

# Predictors of academic outcomes in the International Baccalaureate Diploma Programme



## Research summary

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## Purpose

This study examined student- and school-level predictors of academic performance among International Baccalaureate (IB) Diploma Programme (DP) students. The analysis used an existing IB dataset that included a broad longitudinal sample of DP students (2016–2018). The total sample for this study included 4,858 students from 99 schools in 36 countries.

## Research design

DP student-level survey data was collected in three waves<sup>1</sup> and covered social, contextual and psychological variables. Student survey responses were matched to the May 2018 DP examination results, including DP subject grades, and extended essay and theory of knowledge course performance. Additionally, school-level data was collected through a survey of DP coordinators as part of the original data-collection procedure. The researchers used multilevel regression modelling to identify the strongest predictors of DP academic performance.

## Findings

### Student-level predictors of academic performance in the DP

While the report identifies numerous factors related to student performance across the three waves of data collection, this section highlights the strongest student-level predictors of DP achievement.

- Students' self-reported grades (prior to DP) were consistently the best predictors of DP academic performance, with students who rated their prior grades higher performing better.
- The amount of time preparing, completing homework and studying consistently positively predicted academic performance, with students who spent more time preparing generally performing better. Not surprisingly, these results indicate that the best preparation for DP examinations appears to be the time that students spend inside and outside of the classroom learning, preparing and studying.
- The findings also suggested that activities that place additional time demands on students, such as doing chores and working for pay, negatively associated with academic performance. However, it is worth keeping in mind that such activities may positively benefit students in other ways. It is also possible that such variables are

indirectly driven by the effect of socio-economic advantage.

- Interestingly, students who became either happier or less isolated during the course of the DP tended to perform better academically, while an increase in isolation was associated with poorer performance.

## School-level predictors of academic performance in the DP

- One of the factors that positively predicted academic performance was the number of staff members teaching DP subjects, with more teachers predicting better student performance. Additional interaction analysis indicated that the benefit of a larger number of staff in the programme was more pronounced when fewer DP subjects were taught, showing that increased staff time per subject predicts positive student outcomes.
- Another positive school-level predictor related to assessment practices, with schools that coordinated internal assessment dates “often” or “always” showing better academic performance than schools that did so only “sometimes”.
- In addition, schools that reported their DP students being “moderately stressed” outperformed those that reported students being “very stressed”.

## Recommendations

- The individual effects found in the analyses throughout the report were predominantly small, and yet the overall models predicted large amounts of variance in academic performance. This is somewhat to be expected, as academic performance is not the result of any one factor; rather, it results from the combination of many factors across the individual

student and school levels. As such, targeting a specific variable through intervention or school policy is unlikely to be successful; instead, a holistic approach to improving student learning is more likely to be effective.

- Schools should continue to focus on helping students manage their time and activities, both academic and non-academic, inside and outside of the classroom.
- The research also indicates that supporting increases in students’ happiness and reducing their sense of isolation over the course of the DP may be a promising means of improving their academic performance.

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## Conclusions

Overall, the results presented in this study indicate the role of a broad set of student and school factors in predicting academic performance in the DP. The findings align well with previous research and suggest that a comprehensive understanding of a multitude of student and school variables, along with their interactions, is necessary when designing educational interventions and policy reforms to improve academic performance. The findings indicate that the strongest predictor of academic performance is students’ self-reported academic achievements, along with factors related to instructional and learning time, such as class and study time. Certain activities that place additional time demands on students were negatively associated with academic performance. Lastly, changes in happiness and feelings of isolation throughout the course of the DP were shown to be associated with final performance.

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<sup>1</sup> Data was collected at the beginning of year 1, end of year 1 and at the completion of the programme, after the May 2018 examination session.

This summary was developed by the IB Research department. A copy of the full report is available at: [www.ibo.org/en/research/](http://www.ibo.org/en/research/). For more information on this study or other IB research, please email [research@ibo.org](mailto:research@ibo.org).

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