

RESEARCH SUMMARY

The International Baccalaureate Diploma Programme: Alignment with the Australian Curriculum and Australian Qualifications Framework



**Based on a research report prepared for the IB by:
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Background

This study investigated the extent to which the International Baccalaureate (IB) Diploma Programme (DP) aligns with the standards, principles and practices outlined in the Australian Curriculum (AC) as well as the Australian Qualifications Framework (AQF) for the senior secondary level. Researchers from Deakin University evaluated the alignment between the DP and the AC across a number of disciplines, which included a robust mapping of relevant curriculum documents related to the educational goals of the DP and the AC as well as the four discipline areas of mathematics, science, English and history. Curriculum mapping was supplemented by qualitative data from educators in DP schools.

Research design

Researchers developed a staged data-collection and analysis process for this study. In the initial stage, expert panels created alignment matrices to establish a uniform language for analysing each curriculum. During the second stage, curriculum documents were analysed using the matrices to assess principles, practices and learning outcomes. The research team also conducted telephone interviews with DP coordinators and senior school representatives at 29 schools (just under half of the total DP schools in Australia). Researchers invited curriculum leaders in the areas of mathematics, science, English and history at the schools to complete qualitative surveys to examine how schools are implementing the DP curriculum in practice. A total of 32 curriculum leaders from 16 different schools, representing six Australian states and territories, completed the curriculum leader surveys.

To enrich the online survey data administered to schools nationally, researchers selected two of the DP schools that

participated in the coordinator interviews, one independent and one government school, as case studies. During the case study visits, researchers toured the schools and interviewed various teachers, including the DP coordinators and curriculum coordinators in the areas of mathematics, science, English and history.

This summary focuses on three of the research questions addressed in the full report.

1. To what extent does the DP curriculum align with the *Melbourne Declaration on Educational Goals for Young Australians*?
2. To what degree does the DP curriculum align with the principles and guidelines in *The Shape of the Australian Curriculum*?
3. In what ways do the DP content standards align with the content standards described in AC documents?

Findings

Research questions 1 and 2

- To what extent does the DP curriculum align with the *Melbourne Declaration on Educational Goals for Young Australians*?
- To what degree does the DP curriculum align with the principles and guidelines in *The Shape of the Australian Curriculum*?

The *Melbourne Declaration*, developed by the Ministerial Council on Education, Employment, Training and Youth Affairs, provides an overarching vision for the AC. Each curriculum model, the AC and the DP, has produced a set of documents that clarifies the educational philosophy, beliefs and intentions of its approach (see table 1).

	AC	DP
Overarching documents	- <i>The Shape of the Australian Curriculum</i> (2012) - <i>Melbourne Declaration on Educational Goals for Young Australians</i> (2008)	-Mission and strategy (www.ibo.org/mission/) - <i>What is an IB education?</i> (2013) -The IB Diploma Programme (www.ibo.org/diploma/) - <i>The Diploma Programme: From principles into practice</i> (2009)

Table 1. Overarching documents for the AC and the DP

An analysis of these key documents revealed that the national focus of the *Melbourne Declaration* stands in contrast to the global focus of the DP. The DP was designed as a curriculum that can be implemented across the world, while the *Melbourne Declaration* refers to a specific national context. This distinction is evident throughout the curriculum documents.

Although the global focus of the DP was noted as having benefits that surpass the national focus of the AC, in some areas the DP curriculum may fall short of alignment with the AC because of this distinction. Specific shortfalls relate to the emphasis in the AC on Australian indigenous history and communities as well as Australian governmental structures. While these gaps are apparent in the document analysis, they do not seem to extend to the enacted curriculum in Australian schools, according to interviews with curriculum leaders. Various schools reported how the issues of governance and indigenous knowledge are incorporated, particularly into the core elements of the DP—theory of knowledge, extended essay and creativity, action, service (CAS). For example, one school representative explained:

“We do also have one CAS program, CAS activity which we started last year where we take our students out to an Aboriginal community in [redacted] in outback NSW so there is definitely exposure to indigenous History and culture....I think that’s a very positive step forward that indigenous ways of knowing have made their way in on par with reasoning and perception.”

The core elements were found to be key features of the DP that assist with alignment with the *Melbourne Declaration* and the three dimensions outlined in *The Shape of the Australian Curriculum*: discipline-based learning, general capabilities and cross-curriculum priorities. Additionally, the expert panellists concluded that the DP surpassed the AC with respect to problem-solving and inquiry-based learning. This was further supported by the qualitative data collected through interviews with DP teachers.

Examination of *The Shape of the Australian Curriculum* and key DP documents suggested a divergence between the DP and the AC in terms of content to be covered and pedagogical approaches. The AC is more prescriptive in outlining what should be taught and learned within senior secondary school. Conversely, the IB aims at inquiry-based learning and reflects a more open approach to knowledge and learning.

Lastly, researchers noted general alignment regarding the DP and teaching, assessing and reporting as outlined in *The Shape of the Australian Curriculum* (2012). Quality assurance in the DP, however, was seen as more extensively developed than the generic statements currently found in the AC.

Research question 3

- In what ways do the DP content standards align with the content standards described in AC documents?

Mathematics

The key DP mathematics curriculum documents analysed in this study included:

- DP *Further mathematics HL guide* (2012)¹
- DP *Mathematical studies SL guide* (2012)
- DP *Mathematics HL guide* (2012)
- DP *Mathematics SL guide* (2012)

The AC mathematics subject documents analysed were:

- *Essential Mathematics* (2013)²
- *General Mathematics* (2013)
- *Mathematical Methods* (2013)
- *Specialist Mathematics* (2013)

In general, the DP surpassed the AC in the discipline of mathematics, as all DP students are required to undertake a mathematics subject, which is not the case for a senior secondary student in the AC. The DP structure allows students to undertake two mathematics subjects (one course per year), meaning a DP student can take between 150 and 480 hours of mathematics coursework. In contrast, AC students may undertake 1–4 units (one course per semester) in one or two mathematics subjects, meaning that an AC student could take no mathematics courses or could take anywhere from 50–480 hours of coursework. Thus, the AC allows for a greater range of course hours, although the DP has a higher minimum requirement.

The research team also found that students taking the AC courses of *Mathematical Methods* and *Specialist Mathematics* will encounter significantly less depth in the curriculum than what is offered in the DP mathematics subjects. Many DP mathematics teachers expressed in interviews that the greater emphasis on external assessment in the DP leads to better preparation for tertiary studies, and the higher level (HL) subjects exceed the standard of achievement required in the various state curriculum certificates. As one teacher explained:

“I believe the DP is better preparation for uni with its greater exam focus and independence needed. However, I believe there is plenty of choice across state and IB offerings to allow students to tailor their schooling for any chosen path, and that each allows students to achieve their desired outcomes.”

Science

The key DP science subject documents used in assessing the alignment of the DP with the AC were:

- DP *Environmental systems and societies guide* (2008)
- DP *Biology guide* (2007)

¹ All DP subject guides are available to IB World Schools through the online curriculum center at occ.ibo.org.

² All AC documents are available through the Australian Curriculum website at <http://www.australiancurriculum.edu.au/SeniorSecondary/Overview>.

- DP *Chemistry guide* (2007)
- DP *Physics guide* (2007)

The AC science subject documents used were:

- *Earth and Environmental Science* (2013)
- *Biology* (2013)
- *Chemistry* (2013)
- *Physics* (2013)

As with the obligatory study of mathematics, all DP students are required to take a science subject, which is not a requirement in the AC. It is also possible for DP students to take a second science subject. Each DP science subject, except for environmental systems and societies, is offered at HL or standard level (SL). Taking these points together, the researchers concluded that the DP curriculum offers greater flexibility than the AC in course offerings, while also including “optional topics” that expand the depth and breadth of the curriculum and allow for real-world applications.

In terms of specific subjects, environmental systems and societies in the DP is offered only at SL and does not cover all of the content available in the AC subject equivalent. The DP chemistry course, however, surpasses the AC course in terms of real-world applications, a view that was reinforced by DP chemistry teachers. Teachers generally agreed that the DP chemistry curriculum appeared to be more rigorous than its AC and state senior secondary curriculum equivalents. One teacher highlights this distinction:

“I very much enjoy teaching the IB DP Chemistry course because of its academic rigour and academic thoroughness. As a teacher in a NSW school, I believe the HSC in comparison to the DP has different things to offer students, and I would not wish to suggest that one is necessarily superior to the other as they suit different types of students. My own personal preference, coming from a more academic background (as a PhD graduate) is for the depth and rigour of the IB DP course.”

Lastly, although DP science courses have a greater emphasis on external assessment, teachers expressed a view that internal assessments are also valuable, as they support high-level experimentation skills.

English

DP group 1 (studies in language and literature) subjects include:

- English A: Literature
- English A: Language and literature
- Literature and performance

The AC options for English studies include:

- English
- Essential English

- Literature
- English as an Additional Language or Dialect

One major distinction between the two curriculums is that the DP offers a bilingual diploma while the AC does not. Moreover, in the DP, all students study both a first and a second language. English, language and literature in the DP are conceived as broad academic areas that can potentially be taught and achieved bilingually.

In the DP English subjects, the global dimension and commitment to internationalism, intercultural understanding and inclusion are evident. For example, in parts 3 and 4 of the language and literature A syllabus, the study of works in translation and the investigation of context highlight the ways in which meaning can change across cultures. This aligns well with the AC emphasis on “critical literacy” and the role of context in interpreting meaning. No alignment was found in the AC with the DP literature and performance syllabus; this may be one area in which the DP surpasses what is offered in AC English courses.

History

Both the DP and the AC offer two history subjects for study at the senior secondary level. The AC courses are Ancient History and Modern History. The DP offers History of Europe and the Islamic world and 20th century world history. One of the most obvious gaps in the DP curriculum, compared with the AC, is that the DP does not cover ancient history. However, alignment of content is much stronger when it comes to the other two subjects, Modern History in the AC and 20th century world history in the DP.

A salient finding from this study is that the DP tends to make up for gaps that may be present in the SL curriculum with its HL options, offering detailed study of particular issues, nations or events. For example, a key gap in the DP relates to the history of Asia and Australia’s engagement with Asia, which is a clear focus in the AC. However, one of the HL options is the history of Asia and Oceania. Interviews with DP teachers around Australia indicated that many students choose this particular HL option because of Australia’s location in Asia Pacific and the cultural heritage of many Australian students.

Although the DP and the AC history courses are comparable in learning outcomes around historical skills, the DP curriculum surpasses the AC on particular academic skills, such as constructing a written argument under examination conditions. DP history courses also contribute to alignment with the AC capabilities of “intercultural understanding” and “critical and creative thinking”.

Finally, history as well as English, science and mathematics, were judged by the researchers as fulfilling the AQF learning outcomes for the qualification type Senior Secondary Certificate of Education, with some curriculum areas for these subjects also aligning with AQF learning outcomes for the qualification type Bachelor Degree.

Case study key findings

The teachers at “Lavender Hill” and “Green Acres” (pseudonyms) spoke with genuine enthusiasm about the DP curriculum as an appropriate fit for their local and international student cohorts, specifically with regard to fostering a global perspective, encouraging students to achieve at a high standard, and helping them to develop the knowledge and skills needed for university studies and lifelong learning. Both schools appeared to agree that the DP offers a more academically rigorous program than the local curriculum alternatives.

Teachers at Green Acres suggested that the DP curriculum prepares students more thoroughly for university than the state curriculum. Participants in particular highlighted the emphasis of the DP on inquiry-based learning and research and writing skills. Many teachers stressed the utility of the extended essay in developing these critical capacities within students. As one teacher explained:

“Oh look, the skills they learn through doing the extended essay you cannot put a number on. They go into Uni knowing how to reference and how to research and really, if you’ve got those skills, you can go anywhere.”

In spite of the value of the DP for preparing students for post-secondary studies, a few teachers expressed a concern that the rigour, breadth and depth of the DP is not sufficiently understood or recognized by state universities.

Lastly, qualitative data provided important insight into how the case study schools engage with both the national and regional context. While researchers identified gaps between the AC and the DP curriculum in the document-mapping stage, these gaps were usually filled at the level of enactment in schools, as schools successfully integrated issues of local and regional relevance.

Summary

In this study researchers from Deakin University explored how the DP aligns with the standards, principles and practices of the AC and associated frameworks. Findings suggested that the core elements of the DP are important features that enhance alignment between the DP and the AC. The DP curriculum was found to have a greater international focus, creating both distinctive benefits but also a small number of gaps with the AC. Nevertheless, the study found that gaps in the DP tended to be addressed in the enacted curriculum at the school level. With a few exceptions, the DP curriculum generally provided greater depth than local alternatives and supported the development of critical knowledge and skills. Lastly, most teachers believed that the DP is more rigorous and provides better preparation for university studies.

References

- Australian Curriculum, Assessment and Reporting Authority. 2012. *The Shape of the Australian Curriculum: Version 4.0*. Sydney, Australia. Australian Curriculum, Assessment and Reporting Authority.
- International Baccalaureate Organization. 2009. *Diploma Programme: From principles into practice*. Cardiff, Wales. International Baccalaureate Organization.
- International Baccalaureate Organization. 2013. *What is an IB education?* Cardiff, Wales. International Baccalaureate Organization.
- International Baccalaureate Organization. 2014. *The IB Diploma Programme*. <http://www.ibo.org/diploma/>.
- International Baccalaureate Organization. 2014. *Mission and strategy*. <http://www.ibo.org/mission/>.
- Ministerial Council on Education, Employment, Training and Youth Affairs. 2008. *Melbourne Declaration on Educational Goals for Young Australians*. Melbourne, Australia. Ministerial Council on Education, Employment, Training and Youth Affairs.

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

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