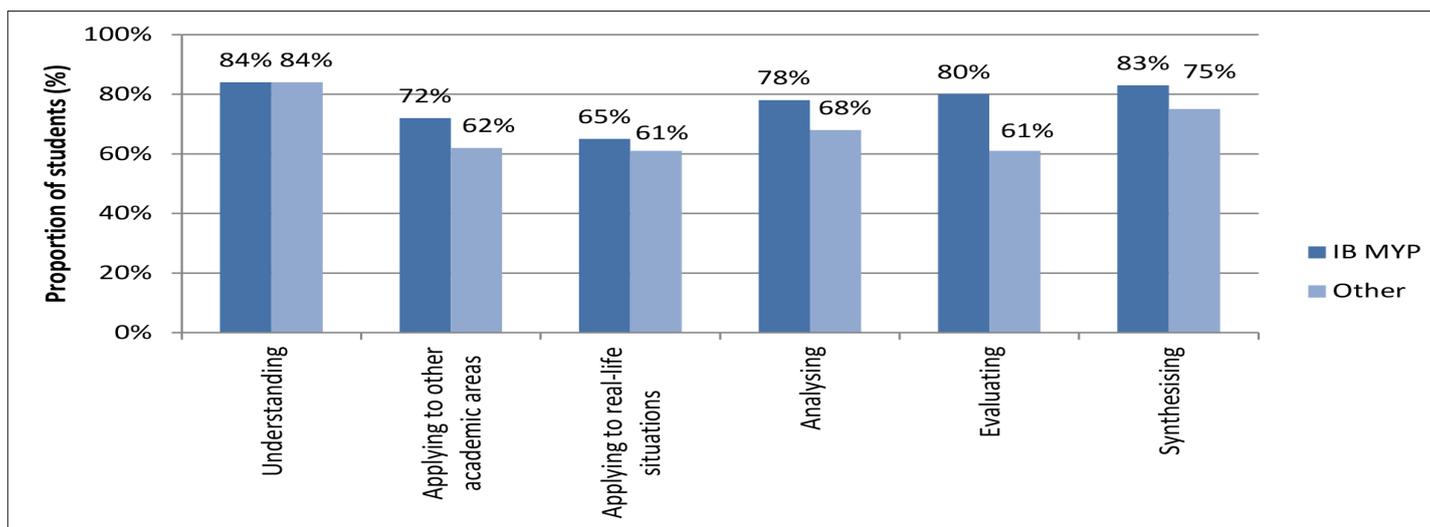


Figure 1. Proportion of students reporting engagement with higher-order thinking skills “often” or “very often” in middle years studies

been identified in the literature as a useful pedagogical approach for middle years students to develop research, questioning and metacognitive skills (or “learning how to learn”), to promote critical thinking and evaluation and to foster school engagement.

English language, literacy and writing skills

MYP students also felt they had received useful practice in essay and report writing. English writing skills developed during the MYP were indicated in particular as contributing positively to DP studies, more so than for non-MYP students. When asked about the specific features of the MYP that were useful for the DP during focus group discussions, students in Indonesia stated that focusing on grammar and punctuation, understanding multiple perspectives and undertaking “close” (analytical) reading of texts was helpful. Others mentioned that research, essay- and report-writing practice had also assisted them in the extended essay and in writing laboratory reports in science courses.

Study skills and assessment

Self-expression and presentation skills cultivated in the MYP were also identified during the focus group discussions as being useful, both from an academic and also a personal development perspective. Around 14% of MYP survey participants singled out group work, discussion, interaction and collaboration with teachers and peers as a valuable aspect of their studies in survey responses, whereas this was not often mentioned by non-MYP students. The personal project undertaken in the MYP was specifically highlighted as supporting reflection and goal-setting, as well as assisting in the extended essay in the DP.

Conversely, during focus group discussions, non-MYP students felt that the focus on exams in their middle years studies had developed their ability to summarize and memorize content, and that they had developed study skills which prepared them well for test-taking in the DP.

Features of middle years programmes that were less helpful in DP studies

Academic content knowledge

Student responses were analysed to understand what middle years curriculum areas were regarded by students as helpful in their DP studies. Higher proportions of non-MYP students reported that mathematics (25%) and science (13%) curriculums in the middle years contributed positively to their DP studies in comparison to MYP students (9% and 5% respectively). MYP students, particularly in science and mathematics, commented on the lack of focus on content knowledge in their middle years studies, which had made the transition to the DP more difficult.

“Bridges” between middle years studies and the DP

Students generally felt that more clarity around expectations in the DP and more guidance and support from teachers would assist in the transition from the middle years to the DP. MYP students felt that there needed to be a better “bridge” between the MYP and DP, particularly in terms of preparing them for increased academic expectations and workload. Further, some felt that the MYP needed more academic rigour and depth, rather than focusing on covering a large number of subjects (breadth). Others believed that the MYP did not sufficiently focus on more traditional academic skills, such as time management and exam-taking, which are required in the DP.

Non-MYP students also felt there needed to be a bridge to the DP, particularly to develop their analytical and evaluative skills, which were not generally focused on in the non-MYP curriculums. They found the extended essay and TOK challenging as a result. Students from non-MYP backgrounds noted they had been “passive” learners in their middle years due to a focus on academic theory and rote learning, whereas the DP required much more active learning and critical thinking. They also felt that in some cases their literacy

and English language skills were not well developed. A possible explanation for these differences may be that nearly 15% of students from other programmes had a local language as the medium of instruction, and therefore writing projects and lab reports in English was challenging for them. There was a general consensus that better preparation in the middle years—particularly with regard to clarifying DP expectations, assisting in subject selection and providing the opportunity to develop core analytical, language and exam-taking skills—would be useful and assist in a smoother transition to the DP.

Perceptions of DP teachers

Teachers were interviewed in two schools in Indonesia and in one school in India to gain an understanding of their thoughts and perceptions regarding the contribution of different types of middle years programmes to student performance in the DP. The middle year programmes discussed included the Indonesian national SMP, the Indian board national curriculum and the Cambridge IGCSE. The teachers interviewed taught a range of subjects, including: mathematics, science (physics, chemistry and biology) and the visual arts.

Much like the students themselves, the teachers generally agreed that MYP students had developed strong critical thinking and analytical skills, which prepared students well for the higher-order thinking required in the DP. Several teachers mentioned that MYP students appeared to be more analytical due to the inquiry-based learning and investigative focus in their middle years. They also cited MYP students' report- and essay-writing skills as beneficial for the DP. However, they felt these students were not always equipped with adequate content knowledge, and were not prepared for the focus on exam-based assessment in the Diploma Programme. Many teachers felt that MYP students experienced an initial drop in achievement because of these factors. One biology teacher highlighted this potential tension in balancing interdisciplinary and inquiry-driven learning with developing in-depth content knowledge:

[The] MYP focuses on multiple aspects (holistic development)—academics, community service, co-curricular activities etc [whereas] other programmes mostly focus on academics.

There was broad agreement that non-MYP students had good content knowledge and were generally adept at taking exams. However, many teachers felt that non-MYP students lacked the analytical and critical thinking skills that are required for the DP, particularly those from national curriculum backgrounds. The Cambridge IGCSE was thought to prepare students better than other non-MYP curriculums.

Teachers recommended the following adjustments to improve the transition from the MYP to the DP: giving MYP students more practice in studying for and taking high stakes exams; ensuring grading methods

are consistent across the MYP and DP; and improving content knowledge in the MYP to prepare students for the expectations of the DP. Teachers also expressed a positive view of proposed changes to the MYP, which would involve more external assessments.

Conclusions

Students with an MYP background were found to outperform students who participated in other middle years curriculums in total diploma points and specific DP subjects, suggesting that participation in this type of middle years curriculum may provide an advantage to students who continue on to the DP. It is important, however, that these interpretations are made with appropriate consideration of the relatively small number of non-MYP students in the study. Additional research will be required to further investigate these differences.

There is also a substantial difference, according to teachers and students, between the greater analytical and inquiry skills of MYP students on the one hand, and the greater content knowledge and exam-taking experience of non-MYP students on the other. Any schemes to build bridges to smooth the transition between the middle years and the DP would need to be flexible and suitably differentiated to cater to the variations in prior knowledge brought by each child to the DP.

The transition from the middle to secondary years of schooling is identified as a challenging time in the literature, regardless of the curriculum. Evidence suggests that the following factors can assist: providing regular quality feedback on student progress; developing strong student-teacher and peer relationships; systematic learning of key content, skills and understandings in each subject area; setting clear, achievable goals and expectations; and monitoring progress (Hattie 2009).

References

Hattie, J. 2009. *Visible Learning – A Synthesis of Over 800 Meta-Analyses Relating to Achievement*. Routledge. New York, USA.

This summary was developed by the IB Research department. A copy of the full report is available at <http://ibo.org/en/about-the-ib/research/>. For more information on this study or other IB research, please email research@ibo.org.

To cite the full report, please use the following:

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