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A review of research relating to the IB Diploma Programme

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International Baccalaureate
Peterson House, Malthouse Avenue, Cardiff Gate
Cardiff, Wales GB CF23 8GL
United Kingdom
Phone: +44 29 2054 7777
Fax: +44 29 2054 7778
Website: <http://www.ibo.org>

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Phone: +44 29 2054 7746
Fax: +44 29 2054 7779
Email: sales@ibo.org

IB mission statement

The International Baccalaureate aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.

To this end the organization works with schools, governments and international organizations to develop challenging programmes of international education and rigorous assessment.

These programmes encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.

IB learner profile

The aim of all IB programmes is to develop internationally minded people who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world.

IB learners strive to be:

Inquirers	They develop their natural curiosity. They acquire the skills necessary to conduct inquiry and research and show independence in learning. They actively enjoy learning and this love of learning will be sustained throughout their lives.
Knowledgeable	They explore concepts, ideas and issues that have local and global significance. In so doing, they acquire in-depth knowledge and develop understanding across a broad and balanced range of disciplines.
Thinkers	They exercise initiative in applying thinking skills critically and creatively to recognize and approach complex problems, and make reasoned, ethical decisions.
Communicators	They understand and express ideas and information confidently and creatively in more than one language and in a variety of modes of communication. They work effectively and willingly in collaboration with others.
Principled	They act with integrity and honesty, with a strong sense of fairness, justice and respect for the dignity of the individual, groups and communities. They take responsibility for their own actions and the consequences that accompany them.
Open-minded	They understand and appreciate their own cultures and personal histories, and are open to the perspectives, values and traditions of other individuals and communities. They are accustomed to seeking and evaluating a range of points of view, and are willing to grow from the experience.
Caring	They show empathy, compassion and respect towards the needs and feelings of others. They have a personal commitment to service, and act to make a positive difference to the lives of others and to the environment.
Risk-takers	They approach unfamiliar situations and uncertainty with courage and forethought, and have the independence of spirit to explore new roles, ideas and strategies. They are brave and articulate in defending their beliefs.
Balanced	They understand the importance of intellectual, physical and emotional balance to achieve personal well-being for themselves and others.
Reflective	They give thoughtful consideration to their own learning and experience. They are able to assess and understand their strengths and limitations in order to support their learning and personal development.

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Preface

In 2008, the International Baccalaureate (IB) is celebrating its 40th anniversary, building on its achievements but also reflecting on the challenges ahead. Its research and development agenda are at the forefront of its priorities. The publication of *A review of research relating to the IB Diploma Programme* is especially timely. It examines a variety of articles and studies that have become available over the years of existence of the IB. The references cited in this review contain only one work from the 1980s and fewer than ten from the 1990s, with the bulk of the research included in the review published in the 21st century. And research relating to the IB will undoubtedly become more and more frequent in the years to come as the organization continues to grow.

A focus on research is not new to the IB. Many of the pioneer figures in the history of the organization were associated with academic institutions of higher learning or with educational organizations, such as the International Bureau of Education, but the passion, commitment and energy that gave birth to the IB movement made it very difficult for any research coming from the IB itself to be impartial. This review, prepared by Dr James Cambridge from the IB research team, is to be commended for the intellectual integrity it uses to approach and distinguish the various sources in which information about the IB Diploma Programme can be found. By collating independently published sources and analysing research from unpublished theses and master's and doctoral dissertations in advanced education, this review presents a body of works to inform research methodologies and address questions relevant to the determination of the effectiveness of the IB and its outcomes.

In the future, through its teacher award scheme, carried out in association with institutions of higher learning, the IB wishes to promote collaboration between researchers and practitioners. It is hoped that this collaboration will allow the IB to identify the aspects of learning from inquiry that are important to assessment and study the impact not only of the IB Diploma Programme but of all three IB programmes on the implementation of school-improvement policies. It is also hoped that the teacher award scheme will eventually be able to bridge research and practice at an international level through a network of internationally minded researchers and practitioners. The practitioners, in turn, will be in a position to communicate their message more widely through on-going formal professional development and promote international best practices based on sound research.

It is in this spirit that the IB Board of Governors chose to reiterate, in 2007, its commitment to the IB research agenda, first stated in 2003. The Board of Governors wants the organization both to promote, and facilitate when necessary, independent external research into the effectiveness of the IB programmes and to inform the development of the IB programmes through internal research into best practices in national and international education. Both aspects of research, internal and external, will require the involvement of the organization but also of the IB community at large. Information on the needs and interests of school-based researchers is already being collected, analysed and posted on the pages of the IB website dedicated to research. The International Education Research Database, available on the IB website, has been updated to better serve the needs of the many researchers that access it regularly. Key questions addressed in the longitudinal study of IB graduates by the IB research unit have now developed into case studies, which are currently underway in several locations including Hong Kong, Chicago and Prince Edward Island, with other locations being investigated.

We welcome the publication of *A review of research relating to the IB Diploma Programme*. It is an important step for the IB not only in terms of promoting research but also facilitating the work of all those eager to contribute to the field of education, and to the promotion of learning in different languages and in a spirit of international-mindedness.

Monique Seefried

Chair of the IB Board of Governors

Introduction

This review has been compiled in response to demand from a wide variety of stakeholders in the International Baccalaureate (IB) for an overview of research relating to the IB Diploma Programme. The IB research team is frequently asked for information about the current state of research relating to the IB Diploma Programme. What research has been conducted with respect to a specific topic? What still needs to be done?

It begins with a discussion of the variety of uses of research in order to contextualize what follows. The methodology adopted in this review is then explained in terms of the criteria for inclusion of sources in the review and an emergent typology of sources arising from analysis. A review of IB Diploma Programme-related research is presented that includes discussion of college entrance, perceptions of the IB Diploma Programme by a variety of stakeholders, preparation for the IB Diploma Programme, outcomes of the IB Diploma Programme, policy issues relating to programme implementation, comparisons with other programmes, critical studies relating to equity and access, and personal, social and health education. A concluding discussion brings the review to a close.

Based on the evidence presented here, it may be concluded that IB-related research is an expanding and developing area of study with the potential to take in a variety of academic disciplines and research methodologies. While an attempt has been made to be as wide ranging as possible in searching for literature sources, it is inevitable that some sources will have been overlooked and omitted. Nonetheless, it is hoped that this review will not only present a snapshot of the continually changing field of research but will also stimulate further inquiry.

Uses of research

The conduct of educational research can be motivated by a variety of reasons. For example, Rickinson (2005) has reviewed the uses to which educational research has been put, and proposes the following typology.

- Instrumental
- Conceptual
- Strategic/Symbolic
- Wider influence

Instrumental uses involve the concrete application of research to direct specific interventions. In the context of the IB, this may be identified with studies into curriculum and assessment that produce summative conclusions resulting in changes to materials or procedures (that is, a product to be used within the academic division of the organization).

Conceptual uses of research involve formative research to change thinking, for example, to inform and enlighten decision makers. Conceptual uses of research may be interpreted as challenges to break out of established patterns of thinking and look at given issues in a different way. In the context of IB-related research activities, this may be associated with processes such as theorizing the methodology and methods that inform the framing of research questions, data collection and analysis. Thus, it may be argued that all other uses of research are underpinned by conceptual research activities.

The deployment of research outcomes as a persuasive or political tool to legitimate a position or practice may be interpreted as its **strategic** or **symbolic** use. This would include the use of summative outputs of research to attract the attention or address the needs of interest groups external to the organization such as governments, ministries of education, teachers, and heads and governors of schools that are not yet authorized by the IB, and parents of prospective IB students. Research for strategic or symbolic purposes is likely to be presented as a product described in a report. Examples of recent research with strategic or symbolic uses include the profiling of IB and non-IB students making applications to United Kingdom (UK) universities through the Universities and Colleges Admissions Service (UCAS), and longitudinal inquiries into the destinations of IB Diploma Programme graduates in the transition to higher education and careers. In these cases, research is used to support claims about the effectiveness of IB programmes in particular contexts.

Research to gain **wider influence** may involve presentation and discussion of products and outcomes, but it may also be expected to address formative processes. Therefore, inquiry may be linked to influencing networks of practitioners and changing policy paradigms. A common means of achieving such ends is by publication in academic journals and books, and by attending academic and professional conferences. However, the content of published articles should not be seen solely in terms of presenting the products of research. Such media also offer the means of “thinking aloud” about the processes of research and related issues, and of gaining critical feedback from other members of the research community by contributing to the discourse.

Even so, it may be argued that the interpretation of the typology offered above is flawed because it compartmentalizes and limits the research activities in terms of its categories. It isolates different research projects by essentializing them. That is to say, each research project is viewed as a static object that is reduced to a set of essential qualities. From this perspective, a research project is identified with a particular

category in the typology. An alternative approach would be to argue that any research project may be interpreted in terms of all four categories in the typology. Consequently, rather than attempting to assign a given research activity to a particular category in the typology, it would be more useful to ask questions such as:

- What are the instrumental uses of this research? What summative outcomes will be achieved that offer a product or procedure that can be used to change or develop practice in the IB?
- What conceptual developments or learning are achieved by this research? What formative processes can be used that change or develop thinking about an issue in the IB?
- What are the strategic or symbolic uses of this research? What summative outcomes will be achieved that offer a product or procedure that can be used to change or develop practice in the wider context beyond the IB?
- How can this research be used to gain wider influence? What formative processes can be used that change or develop thinking about an issue in the wider context beyond the IB?

The advantage of this approach is that it is possible to “spin” a particular research project in a variety of ways because it is acknowledged that it may have diverse uses depending on context and audience. In conclusion, it is proposed that this typology may be best used to analyse variety in the ways in which the outcomes of a particular piece of research might be contextualized.

Methodology adopted in this review

Criteria for inclusion in the review

A variety of sources was located by keyword searches using a selection of online databases and search engines. The criteria for inclusion of literature sources in the present review were broad. Literature sources were selected as candidates for inclusion if they contained the keywords “International Baccalaureate” or “Diploma Programme”. One disadvantage of this procedure was that it identified a large number of sources that made only nominal citations using the keywords without making any useful comments. Such sources have been rejected in preference for literature that discusses the IB Diploma Programme in some depth, either by advocating or criticizing some aspect of the programme.

As may be expected, a large number of sources identified in this search were published by the IB itself. Nonetheless, the majority of these have been rejected for inclusion because they cannot be seen as impartial and, moreover, they frequently describe programme content, structure, organization and assessment without critically evaluating implementation. On the other hand, there are some instances in which sources commissioned or published by the IB have been included in this review. Broadly, however, this review discusses the outcomes of research conducted by disinterested third parties, not connected to the IB and independent of the organization. It is an acknowledged shortcoming of this review that it concentrates solely on literature published in the English language.

Some of the literature sources cited in this review are published in refereed academic journals. Others are archived conference papers. At present, the profile of research relating to the IB Diploma Programme in the academic literature is not high and the extent of published literature relating to the IB Diploma Programme is sparse. However, there is a growing body of literature that is reported in unpublished master’s and doctoral dissertations and theses, originating from universities and colleges that offer advanced professional studies in education. These sources present a valuable fund of primary data. It is expected that this literature will continue to grow and develop as the IB teacher award scheme encourages school-based research by practitioners coupled with formal recognition of professional development of teachers.

The results of the literature search for this review have also made a contribution to the growth and development of the International Education Research Database hosted on the IB website at <http://research.ibo.org>. This is a free online resource for teachers and educators involved in all aspects of research in international education. It is a referencing resource that is in continuous development through the collaborative efforts of a range of different parties interested in promoting the field of international education.

Emergent typology of IB-related research

An emergent typology of literature was developed by induction as sources were accumulated. This was achieved by seeking similarities between the textual content of the various sources. It offers one approach among many to sorting the literature and attempting to make sense of it. Other typologies are possible because boundaries are fluid and there is scope for overlapping between categories. Arguments could be constructed to place some sources in more than one category. The categories in this emergent typology comprise:

- college entrance
- perceptions of the IB Diploma Programme by admissions staff at universities

- perceptions of the IB Diploma Programme by students and graduates of the IB Diploma Programme
- perceptions of the IB Diploma Programme by teachers/heads of schools
- preparation for the IB Diploma Programme
- outcomes of the IB Diploma Programme
- policy issues relating to programme implementation
- comparisons with other programmes
- critical studies relating to equity and access
- personal, social and health education.

What examples of literature sources may be associated with each of these categories?

Sources identified as relating to **college entrance** discuss the use of the IB Diploma Programme for admission to courses in higher education institutions and elsewhere. They report work conducted mainly in the UK and North America. Such studies often use mixed methods, combining analysis of quantitative survey data with qualitative data collection by survey and interview. It is evident that this research is deemed to be of value from a strategic and symbolic perspective in order to legitimate claims made on behalf of the IB Diploma Programme by a range of stakeholders. Yet the research is difficult to conduct with validity for a variety of methodological reasons. For example, longitudinal research designs are frequently hindered by high attrition rates as researchers lose contact with respondents over time. Furthermore, data protection legislation in many countries makes access to data of this type difficult to obtain.

Studies of the **perceptions of the IB Diploma Programme** held by a variety of stakeholders, such as the admissions staff of higher education institutions, current students and graduates of the IB Diploma Programme, and teachers and heads of schools, have been conducted in some countries, particularly the UK, Australia and New Zealand. These studies have generally involved survey designs supported by interviews with selected key respondents.

What constitutes a “good” **preparation for the IB Diploma Programme**? Certain studies have attempted to evaluate articulation and continuity in the transition to the IB Diploma Programme from the IB Middle Years Programme and other programmes of study. Nevertheless, these studies are beyond the scope of the present review, which aims to concentrate on outcomes of the IB Diploma Programme. Some studies have been conducted in the United States (USA) to identify the dispositions of students that may be claimed to be antecedents or predictors of success in the IB Diploma Programme. These studies have strong quantitative and statistical components.

Claims have been made for the **outcomes of the IB Diploma Programme**, relating not only to academic progress and performance in the cognitive domain but also in terms of the attitudes and values in the affective domain held by graduates of the programme. For example, does the IB Diploma Programme cultivate international-mindedness in students more effectively than other programmes of study?

Policy issues relating to implementation of the IB Diploma Programme has been identified as an area in which there is a diversity of views. A growing body of literature places the IB Diploma Programme among “gifted and talented” programmes that cater for the most academically able (Kinsella 2000, Tookey 2000, Callahan 2006). However, this is a point of view that may be criticized as being a proxy for the introduction of elitist selective education. A contrasting position is defended by those who propose that the IB Diploma Programme is for all students. Some sources identify the IB Diploma Programme as a means of increasing access to under-served communities (Bragg et al 2005, Kugler and Albright 2005, Burriss et al 2007).

Such arguments highlight “the formal organization of the school and the disciplinary organization of knowledge” (Siskin 1994: 37); that is, how the contrasting ways in which schools are organized and structured into departments are influenced by the curriculum. Various implementation models are possible; for example, the IB Diploma Programme may be offered as a selective school-within-a-school option open

to a limited fraction of the student body or in an inclusive whole-school context open to all students. Studies addressing policy appear to be mainly qualitative accounts that describe and analyse school organization. Nonetheless, studies making reference to quantitative data may also be found.

Comparisons between the IB Diploma Programme and a variety of other programmes have been attempted, for example, with the College Board Advanced Placement (AP) in the USA, various state examinations in Australia, the International Student Admissions Test, GCE AS/A2 (A-levels) in England and, more generally, between baccalaureate and so-called “quasi-baccalaureate” qualifications (Thompson et al 2003). These comparative studies are generally of two types. Some present qualitative analyses of texts comprising the curriculums, specifications, guide materials and assessment arrangements associated with various programmes of study. Other studies in this category present statistical analysis of quantitative data derived from assessment tests.

Critical studies of the IB Diploma Programme have also been conducted that address issues of equity and access. These studies attempt to place the implementation of the programme in a social, economic or political context. They often address contrasting interpretations of the value of education, either as a public good or as an individual good in terms of positional competition (Lauder 2007). An example of a critical study cited in this review uses a qualitative methodology informed by critical discourse analysis (Hahn 2003).

One source located the IB Diploma Programme in a comparative study with other programmes of study (Amuedo-Dorantes et al 2004). However, the main focus of the study was not the IB Diploma Programme itself but what may be identified with an aspect of **personal, social and health education**. It may be considered to be sufficiently singular to warrant assignment to a discrete category.

A more detailed discussion of the literature outlined here follows.

Review of research relating to the IB Diploma Programme

College entrance

Baccalaureate qualifications may be used in a variety of ways, for example, as an upper secondary school leaving certificate, and as a qualification for admission to higher education, for entry into employment, and as a foundation for learning throughout life (Thompson et al 2003). Hence, it may be argued that there are strong instrumental as well as strategic and symbolic needs to establish that the IB Diploma Programme is fit for purpose as a recognized qualification to facilitate college and university entrance in a wide variety of national systems of education, and as a qualification that has international currency facilitating portability between institutions and transferability between systems (Cambridge 2003). In the US context, the IB Diploma Programme has been evaluated as a dual-credit transition course in which students can simultaneously earn both high-school credit and college credit (Waits et al 2005).

Early studies

Thomas (1991) began a research project for the IB in 1986 to track IB diploma holders of the International School of Geneva through their university studies. This study asked 26 UK universities to provide data and comments about 1,036 IB students who sat university examinations from 1971–87. The results showed that 98% of these students completed good honours degrees.

Duevel (1999) surveyed the registrars of 12 US universities, and former IB students attending them, for her research into whether earning an IB diploma was a predictor of success at university and beyond. The students had come from IB World Schools both in the USA and overseas. Academic results showed that the successful completion of an IB Diploma Programme was an effective predictor of completion of a first degree at university.

Recent study in the UK

UCAS is the central organization that processes applications for full-time undergraduate courses at UK universities and colleges. A research study to profile UCAS applicants with IB qualifications was commissioned by the IB and conducted by UCAS staff (UCAS 2007). The profile of IB applicants was also compared with “non-IB” applicants who had achieved other qualifications. The study concentrated on the 2005 entry. Data analysis was carried out using variables such as region of domicile of applicant (UK, European Union (EU), non-EU). Profiling of UK-domiciled applicants was also attempted in terms of age, gender, disability, socio-economic status, ethnicity, school type, UK region, offers and acceptances, but this will not be discussed here.

Applicants through the UCAS system can make applications to up to six UK higher education institutions. Consequently, it is important to distinguish between applicants and applications when analysing statistics. Applicants with IB qualifications form a small proportion (less than 1%) of the total number of applicants to UCAS. In 2005, there were 4,599 applicants with IB qualifications and 517,556 with other “non-IB” qualifications. Of all IB applicants, 25.4% were domiciled in the UK, 38.3% in the EU and 36.3% in non-EU countries.

A total number of 26,024 applications were made by 4,599 applicants with IB qualifications. Of these, 18,306 (70.3%) applications received at least one offer of some kind (conditional or unconditional). Of the 4,599 applicants making an application, 70.7% (3,252 applicants) went on to gain a place in higher education (UCAS 2007: 7). By comparison, a total number of 2,259,572 applications were made by 517,556 applicants with “non-IB” qualifications. Of these, 1,486,824 (65.8%) applications received at least one offer

of some kind (conditional or unconditional). Out of the 517,556 applicants making an application, 77.7% (402,117 applicants) went on to gain a place in higher education (UCAS 2007: 22).

Applicant domicile	Total accepted applicants	% accepted applicants	% of applicants with an application converted to an acceptance
UK	995	30.6%	85.2%
European Union	1,239	38.1%	70.3%
Other overseas ("Non-EU")	1,018	31.3%	61.0%
Total	3,252	100.0%	70.7%

Figure 1: IB applicants converting one of their applications into an acceptance
(Source: UCAS 2007: 13)

Of applicants with IB qualifications, 3,252 applicants (70.7%) had one or more of their applications converted to an acceptance. Applicants domiciled in the EU accounted for the greatest proportion of accepted applicants (1,239 or 38.1%) while non-EU and UK domiciled applicants both saw similar rates of accepted applicants (1,018 or 31.3% and 995 or 30.6% respectively). When looking at the proportion of applicants with an application converted to an acceptance in each group, UK domiciled applicants showed the highest rate at 85.2% and non-EU domiciled applicants showed the lowest rate at 61.0% (UCAS 2007: 13). However, it is not known whether non-EU applicants had chosen to take up places in universities and colleges outside the UK in preference to UK institutions.

Law and management studies were the most popular preferred subject lines for IB applicants. Considering preferred subject line by domicile, law, management studies, medicine, economics and psychology all appeared in the top ten subject lines in all categories (UCAS 2007: 8–10). Arts and humanities were in the top ten preferred subject lines for UK domiciled IB applicants, while engineering subjects only appeared in the top ten preferred subject lines of applicants domiciled in other EU and non-EU countries.

Higher education institutions in the UK may be grouped into three categories: research-intensive "Russell Group" institutions, other pre-1992 institutions, and institutions assigned university status after 1992. A status hierarchy may be discerned between these categories with the pre-1992/Russell Group institutions identified by some as being the most prestigious. The majority of applications by applicants achieving IB qualifications were made to pre-1992/Russell Group institutions (50.9%) (UCAS 2007: 11). Acceptances by pre-1992/Russell Group institutions also accounted for nearly half of the total accepted applicants (1,614 or 49.6%) (UCAS 2007: 12).

Collection of statistics in North America

Staff at IB New York have carried out student surveys for a number of years. The results showed that IB diploma holders had higher acceptance rates than other applicants to universities (IBO 2005a, 2005b, 2006a, 2006b).

Texas Education Agency has produced serial reports on AP and IB examination results for Texas high school students (Texas Education Agency 2000a, 2000b, 2001, 2002, 2003, 2004, 2005). The reports present the student participation and performance in AP and IB examinations as an indicator in the Academic Excellence Indicator System. They report that both AP and IB were growing rapidly during these years. Between school years 1994–5 and 2004–05, the proportion of US grade 11 and 12 students taking AP examinations rose from 6.8% to 18.3%. In terms of participation of public school students in the IB programme, in 2004–05 a total of 1,487 US grade 11–12 students in 23 Texas public schools took 3,941 IB examinations, compared to the 429 students in 11 schools taking 910 IB examinations in 1994–5. Yet in these reports there is no intention

to compare AP and IB on their effectiveness to prepare the students for their higher education. The reports state that both AP and IB are higher level learning experiences, and they should increase the number of Texas high school graduates who are academically well prepared to meet the challenges of college and university studies.

Perceptions of the IB Diploma Programme by admissions staff of universities

University perception in the UK

Jenkins (2003) carried out a study commissioned by the IB about the perceptions of the IB Diploma Programme among UK institutions of higher education. The questionnaire was sent to pro-vice-chancellors of UK universities. Of the 71 institutions surveyed, 20 were selected for follow-up interviews. The results showed that the institutions had considerable enthusiasm for the IB Diploma Programme and confidence that the students who pursued it were well prepared for university study. Some admissions staff lacked understanding about particular aspects of the IB Diploma Programme. For example, while respondents did accept that creativity, action, service (CAS) in the IB Diploma Programme is a “good thing”, the survey suggested that there was little knowledge about it. However, one admissions tutor commented that students’ personal statements in their UCAS application forms were often very thin and sometimes invented, but this was never the case with IB students “who found space on the form insufficient” (Jenkins 2003: 21). The outcomes of this report were discussed in a symposium of university admissions staff and heads of IB World Schools (Barnes et al 2004).

University perception in Australia and New Zealand

A replication study was conducted on behalf of the IB by the Australian Council for Educational Research (ACER) into perceptions of the IB Diploma Programme among representatives of Australian and New Zealand universities (Coates et al 2007). A key aspect of the research was to determine what university representatives knew about the IB Diploma Programme, and whether they felt it provides a suitable preparation for university study. A further aspect was to examine the perceived strengths and weaknesses of the programme, both on its own and in comparison with alternative qualifications, in order to determine how the IB Diploma Programme might be enhanced to better prepare students for university study. The study commenced in September 2006 and ran until early 2007. In late 2006, a survey was conducted of 644 senior academic and administrative university staff at 47 Australian and New Zealand universities, with 159 usable responses received. Individual interviews were conducted with 11 of the survey respondents in order to capture more detailed information about the perceptions of university representatives.

In total, 56% of the surveyed university representatives indicated that they had some administrative or academic involvement with an IB Diploma Programme student in the last five years. Contact was most likely among representatives working in an administrative role. Overall, university representatives reported that IB Diploma Programme students were more likely to study in the humanities or sciences, or in commerce, health or law. These patterns were confirmed by the interviews, which also suggested that most institutions do not systematically collect information about the performance of entering students.

The survey invited respondents to rate the relative levels of importance of seven aspects of the IB Diploma Programme in helping to make it a successful programme. The most responses, and the highest levels of agreement, were associated with general statements about the IB Diploma Programme that covered matters such as the use of a range of assessment strategies, the breadth and depth of the curriculum, and having students study at least three subjects in depth. Respondents were most uncertain about the three compulsory elements of the IB Diploma Programme: the extended essay; theory of knowledge (TOK); and CAS.

Several themes emerged from analysis of the open-ended survey responses. Most comments were highly supportive of the IB Diploma Programme. Among these were broad suggestions that the IB Diploma Programme had no specific weaknesses and that the programme is valuable. More specifically, many respondents commented that it enhanced university students' academic competence and capability, gave them experience of greater breadth and depth, provided an internationalized educational experience with a greater emphasis on community engagement, and that it should be more widely adopted.

The comments also exposed a lack of awareness of the IB Diploma Programme. Many commented that they had no information on which to base their response or to evaluate the relative performance of IB students or the programme. A similar set of responses noted that as students generally self-select into the IB Diploma Programme, it may be difficult to separate the influence of student and programme variables on outcomes.

A small number of responses were more critical of the IB Diploma Programme, indicating that it provided no specific advantage over alternative preparations for university study, or that it was elitist. Individual respondents reported that IB students can experience adjustment problems, or that there are problems with the delivery of the programme at schools, the focusing and scoping of the programme, or the scoring and conversion of IB scores.

The survey invited respondents to compare the IB Diploma Programme with other forms of preparation for university study. In general, both the survey and interview results suggested that the IB Diploma Programme was viewed as providing a university preparation that is as good as or better than that of the state certificates, or of other international certificates. Despite such views, university staff also reported a general view that state certificates should be supported, and that promotion of the IB Diploma Programme might diminish support for a pathway that they should be working to enhance.

Importantly, all respondents who reported having enough information on which to base a response indicated that they were satisfied that the IB Diploma Programme prepared students well for undergraduate study. Respondents were asked to indicate how well they felt that the IB Diploma Programme prepares students for success in a number of areas of higher education compared with other qualifications. These aspects included first year study, academic learning, university life, course completion, graduate employment and postgraduate study. The IB Diploma Programme was seen to provide an effective preparation in each of these areas, and particularly for first year study, academic learning and university life.

The survey and interview results suggest that senior university representatives have a high level of regard for the IB Diploma Programme. While representatives' direct experience with IB Diploma Programme graduates appears to be limited, it is clear that they see value in the programme, both in itself and in comparison with other possible preparations for university study.

Perceptions of students and graduates of the IB Diploma Programme

Perceptions of IB graduates in Sweden

Thelin et al (2002) distributed a questionnaire to Swedish IB diploma holders graduating during 1971–93 from 44 IB schools in different countries. The IB diploma holders were asked how valuable they thought their IB Diploma Programme studies had been for university studies, other studies, career or life in general. The results showed a very high level of satisfaction with the IB Diploma Programme.

Perceptions of IB graduates in Canada

Taylor and Porath (2006) report the results of a survey administered to graduates of the IB Diploma Programme from two public schools in a large city in British Columbia, Canada. They were asked to respond

to 20 statements on a 4-point Likert-type scale, and to 7 open-ended questions. Graduates from the years 1996 and 2000 were selected. At the time of this survey, many of the graduates of 2000 were just finishing their undergraduate post-secondary programmes, and the graduates of 1996 were settling into their chosen careers. Both groups were in a position to reflect on their experiences while they were in the programme, and also to analyse the benefits of the IB Diploma Programme, if any, that they experienced during their post-secondary studies. Overall, graduates reported positive experiences in the programme. Taylor and Porath (2006) report that the graduates felt that the rich curriculum to which they were exposed, and the critical thinking and time management skills that they developed, were well worth the extra effort required to earn an IB diploma. Furthermore, they felt that the IB experience prepared them well for post-secondary studies.

Perceptions of IB students in Australia

Paris (2003) conducted research into why students choose or do not choose the IB Diploma Programme. He used a questionnaire as well as focus groups in order to establish the prevalent issues posed by his sample students. This sample was not extensive and the comparison was between the IB Diploma Programme and the South Australian Certificate of Education (SACE). He nevertheless concluded that some of the students' attitudes concerning the IB Diploma Programme were that it was difficult, expensive and too academic, but that it also provided students with a better chance to get into higher education both locally and worldwide, and that it had better teachers. However, a rejoinder to this article (Hill 2006) should also be consulted.

An individual's perceptions

Describing herself as a "survivor" of the IB Diploma Programme, Yip (2000) offers a critique of the programme based on her own experience. Yip describes the IB Diploma Programme as "empowering" because it encourages students to make choices, learn languages, pursue investigations in depth in the extended essay, and participate in CAS activities.

Perceptions of the IB Diploma Programme by teachers and heads of schools

Joslin (2006) focuses on what motivates independent schools in England, whose heads were members of the Headmasters' and Headmistresses' Conference (HMC), to introduce or reject the IB Diploma Programme in their school context. Joslin suggests that the IB Diploma Programme is suited to "moderate-ability students" who possess well-developed organizational skills, but that the lack of a specific vocational component renders the IB Diploma Programme unsuitable for some students. The research confirms that the IB Diploma Programme is being used as an effective marketing tool to recruit overseas boarders and to add a broader international dimension to the curriculum.

Preparation for the IB Diploma Programme

Proposed predictors of success

Samore (1992) examined the relationship between the criteria used for admission into the Preliminary International Baccalaureate (PIB) course of study at two schools in Florida (USA), and success in the IB Diploma Programme four years later.

Multiple regression analysis of data from 148 students indicated that Grade Point Average (GPA) in the US 8th grade is a significant predictor of success in the IB Diploma Programme. Results also suggested that the Comprehensive Test of Basic Skills (CTBS) subscore of reading comprehension is a significant predictor of success in the IB Diploma Programme. CTBS Total Battery, remaining CTBS subscores, California Achievement Test (CAT) Total Battery and IQ were not found to be significant predictors.

The combination of US 8th grade GPA and CTBS reading comprehension provided the most significant contribution to the overall predictive model.

More proposed predictors of success

Torre-Halscott (1992) conducted another study in Florida (USA) involving 87 students. The study comprised a student profile and the examination of five variables to ascertain if any, or a combination thereof, were predictors of student success within the IB Diploma Programme. The five variables were intelligence, gender, GPA, teacher predictions of success, and parental environmental process variables. The students had maintained continuous enrollment in a magnet IB Diploma Programme and graduated as full IB Diploma Programme students from the high school in which they began the IB Diploma Programme. The data were analysed using a linear multiple regression procedure.

Only one variable, teacher prediction score, emerged as a significant predictor of student success. Nonetheless, within the population studied, there existed a restricted range of intelligence test scores, GPAs, and parental environmental process variables that may have affected their usefulness as predictors.

An IB student profile was developed, and augmented the results of the regression analysis (Torre-Halscott 1992). Teachers and IB coordinators perceived successful IB students to be “gifted, inquisitive, scholarly, tenacious, emotionally mature, academically motivated, well-organized, analytical, verbally talented, academically focused, independent thinkers, and come from supportive homes with parents who are college graduates” (Torre-Halscott, 1992). Torre-Halscott (1992) concluded that intelligence, as measured by a standardized test, is not a predictor of IB Diploma Programme success. Neither are gender, GPA and parent environmental process variables. However, teacher prediction scores are predictors of IB Diploma Programme success.

Outcomes of the IB Diploma Programme

Besides academic outcomes that may be assessed by formal examinations, the IB Diploma Programme also aims to develop “inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect” (IB mission statement). Hinrichs (2002, 2003) reports a study with a survey design conducted in the USA that attempted to compare the development of “international understanding” among two groups of high school students, one of which was pursuing the IB Diploma Programme. It was concluded that participation in the IB Diploma Programme is a causal variable that “may be effective in promoting international understanding” (Hinrichs 2002: 8). Yet Cambridge (2002) challenges this claim on methodological grounds.

“It may be argued that it is equally valid to assume that a positive attitude to international understanding might predispose American high school students to enrol in the IB Diploma Programme. That is to say, international-mindedness is the cause not the effect, which is the opposite of the relationship proposed by this author. What research has been carried out to describe and analyse what decisions have been made by these students and their parents to enrol in the IB Diploma Programme in preference to a College Board Advanced Placement programme, or any other programme? What reasons might the respondents give that account for their choice in senior high school programmes? What prior knowledge might they have had of the nature and values of the IB Diploma Programme?”

(Cambridge 2002: 11)

This commentary should not be interpreted as an attack on Hinrichs. It highlights a broader issue relating to the difficulty experienced by all researchers in constructing knowledge claims that are valid and reliable. Surveys alone can produce data that may support only limited conclusions.

Brown (2006) describes a two-site, interpretive study to explore the nature of the international understanding of 15 students following the IB Diploma Programme and their grasp of globalization. Qualitative techniques for data collection involved open-ended questionnaires and interviews, and emergent category designation was employed for qualitative data analysis. Brown reports that IB students from Estado de México (Mexico) and Texas (USA) revealed complex, yet well-developed, perceptions of globalization that spoke of a system that privileges the powerful and leaves the developing world behind. Both US and Mexican students expressed scepticism of the USA's position as the dominant player in world politics, economics, and global culture, and students from both sides of the border lamented local culture loss as a consequence of globalization.

Policy issues relating to programme implementation

Factors supporting sustainability of programmes

Berkey (1994) conducted research to address two perceived problems associated with implementation of the IB Diploma Programme in North America: high turnover of schools and a low proportion of students completing the full IB Diploma Programme. The purpose of the study was to investigate three variables identified by IB North America and Caribbean (IBNA) as critical to sustaining the IB Diploma Programme and increasing the number of students who complete the full IB Diploma Programme. These variables comprised curricular adaptability, adequate resources and broad support. Berkey conducted a survey among IB coordinators in North American schools. Results of the study identified several factors that contribute to the success of the IB Diploma Programme in North America. These included the pre-IB curriculum, articulation adjustments, adequate release time for the IB coordinator, investment in staff development, and broad support from administration, parents, community, staff, and interested students.

Evaluation from multiple perspectives in Canada

Buchanan et al (2005) evaluated the three IB programmes (Primary Years Programme, Middle Years Programme and Diploma Programme) from five perspectives comprising academic, economic, political, cultural, and physical, with the aim of adoption of the programmes in the North Vancouver School District. The academic perspective consisted of quantitative and qualitative components. Quantitative data sources included new comparisons of Foundation Skills Assessment (FSA) results, provincial examination scores, and awarded scholarships between IB World Schools and non-IB schools.

From an economic perspective, the study addressed the financial implications of implementing the IB Diploma Programme. The issues covered included the costs of providing training to IB educators, infrastructure, set-up costs, and human capital. A recommendation was made about the economic benefits of IB programmes. Although the study examined political, cultural, and physical issues separately, it also looked at the links between the five perspectives.

When evaluating IB programmes through a political lens, students, educators and parents were acknowledged as key stakeholders. The issues of choice, acceptance into the programme, sustainability, union issues, resources, and funding from the province were addressed. A literature review, survey data from parents and teachers, and interview data from both teachers and administrators were the primary research methods used in the study. A triangulation of these three research methods was found in many of the cases, showing both the benefits of the programme and the shortcomings. From the cultural and physical perspectives, the study concluded that:

“In addition to being computer literate, teachers in an International Baccalaureate Programme must exhibit excellence in teaching, be prepared to commit to International Baccalaureate specific training and professional development, and seek to grow personally and academically. Teachers varied in their expertise are needed to run dynamic classes in the arts, humanities, and sciences. A staff diverse in languages, cultures, and nationalities is essential in developing a strong International Baccalaureate Programme. School districts desiring an International Baccalaureate Programme not only need to be aware of these requirements, they must be willing and able to commit time and money toward attaining, maintaining, and retaining these resources.”

(Buchanan et al 2005: 37)

Buchanan et al (2005) found the IB Diploma Programme to be a demanding course of study for highly motivated and gifted students, an academic programme with the potential to impact other student populations, and a programme with a considerable reputation for rigorous assessment that offers participants access to the world’s leading universities. They concluded that the scope, sequence and impact of the IB Diploma Programme demonstrate its merit and viability in the North Vancouver School District and other similar school districts. They argued that it is a good option for North Vancouver to implement the IB Diploma Programme so schools can serve a select group of students with the determination and motivation to excel in academics at a different level than their peers.

“Supertest”

Supertest: How the International Baccalaureate Can Strengthen Our Schools (Mathews and Hill 2006) illustrates the impact of the IB Diploma Programme on student chances for success in college and life, and how it can make a difference in the transition to college in the US context. McKenzie (2005: 236) criticizes this book as “a marketing tool, designed to sell the IB Diploma to public high schools in the USA that will be strengthened by taking it on” but also comments that the book:

“tackles a difficult task with commitment and persuasiveness. The IB Diploma is a programme that can strengthen many US schools, even if, or as, the great independent schools remain aloof from it. It does provide excellent teacher training, which the AP does not. And it has produced great success stories for students and teachers, enumerated with alacrity by Mathews. It has taken hold in the USA in a significant if small way and it will continue to prosper there, despite the negative manner in which its internationalism is associated by some Americans with socialism, disarmament, radical environmentalism and moral relativism.”

(McKenzie 2005: 238–239)

Studies addressing student diversity and access issues

Kugler and Albright (2005) discuss how the IB Diploma Programme was introduced into a public high school in Virginia (USA) as a means of addressing the educational needs of its ethnically diverse and multicultural student body. This involved increasing inclusion by encouraging greater enrollment from “minority cultures” in high school classes, and it was achieved by changing policy “from the ‘gifted and talented’ model that admitted students mainly on the basis of their performance in standardized tests to an ‘honors’ approach that focused on students’ motivation and performance in class” (Kugler and Albright 2005: 43). The policy meant rejecting a model that runs “a diploma-only program as a school-within-a-school” (Kugler and Albright 2005: 43). By reference to a variety of case studies, the authors illustrate how teachers “seek out bright students who may not even know their own capabilities” (2005: 44), with the outcome that “significantly more minority students now take the most rigorous classes” at the school. Kugler and Albright report that “African American students’ participation in 11th and 12th grade IB classes has doubled in the last three years (to 50 students), and Latino students’ participation has tripled (to 51 students). Eighteen per cent of students in IB classes qualify for free or reduced-price lunch” (2005: 44).

The themes of de-tracking and open access to the IB Diploma Programme are also addressed by Burris et al (2007). They point out that:

“even though any student could enrol in IB courses in grades 11 and 12, students made decisions early in their schooling that effectively, if unintentionally, excluded them from the IB program. Many students—disproportionately black and Latino students—were not taking high-track mathematics and science classes in middle school and therefore were not prepared for IB courses. Eliminating the last vestiges of tracking at the middle school yielded higher achievement scores and set the stage for successful reform at the high school.”

(Burris et al 2007)

In order to address the needs of these excluded categories of students, Burris et al (2007) advocate the introduction of elements into the curriculum in US grades 9 and 10 that prepare students for the IB Diploma Programme.

“Building on this successful 9th grade reform, the high school’s English and social studies teachers transformed the 10th grade English and social studies curriculums into pre-IB curriculums for heterogeneous classes. In 10th grade English classes, teachers used the IB ‘Commentary’ (a detailed, coherent literary interpretation of a brief passage). Social studies teachers integrated the beginnings of the IB ‘Historical Investigation’ (an annotated bibliography based on a student-generated research question). Writing portfolios and individual conferences became essential practices in English and social studies. Tenth grade English language arts support classes helped struggling students with the content all students were learning in English classes.”

(Burris et al 2007)

Comparisons with other programmes

Comparative studies from Australia

A considerable amount of comparative research addressing the IB Diploma Programme has been conducted in the context of Australia. McKenzie (2001) investigated which of three senior secondary school courses, comprising the Victorian Certificate of Education (VCE), the IB Diploma Programme and the Monash University Foundation Year (MUFY) programme provided students with the best preparation for tertiary study. The results showed that:

- the VCE offered by far the widest range of subjects of the three courses with the least restrictions on subject combinations
- the IB Diploma Programme was clearly the most academically challenging of the three with the heaviest workload, and not suitable for students who were academically weak
- the VCE was considered to have the greatest potential for nurturing and guidance of students
- the IB Diploma Programme and MUFY programme were considered surer methods of entry into courses with a high ENTER (Equivalent National Tertiary Entrance Rank) score
- the MUFY programme had the highest proportion of examination and test-based assessment but was more attuned to the needs of international students.

Nankervis (2003) and Lai and Nankervis (2005) report that ACER developed the International Student Admissions Test (ISAT) in the context of increasing numbers of international students presenting for entry to Australian universities and universities’ concerns about understanding some of the academic qualifications being presented as evidence for meeting selection criteria. The test reports on two scales, Critical Reasoning

(CR) and Quantitative Reasoning (QR), and provides an indication of the candidate's general academic abilities. It is designed for use by a population whose first language is not English, and it is not associated with any particular curriculum. Lai and Nankervis (2005) propose that there are a number of uses for the test, including:

- supporting selection judgments when faced with unknown qualifications
- guarding against false qualifications
- ranking applicants to popular courses.

One of the issues raised by users of the test was the value that could be attached to the ISAT scores, and how they could be put into a context that was meaningful in the admissions process. A research project designed to compare the results of ISAT and other known university admissions instruments would help to provide that context. The aims of the study were to accumulate evidence to determine if the skills reflected by high scores in ISAT are related to the skills reflected by high scores in final-year school subjects, and to put ISAT scores into known contexts to assist university admissions officers. The school programmes involved were the IB Diploma Programme, the Western Australian Tertiary Entrance Examination (TEE), the South Australian Matriculation (SAM) programme, the Canadian International Matriculation Programme (CIMP), and an Australian university's Foundation Year Programme (FYP). The five cohorts of students associated with each of these programmes were generally high achieving students who were enrolled because they intended to study overseas. A number of them were aiming at highly competitive medical school selection (Lai and Nankervis 2005: 2).

In April 2003, a group of 541 IB students at a Malaysian school sat the ISAT. About half of the cohort (259 students) completed their final IB examinations in June 2003. This group is referred to as IB.1 in this study. In May 2004, the remaining students sat the IB examinations and 277 students were the subjects of the second stage of the study, referred to as IB.2. The Malaysian school was a prestigious boarding school, supported by the Malaysian government and with a selective intake. Thus, the students were a homogenous group of high performers, so there is possibly less variance due to ability reported by Lai and Nankervis (2005) than might be expected in a general population of school leavers. Both groups of selected, homogenous IB students performed very well on the ISAT, as might have been expected. Given the known highly selective nature of the IB groups, this range of ISAT results would seem to indicate that the ISAT is able to successfully identify high ability students (Lai and Nankervis 2005: 4). Nonetheless, it may be argued that this conclusion says more about the predictive validity of the ISAT when compared to a range of curriculums than it says about specific attributes of the IB Diploma Programme.

Comparative studies from the UK

In the UK, the regulation and accreditation of educational qualifications is the responsibility of the Qualifications and Curriculum Authority (QCA) in England, with similar powers devolved to other regulating bodies in Scotland, Wales and Northern Ireland. A comparability study in England between General Certificate of Education (GCE) A-levels and the IB Diploma Programme evaluated two aspects of their assessment arrangements.

- The demands of syllabuses and their assessment instruments (for example, question papers, markschemes).
- The level of performance required of students at key grade boundaries (QCA 2003: 6).

It is evident that this study had serious limitations in that it only made comparisons between A2 (that is, the second part of the A-level examinations) and IB Diploma Programme higher level (HL) in four subjects, namely English literature, history, mathematics and chemistry. Furthermore, it made no attempt to evaluate the holism of the IB Diploma Programme. The report commented that two key differences between the qualifications militated against producing effective comparisons.

“The first of these derives from the IB Diploma being a single full-time course of study for 16–18 year olds (with some level of optionality but precise rules of combination) leading to an overarching qualification while A levels are single subject qualifications which can be taken by people of any age and in combination with any other qualifications, or with none ... The second difficulty [is] the quite different grading scales the two qualifications use. It is important to note that there are no pre-set points of equivalence, partly because the international nature of the IB Diploma means that it cannot peg its standards too closely to those established in any one country.”

(QCA 2003: 6)

Nevertheless, the study found that “broadly ... A level and IB examinations were comparable in the demands they placed on the candidate at the level of the individual subject” and that “in terms of candidate performance, there was a general consistency in suggesting that the kind of performance meriting an E [at A-level] was similar to that required for 4 points [in the IB Diploma Programme] and that that needed for an A was comparable to that needed for 7 points” (QCA 2003: 10).

Comparative studies from North America

English language and literature

Fritzie Perez (2004) compared the IB, AP and British Columbia examinations (BCIRP), focusing on their treatment of English language and literature and the extent to which they reflected the theoretical educational models that emerged from the 1966 Anglo-American Dartmouth Seminar to improve the teaching of English and cooperation between scholars in Great Britain, Canada and the USA. She concluded that “of the three exams, the IB exhibits the strongest relationship to the Dartmouth ideals, with the BC displaying some, and the AP reflecting much of what the seminar rejected” (Fritzie Perez 2004: ii).

Comparisons between selected IB Diploma Programme and AP subjects

A study commissioned by the Thomas B. Fordham Institute compared AP English literature and composition, US history, biology and calculus AB with IB language A1 English standard level (SL), world history SL, biology SL and mathematics SL (Byrd et al 2007). Each course was evaluated in terms of its content, rigour and clarity (Byrd et al 2007: 12). Applying these criteria, reviewers developed summary grades for each of the courses. “Awarded grades ranged from ‘C’ to ‘A’. English courses in both programs earned the highest grades, while math and history courses received less praise” (Byrd et al 2007: 13). The overall grades for each course are summarized in Figure 2.

The strengths of IB language A SL were identified as “rigorous and comprehensive exam; detailed and rigorous expectations for literary analysis skills”. It was identified as a weakness of the course that “US students in IB programs might miss exposure to core US literature” (Byrd et al 2007: 14). It was observed that the IB book list “is, by design, international in scope and thus could limit the number of American authors that students read” (Byrd et al 2007: 15).

The strengths of IB mathematics SL were identified as “curriculum guide clearly written; rigorous, comprehensive assessments”. The use of graphical calculators (“reliance on technology”) was identified as a weakness “resulting in a de-emphasis on analytical skills; some important pre-university content missing” (Byrd et al 2007: 14). However, it was also observed that “the IB exam’s free-response items are excellent, requiring reasoning and problem-solving skills ‘well beyond the normal high school fare’” (Byrd et al 2007: 16).

Advanced Placement	Overall grade	International Baccalaureate	Overall grade
AP English literature and composition	B+	IB language A English SL	B+
AP calculus AB	C+	IB mathematics SL	B-
AP US history	B-	IB world history SL	B-
AP biology	A-	IB biology SL	A

Figure 2: Evaluations of AP and IB courses compared (Byrd et al 2007).

The strengths of IB world history SL were identified as “demanding, well-constructed, content-rich exams; strong content within narrowly defined course parameters” (Byrd et al 2007: 14). It was identified as a weakness of the course that “US students in IB programs could miss exposure to almost all core US History content; even as a world history course, its 20th century focus is too narrow; lacks emphasis on important chronological knowledge” (Byrd et al 2007: 14). It was noted that an Americas option, covering US, Latin American, and Canadian history was available. However, it was observed that “this option contains some good information, but because it includes much more than US history, the course inevitably slights important topics, events, and people that all US high school students should know” (Byrd et al 2007: 15).

The strengths of IB biology SL were identified as “depth and coverage of content in curriculum guide; comprehensive assessment system” (Byrd et al 2007: 14). It was identified as a weakness of the course that the course guide was so detailed: “‘systematization’ of the program could confuse or overwhelm teachers or stifle their curricular inventiveness” (Byrd et al 2007: 14). Nonetheless, there was praise for “the rigor and comprehensiveness both of the curriculum and of the IB’s formative and summative assessments, especially the mark schemes, which describe for teachers how and why exams are scored as they are” (Byrd et al 2007: 16).

In conclusion, Byrd et al (2007) recommend that “the IBO should streamline its curriculum guides to make them less verbose and more user-friendly” (2007: 19), and that “to the extent that the International Baccalaureate Organization wants to increase its presence in the United States, it should consider allowing some of its courses to be taught apart from the Diploma Programme” (2007: 20).

Critical studies relating to equity and access

Critical discourse analysis of IB publications

Hahn (2003) analysed the written official discourse dealing primarily with the IB Diploma Programme for the following elements:

- the IB's conceptualization of international education
- the manifestation of the nation
- the role of language study in international education
- the presence of a world order discourse
- the national composition of the IB's institutional bodies
- the languages offered for the IB Diploma Programme examinations.

Data analysis was based on the methodology of critical discourse analysis (CDA) because it provides a rationale for examining discourse as a means of social change and highlights the relationship between language and power.

Hahn (2003) reports the following findings.

- The IB's conceptualization of international education is hinged upon the transcendence of the nation, the promotion of the values of internationalism and the needs of a geographically mobile population.
- The nation is ubiquitous in the IB's discourse and highlights an emphasis on diversity.
- The link between language study and international education is based primarily on the development of values.
- A discourse of colonial education surfaces particularly through the themes of education models, service and elitism.
- The structural relations within the organization point to a Western/American dominance.
- English predominates among the first-language examinations and French among the second-language examinations.

Hahn (2003) argues that the findings show how the structural relations of the organization, which signal a Western and American dominance, are also reflected in the discursive practices of the IB. Overall, this study points to the challenges of transcending the nation and the risk of obfuscating international implications in efforts to move education beyond national boundaries.

Marketization of education in Australia

Whitehead (2005) contextualizes the growth of the IB in South Australia as an aspect of the marketization of schooling and then focuses on the implications of both for ongoing issues of social justice in education. The paper reviews the history and aims of the IB and also research on the marketization of schooling. It explores the role of the IB in marketization through an analysis of school advertisements in South Australia's daily newspaper, *The Advertiser*, in 2003. Whitehead's main argument is that schools that featured the IB in their advertisements were "selling social advantage rather than social justice, and the IB was deployed as a commodity that increased their advantage in the education marketplace rather than a curriculum with socially just ideals" (Whitehead 2005: 2).

Personal, social and health education

One literature source was found that located the IB Diploma Programme in a comparative study with other programmes of study. Yet the main focus of the study that it reported was not the IB Diploma Programme itself but what may be identified as personal, social and health education. Amuedo-Dorantes et al (2004: 91) report on an inquiry into the “effectiveness of school endowments and curricula in targeting juvenile use of tobacco, alcohol, and marijuana”. They conclude that schools are important in reducing juvenile involvement in substance use in two ways. First, “higher discretionary dollars per pupil are linked to reduced rates of juvenile initiation and repetitive use rates of cigarettes and marijuana”, and, second, school curricula, “as indicated by the implementation of year round classes and some innovative and after-school programs—such as *gifted and talented*, *attendance monitoring*, *homework hotline*, *international baccalaureate*, *extended-day*, and *mentoring*, programs, affect both juvenile initiation to tobacco and alcohol use and juvenile repetitive use of tobacco and alcohol” [italics in original] (Amuedo-Dorantes et al 2004: 91).

Amuedo-Dorantes et al (2004: 96) conclude that “gifted and talented and international baccalaureate programs appear to be effective at lowering the likelihood of juvenile initiation to smoking cigarettes”. They observe that “juvenile initiation into cigarettes is 3% less likely in schools offering international baccalaureate programs than in schools not offering this program”. Furthermore, “twenty-first and international baccalaureate programs not only help diminish youths’ initiation into smoking, but also reduce their repetitive use of cigarettes by about 50% each” (Amuedo-Dorantes et al 2004: 97). However, there appears to be no association between attendance at schools offering IB programmes and juvenile alcohol or marijuana use. At least two critical comments can be made with respect to this research. First, the authors do not appear to distinguish between schools offering IB programmes and students participating on such programmes (that is, students might attend schools offering IB programmes without participating in them). Second, association does not prove causality. Thus, while the observed significant positive association between the variables (for example, smoking cigarettes and schools offering a specified programme of study) may be valid, it is not clear which variable is the cause and which variable is the effect. Thus, participation in a programme of study may influence particular behaviours in students, but it may also be argued that particular behaviours predispose students to participate in certain programmes of study. Nonetheless, this observed association between variables remains interesting—and potentially useful—so it may be worth investigating in more detail.

Concluding discussion

A variety of positions may be identified in the research discourse with respect to the IB Diploma Programme. Some sources may be described as being hortatory. That is to say, they strongly support the IB Diploma Programme and advocate its implementation in schools. The use of research in such literature is strategic and symbolic, as outlined in the section “Uses of Research” at the beginning of this review, because it is used to promote a particular point of view by rallying support for the IB Diploma Programme. A problem with such sources is that they can sometimes be highly selective in how they treat data and research methodologies. For example, research studies may set out to prove a specific position without reviewing alternative explanatory theories that may account for observations. Linking participation in the IB Diploma Programme to observed outcomes can be naïve and simplistic because it is methodologically unclear whether participation in a given programme of study is a direct antecedent of outcomes, or whether both participation and outcomes are confounded with another variable. Students following the IB Diploma Programme may be viewed as a self-selecting group. In such situations, it is not known what factors could have contributed to their selection of the IB Diploma Programme. Would such students still have succeeded in their studies if they had not opted to follow the IB Diploma Programme? It is also unclear whether or not students following the IB Diploma Programme in two different schools are really pursuing the same programme of study. This is because one school might be non-selective, offering an open access whole-school programme, whereas another might be selective, offering a restricted access school-within-a-school programme. The values and assumptions underlying the criteria for entry on to the programmes of study are different in either case.

The above discussion points to a need for research with a stronger conceptual component to assist in the development of appropriate research methodologies that can frame valid research questions. Such research questions may inform studies into the IB Diploma Programme that highlight not only the strategic and symbolic uses of research but also instrumental uses that assist in developing an understanding of the effectiveness of programmes of study. This is important because it is evident that many schools in different parts of the world look to the introduction of the IB Diploma Programme as a driver of the implementation of school improvement policies. The introduction of the IB Diploma Programme can have a profound effect on changing student, parental and teacher attitudes. The challenge is to develop ways in which such attitudinal changes can be characterized and evaluated. Important research questions can be identified. What is the impact of the introduction of the IB Diploma Programme on school organization? How can schools be organized in order to maximize the impact of the IB Diploma Programme? How might schools use the IB learner profile (IBO 2006c) to characterize and evaluate claims for the growth and development of students in the cognitive, psychomotor and affective domains?

While it is beyond the scope of the present study because it addresses learning in US grades 3–10 rather than in the IB Diploma Programme, it is worth identifying Kiplinger (2005) as a source that indicates future directions for research. The author reports a longitudinal study of the effects of “the International Baccalaureate (IB) program on reading achievement and growth from 2000 through 2004 in grades 3-5, 4-8 and 7-10” (Kiplinger 2005: i). Kiplinger proposes that:

“IB students consistently out-perform their peers on all CSAP assessments. The question that this study seeks to answer is whether the higher academic achievement is most likely due solely to selection effects such as academic ability and prior achievement, motivation, family background characteristics, etc., or whether the IB program has a *unique*, value-added effect on student achievement and growth” [italics in original]

(Kiplinger 2005: 1).

To reiterate, a recurrent epistemological problem associated with research into the effectiveness of the IB Diploma Programme is that association between variables does not prove causality. It is naïve to assume that participation by students on a particular programme of study is the sole explanatory variable to account for observed outcomes, and it is helpful that Kiplinger (2005) appears to acknowledge this argument. On the one hand, the association between two variables may be evaluated statistically but we cannot tell without widening the research question, and by recourse to further data collection, which is the cause and which is the effect. On the other hand, observations concerning the two variables may be both effects of a third confounding variable. It will be instructive and illuminating to see how Kiplinger's work develops in the future.

There is currently a dearth of valid and reliable knowledge addressing the "value-added" effects of participation in the IB Diploma Programme. It is to be hoped that this shortage will be rectified in future studies. Such research is required to validate claims made for the "effectiveness" of the IB Diploma Programme in longitudinal designs relating not only to articulation and continuity between programmes leading to the IB Diploma Programme but also in the subsequent academic and professional careers and lifelong learning of graduates of the IB Diploma Programme. However, in order to implement this research, it is necessary to specify with precision what data are to be collected. Where knowledge is originated we call it **emic**, if applied elsewhere we call it **etic** (Pearce and Cambridge 2008). Many indicators currently used in national systems are emic constructs that are particular to those systems. If an international dimension is to be built into a research project, etic constructs with more robust transferability and wider applicability need to be designed.

The IB welcomes critical studies conducted by practitioners and schools that address the wide range of aspects of the implementation of the IB Diploma Programme. To this end, the IB is working to develop structures that can facilitate critical debate and the free exchange of ideas in order to encourage a sustainable community of practice centred on a research culture that values and supports all facets of the Rickinson (2005) typology of uses of research. All interested researchers are warmly invited to participate in building this research culture.

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Glossary

Acronym	Expanded	Remarks	Page
ACER	Australian Council for Educational Research		passim
AP	(College Board) Advanced Placement	Educational qualification to earn credit or advanced standing in colleges and universities in USA, administered by College Board.	passim
CAS	creativity, action, service	Component of the IB Diploma Programme.	passim
CAT	California Achievement Test	A standardized test to provide a general indication of student achievement.	13
CDA	critical discourse analysis		20
CSAP	Colorado Student Assessment Program	A standardized test designed to measure how well students are learning material from the Colorado Model Content Standards, the established content standards that all Colorado public school students should learn.	22
CTBS	Comprehensive Test of Basic Skills	A standardized test to provide a general indication of elementary and high school student achievement.	13
ENTER	Equivalent National Tertiary Entrance Rank.	Used in the state of Victoria, Australia by the Victoria Tertiary Admissions Centre.	16
EU	European Union		8, 9
FSA	Foundation Skills Assessment	An annual province-wide assessment of British Columbia students' academic skills in reading comprehension, writing and numeracy.	14
GCE AS/ A2		Post-16 educational qualification in England. The Advanced Subsidiary (AS) is a stand-alone qualification and is valued as half a full A-level qualification. The A2 is the second half of a full A-level qualification.	7
GPA	Grade Point Average		13
HMC	Headmasters' and Headmistresses' Conference	Organization representing the heads of leading independent schools in the UK and the Republic of Ireland. There are also members in other countries.	12
IB	International Baccalaureate		passim

Acronym	Expanded	Remarks	Page
IBNA	IB North America and Caribbean		14
ISAT	International Student Admissions Test	A multiple-choice test focused on the generic and cross-curricular skills that underpin academic performance; it aims to tap into the abilities that are the foundation of academic success. Administered by ACER.	16, 17
MUFY	Monash University Foundation Year programme	A 12- to 18-month academic programme designed to prepare students for university study. It is equivalent to Australian Year 12.	16
PIB	Preliminary International Baccalaureate	A course of study offered in the US ninth and tenth grades that can prepare students for entry into the IB Diploma Programme.	12
QCA	Qualifications and Curriculum Authority	Body overseeing the curriculum in England.	17, 18
SACE	South Australian Certificate of Education	An internationally recognized credential that opens pathways leading to vocations and careers, further studies and employment. The SACE also ensures that students leave school with a strong general education.	12
UCAS	Universities and Colleges Admissions Service	Organization responsible for managing applications to higher education courses in the UK.	passim
VCE	Victorian Certificate of Education	A credential awarded to secondary school students who successfully complete senior high school level studies (years 11 and 12 or equivalent) in the state of Victoria, Australia.	16