Flinders University

Problematising IB Primary Schools' responses during the first year of the COVID-19 global pandemic

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Contents

Abstract

The International Baccalaureate Office (IBO) is one actor in the transnational governance of education, operating within local and global contexts. It became a legitimate field of education (Jaafar et al., 2021) in tandem with the increased globalisation of education throughout the twentieth century. A strong relationship between the experience of International Baccalaureate (IB) school communities and the ideological, instrumental, and practical elements of the IBO (Hill, 2002) has remained a defining characteristic of the IBO since its foundation. IB schools offer a vision of education grounded in the IB mission but interpreted at the local level. Each IB school is shaped by local and global power relations and loosely connected to the wider IB community.

My doctoral research investigates how IB schools responded to the declaration of a global pandemic and school closures. It links policies and practices of the IBO with the accounts of three Primary Years Programme (PYP) coordinators about emergency remote teaching and learning. Using policy statements, curriculum guidance, narratives from semi-structured interviews, and a post-structural research design (Bacchi, 2016a), the thesis explores the "regime[s] of truth" (Foucault in Lorenzini, 2015, p. 3) in three IB primary schools in Melbourne Australia, to identify the conditions of emergence of digital IB education and the effect on IB students, teachers, and parents when schools moved fully online.

Each of the three schools interpreted the mandates and policies differently. One school focused on the learning community, developing children into action-oriented inquirers and parents as supportive community members. Another combined the advice of a technology edupreneur with IB's construction of technology as a tool for effective learning, training teachers to be programmers, positioning students as app testers and parents as teaching

assistants. The third school focused on experiential learning in nature, rejecting technology in the development of the 'eco-child'.

I argue that teachers led IB teaching and learning during the pandemic and that the IBO temporarily changed its governance relations with schools. The thesis brought to the fore IBO's human-centred perspective on digital education. It also opened the possibility of multiple digital IB educations, ranging from technocentric behaviourist teaching methods to explorations of post humanist approaches to learning.

Declaration

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text. The thesis has been completed without the use of generative artificial intelligence tools.

Signed Susan Richards

Date 30 September 2025

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Tables

Glossary

ACARA	Australia Curriculum Assessment and Reporting
ATL	Approaches to learning
Big Tech	The five big US technology companies – Alphabet, Amazon, Apple, Meta, Microsoft
BYOD	Bring your own device
COVID-19	The coronavirus disease of 2019 that is called a 'novel coronavirus' because it had never been seen before 2019
DP	International Baccalaureate Diplomat Programme
Eco-child	Environmentally friendly student formed through discourses of sustainable education
Edtech	Education technology
Education foundation	A legal entity for the management of compliance and governance of an organisation
Education system	All the elements and processes of an educational program from its curriculum to the governance processes, e.g. the Australian education system and the IB education system
GERM	Global Education Reform Movement, a term referring to the rise of international testing systems and popularized by Pasi Sahlberg
HPST	High Performing Systems for Tomorrow project, established by the OECD in 2021
IB	International Baccalaureate
IB LP	IB Learner Profile
IBO	The International Baccalaureate Organization
IB MYP	The International Baccalaureate Primary Years Programme
IB PYP	The International Baccalaureate Primary Years Programme
LMS	Learning management system
OECD	Organisation for Economic Co-operation and Development
Pandemic	The global outbreak and spread of the corona virus in 2020
PIA process	Poststructural interview analysis process
PISA	Programme of International Student Assessment, established by the OECD in 1997
POI	Program of Inquiry
SARM	Substitution, augmentation, modification, redefinition
UNIS	United Nations International School
UN SDG	United Nations sustainable development goals
WPR methodology	'What's the Problem Represented to be?', a method of critical policy analysis developed by Carol Bacchi

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The views and opinions expressed in the thesis do not necessarily reflect those of the IBO.

1 Chapter 1: Outline of Research

1.1 Introduction

There is tacit agreement about the inevitability of the adoption and integration of technology in education. The COVID-19 pandemic was an opportunity to think problematically about the "conditions of emergence" of a digital International Baccalaureate (IB) education and the effects produced by transitioning teaching and learning online. This was the only time in history that 99% of IB Primary Years Programme (IBPYP) schools transformed student-centred inquiry to online learning (Riviere & Mills, 2022). No one could have predicted that early childhood and primary age students would go to school by sitting in front of an iPad at home. A distinct tension exists between the increasingly hyperbolic metaphors (Weller, 2022) about the potential of technology to prepare students for the future. Some (Prensky, 2004; Schwab, 2018; van Welsum & Lanvin, 2012) state that education should prepare students for the digital economy and the fourth industrial revolution. Other declarations (Selwyn & Facer, 2013; Williamson, 2020; Williamson & Hogan, 2020b) warn about the current and potential destructive impact on the purpose of education, including its potential to reverse progress towards an inclusive human centred society (Braidotti, 2020).

1.2 Background to the research

To investigate the intersection of learning and technology, I interviewed middle leaders in three IB Primary Years Programme (PYP) schools in Melbourne Australia about their teaching and leadership practices during the first year of the pandemic in 2020. This first chapter situates the International Baccalaureate Organisation (IBO) historically, outlining its development into an education system. The focus then turns to the pandemic in Australia

in 2020, demonstrating the interdependence between global and national policy agendas. The chapter outlines how a crisis of the magnitude of the global pandemic disrupted the taken-for-granted assumptions about where and how teachers, students and their parents engage in education.

The IB as an education system

The IBO was officially registered as an education foundation in Switzerland in 1968 (IBO, 2017). Prior to this, groups of teachers looking to develop an education that was relevant to internationally mobile students, wanting a global pathway for entry to universities was being created in the International School of Geneva (Ecolint) from the end of World War One. The curriculum that the teachers at Ecolint developed would become the IB Diploma Programme (DP) (Hill, 2002). In the 1990s, with the International Schools Conference, the IBO developed the Middle Years Programme (MYP) (IBO, 2017). The Primary years programme (PYP), the focus of this thesis, was germinated in the Bavarian International School a few years later (Giddings, 2013; IBO, 2017).

Historically, teachers and school leaders have influenced the ideological, instrumental, and practical elements of the IBO (Hill, 2002). Its formal incorporation and rise as a legitimate field of education (Jaafar et al., 2021) happened in tandem with the increased globalisation of education throughout the twentieth century. Over its history, the IBO has become a significant actor in the transnational governance of education, operating in the liminal space of local and global contexts.

The IBO's policies and structures construct schools in particular ways, asking teachers and school leaders to commit to an approach to teaching and learning that forms teachers, students and parents as internationally-minded learning communities (IBO, 2019). Schools

who agree to the IBO's regulatory processes of authorisation and evaluation do so in addition to their national or state regulatory requirements. An authorised school displays the IB logo on their website, school buildings, and in promotional materials, and joins the IB community. Central to an IB education, embedded in IB documents and teacher practice, is internationally focused student-centred, inquiry-based learning.

During the pandemic, IB teaching and learning moved online to a form of remote learning. The context for learning changed dramatically in what IB labelled "learning through crisis" (IBO, 2021a, Crisis response framework infographic). This study aims to gain an understanding of how three IB PYP schools transitioned to online teaching and learning during the pandemic and the way teachers, students and their parents were shaped through school closures. Their affiliation to the IBO during the first year of the global pandemic will be examined.

IB Primary Years Programme (IBPYP) in Australian education

In the Australian context, the IBO has a significant influence and impact on school education in all sectors. In 2018, there were 29,033 students undertaking the PYP in Australian schools (Kidson et al., 2019, p. 397). Australia had the second highest number of PYP schools of any country, 128 in total (Dickson et al., 2018). This number increased to 149 in 2025 (IBO, 2025a, The IB by country/territory). In 2016, IB schools attracted to AUD$1190M (Kidson et al., 2019, p. 405) of annual recurrent funding from both the Commonwealth and state governments of Australia. Sixty-four per cent (64%) of Australian IB schools are independent schools (Dickson et al., 2018, p. 244). Kidson et al. (2019) argue that the significant influence of the IBO on Australian education merits more research into its presence in Australia.

1.3 Nature of the study

This study takes a 'policy as discourse' perspective to explore the meaning relationships among policy actors within the IBO and IB schools and the discourse practices found in transnational education policy networks. Policy is conceptualised as interactive social processes which incorporates policy making and policy enactment (Ball, 2012) and diverse policy actors. The actors include teachers in schools, IBO officials and government personnel. The corpus of statements and interactions produced by them makes up policy discourse. The investigation surfaces practices and relationships that underpin the statements and actions of the IBO and PYP coordinators to understand the formation of IB teachers, students, and parents during the first year of the pandemic. Deconstructing and historically situating the discursive practices of PYP coordinators when they were dependent on the use of technology for learning, uncovered the dynamic relations unfolding among teachers, students and their families and the policy practices in play during the pandemic. Using the Foucauldian tools of archaeology, regimes of truth and subject formation (Lorenzini, 2023a), the thesis analyses policy discourse, academic literature and semi-structured interviews with PYP coordinators to understand what happened during the pandemic in three IB schools.

1.4 The context of the study

The declaration of a global pandemic by the UN created a unique policy environment from which to investigate the interplay of global and Australian governance of education. It provided a vantage point to compare the combination of factors and relations that constitute education during the pandemic and the role that the IBO and IB schools assumed in this unique historical moment. Social and economic policy was being made quickly at the

global and national level, while at the same time local policy actors were interpreting the dynamic situation, making their own policy statements about school and education during lockdown.

The global reach of pandemic policies

On March 11, 2020, the World Health Organisation declared COVID-19 to be a global pandemic (Spiteri et al., 2022, p. 126). By the end of March 2020, an estimated 1.6 billion (Eacott et al., 2020; Fullan et al., 2021; Harris & Jones, 2020; Reich, 2021, p. 21) students were affected. UNESCO reported at the end of March 2020 in its *Global Education Monitoring Project (GEM)* that "all countries are introducing or scaling up existing distance education modalities based on different mixes of technology" (GEM report (2020) in Williamson & Hogan, 2020a, p. 18). The safety of students underpinned the adoption of online teaching and learning as the primary approach to teaching and learning globally (Williamson et al., 2020). For the duration of the pandemic, most learning would be mediated by technology and occur remotely from teachers' and children's homes, bringing parents into education governance in new ways. The roles and relationships of a myriad of players in the global education industry became more visible in the public arena during this time. The policy to close schools, declared to be in service of international public health objectives and the safety of the world population, entangled education in the regulation of society in new ways.

1.5 Australian response to the pandemic

COVID-19 brought unpredictable changes to Australian society with, at the time, no foreseeable end in sight. Students and teachers in schools in Victoria, Australia went into remote teaching mode five times for a total of 120 days (Hattie, 2021, p. 1), the longest

school lockdown of any state in the world. On March 18, the Prime Minister of Australia declared COVID-19 a national pandemic and began the implementation of measures to "stop the spread" (Stephens and Curwood in Chan et al., 2022, p. 215). Implementing a national policy on the pandemic required agreement among the states, and between the states and the federal government. The establishment of the National Cabinet on March 13, 2020 was presented to the Australian public as necessary for abnormal times (Eacott et al., 2020, p. 16).

Closing school buildings: maintaining continuity of student learning

Closing schools was not the preferred option of the Australian federal government (Eacott et al., 2020). The risk to adults in schools was played down. Advice from *Australian Health Protection Principal Committee* (AHPPC) on April 5, 2020, was that it was safe for schools to be open. The view coming from the expert health profession was that children were at low risk of contracting the virus and it was relatively safe to keep schools open for the vast majority of students (Parker, p 61 in Australian Government Department of Education Skills and Employment, 2020). The assessment of risk to teachers' health and the classification of low risk to exposure for the teaching profession was not accepted by all education stakeholders. Some jurisdictions made local decisions to close schools. Independent schools were the first to close, followed by government schools (Kidson et al., 2020).

> The Catholic and independent schools sectors were able to close in response to the initial outbreaks, with the most common action being to start the school holidays a week early, whereas public schools were forced to remain open. (Eacott et al., 2020, p. 8)

Pressure, first from independent schools and teachers' unions, on the risk to safety of both teachers and students, led the government to finally mandate school closures. This decision meant schools and education departments had to deliver continuity of learning by distance

(Kidson et al., 2020). In April 2020, in a matter of days or weeks, schools had to deliver lessons to some students in their homes and, at the same time, to some students in their classrooms (some systems gave the option for children of essential workers to attend school). Prioritising the health and safely of the population legitimised the policy to legislate flexible, alternative remote delivery of education services (Australian Government Department of Education Skills and Employment, 2020), positioning education as "an apolitical public service" (Spring in Hallinger, 2018, p. 13).

Dividing the Australian population: citizens, residents and international students

By categorising the problem as a public health problem, the solutions shaped Australian residents in particular ways. Citizens were asked to protect themselves and their neighbours from the virus through social distancing. Closing national borders effectively shut down the international student industry, a multi-billion-dollar export industry (Sidhu, 2003). International students were told to go home (Gibson & Moran, 2020) and were not supported by any funding provided by the government. The Prime Minister said "our focus and our priority is on supporting Australians and Australian residents with the economic supports that are available" (Gibson & Moran, 2020, para. 3). The Prime Minster was quoted saying: "exceptions could be made [for visa holders] with critical skills that can really help us during the pandemic" (Gibson & Moran, 2020, para. 5). The changed status of international education in Australia effectively delineated the population, accepting some students while excluding others (Amos, 2010). Given Australia is one of the most multicultural countries in the world and Australian schools tend to be "transnational learning spaces" (Rizvi et al., 2020, p. 159), these dividing practices created another hurdle for schools to overcome in maintaining cohesion among their school community.

New relations between home and school

The transition to remote learning also disrupted the separation of home and school by bringing schooling into the home. During the pandemic the socialisation processes of the home and of school occurred in the same place and time. The COVID-19 restrictions required the family or households to be the mediator of education, making them central to the enactment of remote teaching and learning. This might explain why 'the family' assumed such discursive prominence (Hannah, 2020, p. 22) during the pandemic. Even the IBO provided advice for parents on remote learning in their crisis resources (IBO, 2021a).

Technology and governance of Australian schools

Putting digital technology at the centre of the solution to deliver continuity of education services is one indicator of the government's commitment to the promise of technology in education. Another is the finding, in 2015, that Australian classrooms have "the highest use of ICT and more school computers per student than other countries throughout the OECD" (Page Jeffery, 2022, p. 3). This came to be so after 40 years of the Australian Commonwealth government pursuing a national digital strategy and funding a mixed economy of technology platforms (Leask, 2022), and the expectation that school principals be effective digital leaders, spreading the capacity of the school to use technology in the governance of education, and within teaching and learning (Gurr, 2004; Sheninger, 2017).

The IBO also expects IB schools to provide students with opportunities for engagement in an increasingly technological and globalised world. Much of the responsibility for leading digital teaching and learning in IB schools falls to the IB coordinator as the pedagogical leader in the school. The challenge for Australian IB schools and the IBO was how to transition a student-centred inquiry based international education to remote learning in a

policy context that deprioritises international education, positioned education as a service, and technology as a delivery vehicle.

The research questions which inform the investigation are below.

1.6 Research Question

The study attempts to answer the following research question and sub-question.

How did PYP coordinators shape teaching and learning, themselves and their students during the transition to remote learning during the COVID-19 pandemic?

Sub-question

How did the IBO shape IB schools and international education at this time?

1.7 Conceptual framework

A post-structural perspective of discourse, knowledge and power relations structures this thesis. Discourse, being more than language (Bacchi, 2009), includes its cultural environment and the actions that surround it. Knowledge, being more than a representation of what is, emerges through discourse within socio-historical contexts. Words make possible multiple interpretations, the acceptability of which depends on historical conditions. Social and educational 'problems' do not exist in the world waiting to be solved. They are constructed by policy actors, such as, teachers and leaders, who interpret and translate policy into practice, or enact policy (Ball, 2015).

Critical discourse analysis (Anderson & Holloway, 2020), using the What's the Problem Represented to Be? (WPR) methodology (Bacchi, 2016a) places the focus on the effect of statements made. The purpose is not to reveal gaps in the literature but to "identify and challenge the assumptions underlying the existing literature" (Alvesson & Jörgen, 2013, p.

2). In this thesis, assumptions underlying policy documents and statements made by PYP coordinators are analysed.

The methodology questions “how power and knowledge shape our understanding through language” (Sam, 2019, p. 334). The rules which shape discourse are often unknown to those who use them (Harvey, 2022), often uttering taken for granted truths, such as, children go to school. Through everyday interactions and making statements, individuals transform into subjects (Lorenzini & Tiisala, 2023). They attach themselves to a given identity through the truth claims they utter (Lorenzini & Tiisala, 2023). The way teachers talk about policy reveals how policies are put into practice (Bletsas & Beasley, 2012). Their disciplinary knowledge of pedagogy creates them as pedagogues. The WPR methodology provides a process to unpick how PYP coordinators talked about and committed themselves to certain ways of being teacher professionals, and to the formation of the students and parents in their school communities during school closures.

The sub-question seeks to understand the ways in which the IBO shapes teachers in IB schools. A conceptualisation of power as distributed and possessed (Christensen, 2024) is leveraged to examine the governance practices of the IBO and how their policy actions shape IB schools. Power is not only possessed by important people and institutions. It is also distributed across and between knowledge communities. Schools are powerful institutions that are part of a network of knowledge power relations. This dual conceptualisation allows me to investigate the power relations circulating between the IBO and IB schools, national and international policy agendas, and among school leaders, teachers, students and parents, leading to “novel ideas and path-breaking thinking” (Alvesson & Sandberg, 2014, p. 2) about IB digital education.

1.8 Significance of the study

This study is an opportunity to think problematically and stand back to consider the "conditions of emergence" (Bletsas & Beasley, 2012, p. 4) of a digital IB education for young children. Through an exploration of IBPYP education during the transition to remote learning, I make visible the relationship between IBO policy and teacher practices in a new way, opening a space for understanding middle leaders' problematisations of IB education. The study provides conceptual tools for educators to explore their role in an education policy network increasingly influenced by big technology. The methodology provides tools for pedagogical leaders and teachers to consider the relationship of teaching and leadership practice to their own formation as teachers in IB schools, as well as the formation of students.

1.9 The Researcher

I bring an "insider perspective" (Otoo, 2020, p. 69) to the field of IB education. I have lived experiences of IB as an educator, school leader and IBO policy worker with responsibility for PYP and online learning. I wanted to understand how social actors constructed the experiences of a fully online PYP education so that I could reflect on the multiple perspectives that led to ways of being exclusively online and doing online learning. I was acquainted with the three interviewees through my work in the IBO. My familiarity with the participants and the demands of teaching IB led to my choice of semi-structured interviews as a data gathering strategy. Sharing agency between interviewer and interviewee fits the cultural norms of collaborative and collegial relationship among IB educators, and between IBO employees and educators, and it is desirable in social constructivist research.

A poststructural policy perspective using discourse analysis brings together the "turning points" (Cresswell, 2007, p. 25) in my own scholarship in political science and applied linguistics, and my professional experience in the domain of international education. I played a role in the internationalisation of Australian education, first as a language teacher, then as a director of international students and an international program in the public and private school sectors. In both cases the corporate goals of international education were entangled with the educational goals of an IB education. Working at the boundaries of local and international education led me to take an international post with the IBO. My interest in the construction of otherness and my awareness of multiple perspectives stems from my own bilingual education experience as an outsider in a francophone milieu, then as an immigrant to Australia and an Australian Canadian expatriate in the USA and Singapore. I have developed the sensibilities needed for reflexivity and operating between disciplinary boundaries – local and international, personal and political, commercial and educational, online and in-person education – and to traverse the insider and outsider continuum.

1.10 Chapter outline

Chapter 1

Chapter 1 outlines the study, its conceptual framework and provides a context for the research question.

Chapter 2

Chapter 2 reviews relevant literature establishing the association between technology and education within the IB education system. It presents the pertinence of a critical and post-structural investigation into Australian IB schools' transition to online teaching and learning during the pandemic.

Chapter 3

Chapter 3 details the design of the study, the methodology, and methods of analysis. It also describes the interview process and data reduction strategies used to capture nuanced meaning from the interview dialogues.

Chapter 4

Chapter 4 provides a historiography of the IBO, a longitudinal view of its genesis and development up to and including the pandemic, and a cross section of each major era over that time period, establishing historical trigger points which help to inform how IBO shaped the three IB schools and situates itself within the global education policy network.

Chapter 5

Chapter 5 uses Carol Bacchi's (2016a) poststructural interview analysis (PIA) processes to analyse the interview data.

Chapter 6

Chapter 6 applies Bacchi's (Bacchi, 2009) What's the problem represented to be? (WPR) methodology to the findings from the interviews, and the contextual and conceptual elements raised in the literature review and discussed in historiography of the IBO.

Chapter 7

Chapter 7 discusses the research, crafting the finding into three scenarios of digital IB education. The scenarios capture the underlying assumptions driving the transition to remote learning in each of the three schools while also opening possibilities for new ways of being, doing and thinking about an IB education.

Chapter 8

Chapter 8 offers some final conclusions and limitations of the research. The historiography of the IBO commenced in chapter 4 is completed, hypothesizing an emerging post pandemic era for IB education. The empirical contribution to knowledge in the field of IB education is outlined. Finally, some implications for policy and practice and future research direction are proposed.

1.11 Conclusion

The doctoral thesis examines problematisations of three middle leaders in IB schools. Working backwards from the policy to close school buildings and move learning online, I unpack what the 'problem' of an IB education during a global pandemic is represented to be in three IB schools in Melbourne. The thesis explores the network of 'truths' circulating in each school and the changing status of teachers, students and parents produced through the experience of remote learning. The research focuses on how three IB schools in Australia transitioned a student-centred inquiry based international education to remote learning, in a national policy context that excludes international students, positions education as a service, and technology as a delivery vehicle.

2 Chapter 2: Literature review

2.1 Introduction

In 2020, within the space of a month, almost all schools around the world moved school online (Williamson & Hogan, 2020b). This unprecedented event meant there was very little literature on how schools transitioned to "emergency remote teaching" (Hodges et al., 2020 para 1). In fact, calling digital learning, 'emergency remote teaching' opened new ways of problematising teaching and learning; problematisation being "the process of putting something forward as a problem" (Bacchi, 2009, p. 4) Emergency and remote signified a new type of teaching and learning, one that was more impromptu. Schools were not implementing an existing process called 'emergency remote teaching', they were improvising. Given this was the only time 99% of PYP schools move to some version of remote learning (Riviere & Mills, 2022), it is important to investigate this period. The relationship between technology and education, the role of educational governance, and the characteristics of an IB education are central to understanding the emergence of emergency remote teaching and learning. Given the footprint of IB education in Australia (Kidson et al., 2019), and that Melbourne experienced the longest lock down in the world in 2020 (Hattie, 2021), three IB schools in Melbourne during the first year of the COVID-19 pandemic are an appropriate research site from which to gain insights into how IBPYP coordinators transitioned their IB Programme of Inquiry online.

This chapter discusses the relationships between technology and education within the IB education system. It lays the foundations for a critical poststructural investigation into the transition to online teaching and learning in Australian IB schools during the pandemic. The discussion begins with the pre-pandemic associations made between technology and

education in academic literature and the public domain, situating IBO policy statements on technology, pedagogy and learning, and Australia's digital education policy perspective within the field of digital education policy. A critical inquiry into governance and policy practice establishes the rationale for a post-structural approach to the examination of educational governance and policy making as it relates to the policy to move schools online. The chapter also explores the IB education system: its knowledge base, rules, and the set of obligations which differentiate and legitimise it among other systems of education. Finally, the IBO's governance structures and processes are linked to the formation of IB students, IB teachers and IB PYP coordinators.

2.2 The connection between technology and education

Technology in education is often dichotomised. On one hand, technology is purported to empower users, build community and transform schools into knowledge creating organisations (Scardamalia and Bereiter in Huang et al., 2016) which develop critically minded, socially responsible agents of change (Prensky 2017, Keynote at WISE conference). On the other, technology is seen as a mechanism of enslavement serving corporate aims (Braidotti, 2020). However, even authors, who highlight the dangers of technology (Apple, 2018; Olssen, 2006 p 929; Papa, 2016) acknowledge the potential of technology to be emancipatory. The view that the presence of technology leads to opportunities for positive change in education and provides an opening for democratising education (Cope & Kalantzis, 2013; Harris et al., 2013; Papa, 2016; Wang & Torrisi-Steele, 2015) prevails among social researchers, post-positivist, interactionists and critical theorists alike.

The promise of technology

The “promissory stories” (Auld & Elfert, 2024, p. 2) about technology, linking the goals of education to the functionality of technology, are found throughout statements and policy documents on technology and education. To understand the “promissory legitimacy” (p. 2) of technology in education, Weller (2022) uses metaphors to demonstrate the relationship of technology to education without directly referring to a particular model of education. Metaphors are central to everyday conceptual systems (Lakoff and Johnson 1980 in Weller, 2022) and are often used to compare two things or concepts from unrelated domains, placing them in a dialogical relationship. They can be used to frame social policy problems and their solutions (Schon, 1993), enabling new “interpretations and analytical possibilities” (Gilbert, 2021, p. 441). Throughout the pandemic, scholars used metaphors as a heuristic to support and challenge the claims of technology for education. Hamilton and Hattie (2021) questioned the claims that technology can improve student learning by using the metaphor of the “emperor’s new clothes”, asserting that a fictional claim had gained the status of fact or truth. Watterson & Zhao (2020) liken the digital world to “a foreign culture” (p. 12) to which students have not been inducted, contradicting Prensky’s (2004) earlier and popular metaphor of the “digital native” (p. 1). Nichols (2022) uses the metaphor of the “educational operating model… which can be likened to the institution’s DNA” (p. 7) to describe the parts and systems needed for schools to work. These linguistic techniques are used to promote the use technology and to question the incipit way technology infiltrates the field of education.

The promise of technology in the Australian context

In Australia, ‘access’ underlies the assertions about technology in education. Australia’s School of the Air, founded in 1951 (Ewing & Cooper, 2021) was a technological initiative to

provide Australian children living in remote areas with access to education. Access to the global economy has also been significant in the rationale to bring technology into Australian schools. With that came the increasing importance placed on standardisation of educational measurement and teaching practice (Facer, 2012) and the introduction of a national curriculum.

Technologies have been incorporated into students' daily routines in schools in Victoria (Selwyn et al., 2017). Before the advent of the pandemic, schools were increasingly dealing with the "platformisation of education" (Grimaldi & Ball, 2021 p 115) for school administration, system accountability, teaching, learning and assessment and for marketing and communication. At the macro policy level, Australia's technology promise is to make education more accessible and provide the innovation Australia needs so that students learn in ways that foster global competencies to compete in the world economy. At the system level, technology and particularly student data provide leaders with access to an objective way to measure the effectiveness of programs on student engagement and achievement to meet institutional performance and accountability reporting (Kei Daniel, 2017). At the classroom level, online platforms are introduced with the promise of improving the quality of teaching and learning, through individualised or personalised and adaptive learning.

Technology in an IB education

The relationship between technology and an IB education is described in the IB policy document *Learning, teaching and leading with technology* (IBO, 2021b). Technology is a tool used by teachers and students or a mechanism which is integrated into the process of learning (Mason, 2018). The policy document describes technology as "things and concepts

that are designed to make the world easier to live in and understand" (p. 5). To use technology to augment students' conceptual understanding, they need to first experience it as a physical tool. The IB technology and learning model, (AID 1: agency, information, design and AID 2: Advocacy, insight, divergence) guide both teachers and school leaders in the systems and skills for integrating technology into school practice. The developmental trajectory from AID 1 to AID 2 links the journey of the learner to several IB ecological systems – IB schools, the IB community, the classroom and extended learning environment. It places the skill of discernment at the centre of the process. Discernment is the "skill of applying technological things and concepts effectively in a variety of contexts" (p. 7). The model indexes technology within the IBO's humanist educational philosophy. Technology can act as an extension of humans and an autonomous agent that we need to learn to live with and understand in order to harness its potential to "augment or even define aspects of the school's ecosystem" (p. 20). The AID model guides teachers in ways of being, knowing and doing technology, and ways of extending human collective, cognitive and practical capabilities.

The table below summarises the IB's model of technology and learning.

Table 1: IBO AID 1 and AID 2 technology and learning model

AID 1	**Agency (ways of being)**	**Information (ways of knowing)**	**Design (ways of doing)**
	The will, ability and responsibility to use multiple technologies	The will, ability and responsibility to comprehend, use and reuse many forms of information and data	The will, ability and responsibility to plan, execute and distribute ideas, processes or content
AID 2	**Advocacy (extending being)**	**Insight (extending knowing)**	**Divergence (doing differently)**
	The will, ability and responsibility to use multiple technologies for collective ideals and pedagogical approaches	The will, ability and responsibility to achieve systemic understanding by the use and reuse of many forms of information and data	The will, ability and responsibility to rethink, execute, share or reject ideas, processes or content

(IBO, 2021b)

Even prior to the pandemic, *The role of ICT in the PYP* (IBO, 2011) describes the teacher's role as enabling students to be "discerning producers and consumers of content and tools" (p. 4). Teachers are encouraged to teach students to leverage ICT and cautioned about the risk of simply teaching technology as an end in itself. The concept of discernment has remained constant in IBO technology policy. In *Learning, teaching and leading with technology* (IBO, 2021b), it is referred to as "technology literacy's fundamental critical thinking skill"(p. 7).

Technology and pedagogy

In the debate among educators about whether technology drives pedagogy or pedagogy leads the use of technology (Fawn, 2022), IBO tends towards a pedagogy-first approach to technology and learning. In teacher support material (TSM), *Purposeful technology integration and implementation* (IBO, 2018f), cases of teachers using different pedagogical technology frameworks are provided, such as the "SAMR framework" (Puentedura, 2006 in Nichols, 2022, p. 6) (substitute, augment, modify and redefine) or the TPACK (Teacher

Pedagogical Content Knowledge) model (Mishra, 2019). The cases are intended to augment face-to-face learning using digital technologies. Technology and pedagogy are presented as two independent entities controlled by teachers.

Entangled pedagogy

Some models of technology for learning remove the dichotomy between technology and pedagogy. Teachers and students are engaged in an "entangled pedagogy [where there is] mutual shaping of technology, teaching methods, purposes, values and context" (Fawn, 2022, p. 71). Neither one drives the other. An entangled pedagogy embraces uncertainty and openness where knowledge is distributed, responsive and ethical, with teachers and students collaborating on design and practice (Fawn, 2022). For the most part, IB approaches to teaching can adapt to an entangled pedagogy with the proviso that agency is shared between and among human actors, such as students, teachers and the community.

Technology and civilisation

Dron (2022) represents the evolution of technology and the evolution of civilisation as synonymous. It is the tandem evolution of the two that makes complex thought possible. Dron moves entangled pedagogy beyond human-controlled learning design and moves technology beyond being merely a tool. It is the way technologies and pedagogical activities are assembled and co-created that is important in this equation. The degree to which a technology is deterministic (hard) or additive (soft) is a function of the way the teacher and the learner assemble the activity (Dron, 2022). Within a school context, soft technology can be hardened through rules. For example, students may have the freedom to search any topic, but schools' responsible use policies prevent them from doing so. Dron (2022)

conceptualises technology as a means and an end. Technology-mediated teaching and learning is the orchestration of a network of human and non-human actions for a purpose. Teachers, students and technology are co-participants in a context-specific emerging process. Technologies and pedagogies, both, contain assumptions about how people learn. In and of themselves, they are incomplete without being assembled with other technologies. They are part of the "technology of learning" (p. 156).

2.3 Leadership and governance of digital education

The changing role of educational leadership

In the IB policy documents, digital leadership is subsumed under pedagogical leadership. The IBO definition of pedagogical leadership is grounded in British and North American leadership constructs, encompassing elements of distributed leadership (Harris et al., 2013) school effectiveness (Hargreaves, 2014) and transformational leadership (Leithwood et al., 2020). When "servant-leadership" (Van Brugge, 2012/2013, p. 249), "school effectiveness" (Muijs et al., 2014, p. 231), and "transformational leadership" (Leithwood et al., 2020, p. 16) are used for technology integration, senior and middle leaders prioritise different elements of education. Servant leaders tend to focus on people, whereas effective leaders tend to prioritise resources and processes. Transformational leader champion aspirations associated with their context.

When schools moved online, educational leadership and technology leadership or digital leadership coalesced. Over the past few decades, as schools have become more technologically enabled, the construct of "digital leadership" (Sheninger, 2014, p. 68) has emerged. It was initially constructed as supporting others to be better platform users (Afshari et al., 2012; Chen, 2013; Domeny, 2017; Gurr, 2004; Hadjithoma-Garstka, 2011; van

Welsum & Lanvin, 2012; Yee, 2000). However, the leadership challenges of bringing technology into education are complex. They involve navigating contradictory forces within technology and education. These forces have been summarised as:

- the struggle between hierarchical top down influence and grassroots pressure (Gurr, 2004),
- the shift from the primacy of entities to the primacy of interactions (Floridi, 2015),
- the tension between market-driven and socially-driven educational ends (Apple, 2018; Olssen, 2006; Papa, 2016)
- the divergent and sometimes convergent aims of a skills-based education and one that seeks to build equity and cosmopolitanism (Olssen, 2006; Papa, 2016).

Technology infrastructure in education

Most technology initiatives in education have come from the technology industry, government education systems (Harris et al., 2013) and higher education (Wang & Torrisi-Steele, 2015), sometimes through intermediary organisations (Williamson, 2015). Historically technology was provided through centralised education systems. However, more recently, there has been a shift towards personal devices such as smartphones and personal tablets (Selwyn et al 2017 in Griffiths & Williams, 2018 p. 3), distributing the responsibility for technology provision and use towards students and the family. An Australian report, *Growing Up Digital* (Gonski Institute for Public Education 2020) suggests that the community agrees that technology in education is necessary, yet the responsibility of the government and families for ensuring that students have access to technology is contested (Page Jeffery, 2022).

Teaching and learning spaces

School buildings also play a role in teaching and learning. They are more than containers within which learning occurs (Biesta, 2022). Learning spaces and learning environments are integral to the endeavour of learning, so much so that some have represented them as the third teacher (Children's Education & Care Quality Authority, 2018). In the 2020 pandemic year, with school buildings not available, the virtual world became part of the learning environment, bringing to the fore the socio-material relations in education.

Governance and policy making

Educational governance places the student and teachers between two system of rules – one that manages their conduct, and another "which recognises they are ethical beings capable of reflection, decision making and responsibility for their identity and social relations" (Ball, 2017, p. 61). Educational governance relies on both power over and distributed power (Christensen, 2024) to encourage and control teachers and students to use their agency to manage themselves as members of a community. When governance is defined as a convergence of facts, processes and obligations, policy making can no longer simply be constructed as a technical activity done by experts who solve existing problems using objective data sets (Anderson & Holloway, 2020). In actuality, a myriad of consultations, concessions and alliance building links policy to practices (Ball, 2012). It involves the "interpretation of interpretations" (Rizvi and Kemis (1987) in Rizvi et al., 2022, p. 57). Policies tend not to come with a set of procedures for a range of contexts (Maguire et al., 2015). Rather, they are based on an ideal school type in a "fantastical context" (Ball, 2012, p. 3), constructed around the concept of a population and normal variation which facilitate the measurement and classification of intellectual ability (Arribas-Ayllon and Wakerdine, 2017). During the pandemic, the Australian government represented its

governance role as keeping Australians safe while maintaining a functioning economy. It positioned schools as a mechanism to accomplish economic policy goals within a health crisis. By declaring a national pandemic and invoking pandemic prevention protocols, the government made the case to position schools as a service which produces future human capital for the economy and a place that allowed essential workers to put their children while they contributed to the economy.

Policy enactment

"Policy enactment" (Ball, 2012, p. 12) provides a useful construct for understanding how policies and practices are intertwined in schools, challenging the dominant view that policies are simply implemented as written. They are formed by policy actors within knowledge systems expressed through declarations, policy statements and actions taken, and they are legitimised when constituents take responsibility for their role in making the solutions work. Policy problems are representations of social issues from which policy solutions are derived. Educators and schools are policy actors within a complex network of governance relations with international organisations, intermediary organisations (Chang, 2020), state governments, students and families. The dynamic nature of the pandemic exposed the shortcomings of traditional policy studies which place policy makers in government institutions or in international organisations, like the IBO, as overseeing school implementation. Teachers were not implementing a new curriculum provided to them by the authorities. There was no program waiting to be implemented. Teachers played a crucial policy role in the design, development and implementation of remote teaching and learning. Teachers and middle leaders translated and interpreted high level statements, enacting them in the classroom with students in unique contexts and in real time.

The policy to move all schools online globally

Across the globe, a convergence of facts, processes and commitments led to the acceptance of remote learning as the solution to the problem of the pandemic education (Peters et al., 2022). The logic behind the policy to move schools online can be summarised as follows. Medical science and the tenets of liberal governance obligated the government to close schools to protect the population from a global health threat. Teachers and families needed to shelter at home to fulfill their citizenship obligations in a society founded on liberal government. Learning needed to continue to allow the governance of the economy.

The promise of technology constituted it as an obvious solution to pandemic education. The solution meant the only way to deliver schooling was remotely, with digital technology. The 'force of the science' behind the pandemic, the regular updates about its spread, and the commitment of professional educators to the care of their students as people and as learners, formed through their obligations to field of psychology and cognitive science, contributed to all stakeholders accepting the 'truth' about the pandemic and the need for remote learning. The logic relied on the globally shared assumption that children go to school, that governments make policies, and that citizens are duty bound to support them.

2.4 The making of the IB education system

The IBO as a legitimate educational system, with its own foundational truths, processes and obligations which form teachers and students as IB teachers and IB students, occurred over time. The IB system of education developed as a certain way of seeing and being in the world that progressively became unquestioned or normalised by those who called themselves IB schools and among stakeholders within the global education policy network.

A mix of statements and relationships "install[ed] the IBO as a "regime of truth" (Bacchi & Bonham, 2014, p. 177), giving legitimacy to some knowledge and acknowledging it as true.

> A regime of truth is the strategic field within which truth is produced and becomes a tactical element necessary for the functioning of a number of power relations within a given society. (Lorenzini in Cremonesi et al., 2016, pp. 67-68)

The 'truths' are bound through an allegiance to them, and through the ways IB educators talk about them in relation to themselves and how they have incorporated them into the daily life of the school. Accepting a truth is accepting the human relationships and becoming "part of mechanisms of power" (McHoul & Grace, 1993, p. 22) that uphold that truth. People consent to behave in certain ways and become subjects of knowledge truths. A delicate balance of three elements makes something true – the scientific evidence upon which it is based, the declarations and statements made about it, and the human commitments that bind the truth to actions in the real world. Scientific epistemology, the discursive practices and truth obligations, together create the conditions for certain things to be seen as true, even unquestionable (Lorenzini, 2016).

A regime of truth is not a universal truth but a series of interpretations and the active integration of statements and beliefs within a local situation. Gore (1993) suggests that regimes of truth can be localised. The ways that IB schools delivered education and the assumptions upon which they operate are formed through the local situation in relation to wider discourses circulating around them. The worldview of IB schools references the dominant epistemology in unique ways which contribute to the beliefs, values and actions of the teachers in each school, thus forming the school's "local politics of truth" (p. 56).

IBO's governance practices: Connecting schools to global standards

The IBO governs schools through its authorisation process (IBO, 2018b), asking schools to engage in the process of becoming an IB school.

> The authorization process is school-focused and -driven … designed to involve multiple IB educators and staff who bring their varied perspectives and experience to their interactions with the school. By using a diverse mix of staff, the IB ensures that it can support each school's context as they work towards authorization. The different experiences of IB educators can help schools understand the many ways that the programmes can be implemented in diverse contexts while still adhering to the IB's programme standards and practices (IBO, 2022, p. 3).

The IBO's governance of schools occurs within a global governance landscape. Frankowski's (OECD, 2020) matrix of four perspectives of governance is useful to understand the IB's governance profile. The four perspectives are:

- traditional public administration where governance focuses on the law;
- new public management where the focus is on efficient and effective policy execution;
- a network governance perspective which prioritizes partnerships among "multiple stakeholders in decision-making and policy implementation" (p. 62);
- the societal resilience perspective where social actors and their needs emerge to shape policy "within the bounds of government responsibility" (p. 62).

The IBO's authorisation and evaluation process combines elements of new public management with networked governance. Working in partnership with schools, the IBO supports schools to effectively achieve outcomes and measure results. Notably, the IBO can associate the results of an IB education with other global standards, such as PISA (Steiner-Khamsi & Dugonjic-Rodwin, 2018).

The swing to a global networked governance perspective is one factor that has influenced the IBO to build a digital infrastructure for "datafied monitoring" (Lewis, et al. in Rizvi et al.,

2022, p. 65). The digital infrastructure began with the introduction of a portal connecting IB student exam results to higher education institutions (IB information systems, IBIS) and *the Online Curriculum Centre,* renamed *My IB* curriculum portal at the turn of the century. Also added to the infrastructure were Digital assessment for MYP, *My School* portal for authorisation and evaluation, and most recently, in 2022, *IB exchange,* a professional learning platform. Discursive relations between IBO and IB schools, teachers and students and the IBO and university admissions offices are, for all intents and purposes, mediated through technology (IBO, 2018b).

IBO's scientific epistemology: A cosmopolitan educational standard

Cosmopolitan ethos

The IB project rests on a belief in human reason and science, social progress and a future for humanity (Ben, 2021). The IB learner is the unfinished cosmopolitan, involved in a "never-ending process of making choices, innovations and collaboration" (Popkewitz, 2008, p. 4). "The humanist-liberal education" (Sunyol & Codo, 2019, p. 137) appeals to "the disciplined, self-responsible citizens to act upon themselves" (p. 135) and "advance[s] ideas of internationality and cosmopolitanism in search for a better world" (p. 138). National elites have traditionally had an international outlook. Through travelling and international mobility, they are concerned with global issues like sustainability and global warming (Bunnell et al., 2022).

Cosmopolitanism, like IBO's international mindedness, emanates from humanist principles and a global political attitude that transcends boarders (Savva & Stanfield, 2018). However, cosmopolitanism and international mindedness relate to different aspects of education. As an education system, the IBO can be described as rooted in cosmopolitanism. International mindedness is a byproduct of an IB education. It describes the formation of an IB learner's

identity and “moral character” (Savva & Stanfield, 2018, p. 190). The close association of the concepts of cosmopolitanism, international mindedness and multiculturalism link the IBO to school populations in different ways. The moral and character-building component of international mindedness in the IBO lies in the goal to form

> a cosmopolitan identity which shows tolerance of race and gender differences, genuine curiosity toward and willingness to learn from other cultures, and responsibility toward excluded groups within and beyond one’s society (Popkewitz, 2008, p. 4).

A legitimate field of knowledge

Using a systematic bibliometric review, Jaafar et al (2021) mapped 295 peer reviewed IB research articles and reports from 1967 until August 2018, essentially compiling the knowledge to date on the “characteristics and dynamics” (p. 2) of IB education, demonstrating that IB has become a legitimate field of knowledge. Three key characteristics prove its legitimacy:

- The IBO creates self-referential education standards, establishing a “parallel education system” (Steiner-Khamsi, 2018, p. 384). The growth of the IBO’s brand has enabled it to represent itself as different to other education systems while still operating inside the socio-political context.
- The success of IB students is evidence of the maturity of IBO as an education system.
- Finally, the IBO’s research agenda indicates a desire to continually question its central proposition of international mindedness and global citizenship.

Together these structures, processes and relationships have resulted in the IBO being considered a field of knowledge, and over time IBO has become a ‘regime of truth’. Organisations like the IBO are referred to by the United Nations (UN) as “the third UN”

(Carayannis, 2021, p. 6), working with stakeholders in the development of materials to amplify policy change and encourage particular policy problematisations (Orr, 2023).

Obligations to the IBO: Meeting the IB standards and practices

Schools agree to the IBO's regulations when they upload documentary evidence of their adherence to the IB programme standards to IBO's *My School* portal. Once authorised, schools can use the IB logo and students can gain a credential from the IBO. The commitments are an example of what Foucault had called as a "confessional science" (Lorenzini, 2023b, p. 18), one that is also dominant in western society and complements the scientific epistemology. People commit to 'truths' through their words and actions. Correspondingly, they are free to critique these regimes of truth and do so by resisting them, adapting them or even rejecting them. For example, when schools in Melbourne choose to become IB schools, they question the Victorian education system. By adopting an IB education, they challenge the scientific and the confessional regimes of truth of being a Victorian teacher. The truth that binds them and forms them as educators is now also influenced by the self-refencing IB system of education and the ways of knowing and inquiry pedagogy of the IBO.

2.5 The formation of IB students, teachers and coordinators

Western education is underpinned by several inquiry systems which have emerged over history and continually influence the ways we obtain and conceptualise knowledge and truth (Mitroff, 2019a). Each inquiry system has a different purpose in its design and its own knowledge base that frames the world and forms people in relation to that knowledge.

Churchman (1971) classifies the inquiry systems in western thought by author – "Leibnizian" (p. 33), "Lockean" (p. 105), "Kantian" (p. 140) , "Hegelian" and "Singerian" (p.

178). Mitroff uses more everyday language to describe each type of inquiry system – one true formula (Leibnizian), expert consensus (Lockean), multiple perspectives (Kantian), expert disagreement (Hegelian), and systems thinking (Singerian) (Mitroff, 2018). (See Appendix F table of inquiry system for more detailed comparative description of the five inquiry systems.) These different inquiry systems provide a useful lens to unpack the underlying assumptions about students' relationship to knowledge and the real world in PYP inquiry-based learning, particularly as inquiry is the lead pedagogy of the IBO. In IB documents, inquiry is framed as different activity types, such as, direct instruction, guided inquiry and open inquiry obscuring the underlying knowledge relations within these approaches to teaching and learning.

Positioning the student in relations to the world

The ways of knowing and the origins of knowledge vary across the inquiry systems, positioning the inquirer in different relationships to knowledge and the world.

- In Leibnizian inquiry system, for example, pure knowledge and logic place the inquirer outside of the material world. Doing Leibnizian inquiry develops ways of being that form the student as a model maker.
- In system thinking or Singerian inquiry systems, knowledge comes from ethics and aesthetics and is interdisciplinary, placing the inquirer as part of the system.
- In Lockean inquiry systems, knowledge is validated by expert consensus and comes from logic via sense making.
- Kantian inquiry systems combine the attributes of Leibnizian and Lockean inquiry, relying on multiple perspectives uniting the inquirers' prior knowledge with new input during the inquiry process.

- Hegelian inquiry systems are dialectical. They validate knowledge through challenging ideas and juxtaposing conflicting knowledge systems to create new ideas (Churchman, 1971).

Although embedded in the PYP guidance to teachers is a predominantly Singerian stance on the relationship among the learner, learning and teaching, and the learning community, it is never overtly declared, leaving it up to schools to decide how they interpret inquiry pedagogy and the ways of doing inquiry.

When the pandemic moved learning online, the teachers needed to reconfigure the ways of doing inquiry, potentially changing the students' relationship to knowledge, its validation and how the student relates to the world, while remaining within the parameters of the PYP Programme of Inquiry (POI).

Forming students and teachers through the PYP Programme of Inquiry

A school's POI is based on a set of six transdisciplinary themes which are taught across all year levels using approaches to teaching and learning that integrate subject disciplines. Single subjects can be taught as standalone units but must relate to the overall POI and link to the transdisciplinary themes. The programme design reflects a systems thinking approach "where inquiry is the creation of knowledge by an individual who extends their perception of themselves and of the world to what it could be or ought to be (Churchman, 1971, p. 276). In the PYP, all subject areas have equal status and drive transdisciplinary understanding of big ideas. The transdisciplinary themes bring the learner into an inquiry system that does not lead to answers but more and better questions. Objectivity in systems thinking is achieved when the expressions of the inquiry are derived through bringing different knowledge forms together. In the PYP, these different knowledge forms include

the school disciplines of the arts, the sciences, the humanities and so on, and have a teleological goal of the improvement to society expressed as the IB's mission of a better world.

Being a PYP learner

The IB learner profile defines an inquirer as a lifelong learner intrinsically motivated to learn alone and with others (IBO, 2018b). Submissive students ingesting knowledge from the teacher are replaced with active learning in search for multiple perspectives, which can be student directed or arise from the moment, all coordinated by the teacher. This student-centred approach critiques the view of the child as a consumer of knowledge divided into discrete subject areas by connecting them to the others and the wider world. The PYP challenges traditional primary school methods by asking students to focus on becoming a global citizen and to interact differently with each other and with knowledge in learning space that allow self-expression.

Being an IB teacher

IB teachers show their dedication to the profession through translating and interpreting IB documents into day-to-day practices. This process of committing to a knowledge regime and self-regulating oneself around it has been called "subjectivation" (Lorenzini, 2023b, p. 11). It is where we self-constitute ourselves as an IB professional, joining a long line of like-minded professionals who came before us. Confessing to being an IB teacher links teachers to an 'IB truth'. Subjects are produced through epistemic and personal obligations.

The pandemic put teachers in new relations to the virtual and material. They had to reevaluate educational practice.

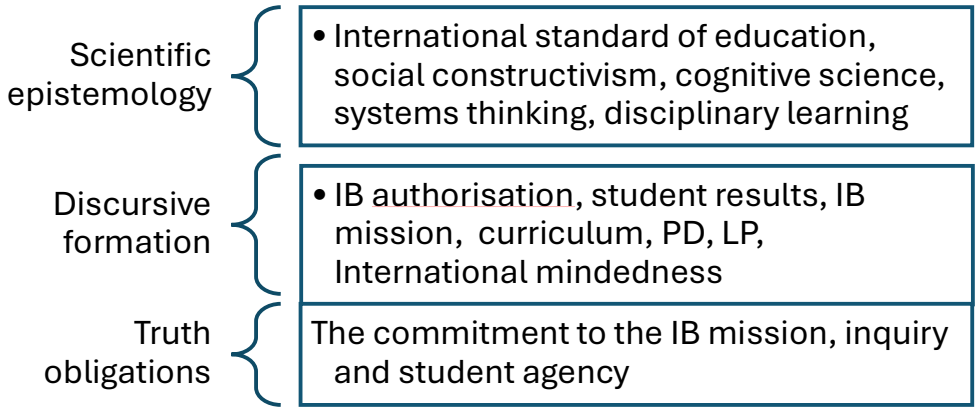
Being a PYP coordinator

IB coordinators communicate how "a particular version of knowledge is to be seen as truth" (Khan & MacEachen, 2021, p. 4) in their school. They influence other teachers and their students. They also hear statements made by the school leaders, the IBO and the national policy actors. Simultaneously, they hear the declarations and protests or confessions of other teachers, students and parents in different forums, such as during parent teacher interviews, and at collaborative planning meetings. They critique, interpret and turn the interactions into localised IB practices; at the same time, constituting themselves as IB primary school teachers in independent schools in Melbourne Australia.

The pre-pandemic governance relations between IB schools and the IBO

IB PYP school communities entered the pandemic with a commitment to the IB mission, inquiry and student agency. They were influenced by the IB authorisation processes, IB student results and IB statements such as the mission, curriculum documents and professional development materials which foregrounded the learner profile and international mindedness. These commitments rested on international education standards, social constructivist curriculum, cognitive science, systems thinking and a focus on disciplinary learning. The IB's regime of truth pre-pandemic is summarised in the figure below.

Figure 1: IB regime of truth pre COVID-19



(Richards, 2025)

PYP coordinators were faced with the challenge of transitioning IB PYP inquiry learning online using legacy technology (not generative AI or even immersive environments) designed to replicate traditional transmission teaching (Reich, 2021). They could choose to maintain the existing approaches to learning and leading or evolve how they led the teachers and school community. Either way, they had to develop and implement a digital IB education within the governance practices of the day.

2.6 Conclusion

The move to remote teaching made it difficult for teachers and students to maintain their current technology for learning practices. It forced them to evaluate how they positioned technology in relation to learning, teaching and leading. The policy to mediate all learning through technology distributed school across place and time and placed the focus of middle leaders on orchestrating students learning and teaching in new ways.

To understand how PYP coordinators transitioned the IB Programme of Inquiry in their school to online, it is important to understand the local interpretations of governance

expectations, and how they shaped the ways of being IB teacher professionals and IB student inquirers. The next chapter describes the methodological approach taken in this thesis to identify the conditions of emergence for teachers to translate student-centred inquiry learning into a remote IB Programme of Inquiry and the effects produced through their making of a digital IB education.

3 Chapter 3: Methodology

3.1 Introduction

The thesis uses a qualitative research methodology which is Carol Bacchi's (2009) 'What's the problem represented to be?' (WPR). It is supported by three methods, historiography and archaeology (Gale, 2010), and poststructural interview analysis (PIA) (Bacchi, 2016a). Together they are used to analyse and interpret policy statements and interview data about the transition to remote learning during the first year of the pandemic in three IB schools in Australia. The methodology draws on discourse analysis of public policies and policy enactment in local contexts. It takes an exploratory and inductive approach to understanding the "paradigmatic reasons" (Cresswell, 2007, p. 55) and antecedents to the formation of a digital IB education as communicated by PYP coordinators in the three IB schools.

Comprehending the transition to remote learning during the pandemic involves a historical process of identifying discourses that surround national, local, and IBO educational goals and determining "governance strategies that emerge from them" (Laursen & Jensen, 2024, p. 5). Historiography is used to trace the emergence of the IBO as a legitimate system of education. Poststructural interview analysis examines the representations of PYP coordinators' day-to-day decisions. Poetic inquiry is used as a data reduction technique to distil interview comments, capturing the nuances of spoken language through a functional semiotic approach (Cope, 2020) to parsing statements into 'poems' with a focus on the meaning potential of language. (Cope, 2020) The methodology connects the problems of practice in PYP coordinators' statements to the wider discourse practices within the field of IB education and educational technology (EdTech), highlighting the potential of different

forms of IB education to emerge when schools closed and learning was mediated by technology.

3.2 The methodological design of the study

The data analysis starts with a longitudinal analysis of IB education, constructing historical periods (chapter four). Each period undergoes a cross-sectional analysis of the development of the IBO in relation to the policy environment of the time. The policy analysis identifies historical and cascading relationships between IB schools and educational governance bodies, in particular, IBO and national education systems. Following this, the PIA processes are applied to the interview statements made by PYP coordinators about the challenge of transforming the school's PYP Programme of Inquiry online. The six WPR questions are then used to deconstruct, interpret and "restory" (Cresswell, 2007, p. 56) the findings from the PIA processes with the dichotomies, silences and possible disruptions developing within the context of the pandemic. The findings are summarised into three scenarios which are then interrogated for emerging trends and future policy problematisations for IB schools and the IBO.

The research question

The process can be described as "ascending analysis" (Gilbert, 2021, p. 441) as its begins with discourse practices evident in schools from interviews and explores the effects on the actions and formation of teachers and students and their relationship to the wider policy context. This serves to address the research question:

How did PYP coordinators shape teaching and learning, themselves and their students during the transition to remote learning during the COVID-19 pandemic?

and the sub-question:

How did the IBO shape IB schools and international education at this time?

Relating the practices in IB schools to "how national and global forces intersect in education policy" (Lee et al., 2024, p. 174) highlights the assumptions underpinning how middle leaders in IB schools and the IBO constitute and enact the problem of merging IB education and technology. This chapter (chapter 3) elaborates the WPR methodology in the design of the research, then explains policy historiography and archaeology (Gale, 2010) before describing the three schools and their pre-covid localised regimes of truth.

3.3 The methodology

What's the problem represented to be? (WPR)

What's the problem represented to be? (WPR) methodology (Bacchi, 2009) questions what underlies the formation of a 'problem'. It identifies the beliefs, values and constructs that lead policy actors to conceptualise social problems and their governance in particular ways. A number of studies examining social issues have applied WPR (Arar & Örücü, 2020; Bacchi, 2016b, 2020; Bonham & Bacchi, 2017; Brown, 2005; Deuel, 2021; Devaney & Limerick, 2019; Forde et al., 2021; Ideland et al., 2021; Philip, 2019; Sam, 2019; Van Aswegen et al., 2019). Fewer studies have taken a poststructural approach in examining IB education (Ben, 2021; Palmer, 2022).

WPR (Bacchi, 2009) is a recognised methodology framed around six questions. In this thesis the questions crystalise problematisations of each PYP coordinator and the effects on teachers, students and parents of their 'solutions' to pandemic education. Before it is possible to see the effects of the policy to move schools online, it is important to understand of how the schools characterised and communicated the issues, concerns and solution to their school community. The process of analysis identifies the way three problem

representations were constituted as real ‘problems’. The WPR methodology enables the identification of underlying assumptions that formed the localised regimes of truth (Gore, 1993) which influenced the PYP coordinators’ representation of the problem of online learning during the pandemic.

The methodology puts the key theoretical concepts of problematisations (Bacchi, 2009), regimes of truth, and subject formation (Lorenzini, 2016) in a dialogical relationship with interview data. The analysis of these relationships surfaces each school’s approach to remote learning and the associated obligation that led the school to enact continuity of learning in the way that they did. The process reveals how certain approaches to emergency remote learning were ‘normalised’ in each of three IB schools.

The six questions are outlined below, followed by an explanation of how they were applied in the thesis.

WPR questions

1 What is the problem represented to be in a specific policy?

2 What presuppositions or assumptions underlie this representation of the 'problem'?

3 How has this representation of the 'problem' come about?

4 What is left unproblematic in this problem representation? Where are the silences? Can the 'problem' be thought about differently?

5 What effects are produced by this representation of the 'problem'? What is likely to change with this representation? What is likely to stay the same? Who is likely to benefit from this representation? Who is likely to be harmed? How does the attribution of responsibility for the 'problem' affect those so targeted and the perceptions of the rest of the community about who is to 'blame'?

6 How/where has this representation of the 'problem' been produced, disseminated and defended? How could it be questioned, disrupted and replaced?

(Bacchi, 2016b p. 9)

The application of each question in the research analysis

- Question 1 – what is the 'problem' represented to be in a specific policy? – interrogates what each coordinator proposed to do, bringing to the surface assumptions about the issues.
- Question 2 – what presuppositions or assumptions underlie this representation of the 'problem'? – links their problematisations to the "knowledge systems that constitute them" (Riemann, 2023, p. 156), looking for cultural antecedents, not causal relationships.
- Question 3 – how has this representation of the 'problem' come about? – delves into the background or implied problems of the representation that led the PYP coordinators to shape their solutions. It unearths the power relations among people, knowledge and actions.
- Question 4 – what is left unproblematic in this problem representation? – looks at what they did not say, revealing how and why each coordinator highlighted certain issues and not others.
- Question 5 – what effects are produced by this representation of the 'problem'? – focuses on the effect of the problem representations: discursive, subjectification, and lived effect.

- Question 6 – how/where has this representation of the 'problem' been produced, disseminated and defended? – explains how the problem became accepted as truth, or can be questioned and potentially disrupted.

Each question builds on the next, exploring the way the 'problem' of remote learning came about and the effect of the transition to remote learning on IB teaching and learning and on the formation of IB teachers, students and parents in each school context.

3.4 Methods of policy analysis

Policy historiography

Historiography is a way of "storying policy" (Gale, 2010, p. 384). It takes a longitudinal approach to historical relations across time periods, not to come up with an objective view of past events but to look at the concerns of the present through a historical lens (Gale, 2010). It links societal and global issues to individual local concerns in a policy domain. It is used to examine the tactical policy elements that evolved and grew the IBO's global footprint, moving it from an elite international certification for children of diplomats to a continuum of international education (pre K–12). Tracing the changes and adjustments IBO made to its policies and processes foregrounds the socio-political forces that propelled the IBO in different time periods. A historiographical process challenges dominant interpretations of history, potentially dispelling or even refuting commonly held assumptions, opening up the possibility for different interpretations of being an IB school, an IB teacher and an IB student over time.

Archaeology

An archaeological approach (Walton, 2010), on the other hand, examines the diversity of competing discourses within knowledge systems during one time period, creating a cross-

sectional view of that era (Strawberry, 2012). As researcher, I divided the history of the IBO into six eras, stretching from the foundational period to the post pandemic era, identifying the emergence of a dominant discourse in each era, noting that the dominant discourse often silenced multiple perspectives or pushed some statements to the background. Archaeology exposes what statements emerge as acceptable over all the possible statements at a particular juncture in history. Those acceptable statements are treated as the 'truth' at a particular time. Tracing the dominant discourses reveals the 'truths' IBO challenged, and those it normalised in each time period and the type of subjects being shaped by the discourses. The historiography and archaeological analysis of the IBO identifies the antecedents to the problematisations of the three IB PYP coordinators interviewed for the thesis.

3.5 Interviews and interview analysis

Semi-structured interviews

The "research interview" (Muijs, 2011 p3) is used for critical inquiry into how the PYP coordinators constructed learning and teaching, themselves and their students in pandemic conditions. The research questions set the contours of the interview. Interviews are also sites of knowledge practices (Devaney & Limerick, 2019). Semi structured interviews are intentionally relational and formative of both the researcher and the research participants. The interviewee is "someone who acknowledges themselves as a particular kind of subject" (Bonham & Bacchi, 2017 p 690), in this case, an IB PYP coordinator. The PYP coordinator, an official IB role (IBO, 2018d), hired by the school, is authorised by the IBO to make declarations that influence other teachers and students. They are the embodiment of the IBO within each IB PYP school. Their statements and the knowledge behind 'what is said'

forms teaching practice, teachers and students and discloses the assumptions that underpin the relationship between the IBO and IB schools. The interview statements are performances of the role of PYP coordinator, where they "speak of themselves as particular kinds of subjects" (Bonham & Bacchi, 2017, p. 690). Subject formation has two basic dimensions, one that is formed through adhering to regimes of truth, and the other, through rejecting aspects of a regime of truth in favour of "one's own understanding of self" (Grecu, 2008, p. 71). The PYP coordinators formed themselves in relation to the contextual features of each IB school.

Both the IBO and the national education system contribute to the formation of school context. The interview gave the coordinators an opportunity to say how they accepted, resisted or critiqued the "mechanisms of power" (Lorenzini, 2016, p. 63), be they technological, system level governance or situational, and how they developed alternative ways of being teachers, while school was not in school buildings. Working from the premise that teachers are policy actors who interpret and translate policies through everyday actions turns interviews into sites where the dynamic relationship between policy and practice unfolds.

Recruiting participants

The recruitment process began with an initial survey about the experience of using technology for learning among IB PYP schools in pre-pandemic Australasia. The Manager of IB World Schools Australasia shared the link to the survey, an information sheet about the project, along with an invitation to participate in the study with members of the IBPYP Australasia network community, an official IB community. The last question on the survey was an invitation for interested PYP coordinators to participate in an interview on the policy to close schools and their response to it.

Those people expressing interest to participate in an interview received a follow-up email to confirm interest and were sent the consent form for signing, and the list of interview questions (Appendix B). As per ethics requirements, they were thanked for being volunteers and were told that they could withdraw at any time. Anonymity was assured.

Because only 13 people across Australasia took the survey after the first lockdown, and an additional six after the second Victorian lockdown, the sample size was not deemed to be large enough to warrant including it in the analysis of data for this research. The main purpose of the survey was as a recruitment tool and to provide demographic data about the three interviewees' context. Six people expressed interest in participating in the interview. Victoria went into lockdown four times over the period of the research. Given the extent of the lockdown in Victoria, I decided to focus the study on Victoria, leaving only three participants. They were all teaching in independent schools. Therefore, the suspension of research in government schools did not extend to them. Legally the study could go ahead. From an ethical perspective, as it was an opt in process it was felt that workload was not a major issue as the time commitment was one and half hours including the interview and reviewing the transcript. I was no longer in a leadership role in the IB and the research was independent of the IBO. This mitigated any possible perception of coercion. Additionally, the interviews were an opportunity to engage in their own reflection on what they were experiencing. Those who chose to participate potentially would gain from being able to anonymously talk about the unusual circumstances.

Timing of interviews

Interviews took place late 2020 and early 2021. Three PYP coordinators in Victoria were interviewed virtually over Teams soon after they completed the survey. Each interview took around 45 minutes. The interview data was transcribed using manual and computer-

assisted techniques and shared with interviewees for verification before the analysis phase commenced. Any identifying information was removed. The school and research participants continue to be anonymised in the research study and any future publications about the study. An application to the Flinders University Social and Behavioural Research Ethics Committee was approved (Appendix A).

Poststructural interview analysis (PIA)

Poststructural interview analysis (PIA) (Bacchi, 2016a) focuses on what is said rather than who said it. The PIA process is an analysis method that facilitates the interpretation of the different meanings produced by texts (Khan & MacEachen, 2021) and how meaning is tied to rules that govern the way we speak (Arribas-Ayllon and Wakerdine, 2017). The method consists of seven processes. The processes look for attribution through ways of being and self-formation by the interviewee, and the type of information they prioritise.

PIA is used as a tool to find how PYP coordinators act within the very discourses that shape their understandings of IB teaching and learning during the pandemic. The method identifies how they manage the social relations through what they say (Arribas-Ayllon and Wakerdine, 2017) by mapping how discourse "operates to establish their knowledge credentials" (Bacchi, 2016a, p. 117). By producing genealogies of what is said (Process 2), the self-formation of the PYP coordinators as subjects of an IB education and how they constitute school education comes to the fore. The analysis highlights the dominant discourses which privilege versions of remote IB teaching and learning and the social relations and structures that legitimise them. It also points to potential opportunities for things to be different. The method explores what the solutions described by the coordinators represent about teaching and learning, teachers and students in IB schools.

The six PIA processes were applied to the semi-structured interview data to interpret:

- how school as a place is formed;
- how PYP coordinators construct themselves as IB middle leaders and teachers;
- how students and their parents are made into subjects and objects of an IB education.

The steps of the PIA processes are outline below.

Steps of the PIA process

Steps
Process 1: Noting "WHAT IS SAID"
Process 2: Producing genealogies of "WHAT IS SAID"
Process 3: Highlighting key discursive practices
Process 4: Analysing "WHAT IS SAID"
Process 5: Interrogating the production of "subjects"
Process 6: Exploring transformative potential
Process 7: Questioning the politics of distribution

(Bacchi & Goodwin, 2016)

Process 1 captures what is said by the coordinators, looking for normative implications, such as ways of being, and particular ways of thinking, feeling, and characterising things. I noted what each coordinator said, highlighting themes that came out of their statements, such as inquiry, leadership or online teaching and learning.

From the key discursive practices that emerged from Process 1, I identified the way each school represented practices. The enabling factors that made interview comments possible were also identified, noting information that was privileged. This brought to the fore the norms being invoked and the localised regime of truth upheld by each school community. Within each school community, the subject positions of teachers, students and parents

became apparent as the coordinators talked about what separated them from other schools, campuses and communities.

The analysis then shifted to the transformative potential of the new situation in each school context and potential biases of the interview itself and its role in reinforcing or challenging "pervasive ways of thinking" (Bacchi, 2016a, p. 120) between the interviewees and the interviewer.

Questioning the politics of distribution

The interview questions (Appendix B) interrogate practices in schools and their influences, such as teacher and student attitudes, approaches to using technology for learning, and school policies about technology and learning. The bulk of the interview questions and answers were about the use of technology to support inquiry, the coordinators' leadership of learning and their reflections about the implications of the experience. Asking how teachers are using technology for learning implies that technology and learning are linked and reflect the IBO's construction of technology as a conceptual tool, used intentionally by students and teachers alike, with a clear purpose in mind. There was an assumption that the schools had a policy on technology and goals associated with its use.

I specifically asked about the community's perception separately from the teachers' perception opening the possibility that there could be similarities or differences. This question was derived from the academic literature and popular narratives about different groups' attitudes and skills regarding technology. Young people tend to be described as digital natives while older people are digital immigrants (Prensky, 2004). In the literature, teachers and school leaders are generally described as lacking in skills and very resistant to technology adoption.

The question referring to how teachers learn to use technology to optimise the design of learning allows the interviewee to pick up on teacher learning, or the use of technology, or both. Specific questions on inquiry and the preparedness of teachers to use technology for inquiry-based learning guided the interviewee to discuss the IB's inquiry pedagogy. The future needs question allowed the coordinators to reflect on what they did and how they worked together, as well as how they might do things differently. This is a typical formula or "pervasive way of thinking" (Bacchi, 2016a, p. 120) in IB programming. Teachers, sometimes with students, review and reflect on the implementation of a unit of inquiry to understand what the teacher learned from the process and how things might be different next time. Finally, the focus on their leadership opens the opportunity to discuss what changed through the experience and what they see as new problematisations for the future, evoking a stance of reflective practice where teachers reflect on what they have learned and its impact on future actions.

3.6 Data reduction: Capturing spoken language

Spoken language is not pre-planned and edited for an audience in the same way as written discourse is. Interview comments happen in the moment and are interactive in nature, relying on cues from the interlocutor to drive the discourse forward. The desire to capture the socio-emotional and linguistic aspects of the interview led me to begin to explore a process of turning interview comments into data poems. I read the transcripts numerous times, looking for themes formed through the relations between and among statements and the interviewee and myself. As I did, I began to see a pattern in the structure of the interview transcripts. Linguistically, all messages can be parsed into two parts: theme and rheme. Normally in spoken English, we thematise what is important by placing it at the

beginning of the utterance. The rest, the rheme, follows. In spoken language a common theme/rheme structure is to lead with the topic and then follow with a comment. This is often referred to as the topic/comment structure. As the interview transcripts were spoken and language written down, the topic comment structure was evident. Generally, each time the interviewee made a new move or changed tactic, a new theme was introduced. I leveraged this spoken language structure to re-story the narratives of the PYP coordinators while capturing the socio-emotional dimension of the interview comments.

Poetic inquiry

To use language as data (Newton, 2010) without taking away from the spontaneous, character of conversation, I employed "participant-voiced poems" (Owton, 2017, p. 43) as a data reduction technique. I use the linguistic features of poetry to capture the constraining and enabling functional effects (McHoul & Grace, 1993) of the participants' statements. Prose poetry is "a literary composition that is not verse but exhibits the intensity of imagination and language common to it" (Owton, 2017, p. 44). I created small texts that resembled prose poems by selecting words and phrases from the interview and formatting them into stanzas. To do this, I deleted fillers and duplications, clustering ideas while maintaining the phraseology of the interviewee. My own interpretations are most evident in the titles that I created for each poem. The titles can be thought of as the themes or topics that emerged from dividing the transcript into sections.

Crafting poems from data

Two extracts from the interview data collected are juxtaposed and compared to the data poems crafted to show the fidelity in meaning while rendering the data more accessible to the reader.

Example 1

The transcript on the left was reduced to the data poem on the right. The highlighted text was used to create the poem.

Table 2: Comparing a transcript extract to a data poem – example 1

Transcript	Data poems
Sue: "So some examples of how teachers at your school are using technology for learning. Katie: 'Yeah, it's a really interesting question, that one, and it made me think about, you know, technology for learning or technology as the tool to replace the face to face. And I've, I have to think some more about, you know the differences there because, you know, we really did hit the ground running." 'Our students in P to 4.' P to 2 had a one to two iPad ratio or threes and fours or one to one. The fives and sixes were on netbooks and so when we went into lock down over that, you know, the Easter holiday break. We bought an extra whatever it was 500 iPads across the college so that we had a one to one iPad ratio. They were configured for the students to be able to use, to support us, so it was easy login. So we were using Teams as a communication tool so that teachers could have face to face interaction with our students and we introduced Seesaw as, I think you know, hundreds of other schools globally have done. I'd like to have shares in that company at the moment.' Sue: "Yeah, that and Zoom right?" Katie: 'yeah. So we started with Seesaw as a as a way for our students to be able to communicate their learning with our teachers, at 5 and 6 with computers they already had the, the technology that they were using in different ways, but we had just by chance had a PD session about using One Note in early February, and our five six teachers, we've got some very Tech savvy people there, they just thought this was wonderful and had started using it quite a lot. so when we went into lockdown One Note became the vehicle for instruction. We also have Schoolbox as the College's learning management system which we call WISE. 'And so that was also sitting there as well. It was certainly used by the secondary's, but not so much by us. It was more apparent as a communication tool. So, sort of, in saying that, in terms of having the technical infrastructure, that was how we managed what we did, it then became vital that we all have PD. So for teachers, first to learn how to operate the systems we have, what we call is a Digital learning practice team	**Title: Online communication tools - from zero to 100** *Teams* a communication tool teachers face to face interaction with students using the voice functionality to give oral conversational feedback and for reading *Seesaw* a platform to see kids in action for students to communicate their learning with teachers for teachers and students to create videos, take a photo and upload it. *One Note* vehicle for instruction for 5 and 6. *School box* the learning management system *Padlet* to support students being able to upload images and responses *PowerPoint* as the way of enabling kids to give feedback to each other using the comment functionality

of five people across the College and their, one of their main roles is instructional support and PD provision and supporting teachers. And so we had one on one courses in how to learn Teams by sitting on Teams and having, you know, webinar meetings for an hour. We did the same with Seesaw. All of those were recorded. People could go back to access, so we went from zero to 100 in terms of having to communicate with our students.' 'Over the course of the lockdown we engaged in lots of different ways of looking at technology to support how we wanted kids to access learning. We also maintain some of the things that we had already set up and used in place. For example, we have a 'Um?' 'No, we were back at school by then, a , just thinking we have a technology unit that we run in year 2. For example which uses feros and other technical tools. Scratch junior. So we're using those." 'We use Padlet a lot to support students being able to upload images or responses and for our kids to give responses back.' 'We didn't use a lot of Teams to go out into breakout rooms. We started to do that more towards the end with fives and sixes. We were sort of not quite sure how the kids would respond to being in a chat room on their own, but they did that really well, and, had we been in longer, I think certainly threes and fours would have started to do that in smaller groups.' Katie: 'We used PowerPoint particularly at year four as the way of enabling kids to give feedback to each other, so using the comment part of the PowerPoint functionality there.' Katie: 'In Seesaw a lot of we did, a lot of Teachers, created videos for the kids and then the students doing work. A lot of their work was really just, you know, take a photo and upload it or create a video and upload that. So we were getting an opportunity to see the kids in action. The interesting observation there was for some of our more introverted students that way of learning really suited them, and they really came out of their shell, they weren't afraid to take a video of themselves explaining their learning and then upload that, and they really grew.' 'We used the voice functionality in OneNote and Teams quite a lot for kids to give oral conversational feedback or to read so that teachers could hear them reading.' 'Um, so it was really a case of adapting to what we were trying to teach and modifying that so that we could get the kids to be able to access it.' 'Our teachers really, didn't know Seesaw has lots of, a library of materials, for people to access. I'm not sure we actually saw any teachers access the library. I think that they were very much focused on where my kids were then and now,	*Scratch junior* We maintained some of the things we had already set up We went from zero to 100 in terms of having to communicate with our students

what do I need to be teaching them? How am I going to do that in a remote space?'	

Example 2

Another example of the transposition of the transcript to poem, this time related to leadership, appears in the table below.

Table 3: Comparing a transcript extract with a data poem – example 2

Transcript	Data poem
Katie: 'Um? In the first lockdown, that was really about survival and we were very keen to find out when we were coming back. So you know we did it 'cause we did it. I think we did it. In terms of our communication with our parent body, and with staff. "I think we did that amazingly well, but it was at a huge cost. You know I was exhausted, absolutely exhausted, it was dotting Is and crossing Ts. And you know up till 12:30 and just getting documents ready for the leadership team to proof and give feedback on in order to be able to share with all the teachers on a Friday lunchtime so they knew what they had to do in preparation for the next week. And then once we had agreement there, and it was all, you know, every so often I'd call a meeting of teachers and go: Right, P to 2s. I need to see you at 2:00 o'clock and I go right da, da, da, da, da, right tell me because I wasn't the one in front of the kids everyday so I needed to know what was doable and achievable from them. "And then I'll have to weigh it all up and go OK, Alright?" "This is what we're going to do, and so every week teachers would get: Here's what we're doing in this week, and then we'd use that relevant information and send it home to parents as well so. That was fine.	**Title: Survival leadership** First lockdown we were very keen to find out when we were coming back. we did it 'cause we did it We bought an extra 500 iPads across the college it was dotting Is and crossing Ts Up till 12:30 am, just getting documents ready for the leadership team to proof and give feedback on to share with all the teachers on a Friday lunchtime so they knew what they had to do in preparation for the next week once we had agreement there I'd call a meeting of teachers and go: Right, P to 2s I need to see you at 2:00 o'clock and I go right da, da, da, da, da Right, tell me because I wasn't the one in front of the kids everyday

	I needed to know what was doable and achievable from them And then I'll have to weigh it all up and go OK, Alright This is what we're going to do Every week teachers would get Here's what we're doing this week then we'd use that information and send it home to parents it was at a huge cost I was exhausted absolutely exhausted

This technique supports the broad view of discourse analysis, which positions discourse as constitutive of the world, not simply a mirror (Thrift, 2005). Poems allow readers to go beyond literal reading of texts, evoking the emotional and relational aspects of the narratives. Using the words of the interviewee, I grouped their narratives to form rich messages, making the transcripts more accessible to the reader. Fifty-one data poems were created from the three interview transcripts:

- 14 from interview one in School A;
- 25 from interview two in School B;
- 12 from interview three in School C.

The list of data poems can be found in Appendix D.

3.7 The Context of the Thesis

Three IB schools in Melbourne Victoria

In Victoria, teaching is treated as a technical skill where the government provides teachers with high impact strategies that come from worldwide research and can be used as "a bank of reliable instructional practices" (Department of Education Victoria, n.d.). Alternately, in IB education, teachers propose teaching and learning strategies through ongoing planning and reflection. IB teachers temper their practice with the evidence from ongoing inquiry, their classroom experience and IB guidance. Transdisciplinary learning constructs knowledge as changeable because the inquirer is the main actor in any inquiry and their "history, beliefs and values frame their ways of thinking" (Montuori, 2013 in Learning and teaching in IBO, 2018d, p. 7). A transdisciplinary approach to teaching and learning "has relevance between, across and beyond subjects and transcends borders that confine them to connect to what is real in the world" (Learning and teaching in IBO, 2018d, pp. 1-2). The goal is not to find one outcome but use inquiry to develop conceptual understanding. "Planned and unplanned curriculum" (Behrenbruch, 2012, p. 38) have equal status supporting a view of knowledge as socially constructed rather than one fixed universal truth.

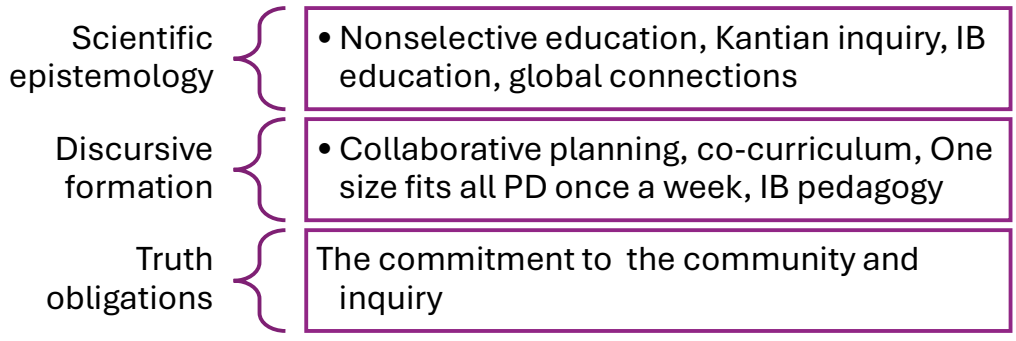
In normal times, IB PYP teachers deviate from the norms of the Victorian system to some extent by offering an action-oriented inquiry-based international education. During the pandemic, the challenge was to frame technology-enhanced learning as synonymous with their localised regime of truth as well as with an IB education. To understand the context of each school and their obligation to their communities going into the pandemic, the statements on each school's websites were classified into the elements of a localised regime of truth. The summaries and diagrammatic representation of each school's localised regime

of truth highlight the unique context of each of the three schools. Grouping the contextual elements in terms of the scientific epistemology, discursive practices and truth obligations provides a construct for comparative analysis. The localised regime of truth of each school can also be juxtaposed with the IBO's regimes of truth, historically and at the time of the pandemic.

School A

According to the school website, School A, the longest standing IB world school of the three schools in the study, claims to offer students an immersion in experiences which enable them to interact with different people, places and situations. Technology is integrated into the learning to develop new thinking and connections. It contributes to action-oriented inquiry of the world helping students understand themselves and how they can make a better world.

Figure 2: Localised regime of truth School A – Pre COVID-19



(Richards, 2025)

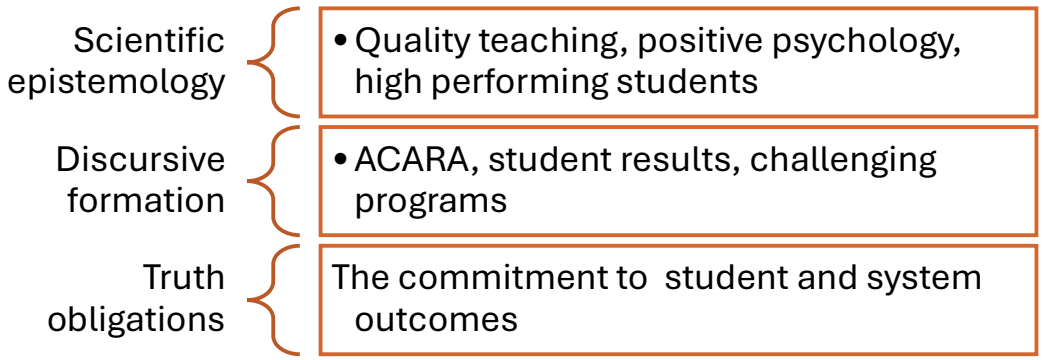
School A was built upon a commitment to an inclusive transnational community that valued global connections and learning through sense making in the curriculum and co-curriculum.

It was tied together by IB pedagogy, weekly professional learning for teachers and collaboration among teachers in the planning of learning activities for students.

School B

School B has been an IB world school for over 5 years [survey]. The website presents the school as improving leaning by offering challenging high quality, inclusive classes that challenge students to stretch themselves. School B claims to produce high performing students who have pathways to further study and work.

Figure 3: Localised regime of truth School B – Pre COVID-19



(Richards, 2025)

School B was built on a hierarchical commitment to the national system where quality teaching and positive psychology develop challenging programs for resilient, high performing students who demonstrate the outcomes of the national curriculum (ACARA).

School C

School C is preparing for IBO authorisation[survey]. The school provides experiential and natural learning environments which caters to the development of the whole child.

Students learn through their experiences in nature. They develop the character strengths that lead to personal success and to a sustainable environment.

Figure 4: Localised regime of truth School C – Pre COVID-19

(Richards, 2025)

School C was built on a commitment to experiential learning in nature complemented by traditional academics. Ecological education and IB philosophy formed school as a place where doing and caring for the environment came together.

3.8 Conclusion

The methodology (WPR) and analysis techniques (historiography, archaeology, and PIA) facilitate the development of high-level explanations and rich interpretations of patterns and trends among what is said and what is taken for granted in published literature, interview comments and policy documents. The historiography and archaeology facilitate the historical construction of situations whose sedimentation is detected in the interview data through the PIA processes and by applying the WPR methodology. The theoretical

construct of regimes of truth provides a framework to compare the emergence of a digital IB education in each school and in IBO's policies and practices.

4 Chapter 4: A Historiography of IB education

4.1 Introduction

This chapter uses the analytical technique of historiography (Gale, 2010) to trace the development of the IBO into a unique approach to education within the global education policy environment up to the time of the pandemic.

4.2 Eras of the IBO

Through applying the historiographic method, six distinct eras of development were identified. This chapter excavates the first five eras:

1. A commitment to cosmopolitanism (1929 – 1975)
2. Establishing a global standard for student centred learning (1975 – 2000)
3. Reforming of national systems with IB education (2000 – 2010)
4. Global human capital development (2010 – 2020)
5. Responding to crisis (2020 – 2022)

The sixth era, the post pandemic era, *Reaching out to common humanity (2022 – onward)* is outlined in this chapter and more fully described in the final chapter. The historical development of the IBO indicates the conditions of emergence of a digital IB education leading up to the pandemic. The historiographic interpretation of the development of the IB education system discloses multiple aspects of IB education from which schools curated their transition to online teaching and learning. Table 4 summarises the six eras of the IBO identified by the historiography.

Table 4: Eras of the IBO

Era 1: A commitment to cosmopolitanism (1929 – 1975) Foundations of international schools
Era 2: Establishing a global standard for student centred learning (1975 – 2000) Expanding global reach
Era 3: Reforming national systems with IB education (2000 – 2010) Internationalising national systems
Era 4: Global human capital development (2010 – 2020) Mediating relations in a digital world
Era 5: Responding to crises: digital student-centred teaching and assessment (2020 – 2022) Reaching out to schools for guidance
Era 6: Reaching out to common humanity (2022 – present) A vision for human flourishing

(Richards, 2025)

4.3 Era 1: Cosmopolitanism: Foundations of international schools (1929 to 1975)

Half a century before Atlantic College, Wales, was established in 1971 as the first IB school, practitioners in the International School of Geneva (Ecolint) began developing an end-of-secondary education diploma, which would become the IB Diploma programme. It would "promote international understanding", be globally "recognised for university entrance", and "promote critical thinking" through a balanced education (Hill, 2002, p. 2). "The IB Diploma programme came about for ideological, utilitarian and pedagogical reasons"(p. 2). An Aristotelian education – one that values knowledge systems alongside the development of students who know themselves and interact with others – was an international passport for children of diplomats and international civil servants who were the inaugural parent group of an IB education. These families had a commitment to world peace and an

appreciation of diverse cultural perspectives. Learning other languages and about world issues was seen as essential for these internationally mobile people (Hill, 2002). An IB education produced world citizens in the image of future diplomats.

Heterotopic spaces

The inaugural IB schools – Atlantic College, Wales, the International School of Geneva and United Nations International School (UNIS) New York – were heterotopic spaces or "worlds within worlds" (Bashiran et al., 2021, para. 3). The structure and community relationships of Ecolint were based on the French national school situated in a foreign country (Dugonjic-Rodwin, 2022). The IB experiment, funded by American foundations, was supported by some of the most esteemed teachers from France. It was modelled on schools in France that were moving away from the Napoleonic system of education and towards a child–centred pedagogy that educated democratic citizens (Dugonjic-Rodwin, 2022).

Ecolint teachers started to question the possible harm of promoting excessive nationalistic feelings and pitting citizens from different countries against each other. The "critical attitudes" (Lorenzini, 2023a, p. 7) of the early pioneers of the IBO led them to withdraw their consent to be national educators. They took the first step to resist a regime of truth that presented national education as the only form of education. They saw the possibility of crafting themselves as international educators. First, they resisted being national educator, then by they became an educator whose truths came out of a commitment to a new society of world citizens, committed to world peace through intercultural understanding and a shared mission. They used the IB Diploma to uncouple education from a world order that perpetuated world wars. The education to which they were committed asked students to investigate the world making a more peaceful one (Chauvigné, 2022; Hill,

2002, 2012). They germinated the IBO's commitment to the cosmopolitan project of developing universal citizens "bound to global hopes of a unified humanity guided by reason and rationality and with hospitality to Others" (Popkewitz, 2008, p. 2).

Cosmopolitan aspirations tempered by the local context

When establishing the United Nations International School (UNIS) New York, it became apparent to the founders of Ecoling that UNIS was a localised regime of truth (Gore, 1993) into which the IBO was invited (Chauvigné, 2022). UNIS resisted the imposition of Ecolint's structures and process into an American context. The local school would have to determine its own interpretation of international education. Ultimately, Ecolint and UNIS shared a similar moral purpose, practical goals, pedagogy and "inquiring systems" (Churchman, 1971, p. 18). However, they did this on their own terms. The founding international teachers made space for teachers and students to see the world differently, which opened new possibilities for education. These teachers put curiosity and experimentation alongside a program that included truth seeking through an inquiry pedagogy. It was the teachers and leaders at the three founding schools (Ecolint, UNIS NY, and Atlantic College, Wales) who formed a curriculum that would be the IB Diploma programme (Hill, 2012), rejecting the traditional approach to education that seeks certainty in scientific truths, and embraced multiple approaches to inquiry.

The formation of the International Baccalaureate Organisation (IBO)

In 1968, the IBO appointed its first Director General, Alec Peterson and became a not-for-profit foundation, registered in Geneva (IBO, 2017). The founding of the IBO began the process which allowed an IB education to become a common global standard for school

examinations (IBO, 2017). The IBO began to garner support of likeminded educators, government officials, funders and families, thus legitimising a new educational approach.

4.4 Era 2: Student-centred learning: Expanding global reach (1975 – 2000)

The IBO differentiates the IB curriculum from national models of education by preparing young people to live in a complex world where they can be both national and global citizens. It offers a progressive, humanist education that fosters individual development. Providing a final year certificate was imperative to expanding the IBO globally and bringing it closer to national systems. In 1975, the North American regional office opened in New York, followed in 1982 by regional offices in Buenos Aries, London and Singapore. Singapore became the regional office that served Australian schools. In 1994, the IB Middle Years Programme (IBMYP) was introduced, followed by the introduction of the IB Primary Years Programme (IBPYP) in 1997 (Hill, 2002). Of equal importance was the establishment of a research centre in international education at the University of Bath in 1987 (Dugonjic-Rodwin, 2022).

The IB Primary Years Programme commences

The Primary Years Programme (IBPYP or PYP), like the Diploma Programme, was created by educators almost 30 years after the Diploma Programme (Giddings, 2013). Commencing as the International School Curriculum Project, the PYP was to become an integrated curriculum developed by teachers with "student learning outcomes as the major concern" (Giddings, 2013, p. 22). The first two PYP schools were authorised in 1997 (IBO, 2017) in Europe at the same time as what Sahberg descried as the Global Education Reform Movement (GERM) (Sahlberg, 2012). He used to acronym of GERM to describe the increased focus on quality improvement through standards based education policies, first

in English-speaking countries (Sahlberg, 2012) then across the Organisation of Economic Co-operation and Development (OECD) with the introduction of the Programme of International Student Assessment (PISA) at the turn of the century.

The PYP pedagogy was transdisciplinary with a moral purpose focused on the development of the whole child through the attributes of the IB Student Profile, later to be renamed the IB Learner Profile. The Learner Profile, a set of 10 attributes, is:

> the embodiment of what the IB means by international mindedness … and promotes the education of the whole person. [It is] a map of a lifelong learning journey to international mindedness. (IBO, 2009a, p. 1)

The Learner Profile describes students as inquiring, knowledgeable and caring citizens of local, national and global communities who can engage in the 21st century and the realities of a globally connected world (Rizvi et al., 2020). High-level attributes are promoted and guide teaching and learning among teachers, students and parents "who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world" (IBO, 2009a, p. 5). In this time when standards were being introduced, a PYP education was offered by the IB as a support to national systems. Local teachers and students had the opportunity to achieve holistic educational outcomes, shaping globally competitive individuals.

The IB mission is published

A year after the launch of the PYP, in 1998, the IBO introduced its mission which, to this day, underpins the truth obligations of an IB education and describes the governance relations proposed to form IB students.

> 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. (IBO, 2017, p. 2)

The mission does not abandon the international diplomat, nor the rigorous Aristotelian education, but repositions them around the young person as its outcome. By placing the learner as the outcome of a rigorous international education, the formation of the students becomes the focus. The IBO's mission statement declares an IB education as an internationally relevant solution to national systems, taking its cosmopolitan ideal to national governments by offering challenging programs and assessments. The mission sets the stage for "cosmopolitan nationalism" (Jackson, 2024, p. 1). The IBO can be integrated into national systems. It is available beyond international schools.

An IB education arrives in Australia

An IB education was first established in Australia in 1979 (Kidson et al., 2019, p. 393) and now spans all sectors of schooling and all jurisdictions. The growth has been significant over the last 30 years, going from 13 schools in 1992 (Kidson et al., 2019, p. 394) to 216 schools as at April 2025 (IBO, 2025a).

Jaafar et al. (2021, p. 13) found that research publications in the field of IB accounted for 19% of Australian education publications. The research interests of Australian authors differed significantly from those of international authors. International scholars were interested in international mindedness, the definition of an international school and the tension between IBO's said mission of intercultural understanding and its international identity (Jaafar et al., 2021, p. 17). Australian researchers were more focused on growing

the IB brand and documenting student success in IB schools in order to build the commitment to IB as a legitimate education system across the country. Kidson et al. (2019) identified a growth trajectory in PYP schools in Australia from 1997 when the PYP began, to there being 152 PYP schools at the time of publication.

For Australia, legitimising the value of the IBO to the national system was paramount for funding. The Australian government's neoliberal economic agenda and global reputation legitimised its spending on IB schools. The increasing importance of standardisation of educational measurement and teaching practice led to the introduction of a national curriculum in Australia (Facer, 2012). The growth of IB education in Australia was mainly among "high socio-economic status students" (Kidson et al., 2019, p. 402).

4.5 Era 3: Reforming national systems with IB education (2000 – 2010)

A continuum of learning

The new continuum of IB programmes from early childhood to pre-university entrance (PYP, MYP, DP) was positioned as a school improvement strategy with rigorous international standards. The PYP provided more than basic skills in literacy and numeracy for primary age students. It did not interfere with existing national testing nor the emerging international standardised tests. It developed students' higher order thinking skills and promised to improve attainment through a unique PYP framework and pedagogy that "recognises the individual in relation to the world in all its complexity" (IBO, 2019, p. 2).

Child-centred education

The shift to child-centred education signalled a shift from a focus on teaching to one on learning and progress, and emphasised students' ability to take greater responsibility for their own progress and management of their learning. Child-centred pedagogy rests on the

premise of individual freedom, national development and the pedagogical practices of observation and monitoring child development, and implementing the appropriate interventions (Arribas-Ayllon and Wakerdine, 2017, p. 6). Scientific measurement and developmental psychology formed the expert teacher, a pedagogue. Scientific measurement was the solution to the emerging problem of failing public education (Sahlberg, 2012).

A global quality standard

The opportunity to use the IB to improve teacher quality and student outcomes led the IBO to engage in the national and international debate around school reform (Giddings, 2013, p. 29), which connected the IBO to "a new reality of international education leading to a movement to internationalise national systems" (Giddings, 2013, p. 21). At this time, the IB Diploma Programme "represents the most widely known end-of-secondary school qualification not tied to a particular country" (Hill, 2002, p. 18). In some countries, an IB Diploma has higher currency value than a local leaving certificate (Steiner-Khamsi, 2018), giving IB students a competitive advantage through membership in a global community.

4.6 Era 4: Global human capital development: Relations in a digital world (2010 – 2020)

With the standards movement well in place, the purpose of education turns towards building human capital to drive national economic development. With education increasingly tied to economic recovery in the period after the global financial crisis of 2008, national policies began to tie the development of human capital to the development of the digital economy (Schwab, 2018). Ensuring the curriculum includes technology, teaches

technology and upskills teachers in technology so that they can prepare students for the digital economy became a policy priority (van Welsum & Lanvin, 2012).

Scaling: Human capital development

The IBO's human capital development structures and process were reflected in the IB Learner Profile and the IB Approaches to Learning: "thinking skills, research skills, communication skills, social skills and self-management skills" (Barratt Hacking et al., 2016, p. 7). These skills are often represented as 21st century skills for the fourth industrial revolution (Schwab, 2016, 2018).

Between 2010 and 2016, the IBO expanded its global presence by relocating its regional offices and rebadging them as global centres. The centres moved to Washington DC and The Hague, and remained in Singapore and Cardiff, (IBO, 2017, pp. 5-7). Through its growth in the USA, an IB education has expanded into public education. Fifty percent of IB school are now based in North America (Bunnell, 2015). Through its distributed Global Centres, the IBO governs state and private schools, adopting a networked governance perspective (OECD, 2020) and enabling partnerships with governments and private education entities.

Private public partnerships in education

The IBO engages in a public policy environment that mixes public policy and profit. Like "multinational edu-businesses" (Hogan et al., 2015, p. 244), the IBO has appointed former high profile public servants and managing consultants to influence public policy in education. The recently appointed Director General (OP Heinonen, the former Director General of the Finnish National Agency for Education and a former Minister of Education and Science in Finland) is a prime example of the IBO moving from a movement of teachers

and parents to being an “intermediary organisation” (Cabaj, 2021, p. 1) in the global education industry.

Educational governance in a digital world economy

Industry 4.0, a term coined by the World Economic Forum (WEF), creates the problem of an archaic education system in need of transformation (Schwab, 2016). Outdated teaching practices, lack of student engagement, and poor outcomes for disadvantaged populations can be turned around through technology.

The teacher, as an object of policy, is both “a policy problem and policy solution” (Forde & McMahon, 2019, p. 221). Governance of education now dichotomises teachers and students by defining them in relation to their ability to adopt technology. The ‘digital native’ and ‘digital immigrant’, coined by Mark Prensky (2004) at the turnoff the century, positions the new generation of students as born into a technological world. Through birth right and a process of osmosis, they are adept intuitive users of technology. Their teachers, on the other hand, by virtue of their age and being born in pre-digital times, are like immigrants who will never integrate as easily as those born in the digital age.

> Since its inception, the digital native/digital immigrant metaphor has become the defining metaphor among teachers and many others for the role of technology in education (Smith, 2013, p. 31).

The student is constructed as the future and the teacher is stuck in a bygone era. The ability to replace outmoded teaching practices with technology aligns with the “learnification of educational practice” (Biesta, 2013, p. 451), making possible the neo liberal promise to lower marginal costs of education by replacing teachers with technology (Selwyn, 2016) and the neuro-liberal agenda of personalised learning through data analytics and the application of neuroscience to online learning and testing (Bryan, 2022). It encourages

adoption and integration of technology (Smith, 2013, p. 32). Both Schwab (2017) and Prensky (2012) suggest students need the ability to engage with and use technology and be adept at understanding technology change while, at the same time, they need to develop skills such as leadership and critical thinking. Technology affords a 21st century education and prepares students to participate in the fourth industrial revolution.

The view that education is no longer relevant to today's society and needs to be more relevant now underpins national education policy globally (Kong et al., 2014). The IBO is poised to bring relevance to education through its pre- K–12 curriculum, school evaluation services, teacher professional development and digital governance infrastructure. The IBO collaborates directly and indirectly with national education authorities and universities and through accreditation and equivalency agreements in 156 countries around the world (Barratt Hacking et al., 2016).

4.7 The changing discursive frames of the IBO from 1929 – 2020

The historiography reveals the "overlap and intersection" (McHoul & Grace, 1993, p. 31) of IB discourse practices with the emerging and dominant truth obligations and policy shifts in education throughout its history. At its foundation, the IBO attached itself to a movement in Europe that rejected nationalism but embraced the emerging world order being established through the UN and a commitment to world peace. To expand and establish its legitimacy globally, the IBO shifted its focus to align with the governance practices driving global education reform, first by representing itself as a vehicle for national cosmopolitanism where schools and national systems could find a curriculum that developed high performing individuals as measured by international metrics. The IBO then emerged as a type of education that developed human capital, including digital skills.

Through its networked governance structures, it curated and created discourse practices to influence and amass commitments from an increasing diversity of stakeholders.

The table below summarises the historiography of the IBO up to the pandemic using the theoretical construct of regimes of truth.

Table 5: IB regimes of truth from 1929–2020

	Foundations 1929 –1975	Global reach 1975 – 2000	Internationalizing national systems 2000 – 2010	Global human capital dev 2010 – 2020
Scientific epistemology	Examinations, French national school overseas, Post Napoleonic Kantian education	Humanist, Individualist, Cosmopolitan nationalism	National development, Measurement and psychology	Human capital, Standards, Digital skills
Discursive practices	International understanding, Third UN, Child-centred, Democratic	Transdisciplinary, Learner profile, GERM, PISA	Beyond basic skills, Responsible high performing students	Private public partnerships, Consultants, Failing schools
Obligations	Committed to world peace, Other cultures and language	Developing attributes for the 21st Century and global economy	Measuring teacher quality, Student outcomes	Individual progress in a digital economy

(Richards, 2025)

4.8 Era 5: Responding to Crises: Reaching out to schools for guidance (2020–2022)

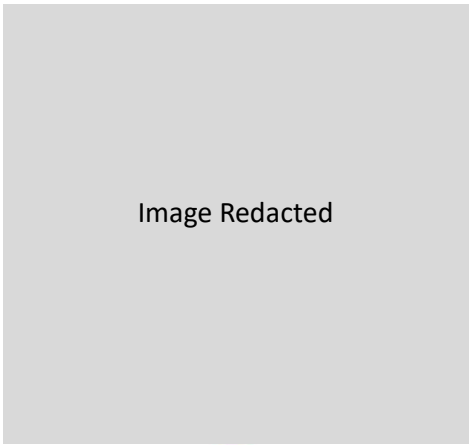
IBO governance practices during the pandemic

During the pandemic, the governance of schools changed to align with the global situation. A review of the statements and actions taken by the IBO during the crisis revealed similarities with the discursive practice of other international organisations. Like UNESCO, the IBO used a crowdsourcing strategy to curate resources (IBO, 2020b) and created a

webpage *Crisis support resources* (IBO, 2021a), accompanied by hashtags for sharing student capstone projects on social media.

Like the OECD, with its checklist based on their PISA instrument, the IBO developed a *Crisis response framework* based on the tenets of an IB education (IBO, 2020b, 2021a). The framework complements the IB mission and resembles the IB programme models. However, it shifts the elements of an IB education in significant ways. At the centre of the framework diagram is the IB logo. The crisis response framework placed the IB branding text at the centre and removed the learner profile, the symbol of student-centred learning. The tenets of an IB education – learner profile, approaches to learning, approaches to teaching and international mindedness – are still called out, albeit in a slightly different relationship to each other. They are equal aspects of an IB education, downplaying the prominence on international mindedness as the ultimate goal of an IB education. The context is " learning through crisis, … learn about crisis" (IBO, 2020b IB crisis response framework infographic). Most significantly, the traditional subject areas, which normally sit within the programme models, have been removed, highlighting instead "our wellbeing, our learning, our action and our community" (IB crisis response framework infographic) as the content of an IB education, which is a departure from knowledge of the disciplines and a movement to personalised learning and wellbeing within an active community. The IBO provided research and resources to support schools with wellbeing, learning, action and community. The *IB crisis response framework* (Figure 5) has been redacted but is available at (IBO, 2020b).

Figure 5: IB crisis response framework



The shift in IB discourse during the pandemic aligns with the OECD's move towards the assessment of 21st century skills and to UNESCO's sustainable development goals (SDG). It moves the IB's focus to humanity and the planet (Barratt Hacking, 2020). International organisations such as the World Bank, the OECD and UNESCO positioned themselves as saving education (Shultz & Viczko, 2021). The IBO positions itself as an intermediary organisation. Intermediaries do not drive the agenda, rather, they provide "supporting capabilities" (Cabaj, 2021, p. 4) in a field of expertise.

As a member of the Global Education Coalition, the IBO offered digital resources and technology integration guidance to schools. They offered national systems the opportunity to partner with the IBO to prevent a loss of financial equity in their students, or to use the IB resources and the crisis response framework to quell diminishing human capital when school moved online. The IBO's statements produced a stance on whole-child education that offered an emancipatory education for those who wanted to apply pedagogical practices to escape pandemic conditions and achieve a better future. For those who felt a responsibility for the care of students and the environment, the IBO acknowledged the responsibility to student wellbeing during the crises.

The direct involvement of the Edtech industry in teaching and learning by invitation from national governments and international organisations alike (Shultz & Viczko, 2021) opened the possibility to think differently about students and teachers in school and to craft new scenarios for a digital IB education. The regime of truth of the IBO during the pandemic rested on the science of metacognition, cognitive science, and a route to emancipation from the pandemic situation alongside a way to care for the world and the student. The IBO used its brand, the crisis framework and crowdsourced resources to gain a commitment from schools to each other and to the wider global community, asking them to learn about and through the crisis. Unlike the World Bank, the OECD and UNESCO, who openly advocate for increased use of technology in education, the IBO pushed their technology policies and statements to the background, asking schools to share resources and determine their own ways of implementing an IB education while integrating technology.

The figure below outlines the IB regime of truth during the pandemic.

Figure 6: IB regime of truth during COVID-19

(Richards, 2025)

Changes to IBO policy making during the pandemic

Traditionally, the IBO publishes a curriculum document and soon afterwards publishes accompanying teacher support material (TSM). During the first year of the pandemic, it

published the TSM first and the curriculum document the following year. The TSM, *Online learning, teaching and education continuity planning for schools* (IBO, 2020b) was published as a webpage. It presented accounts of practices for remote learning made from crowdsourced resources from IB schools. The curriculum document, *Learning, teaching and leading with technologies* (IBO, 2021b) was published post pandemic but before the upsurge in generative AI. Although the latter was published after my interviews, and teachers would not have had access to it, I reference it here as it captures the way the IBO indexed technology within its education system at the time of the pandemic. Given the timing of the curriculum publication, it is unlikely that it was developed primarily from the curated resources collected from schools. From my own experience in the IBO system, more likely it was in development before the pandemic and finalised for publication after the curation of the resources were collected for the TSM.

4.9 Era 6: Reaching out to Common Humanity

Post pandemic, a new era is emerging. The IBO has adopted the construct of human flourishing (Van der Weele & Hinto, 2024) and has partnered in the OECD's competency-based *High Performing Systems for Tomorrow (HPST)* project (Hannon, 2023, p. 1) to explore education for human flourishing. Wellbeing and learning are recast as student flourishing, and technology is obscured under the mantra of innovation. The emerging policy discourse post pandemic reveals a commitment to human flourishing as the new manifestation of "the utopian ambition" (Vlieghe & Zamojski, 2019, p. 158) for a more peaceful world through education. This time, however, the IBO is expanding beyond curriculum guidance and assessment of student outcomes. It is moving into the student experience, reaching out through the *Festival of hope* (IBO, n.d.), an initiative where students share what gives

them hope, recasting its relationship with students beyond that of an assessment board. The concluding chapter further elaborates on Era 6, in the section on 'The future of the IBO'.

4.10 Conclusion

Over its history, the IBO developed into a cosmopolitan, student centred inquiry based global standard of education. It offered schools and national systems a child focused emancipatory education, international standards for implementing national systems, and a high-quality education pathway. From its origins, the IBO retains the premise that education can be a transformative experience given the right conditions. What started as an education for children of diplomats has developed into a standard for international education for children from 3 – 19 years old, now more than ever made up of a multicultural student population that shares a disposition towards cosmopolitanism.

The IBO has always offered a holistic education that encompasses knowledge of the subject areas and a pedagogy of inquiry. By the turn of the 21st century, it has added the IB Learner Profile and the IB Approaches to Learning skills to its framework.

The international school has moved away from being an institution that is distinct from the outside. Being connected to the outside became part of an IB education, catering for a globally interconnected world. With the advent of the pandemic, the interconnections between school and the outside world changed again as school connected children to the world through digital technology. The next chapter uses the PIA processes to identify themes which emerged from the interviews with PYP coordinators about learning through technology during the pandemic.

5 Chapter 5: Findings

5.1 Introduction

Chapter Five moves through each of the six poststructural interview analysis processes of PIA (Bacchi, 2016a), documenting what is said by the coordinators. The process identifies norms being invoked, transformational potential and the production of subjects in each school. Links between the interview analysis and the historiography of the IBO point to the antecedents of each school's adoption of the IB and continued commitment to an IB education.

5.2 Process 1 – Noting 'what is said'

Process 1 lays out 'what is said' by each coordinator in each school, capturing the issues and concerns faced by each of them.

School A – Katie

The interviewee for School A will be referred to as Katie. The transcript generated 16 data poems (Appendix D). Each poem captures a different facet of the experience of online learning over two lockdowns.

Being a leader – Being there for others

Katie describes leading the transition to remote learning as happening in three stages: survival, management and innovation. Each stage is discussed below.

Survival leadership

In the first lockdown, it was survival leadership.

> We did it because we did it. (Katie)

Katie spent her time working to weekly deadlines, coordinating among teachers and between teachers and the leadership team. She prepared documents for senior leadership

to review at their meetings. Once agreement was reached among the senior leadership team, Katie would cascade the information to teaching teams within the junior school (Prep – Year 2, Years 3–4, Years 5-6). She would share the decisions with teachers each Friday before lunchtime, so they knew what they had to prepare for the next week. She commenced each meeting by asking for their input to ascertain what was feasible and achievable. Then she would weigh up their input and provide teachers with a plan that they could then send home to parents.

> I was exhausted, absolutely exhausted. Up until 12.30 am in the morning dotting the Is and crossing the Ts. (Katie)

Management leadership

By the second lockdown, Katie was in management mode. The systems were in place and a routine had been established. Teachers and students alike had adapted to it. They were even getting quite adept at manipulating the materials, which gave them the confidence to move into an innovation stage.

> The second lockdown, we were into a rhythm. We had developed the skill set really quickly. We started to actually try some different things. (Katie)

Innovation leadership

What drove the innovation stage was the need for variety. With the systems in place across the college, she and staff could work across year levels, tap into whole school structures, and bring in new ways of engaging in school life. This included a virtual camp, with the outdoor education staff at the campsite cooking damper, building Gunyas, and children doing the same at home, even sleeping in the Gunyas and being greeted in the morning to the sound of trumpets played by the music staff. Staff brought in parents as guest speakers, had Crazy Fridays where students would dress up in crazy ways, and held virtual assemblies,

called ‘production hours’, where families could sit together and see into student school life. Katie said leadership was central to her approach.

> How you going and what can we do to help you?
>
> Leadership was about offering support, being encouraging, validating and helping where needed but also letting them go and trusting their judgement as educators. (Katie)

Katie developed enough trust that she could start the meetings by checking in on staff and their wellbeing and asking what she could do to help them. She moved from survival to innovation mode and knew that meant trusting staff as professionals, while being there for them. Being there could simply be being available on Teams when a teacher needed to talk, to vent, or to ask a question.

> Leadership was behind the scenes. (Katie)

Katie used her role as PYP coordinator to keep things going and to make sure people had the technology and wherewithal to be able to do what they needed. This meant helping them understand the difference between the “must do(s), can do(s) and nice to do(s)” (Katie). She described her role as ensuring that the outside looking in saw a consistent approach.

Being an inquirer

> Inquiry was designed to be the backbone of what we did. (Katie)

Katie explained inquiry at the school through a series of stories. The first was an anecdote about a Year 5 student who invented a physiotherapy device for his grandfather while undertaking an inquiry unit on inventions. The task was to create something and video themselves and share it with another audience. The grandfather’s physiotherapist saw it and thought it was worth designing and patenting. This example was only one of many

examples where place-based learning and handing over agency to the children was used to explain what they did during remote learning.

> We had some really amazing inquiries happen, through authentic purposes that you wouldn't have had, had we been at school. (Katie)

She told the story of a maths inquiry, an inquiry into socks. The students were asked to empty their sock drawer and organise their socks in some way – by colour, by stripes, by patterns – and find a way of recording and using the information. Another story described when they had the children walk down the street to see what shapes they could see in the neighbourhood fences, and to take photographs or look at the house numbers and see which side is even, which is odd. They had to record it any way they chose – photography, drawing, writing, video –it was their choice. Interacting with the local environment became how teachers structured learning for students.

Students were invited into inquiry by teachers in different ways. It varied from 20-minute whole group sessions to 20-minute small group sessions, providing a provocation to initiate the inquiry. Teachers would then set the children off to some exploring, and the children would come back and share.

> Lots of scavenger hunts. (Katie)

The students used search engines to find information through the library and teachers developed students' research skills in different platforms, teaching them how to use them effectively and efficiently. Students were encouraged to find things out, to record responses in different ways, and to use the tools that were best for them.

Being an inquirer is at the centre of teaching and learning at Katie's school. Teachers prioritised students being able to express themselves, being connected as a community, and they asked students to engage in a range of spaces.

Being online: Connecting the community

> A platform to see kids in action
>
> The school bought an extra 500 iPads across the college (Katie)

The school invested in hardware and software for students. When they set up their infrastructure they focused on communication and connecting the community with online tools. Each tool had a purpose. Teams was for face-to-face communication between teachers and students. Voice functionality was used for conversational feedback and for reading aloud. Seesaw was used for students to communicate their learning with teachers, for both to create videos, take photos and unload the materials as a form of expression. One Note was used for instruction for upper primary and School Box was the Learning management system (LMS). Padlet was a tool to support students upload images and responses, while PowerPoint, through the comment functionality, was used for peer feedback.

> We went from zero to 100 in terms of having to communicate with our students (Katie)

Being a leader of learning

The professional development model shifted from two hours on a Wednesday afternoon to being one-on-one, as needed. Teachers learned how to use the tools through using them, having webinars on Teams or Seesaw with each other to learn about and trial the functionality. The learning was individualised and self-directed, depending on the skills needed at the time. It occurred in teachers' own time. The college had a Digital Learning Team who worked collaboratively with teachers individually or in teams when invited by the teachers.

Collaboration

Collaboration provided inspiration for new ideas, maintained staff sanity, and created an environment of trust among teachers and with the PYP coordinator.

> We piggybacked off each other with ideas
>
> That was a good idea. I'm gonna do that (Katie)

Staff engagement was a central goal of whole-school professional development. The PYP coordinator used a range of approaches, some involving thinking routines, some demonstrating functionality and features of tools they were using in the classroom, and some activities that extended across a longer PD timeframe.

> I thought very differently about the PD I ran (Katie)

School B – Helen

The interviewee for School B will be referred to as Helen. The transcript generated 25 data poems (Appendix D). Each poem exposes a different facet of the experience of online learning during four lockdowns. The interview took place after lockdown four.

The challenges of online teaching

> It is what it is (Helen)

Helen describes how she accepts the situation. She is carrying on her work. She uses the words of the technology consultant saying it is "the same, just using a different platform" (Helen). She says the Junior School team continues to be "very collaborative, considerate of wellbeing, and able to look at individual student strengths" (Helen). She finds it challenging doing her job (as usual) with only being able to be in an online learning environment.

> Being online is horrendously taxing (Helen).

At the time of the interview, the school is in its fourth lockdown. Having the timetable in place for remote learning relieved "a lot of stress about structure, they could get on with it" (Helen). Helen even goes into how physically constrained she feels by "not being able to move around". It makes giving feedback challenging. The Apps used for giving feedback – Seesaw and Google slides – are too time consuming compared to "walking around the room and giv[ing] a little tick. That's really, really challenging, very challenging" (Helen).

Our blended learning model

The collaborative planning meetings are how she and the other PYP teachers discuss what technology will be used to enhance learning, to provide an experience for students.

> Our blended learning model is our curriculum. It has outcomes, educational goals for each year level. It's a programming curriculum that gives purpose to the tools that we choose, making connections with learning. (Helen)

The teachers reflect on how well students use the tools, what teachers can do better in a similar learning instance, and possible ways to use the tools differently or even better in new situations. There is a list of Apps for students in each year level posted on the classroom wall. The user agreements put in place by the school focus primarily on academic honesty and respecting people's privacy. One teaching and learning innovation – incursions – was impacted by the school's cyber safety policy. They tried, in the first lockdown, to involve "guest speakers coming into our Zooms, presenting, talking, discussing" (Helen). It was a positive experience. Then, working with children checks curtailed it.

> That's digital safety. We've had to manoeuvre around not being able to have the people that we want to have because they have to fill out all the forms. (Helen)

User testing apps

Selecting and applying the right app for the right purpose and not knowing or being able to see firsthand how the student engages with the task using the app was a challenge for teachers. That is where the digital learning consultant, Slava, was their biggest support.

Helen said: "We were in a bit of a quandary of how to deliver our exhibition online." Slava suggested an app called ThingLink. "We didn't really know how we would go about using that" (Helen). Taking a user-centred approach and asking themselves how students might respond to using ThingLink helped them to decide to try it.

The PYP team introduced a number of apps; some for teachers to provide "provocations during explicit instruction or as part of the inquiry cycle, for teacher feedback, peer feedback and to take learning to another level" (Helen). Others were handed over to students. When the students respond well to the teachers' experimentations with apps, Helen expresses joy and a bit of relief. "It was fabulous" (Helen). She also calls the students 'kids' when things are going well. She runs through a list of apps and their purpose and who they were for.

> That's for kids, kids used that, or Explain everything … the alternative to brainstorming and getting ideas (Helen)

Once the children were familiar with an app, the teachers then thought of different reasons for its use. "And if it fails, or doesn't work, that's ok, then keep going from there" (Helen). They had apps for whole-class learning, small groups and individual work. They used them for differentiation and individualisation.

Assessing was modified to

> reflect what we could teach and learn in online form without assessing parent knowledge. We modified outcomes for 2020 and got rid of ratings (Helen).

Managing school processes and structures

When they first went into lockdown, Helen put her attention to the timetable. She insisted that formal lessons finish at 12.20, giving teachers time for collaborative planning. This decision caused a little bit of tension initially with some parents. For the second lockdown, the school "provided tasks for students and parents who wanted their students to continue

with learning after 12.30" (Helen). She also scheduled their specialist teachers throughout the week. Teaching and learning was:

> explicit teaching for the first 15–20 minutes. The Zoom was open. Students would go off and do their own work collaboratively. The teacher was there if they needed anything. (Helen)

At the centre of planning and delivery was the selection and experimentation with digital tools to engage students in the curriculum. The digital learning consultant attended their fortnightly collaborative planning meetings and was an email away at any time. Teachers used collaborative planning to determine the tools and learning activities, trying them out with the students to see their reaction and then reflecting on their impact to see what might be improved. This happened quite quickly, which meant they had little time for real reflection and were in experimentation mode most of the time. Helen remembers looking forward to their conference day in July so they could have time to reflect on their blended learning model and the outcomes.

> Let's do this and off we go, we run with it (Helen*).*

She described the Junior School as open minded to technology.

> very open minded to trying new things, if it doesn't succeed, that is ok, I try again. (Helen)

In the lower years, the selection of apps drove planning, whereas in Years 5 and 6 the "pedagogy led the technology" (Helen). The expectation of students in terms of uniform altered. If they are on Zoom with the camera on, that counts as being in class. This is also one of their indicators of student engagement. With the digital consultant advising on the teaching and learning, Helen's role as a leader shifted to a focus on processes and student behaviour and wellbeing.

Managing wellbeing

Helen mentions wellbeing a number of times as their focus. Wellbeing is discussed in relation to community and parents, teachers' technology adoption, student management and programme leadership. Helen uses collaboration and ongoing conversations about wellbeing to support teachers who are challenged by technology.

> We made sure that we had a wellbeing connection everyday (Helen).

One classroom strategy for student wellbeing was to ensure students had their camera on. They did not expect them to be "sitting up at a desk and all that, we need to see your face, engage" (Helen). Helen highlights the need to connect with parents when students are not engaging as expected. Student wellbeing is managed through the school's processes for truancy and health and safety. In addition to teachers and parents, the head of junior school gets involved. They contact parents when students were absent, i.e. did not have their camera on, or did not submit work. They ask the parent to determine whether the student was truanting or suffering from a wellbeing issue. Then they ask them to decide if they want the school to encourage their student to complete work and attend class or to have time out. When issues arise with students, Helen does not refer to them as 'kids'. She shifts the attribution to the parents. 'Our kids' become 'their students'.

Managing parents

> Being online, parents are more aware of what we do … in teaching and learning and assessing. Before they weren't 100% sure how the curriculum was delivered. Their perceptions have been brought into reality. Parents appreciate what we do – their feedback is really positive. (Helen)

Parent perceptions about what is expected at school has shifted. Parents have an increased awareness. This turns out to be a double-edged sword. Teachers have gone up in parents' esteem. However, now teachers are not confident that students' work is their own. They

had no way to monitor the amount of support given by parents to their children during assessment tasks. The school had to modify assessment to ensure they were not assessing parent knowledge.

School C - Julie

The interviewee for School C will be referred to as Julie. The transcript generated 12 data poems. Each poem (listed in Appendix D) exposes a different facet of the experience of online learning up to and including two lockdowns. The interview took place after lockdown two.

A very unique character

Julie described the closing of schools and the need to transition to online learning as a conceptual problem. Her dilemma was one of integrating the PYP and remote learning simultaneously into a school with "a very unique character". She ponders how to integrate the philosophy of the IB into the overall purpose and experience of learning. Throughout the interview, she answers many of the questions with her own inquiry questions, reflecting on the implications of suggesting any changes to her colleagues.

Julie characterises the school as "a non-traditional independent school" and its special character attracts a wider range of ability groups than a traditional independent school.

> Traditional academics sit alongside amazingly rich experiential outdoor learning. (Julie)

Her role as the newly appointed (two years in) PYP coordinator is to bring a common language of inquiry and IB education across two campuses. There appears to be a clear delineation between the teaching and learning (T&L) team's remit and that of the bush school.

A strong tradition of experiential learning

The community is "a mixed bag" (Julie) when it comes to technology acceptance. Those who have seen their children excited about coding, for example, are more appreciative of the use of technology for learning. However, parents chose the school for its focus on experiential learning. The tendency is for parents to want their children to be "off devices" (Julie), with some feeling a bit of trepidation toward technology. One campus has a less tech friendly parent group than the other.

> The use of technology is not a preferred tool. (Julie)

The transition online: transforming a resistant community

When the pandemic hit, her school was one of the first in Victoria to close. It closed a week before the state government legislated the closing of schools. At that time, there was very little guidance for independent schools about what technology to use or how to navigate the privacy concerns of going online. Her school's IT department provided a SWAT analysis of two video communication tools, Zoom and Teams. The priority was to "get devices in the hands of students" (Julie). That meant going to one to one with iPads on both campuses for Prep to Year 2, adding more MacBooks to the shared classroom set of MacBooks, so each Year 3 child had their own, and ensuring the Years 4 – 6 students had their MacBook with them at home. It is a Microsoft school, and it has Adobe. One campus has Seesaw for communicating with parents and the other was trialling it when the pandemic hit. Rather than a trial and experimenting with Seesaw as planned, the school had to embrace all the tools it had and use those for two school terms. This created a "massive learning curve" (Julie) for teachers, students, and families. Staff, along with the families, learnt to use Zoom through using Zoom and being coached remotely. Doing all of this "while not being in our spaces" (Julie) was highlighted as noteworthy by Julie.

The school policies around technology are centred on cyber safety, not on learning and teaching. She said teachers are not intentional or purposeful with the use of digital tools. The exception is a few passionate individuals who teach coding, some robotics and use technology to help students with organising their learning, for example, showing them how to set up folders. Teachers used technology to capture, share and present learning rather than for collaboration or anything else. Julie does not want to use technology merely to substitute what they are already doing. She advocates for the SAMR (substitute, augment, modify and redefine) model and wants teachers to go beyond substituting an online tool to do the same thing as an analogue tool. At the PYP collaborative planning sessions with teachers, she asks them to consider:

> How are we using technology in a way that supports and facilitates rich learning and captures learning as opposed to just a substitute? (Julie)

Through the PYP collaborative planning meetings, Julie has been quite deliberate in introducing new tools to get people using something different, like a Padlet or a Wakelet or tools that support collaboration and sharing in a different way.

Leading a strategic approach to inquiry and technology

For Julie, "the biggest challenge of being online is what does inquiry look like?". The lack of a strategic or "coherent approach to technology" (Julie) and "developing understanding of what inquiry is" (Julie) are key areas of development that Julie identifies for the school. Teachers "equate inquiry with doing research" (Julie). Teachers believe inquiry is happening when students use the internet to find information. They do, however, also use technology for sharing a product at the end of an inquiry process. This occurs more often with Year 5 and Year 6. Since the pandemic, these year levels have expanded their use of technology to include communicating with experts and engaging in some digital collaboration. Capturing

of learning is limited to taking a photograph. However, it does not go into thinking about the potential of the photograph to expand learning. Being a non-traditional independent school, several students with special learning needs attend the school. Julie says that a more strategic approach to technology and learning could open opportunities to capture learning in different ways, allowing a wider range of students to express themselves in ways that are not possible with pen and paper assessment and learning.

Building connections across boundaries

Julie also discusses how she, IT and the T&L team are starting to work more closely together. She described a disconnect between academic and experiential learning. T&L consider the Bush school to be quite separate from their work, whereas Julie says that "they can be one and the same" (Julie). Teachers are starting to talk about how they are using the IB Approaches to Learning (ATL) and articulating them with students. Students are using them as a reflection tool. Julie believes that these should also cross over into the Bush school.

Julie frames her view about connecting the outdoor learning with IB education as another inquiry question: "Why aren't you talking about ATLs, social skills and communication skills and all those things when you're out there?" (Julie). She sees the opportunity to integrate IB approaches to learning and laments the missed opportunities.

> Kids spend a day at the Creek every week. It's a perfect opportunity to be able to articulate and think about what those skills look like in that context. What does it mean to be a risk taker? And all those sorts of things. (Julie)

The school leadership has brought in the IB PYP to create a common language of learning across the campuses. The pandemic meant that the teachers needed to work more closely with the head of IT and the T&L team to develop a strategic approach to "the what, why and how of technology" (Julie). Post pandemic, Julie wants to have a strategic focus on

technology through investigating current practice and how they use the tools more effectively to capture and communicate learning. As the skills and knowledge about technology evolve through the planning process, she says that teachers will become more comfortable with the language of inquiry. She supports the school's firm decision to only offer onsite learning post pandemic. She refers to learning in "our spaces" as being important. However, the pandemic did have a silver lining. The timetable allowed for the collaborative planning meetings to occur in the afternoon, as facetime with students finished at 12.30 pm, even though "some parents did not appreciate it" (Julie).

5.3 Process 2 – Themes and school practices

Process 2 focuses on the 'things said'. Bringing them together under themes provides an avenue to examine how statements relate to each other and fit within the local context and practices in each school.

Spaces and places

Spaces and places were at the forefront of the decision about remote learning. All coordinators mentioned the challenges of not being in their spaces. They each reimagined school around different constructs of space.

School A

School A transposed the home into the child's classroom.

School B

School B made the computer and Apps into the classroom. The computer became synonymous with the learning environment .

School C

School C transformed the Bush school into a utopian space, a place that is not accessible yet ideal for environmental learning. The unique experiential school was in limbo. Although the school continued to offer the academic program through technology, this part of the school program was not talked about as a place of learning. Learning happened in nature not in the computer.

Collaborative planning meetings

Collaborative planning was called out by all three PYP coordinators.

School A

School A planned together by bouncing ideas off each other through sharing experiences of successes and encouraging each other with new ideas. The digital learning team was invited in when needed.

School B

School B's collaborative planning now included the digital learning consultant who led the teaching and learning planning sessions, with the PYP coordinator facilitating the processes and dealing with the consequences of their decisions.

School C

School C had collaborative planning meetings after 12.30 pm. The IT team had no engagement in the meetings and the Bush teachers planned separately from the teachers delivering the academic program.

Inquiry

The coordinators focused a lot on their approach teaching and learning, but only two mentioned inquiry.

School A

The School A coordinator identified inquiry as “who we are” (Katie). Multiple forms of student-centred inquiry learning were mentioned.

School B

The School B coordinator used the word inquiry sparingly. Helen tended to talk about student engagement and how they used direct instruction to scaffold independent student learning.

School C

The coordinator was concerned about the superficial understanding of inquiry among teachers in the academic program. She said that teachers conflated inquiry with researching information on the internet. Although Julie advocated for inquiry-based learning, she described the academic program as being content- and teacher-driven, with little focus on skills or reflection.

Leadership

School A

Katie described leadership as “behind the scenes” (Katie). The PYP coordinator was both a conduit to senior management and a support to the teachers.

School B

Helen considered the senior leaders as supportive because they provided a digital learning consultant. Helen described her own leadership as taking a different slant. She led processes and implemented structures and rules. She spent most of her time mitigating the negative effect of online learning on the teachers, students and parents, interpreting student behaviour management systems in the new situation.

School C

Julie did not mention leadership but did comment on the government's lack of support with technology and its indecisiveness about closing schools. Her own leadership was influencing the siloed groups across the two campuses. School C was focused on preserving its vision for an alternative education when faced with the need to shut down this focal point of their school curriculum.

Technology

Technology was divided into two parts, procuring or adopting technology and using or integrating technology in teaching and learning.

School A

School A purchased 500 iPads for students. This served as a community building gesture. The school used technology to connect students with each other, their learning and the community.

School B

School B relied on parents providing devices through the Bring Your Own Device (BYOD) policy. In School B, technology was their curriculum. Staff focused on using technology to demonstrate ACARA learning outcomes.

School C

School C purchased devices and delivered them to students to keep parents satisfied that students were not falling behind in their academics while they waited for the Bush school to resume. The coordinator wished the school could use technology in more innovative ways and for inquiry.

Wellbeing

School A

The School A coordinator alluded to collective wellbeing of teachers. She was there to support where it was needed. Staff supported each other, celebrated student success and brought the community together.

School B

The School B coordinator described in detail the school's wellbeing focus and the expectation of students and parents as the transition to the blended learning curriculum was made. Helen was the wellbeing coordinator as well as the PYP coordinator. The healthy struggle of learning pre-pandemic transformed into struggling to remain well during lockdown.

School C

The School C coordinator did not raise wellbeing of students or teachers at all. A key concern for the school was the survival of its unique environmental program.

Summary of processes 1 and 2

Each coordinator highlighted different issues and concerns:

- Katie talked about being online.
- Helen focused on managing online teaching and learning.
- Julie conceptualised merging online PYP with traditional academics and experiential learning.

The themes raised in the interviews were similar across all three schools. However, the schools approached them differently.

- School A took a collective approach to navigating the new situation.

- School B took a hierarchical approach to managing the situation.
- School C remained aspirational, waiting for the pandemic to pass.

5.4 Processes 3 and 4 – Norms being invoked and analysing what is said

Processes 3 and 4 highlight the norms being invoked within each school and how certain ways of acting were able to come about.

School A: School is created in the community

School A immerses students into experiences where they engage with different people, places and situations. Technology supplements learning that encourages thinking and social connections, helping students understand themselves and their role in the world. The PYP coordinator referenced the latest *IB PYP principles into practice* (IBO, 2018d) guidance on the learner, learning and teaching, and the learning community to craft an experiential, transdisciplinary inquiry-based curriculum that used technology to connect students with their teachers, the school and the world.

School A created a learning environment where children felt they were at school while in the home, removing the remoteness between the student and their teachers. It used technology to unify the community through emancipatory education and mutual learning. Teachers were interested in student action and inquiry processes and their illustrations of knowledge. The purchasing of 500 iPads for students not only ensured each child had a device, but it was also an act of commitment to the community.

The crisis led the school to connect more closely with its community. Starting with the local classroom, the school leaders and teachers learned from each other, and over time, built back their relationship with the community through leveraging technology to connect and share children's learning experiences with parents. Being true to their vision of providing

students with opportunities, the PYP coordinator worked side by side with teachers and served as the conduit to school leaders to rebuild a student-centred inquiry-based program. Technology facilitated place-based learning. As confidence grew with remote learning, the PYP coordinator included specialist teachers and extended to extracurricular activities. Eventually, whole-school virtual assemblies brought the community together, showcasing student learning and school activities. School A understood the role all stakeholders had in orchestrating learning and teaching with technology when school moved online.

School B: School sets and measures cognitive challenges

School B offers a challenging high quality, inclusive education. The PYP coordinator, along with a digital learning consultant, used the previous version of the PYP framework, *Making the PYP happen in the classroom* (IBO, 2009b) guidance on the written, taught and assessed curriculum to design and deliver their Programme of Inquiry. Through collaborative planning meetings, teachers and the consultant developed a written and assessed curriculum which would be taught through technology. They started each day with wellbeing time to encourage students to engage. Teachers programmed a learning environment, then observed how students used the apps and their effect on task completion and the outcomes of their programming.

School B's program combines the dominant Victorian truth about teaching as a technical process and IB's claims that its programmes produce high performing students. The senior leaders determined technological expertise was needed to transition the school program online. School B inserted a digital learning expert into the pedagogical leadership team. The strategy was in aid of the school's promise that students would be prepared for the challenges they would face after graduation.

During remote learning the school and students moved inside the computer. It became an observation point for the teacher to see what the students were doing. Technology, with the support of the digital learning consultant, would direct students to perform in pre-determined ways. When the planned approach failed roles changed. The home became the school and parent became the teacher. With school in the home, parents had to play a performative role. Teachers governed students through their parents, relating to them as paraprofessionals. They used policies designed for the manage students (e.g. truancy, special education) to responsibilise parents.

School C: School happens in nature and in culture

School C approaching the final stages in preparing for IB authorisation [survey]. An experiential and natural learning environment that fosters holistic development of each child characterises School C's program. Students learn through active learning in nature. They learn to care for the environment and develop the character strengths that lead to sustainability and personal fulfilment. As a new PYP school, the PYP coordinator made multiple attempts to incorporate the outdoor learning and academic programs into the PYP framework. The pandemic provided an opportunity to support teachers to use technology to change their programs rather than simply replicate practice. School C already represents education as having a dual purpose. The Bush school honours the child in relation to nature and the academic program puts the child in a cultural relationship with the sciences of learning.

School C had clearly delineated one space for learning theory and one for experiential learning. Students could become themselves in nature and link the experiences in nature to knowledge acquired through the academic program. The school promotes an

environment that is separate from the outside world, a heterotopic space, allowing students to learn through exploring the natural world and the human made world. School closures forced the school to try to reconcile the place of technology within the dualism.

Core to the identity of School C was a resistance to technology, leaving each campus trying to figure out how technology fits into their programs, especially with a parent body more inclined to want their children “off devices” (Julie). The PYP coordinator could see that the academic teachers were leaning towards using technology to replicate what they had been doing with the curriculum, and that the teachers in the Bush school, along with parents, were resistant to technology invading the natural world.

The PYP coordinator was committed to technology innovation in the academic program. However, the teachers continued to use digital tools to deliver teacher- and content-centred curriculum. The school preferred to provide extra worksheet rather than use technology solutions to extend the school day beyond 1 pm to satisfy parents. The teachers in the academic and Bush program met to find ways to deliver the two separate programs in these new circumstances, never resolving the place of technology in a school founded on experiential learning in nature.

5.5 Process 5 – The production of subjects

Each school endeavoured to develop the same student attributes and understandings during lockdown as they did prior to the pandemic. Because learning was remote, the relationship among people, places and technology changed. This altered the roles and responsibilities of teachers, students and parents to different degrees.

School A: Passionate inquirers

In School A, the ideal student is a capable, resourceful, self-directed individual. Prioritising student voice and agency gave students the opportunity to interact with a variety of learning spaces and share their wonderings, findings and solutions with others.

> We knew we wanted to keep kids engaged and motivated, the way to do that, have them be passionate, to be able to explore, to find things of interest. (Katie)

IB pedagogical knowledge was given authority over technological knowledge. Teacher judgement was trusted. Teachers were encouraged to experiment and improvise, orchestrating an entangled pedagogy, to connect community to student learning. The digital learning design team was at the service of teachers and students. In School A, successful student performance was sharing the action of learning. Parents were community members who joined in where they could.

School B: A well-developed brain

In School B, the formation of the child centres on students demonstrating curriculum knowledge measured by the ACARA outcomes. Student performance was reduced to testing and accepting technology associated with the blended learning curriculum. It wasn't enough for them to simply demonstrate the outcomes, they had to do so happily and visibly, rendering them accountable to the socio-emotional and curriculum expectations of the school. The students were homebound app testers.

> We have a very strong culture of growth. It can be a buzzword but *here* it is part of our Junior School program. It's about growth mindset and neuroscience. Our students know about the importance of struggle, how neurons are created and pathways. And that is the same for teachers. (Helen)

The role of the teacher was to plan the blended curriculum through selecting technology apps, priming the student to use the technology, and monitoring students' acceptance of

the application. The teacher became an agile curriculum planner, as well as a manager of technology implementation and integration under the guidance of the digital learning consultant. The consultant is the authority. Metaphorically, she is the technology industry embedded in the pedagogical team.

> During collaborative planning meetings, we discuss what technology will be used to enhance learning to provide an experience for our students. We talk about what will enhance learning. (Helen)

Parents provided the technology (BYOD) and the learning environment, including bandwidth and a workstation. They ensured the child completed tasks and assessment requirements independently, and they advocated on behalf of the child. The parents transformed into teacher aids, with the additional responsibility of technology procurement and cyber safety.

School C: Experiences are fun, learning is serious

In School C, the ideal student is environmentally friendly and knowledgeable and is in transformation as an "eco-friendly person" (Ideland, 2019, p. 8). The transformation occurs during opportunities for taking action in nature. Successful performance is when students bring nature and human activity together and show a commitment to saving the planet.

The role of the teachers in School C was to develop a student who is comfortable in nature and in the classroom; someone who can apply their experiences to knowledge. The authority in School C remained with their vision of an eco-friendly school community committed to sustainability. Although the bush teachers were displaced, they were valued by the school but had no place in the pandemic configuration of schooling. The academic teachers adopted a technology first approach to achieve continuity of knowledge acquisition. The teachers in the Bush school, along with parents, did not want technology

encroaching on the natural world. Parents accepted that the children could not go to school so only demanded that academic work be sent home. The community's commitment to sustainability meant they accepted that the school would be in a holding pattern until things returned to normal.

> For the teaching and learning team, the experiential stuff sits outside of learning. We do this, this is the fun part of what we do. It's all this rich stuff, then we have the learning, then we do the academic stuff. They're quite separate at the moment. (Julie)

The PYP coordinator was the link between learning and teaching, and IT. Technology was never linked to learning in School C. School C had an IT department that focused mainly on procurement. Technology never gained any authority in the school, not among the teachers, not among the parents. As the school was in candidacy, IB had no authority. Julie wanted to commit to IBO policy and use technology to do something transformative. She believed "when technology is used purposefully, it can transform learning and teaching" (IBO, 2018f, p. 1). She wanted the teachers in the academic program to see that they too could offer something more akin to the experiential learning in the bush program, even through digital technology, if only they adopted the PYP.

5.6 Process 6 – Exploring transformative potential

Process 6 explores the possibilities opened through each school's digital transformation strategy.

School A: Learning happens with others in the world

School A was able to move students virtually into the physical spaces they had occupied while learning in face-to-face mode. Their bedrooms transformed into school camps, and the lounge room was a venue for school assemblies. The local surroundings became their

classroom which acknowledged the role of place, the individual and the community in learning. They resisted “techno solutionist approaches” (Morozov (2013) in Milan, 2020, p. 3) designed into many technology apps, preferring to provide a social constructivist approach to learning, situating the human in relation to the socio-material world.

School B: Learning is performative

In a bid to prepare students for a digital future, students and teachers became more alienated and burned-out. The PYP coordinator began to doubt the consultant who continually reaffirmed that nothing, but the learning platform had changed. She recounted how the students would turn off their cameras, and how taxing online teaching is. Having to just simply view the students’ acceptance of the apps insulated the coordinator from her role as a teacher. She and staff tried to build students’ resilience with positive psychology, an approach they had used during face-to-face teaching. The coordinator called these wellbeing activities.

The role of the teacher became to manage parents as apprentice support staff. The parents helped their children with assessments which invalidated the results, Teachers had no valid data for school reporting. The resistance to the role of invigilator by the parents led the school to adjust the grading scale. The new assessment environment opened the possibility for proctoring software to invigilate student assessments.

The resistance by students to computed centred education led the school to use truancy laws to pressure parents to persuade their children to turn their cameras on. The only other alternative offered to parents was for them to assess their child as unfit for school, essentially agreeing to exclude them. Teachers longed for the ‘kids’ they knew. They dreaded the onerous task of controlling online learning. Not being with students, having to

manually enter feedback in the platform for each and every assignment, rather than “walk around the room and give a tick” (Helen) created a large workload and discouraged the teachers. Their approach showed the possibility of creating new types of teachers, programmers and data managers.

School C: Learning can be serious fun

By using the PYP as a common language of learning, the PYP coordinator intended to bridge the gap between the traditional academic approach to classroom learning and the rich experiential learning in the Bush school. Her strategy was to induct the school into the IB pedagogies, such as inquiry and the approaches to learning. This meant transforming traditional academics and knowledge acquisition in the subject areas into transdisciplinary student-centred, inquiry-based, conceptual learning, while at the same time demonstrating how the PYP can benefit the experiential learning program.

School C had found a place – nature, where children can just be, without having to be in opposition to or in accordance with a way of being in the world created by technology. When COVID-19 came along, the bush teachers resisted the PYP, viewing it as a threat to natural learning. Interestingly, the academic program teachers also resisted the PYP, viewing it as a threat to them as pedagogues, seeing it as displacing them as experts, and undermining the role of theoretical knowledge.

5.7 Summary of the interview analysis

Localising an IB education

The analysis of what the three coordinators said identified three interpretations of an Australian IB education. Each school was formed through the norms, practices and educational purpose they proclaimed. All three schools had a stance on education, student

learning and a clear message to the community about who they are. School A claimed to be nonselective and inclusive. School B presented as a traditional independent school where student achievement is measured through outcomes, and School C offered an alternative education. The purpose of each school set the rules that governed the school's approach to child development and the kind of student being developed. The goals of education influenced the choices they made about teaching and learning and determined how they positioned technology in relation to the people, places and the activities students undertook. The way they transitioned to online learning led to three different types of children as learners.

Referencing the IBO

In each school, the influence of the IBO on the discursive practices, learning and teaching, wellbeing and child formation came through the interview analysis process.

School A, the longest standing IB school of the three, adopted a humanist, individualist education formed in a transnational context. The sedimentation of the global reach era of the IBO sits behind its community oriented social constructivist approaches. School B was founded on standards-based education, the principles of cognitive behaviourism and school improvement. Its interpretation of education emerged from the paradigm where internationalising national systems is considered a pathway to future success. School C, a school in IB candidacy, can be seen as a nostalgic trail blazer. It wants to create an alternative education like the founders of IB schools. Its vision is linked to the modern-day goals of the UN, the sustainable development goals (SDG). The school is not only committed to other cultures, but other species and the planet, and it values Singerian inquiry and post humanist education.

Table 6 presents how each school indexed its educational policies and practices to the discursive practices of the IBO at different stages of the IBO's historical development.

Table 6: The historiographic references of the IBO to IB schools

	Foundations 1929 –1975	Global reach 1975–2000	Internationalizing national systems 2000–2010	Global standard of education 2010 –2020
Scientific epistemology	Exams, French national school overseas, Post Napoleonic, Kantian education	Humanist, Individualist, Cosmopolitan nationalism	National development, Measurement and psychology	Human capital, Standards, Digital skills
Discursive practices	International understanding, Third UN, Child centred, Democratic	Transdisciplinary, Learner Profile GERM PISA	Beyond basic skills, responsible high performing students	Private public partnerships, Consultants, Failing schools
Obligation	Committed to world peace, other cultures and language	Developing attributes for the 21st Century and global economy	Measuring teacher quality, student outcomes	Individual progress in a digital economy

Key

School A	School B	School C

(Richards, 2025)

5.8 Conclusion

The interview questions guided the collection of data about the interplay between technology and education. The application of the PIA processes identified that all three coordinators wanted to maintain the intent of their Programme of Inquiry. They selectively

used technology to achieve their goals, which led each school to enact the digital transformation of teaching and learning differently. The coordinators referenced different educational priorities and had different expectations of themselves, the learners and the learning community. Each school has a special institutional character that formed its own localised regime of truth. As the IBO's ambassador in the school, a teacher and middle leader, each PYP coordinator interpreted the situation differently. The local context dominated the response to the pandemic. Elements of an IB education were integrated into their school context. While learning was remote, the place of teaching, learning and assessment changed which altered the roles and responsibilities of teachers, students and parents. The experience of being at school and learning also changed. The next chapter applies the WPR methodology to the themes that emerged from the interviews.

6 Chapter 6: Analysis

6.1 Introduction

Chapter Six applies the WPR methodology to the problematisations expressed by each PYP coordinator. The WPR questions guide the interrogation of the coordinators' statements, identifying assumptions and characteristics that shaped digital IB education in three IB schools in Australia during the first year of the pandemic. The methodology further unearths the antecedents to the solutions proposed by each coordinator and the possibility afforded by a digital IB education.

6.2 Question 1: What is the problem represented to be?

Question 1 teases out the 'problems' that each coordinator represented as needing to be solved in the transition to remote learning.

Three problem representations

School A – A pedagogical problem

The PYP coordinator, Katie, represents the problems as the need to maintain an inquiry-based learning environment that gives students voice and agency to express themselves and take action in the real world. Katie takes the PYP premise (IBO, 2018c) that "students are agents of their own learning and partners in the learning process … [and have an] innate potential to inquire, question, wonder and theorize about themselves, others and the world around them" as foundational to the processes she put in place to transition to online learning.

School B – An operational problem

The PYP coordinator, Helen, represents the problem as a lack of technology expertise needed to plan and implement digital learning for students. The move online was presented to the school community as a minor procedural change. School would continue as usual with student learning being moved to an online platform.

School C – A philosophical problem

The PYP coordinator, Julie, represents the problem as transforming a culture. She attempts to convince a community committed to experiential learning in nature that technology used with the PYP inquiry framework can foster a transformative student experience in the academic as well as the bush program.

Summary of Question 1: A local educational problem

Across the schools, the 'problem' was represented as an educational problem:

- School A's problem: offering students learning experiences in the community;
- School B's problem: the planning and implementation of online learning;
- School C's problem: the risk and potential of technology redefining the delicate balance of experiential and academic learning in its program.

None of the schools used the pandemic as an opportunity to disrupt their localised regime of truth. The 'new normal' was about continuity of the old normal, only this time with digital technology. Each problematisation emerged to perpetuate the school's unique character.

6.3 Question 2: What presuppositions underlie the representation of the problem?

The underlying assumptions and preconditions that enabled schools to develop each solution were twofold: the schools' approaches and beliefs systems about knowledge and

learning, and the social and technological structures of the schools. The purpose of education at each school led to different conceptualisations of objectivity and the validation of knowledge. The processes of inquiry-based teaching were similar, yet each school relied on different inquiry systems to developed different types of student inquirers. The inquiry systems outlined in the literature review – one true formula, expert consensus, multiple perspectives, expert disagreement, and systems thinking (Mitroff, 2019a) – are helpful theoretical lens to examine the underlying assumptions in each school about inquiry-based teaching and learning and what it means to be knowledgeable.

Knowledge and inquiry

School A: Multiple perspectives and open inquiry

School A positions itself as a non-selective education, placing the learner and the learning community at the centre of its school. It connected students to the local and wider community through digital technology, providing the child with the possibility to discover the world. The child was a community member, as were the parents. The home-school relationship was a partnership.

School A created the conditions that allowed students to use their senses to come to an understanding of the virtual and physical worlds. Students were encouraged to observe their own learning processes through self and peer reflection. The goal was to accentuate the interplay of thinking, sensing, and the children's own intuition to achieve new ideas. Both the teachers and the students learned through being in dialogue with each other and the world. They fostered a knowledgeable student able to adjust to changing circumstances. Multiple perspectives and Hegelian storytelling approaches to inquiry underpinned the transdisciplinary program design, using a combination of guided and open

inquiry. The teachers offered the technology as tools to communicate and reflect on student actions. The place-based learning approach supported students to think "outside their brains" (Murphy Paul, Annie in Araya & Marber, 2023, p. 157). By changing the learning spaces and asking students to document their learning using technology in any way they wanted, students were partnering with technology guided by their teachers.

School B: One true formula and confirmation inquiry

School B positions itself as a traditional independent school offering an academic pathway that prepares students for the future. The school's business as usual view of the transition to online learning relied on maintaining established school procedures and policies. School B based its program on logical reasoning and well-established subject-specific outcomes. Its model was underpinned by a Leibnizian inquiry system where the goal was for students to apply software functionality to curriculum content to demonstrate pre-determined curriculum outcomes. Information, filtered through apps, was the tangible or real world that children investigated and from which teachers were expected to make generalisations. Through the blended learning curriculum, teachers prepared lessons for students that demonstrated their ability to confirm knowledge using a combination of direct instruction followed by structured inquiry. The teachers watched students produce the right answer using the software.

School C: From systems thinkers to confirmation inquiry

School C was committed to experiential learning, with traditional academic learning alongside. It positioned the child in relation to nature, providing a kind of "heterotopic" space (Tamboukou, 2004, p. 400), a place for children to be themselves away from the socio-technological world while still being in a familiar place, the school. Although the PYP

coordinator wanted to use technology in new ways, the teachers simply replicated the teacher- and content-centred approaches to learning something using digital tools.

The PYP coordinator in School C tried to promote an approach to inquiry in the academic program that was like the experiential learning in the Bush school. However, during the pandemic they used worksheets and more traditional transmission learning where students tried to find the right answer to knowledge questions. In the Bush school, pre-pandemic, teachers were developing students' sensory abilities, and in the academic program their ability to apply their knowledge. The whole school program separated "the methodology of gathering information from the methodology of creating theories" (Churchman, 1971, p. 129).

The goal of School C's alternative education is to link expert consensus and objective truth to sense making. Some Hegelian dialectic was part of its approach, asking students to use critical thinking to juxtapose the sensing in the Bush school with the pure logic of the academic program to create meaning. Technology was used minimally. The formation of students moved away from holistic systems thinkers to knowledge consumers while waiting to re-engage with nature.

The underlying inquiry system

Each school prioritised different inquiry systems, placing the student in a different relationship to knowledge. For School A, knowledge is validated by multiple perspectives and self and peer evaluation. In School B, logic validates knowledge. In School C, there are two separate systems of validation at play: Pre-pandemic there was a dialectical interplay of thinking, sensing and intuition. Intuition is the means to bring ethics and logic together to produce an ecologically minded inquirer. During the pandemic, the school's focus on

academics led them to validating inquiry learning through subject content and logical reasoning without reference to their experiences in nature.

Social and technological structures

Social structure

The solutions for each school were all dependent on highly functional home environments and parents who had a strong investment in their child's education. The preconditions for student- centred learning and access to technology rested on the assumptions that:

- students had a stable and comfortable home environment with parents who were able to support the children to be 'at school' at home;
- both students and their families had a reasonable degree of digital literacy to navigate the range of hardware and software being used;
- each student had exclusive use of at least one device;
- children and their parents were committed to making the experiment a success.

Infrastructure, policies and practices

Although access to technology and bandwidth was an issue globally (West, 2023), it was taken for granted in these schools. All schools used almost identical technology stacks – Google classroom, iPad, Seesaw and Teams, as well as an LMS. Each school had a technology policy that focused on responsible use. Policies did not address learning, let alone emergency remote learning. Each school supported students and teachers with technology and learning using a combination of policies and mandates. The technology policies and practices positioned teachers, students and parents differently in relation to technology.

School A: A digital learning team

School A had a digital learning team who supported teachers and students to integrate digital learning into classroom activities.

School B: A BYOD policy

School B had BYOD and responsible use policies. During the pandemic, the school hired a learning technology consultant to move face to face teaching and learning online. Teachers needed collaborative planning time as part of their teaching load and a digital consultant to help them with the planning and app selection. Students needed access to digital devices and a learning environment at home conducive to learning on the computer. Parents needed to provide the hardware, software, a learning environment, moral and academic support, and the skills to navigate the education compliance system.

School C: An IT department

School C had an IT department that was responsible for procurement of technology.

The interplay among prior beliefs about knowledge and its validation, and the conceptualisations of students as inquirers, underpinned the inquiry system chosen by each school and also influenced the technology support structures put in place by each school. These structures established unique relationships between technology, learning and teaching, and between the school and the school community.

Leadership structures

The leadership practices were adjusted to accommodate the perceived level of teacher expertise and the degree of change required for remote learning. A dominant type of leadership emerged in each school, ranging from “servant-leadership” (Van Brugge, 2012/2013, p. 249) to “school effectiveness” (Muijs et al., 2014, p. 231) to “transformational leadership” (Leithwood et al., 2020, p. 16).

School A: Servant-leadership

The leaders of School A realised that the transition to remote learning required teachers to "draw on their full range of professional experiences and who they were as a person" (Sorensen, 2023, p. 1) to be able to improvise in these unusual times. Leadership was "invisible" (Harris et al., 2013, p. 928) and resembled "servant leadership" (Van Brugge, 2012/2013, p. 250). The leaders took notice of the people engaged in teaching and learning in their decisions to transform the entire school program online, not just the curriculum. The conduit between senior leadership, teachers, students and parents was the PYP coordinator. The leaders fostered collaboration and trust by asking her about what the teachers needed. What Katie said was considered in the policy decisions and messages shared with the school community. Governance started with the local classroom. School leaders and teachers worked together, evolving their program into the inclusive and enriching program that they had always provided.

School B: School effectiveness

The senior leaders in School B continued to maintain the level of accountability to the state curriculum of pre-COVID times and persevered with achieving student performance outcomes. Their focus was on school effectiveness. They accepted the authoritative voice of technology solutionism (Milan, 2020), with its logic:

- that a causative association between a function of technology and teacher practice can lead to pre-determined student outcome (Grant, 2022);
- that teachers lacked technical expertise;
- that digital transformation is an operational rather than human process.

The leaders expected teachers to construct interventions that produce student outcomes in discrete knowledge areas of the curriculum. From their pre-pandemic experience, they

expected that some resilience building might be needed during the 'struggle' of learning. This led them to reintroduce a modified wellbeing program.

School C: Transformational leadership

The senior leaders in School C remained faithful to their vision of the child in nature, exercising a form of transformational leadership. They did not want to modify or redefine their program through technology. They did not provide teachers with any extra assistance to make the transition to online learning. School C contested online learning's place in their program as it contradicted the very core of their collective identity. The teachers accepted technology as a short-term emergency solution while they waited for the return to normal. The PYP coordinator, too, used transformational leadership to try to inculcate the vision of the IBO. School C protected their teachers' expertise in experiential learning from technology, while allowing the academics to be mediated by technology.

Authority behind the decisions and actions

In most jurisdictions, IB teachers use their professional judgement to navigate two education systems. Schools in Victoria represent learning as conducted through teachers making objectives visible to students and giving them evidence-based methods which they implement (Department of Education Victoria, n.d.). Conversely, the IB represents teaching as reflective practice and learning as exposing students to open-ended puzzles that involve problem posing and problem solving, encouraging students to challenge their thinking in dialogue with others (Edling, 2023).

The teachers' interpretation and integration of IB education and the localised regime of truth determines their stance on inquiry and approaches to technology and leadership.

Each school crafts its authoritative voice from different policies and practices on inquiry, student-centred learning, technology, teacher expertise and leadership.

School A: Teachers

In School A, teachers were valorised. School A's distributed decision-making model prioritised the needs of teachers in the classroom their strategy to make emergency remote learning work.

School B: Technology

In School B, technology was given the authoritative voice, supported by accountability policies strictly enforced by the senior leadership.

School C: Sustainable education

In School C, sustainable education was given authority. Teachers were left in limbo, with a purpose of schooling that was rendered unattainable. Normally, School C "provid[ed] the space for teachers and students to shape the self in different ways" (Simons & Masschelein, 2019, p. 121), treating education as an invitation to self-transformation. During the pandemic this broke down. Leadership provided a vision for the community but no tangible way forward, leaving teachers to improvise.

6.4 Question 3: How has this representation of the problem come about?

Each school crafted a strategy for emergency remote learning that reflected their pre-pandemic commitments to the community, and their obligations as an education institution. Each school had a unique combination of goals, processes and approaches to learning that acted together to form the localised regime of truth. A complex mix of educational purpose and approaches, technology, social structures and leadership practices underpinned the provision of continuity of student learning.

School A: A commitment to the capable child

School A put student agency at the centre, revealing its commitment to the capable child and their obligation to develop an open-minded, knowledgeable communicator and inquirer. The strong relationships between school and the community, and school as a place for self-expression. made it possible for the PYP coordinator to reject a disciplinary, didactic approach to learning. She referenced IB *PYP principles into practice,* based on the learner, learning and teaching, and the learning community which places child-centred inquiry-based learning at the centre of planning. Technology was at the service of experiential, transdisciplinary inquiry-based curriculum. It connected students with their teachers, the school and the learning environment. Over time, School A reestablished its connections to community. Children used technology to connect and share what they were learning and doing. Starting from home and the teacher, place-based learning was enabled through digital connectivity. Once they build the skills of remote learning, specialist teachers and extracurricular activities were incorporated into the learning program. Eventually, virtual school assemblies united the community creating a sense of closeness.

School B: A commitment to the national system

In School B, the ability to engage in computer-based learning became to the indicator of cognitive performance, revealing the school's commitment to the national education system and obligation to develop resilient, high performing students, neither of which are attributes of the IB Learner Profile. Their commitment to the system and learning as an individual process led the leadership team to hire EdTech expertise and adopted the consultant's blended learning model tied to ACARA outcomes. The teachers substituted software for human interaction. "Technology implementation involves thoughtful and intentional planning on the part of teachers to ensure the tools match identified learning

goals" (IBO, 2018f, p. 1). School B was also guided by the previous version of the PYP framework, *Making the PYP happen in the classroom* (IBO, 2009b) which is based on the written, taught and assessed curriculum. Through collaborative planning and the consultant's advice, the teachers developed a written and assessed curriculum which would be taught by technology. Teachers programmed learning with various apps, then observed students' engagement in tasks and achievement of the intended outcomes. The wellbeing activities each morning were designed to foster engagement in computer-based education. The strategy reflects the advice in the original IB policy on technology for PYP schools, *The Role of ICT*, where the teacher's role is to enable students to be " discerning producers and consumers of content and tools" (IBO, 2011, p. 4). The performative culture and purposeful implementation of the written, taught and assessed curriculum positioned technology as the solution to system accountabilities.

School C: A commitment to alternative education

Resistance to technology-first education was core to the philosophy of School C. They were committed to providing a learning environment that complemented and contrasted traditional academic schooling. Incorporating technologies in the educational ecosystem risked derailing its holistic program. The PYP coordinator tried to bring inquiry into the academic program and the IB approaches to learning into the bush program. She tried to convince staff that they could use technology to augment and modify what they do. Because all schools used technology during the pandemic, it was unclear to what extent School C was an alternative. Pandemic governance became an existential threat to School C, leading it to distance their program from any type of technology-driven learning. School C continued its commitment to multiple truths about learning and positioned holistic environmental education as an alternative to traditional schooling, revealing its

commitment to developing an eco-friendly child who was a caring, balanced, principled thinker.

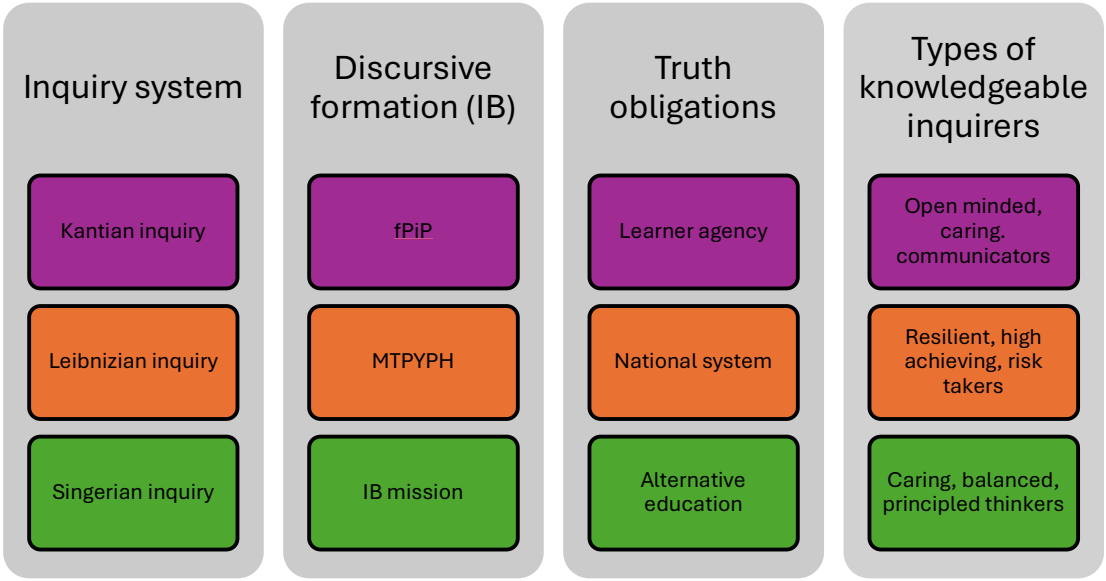
The formation of knowledgeable inquirers in the three schools

All PYP coordinators referred to technology as being in aid of educational goals rather than determining them. The guidance from the IBO they referenced and the way they used technology for learning led to students learning through different inquiry systems. All students were becoming different types of knowledgeable, inquirers.

- In School A, Kantian inquiry and the latest version of the IB PYP principles into practice led teachers to focus on student agency which formed open-minded, caring communicators.
- In School B, Leibnizian inquiry and the original version of the PYP curriculum, *Making the PYP happen in the classroom,* led teachers to focus on national system requirements with the aim of forming resilient high achievers. Yet, they formed risk takers.
- In School C, Singerian inquiry was the preferred approach to learning. Inspired by the IB mission, School C focused on an alternative ecological education to develop caring, balanced, principled thinkers.

The figure below depicts the relationship between inquiry, IB policy and schools' commitment to the formation of students.

Figure 7: Comparing the three schools' production of knowledgeable inquirers



(Richards, 2025)

6.5 Question 4: What is left unproblematic in the problem representations

The tenets of an IB education

The IB Learner Profile (IBLP/LP), international mindedness (IM) and the type or quality of technology in schools were never mentioned directly.

IB Learner Profile (IBLP)

The IBLP describes the types of learners the IBO hopes to produce (Rizvi et al., 2020), learners who can meet the challenges of 21st century learning. The Learner Profile and International Mindedness connect the personal to the social and to the global, with the aspiration for a way of life that "produces human progress and individual happiness" (Popkewitz, 2008, p. 2). The learner profile attributes are learnt alongside the curriculum,

influence the approaches to teaching, and form learner identity (Rizvi et al., 2015). The PYP coordinators interviewed never mentioned the learner profile or international mindedness. Perhaps, they were considered unproblematic when other matters were considered more urgent. The IBO too pushed the IB learner from the centre of its Crisis Support Framework, replacing it with the IB logo.

International Mindedness (IM)

The silence around international mindedness in the three Melbourne schools could be a signal that the PYP coordinators take for granted that Australian schools are shaped by high immigration and a shared disposition towards cosmopolitanism. Potentially, the PYP coordinators conceptualised their schools as ”transnational learning spaces” (Rizvi et al., 2020, p. 159) which are already globally connected, given that Australian schools have a high level of technology.

The quality and safety of the technology

Access or availability of technology, student privacy, digital safety and the quality of technology were mentioned, only minimally, by two interviewees.

Technology availability and quality

None of the coordinators mentioned availability of technology as an issue. Either the school paid for extra devices or used their BYOD policy. Procurement of technology was an operational matter, not an educational one. None of the coordinators questioned the technology stack on offer to schools. The learning management system (Google classroom) and video conferencing (Zoom) were designed to replicate traditional transmission teaching (Reich, 2021). They are not the state-of-the-art technology, such as immersive environments.

Privacy and digital safety

There was only cursory mention of digital security. The senior leaders in School B were concerned about teachers allowing children to listen to guest speakers on Zoom without ensuring they had completed 'working with children checks'. None mentioned the mining of student data by the digital apps used with students.

The security parameters recommended by the IBO are equally inadequate. Schools are advised to check the pricing plans of digital products for evidence of protection. The recommended digital safety strategies include only to provide individual logins and to ensure end-to-end encryption and house data on the school's private servers for extra privacy (IBO, 2021b). There is no mention of the use of student data, the on-selling of student data, or student rights to intellectual self-determination.

6.6 Questions 5 and 6: What effects are produced? How has the representation of the problem been produced, disseminated and defended?

The solutions devised by each school changed the places and processes of teaching and learning with technology, produced different student experiences and required different approaches to leadership. The effects were different in each school. The educational purpose of each school justified the approach to online education.

The places and spaces of school

The transfer to remote learning changed where school occurred. Each problem representation put school in a different place and the student in a different relationship to learning and technology.

School A – School is everywhere

School was everywhere – at home, in the garden, on the street, online, and with family and peers. In School A the classroom was in the home with students inquired into their immediate environment using the approaches to learning they were familiar with from being at school. The learning spaces were synonymous with real world. Technology served as a connector of people, places and ideas. The world is a place not the computer. Learning is discovery and expression of the self in the world.

School A minimised the distance between students and their teachers. Collaborative learning was made possible through digital connections. While at homes children felt they were at school at home. The school leveraged technology to unify the community through inquiry and collaborative learning. The role of place and the myriad of people that make up school came together in new relations, always keeping the child and inquiry at the centre.

School B - School is in the computer

School B and its students moved inside the computer. The computer became a surveillance tool for the teacher to ensure students performed. With school at home, parents are instructors, expected to play a performative role and governed by school policies designed to manage students.

At School B, the incongruence between the affirmation about technology and learning by the consultant and the experience of the students and teachers made going to school untenable. Watching students use apps to complete tasks alienated teachers from teaching and learning and from their students. Even more debilitating, as the wellbeing coordinator was seeing, the students refused to engage with school.

School C – School is nowhere if not in nature

School C set down a space for cognitive learning and one for experiential learning. One allowed students to be themselves and learn through experiences, while the other provided a control mechanism to reflect on and analyse experiences. To some extent, School C fosters a place that is apart from social norms to encourage students to explore how they related to the natural world and the human made world. School closures forced School C to reconcile this dualism. The heterotopic space of the bush school turned into a "utopia" (Tamboukou, 2004, p. 400), an unreal and unattainable place. With the community rejecting technology and the Bush school unavailable, teachers reverted to providing traditional worksheets so students could keep busy all day.

Teaching and learning with technology

Teaching and learning with technology was used to achieve different educational goals. Its deployment affected the type of learning and the relationships within the school communities.

School A – Tools for communication not for learning

School A used technology to establish multiple channels of communication for each child. Technology was the connective tissue for a community of learners in the absence of direct contact. Applying knowledge to real-life learning drove the decision making about what students would do. The school's approach to teaching and learning with technology transformed the home environment into the child's real world learning environment. Students were guided and encouraged to discover their immediate surroundings, interacting with the home and local environment, using what was at hand in familiar surroundings. Socks became mathematics materials; fence posts were used to discover and identify patterns.

Student agency was central to the demonstration of learning and technology tools facilitated this. Technology was used to thread student agency "through the three pillars of the curriculum: the learner, learning and teaching and the learning community" (IBO, 2018c, p. 3). Students used it to share what they found while exploring the local environment or to communicate different ways of representing knowledge. The learning activities often had the students create something of value for another person beyond the classroom. As the teachers and the students gained confidence in using the technology and being at school while at home, activity design increasingly encouraged students to make connections between the real and virtual worlds. Students' prior knowledge and experience helped them make connections.

Teachers used familiar school activities as jumping off points for inquiry. The virtual school camp is a prime example. They beamed the campsite with the outdoor education teachers into the students' homes through video conferencing. Students engaged in virtual demonstration lessons, like YouTube explainer videos or science demonstration in the classroom. The staff recreated the camp experience for the students in their homes by having them cook damper, build tents and even sleep in their constructions just as they would on camp. The Music staff started each morning with a trumpet wakeup call over the three-day virtual camp. These experiences, mediated through technology, were primarily about connecting students, teachers and the learning environment in authentic transdisciplinary learning. The purpose was not to learn how to use technology but to use it to connect home and school to the child. There was a blurring of the virtual with real, the personal with educational, and the social with the material.

The virtual assemblies are a prime example of using "the power of technology to bring the community closer together and overcome boundaries" (IBO, 2018d, p. 48). The parents are

brought together with their children and the school community to “form the bridge that connects learning and teaching” (IBO, 2018c, p. 4) to the children’s experiences. The assemblies brought school life into the home through high quality virtual production nights. Like in the school auditorium, the school’s production team choreographed a collection of virtual performances to showcase school life during lockdown. The PYP coordinator and the school community used technology to “sustain a positive school culture” (IBO, 2018c, p. 4).

School B – Programming to produce student data

Bringing “algorithmic fluency” (Braidotti et al., 2019, p. 40) directly into the school, in the form of a digital learning consultant, created a new assemblage of teaching and learning, one where the student was directly positioned to be mined for their cognitive data and used as testers of digital technology. The teacher became the programmer of such experimentation.

School B tried to maintain a performative education through a mix of neuroscience and behaviourist psychology, positioning teachers as observers of student progress towards technology acceptance. Teachers transformed into IT workers through their process of curriculum design and delivery, which revolved around user acceptance of apps. They were guided by the premise that there is a technological functionality can link teacher practice to student outcomes in the areas of the curriculum to provide a causal link between technology and learning (Grant, 2022). By marginalising the social actors and promoting technology as the solution to education provision, teacher expertise, the school neglected human collaboration among students and educators, and the emotional aspects of education (Jones, 2020) were also marginalised. Moving online changed the relationship between the teacher and the learner.

Collaboration also changed. Teachers and the consultant were together in the collaborative planning meetings. The parents were with the 'kids', and the students with technology. The relationships with students were mediated through technology, the apps and the blended curriculum. Collaboration became a functional tool to get students to use technology, not a social endeavour where teacher and student shared experiences and developed relationships. Collaboration between parents and students was discouraged. As teacher aides, parents' role was to encourage the student to collaborate with the app, not with them.

The apps are intended to facilitate interaction between the student and the curriculum. It is the PYP teacher who determines the level of support that is acceptable, not the teacher aide. Core to being a teacher is being with students and their learning. When it was mediated by technology, teachers could no longer be spontaneous in the classroom and use student feedback as a driver of individual and class learning. The highly personal interactive student-teacher relationship of inquiry-based learning was removed. The dissonance between a collaborative community of inquiry in face-to-face IB education and collaboration during remote learning was another unsettling aspect of technology-first learning in School B.

Going online caused an increase in student absenteeism, non-submission of work and a decrease in student engagement. Adding individual wellbeing activities to students' academic programs to build resilience did not work. Students refused to turn on their cameras and the teachers experience exhaustion. Masking performative learning model with resilience activities suggests the school has a behaviourist ideology. It uses the pretence of putting students' needs first, while fulfilling the system's need for student outcomes and Edtech's need for student data. As technology had the authority, it never

occurred to the teachers to change the blended learning model. They blamed the children, then the parents, even some teachers who were not skilled with technology.

School C – Resisting technology while revering its transformative potential

The unique programs in School C could not be replaced by technology, either ideologically or in their enactment. The PYP framework was not seen as a solution to integrating technology into their programs, in spite of the PYP coordinator's attempts to model technology for learning and providing the popular SAMR digital learning protocol to help them. She wanted to transform and augment their programs rather than simply replicate current practice. However, teachers did not want to transform their programs.

The PYP coordinator embraces the potential of technology to improve student learning, especially for those children who have special learning needs. She also wants the teachers to use technology for learning models to do things differently. However, the staff and community resisted. They accepted a reduced academic program while they waited for the Bush school to reopen, not wanting to modify let alone redesign their unique program.

Leadership

All three PYP coordinators crafted themselves as PYP leaders drawing on different aspects of the IBO's definition of effective leadership.

> At the core, effective leaders are individuals who provide direction and exercise influence to achieve a shared vision and aspirations of the school. Effective school leaders acknowledge the agency of all members of the learning community and they motivate, challenge and encourage others in the learning community to take on formal and informal leadership roles to advance the school mission (IBO, 2018d, p. 19).

School A – Servant-leadership builds the community

The PYP coordinator described being a leader during lockdown as an evolutionary process where leadership was a response to the circumstances and the people caught up in them. The senior leaders acknowledged the agency of all members of the learning community, motivating them during remote learning through taking a collaborative approach to being in lockdown. The leadership was distributed among the teachers, students and the school leadership team. The senior leaders looked to those closest to the students to help them set the direction.

The PYP coordinator described leadership as 'evolving' as they got better at responding to school life in lockdown. She started with survival leadership, "we did it because we did it" (Katie). Teachers worked almost from instinct, using their collective strengths to get through the challenges of being remote. As they got more proficient, the coordinator moved into management mode, letting teacher judgement guide the next iteration of remote learning. This gave teachers the confidence to innovate.

School B - Delegating responsibilities sustains school effectiveness

The PYP coordinator tried to live up to the expectation that the school will run as if nothing has changed. Lessons were segmented in the same way, starting with direct instruction, then moving to independent learning, and assessment, providing a familiar routine for teachers and students. Additionally, existing policies were applied to manage similar type events in the new situation. The school leveraged its BYOD iPad policy, user agreements, attendance, learning needs and child protection policies to effectively manage parents and "their students" (Helen).

The senior leadership of School B delegated the responsibility of getting through the curriculum to the digital learning consultant by adding her to the pedagogical leadership

team. The PYP coordinator and the teachers delegated the responsibility of assuring validity and reliability of student assessment to the parents. Responsibility for attendance, submission of work and student engagement was also delegated to parents, expecting them to assure the school's accountability to the system.

School C - Leadership bridges the gap between what is and what could be

The PYP coordinator used transformational leadership to bring in a shared language and vision of learning uniting traditional academic learning and rich experiential learning under one transformative vision. Her starting point was to bring the IB pedagogies into the educational programs. This meant transforming knowledge acquisition in the subject areas and experiential learning in nature into one seamless, transdisciplinary student-centred, inquiry-based programme. The senior leaders, too, used transformational leadership to reinforce the vision and value of ecological education. They kept the commitment to sustainable education alive while students were engaged in traditional learning.

The multiple effects of transitioning to online learning

School, teaching, learning, and assessment happened in many places when they were mediated by technology. The real and virtual worlds became the place where School A happened. School B moved inside the computer. When learning in nature and nature was not accessible, School C was nowhere. Teaching and learning with technology was also enacted differently. All schools used technology as a tool. However, in School A it was a communication tool, in School B, a teaching tool, and in School C, a substitute for academic content. Different approaches to leadership were used. Servant-leadership emerged in School A as it fostered the agency of teachers and students. Effective leadership dominated

School B to ensure all stakeholders contributed to the system. In School C, transformational leadership was used to defend a utopian vision of experiential learning.

6.7 How did PYP coordinators shape teaching and learning, themselves and their students during the pandemic?

The school purpose and perceived local and IB governance responsibilities influenced how PYP coordinators transitioned teaching and learning online. They each attempted to solve a different educational 'problem'. The solutions they enacted changed the place and experience of schooling. The transition to online learning shaped new learning spaces, leadership approaches and changed the relationship between teachers and their students. The school's historical relationship with the IBO also had an influence on what the coordinator said about transitioning the Programme of Inquiry to online learning. Each school re-storied the principles and practices of the IBO, making them represent the school's teleological goals.

Shaping the places and spaces of teaching and learning

When schools closed, the place of school was reconceptualised. School moved to different places to accommodate the integration of technology into the schools' obligations to the local and the IB communities.

School A

School A began to reconceptualise the school as "a public space" (Allan & Harwood, 2022, p. 275). The real world was a physical place connected by virtual space. The school had clearly positioned student led-inquiry in the real world and already had the structures and process to support teachers and students to use technology for inquiry-based learning. During lockdown, the digital learning team helped the whole school use the available digital

technology to transpose one learning environment for another; that is, home became the classroom, the kitchen a campground, and home theatres became the school auditorium.

School B

School B shaped the school as a cognitive place. Learning was brain based. It dispersed school across a myriad of places to achieve its performative accountability outcomes. Learning occurred in the minds and brains of students. Planning and programming happened among teachers and a consultant on Zoom or by email. Teaching and assessment were through technology, placing the student in relation to the hardware and software, taking the teacher out of the relationship, except for some preliminary instructions to explain the task. Pastoral care and student behaviour management moved between the home and the head of junior school's office via Teams.

School C

For School C, school was an unattainable imaginary space. School C could not find a place for school. It could not be in nature. It could not be at school. It resisted the digital world. School was nowhere. Students were at home on their iPads or MacBooks doing worksheets, waiting to be able to go back to the bush. The heterotopic space created in the Bush school turned into a utopia, an unattainable imaginary space for "leading a good life" (Vlieghe & Zamojski, 2019, p. 103). The academic program was reduced to busy work.

Shaping middle leaders in schools

School leadership in the age of digital technology has historically focused on the leader's competence with the use of technology (Anderson & Dexter, 2000; Leithwood, 2002) and installing technology in school buildings (Schiller, 2003). However, it is also pedagogical and political (Yee, 2000). Leading in online spaces is relational and requires "power sharing …

individual and collective agency" (Harris et al., 2013, p. 929). Different interpretations of leadership were picked up by the coordinators to form themselves as leaders. The leadership practices adopted by each school ranged in focus from "student centred" (Robinson, 2011, p. 4) to "managerial" (Holloway, 2019, p. 208) to transformative.

School A

Prioritising the student in the community, coupled with a need to rapidly innovate classroom practice, meant leaders needed to get closer to the community. This resulted in the school leaders distributing their decision-making structure to seek input from those closest to the students. Middle leaders, teachers and the situation transformed the relations between the senior leaders and the teaching staff. The teachers and the PYP coordinator took on formal and informal leadership roles of teaching and learning. The senior leaders built trust with the school community through servant leadership. This redistribution of responsibility freed teachers to prioritise the student, the learning culture and the learning community and adopt an improvisational approach to remote learning.

School B

When the production of outcomes for the system was prioritised, the teachers, students and their families became implementers of the technology consultant's blended curriculum and wardens of the learning environment. The senior leaders maintained central control and delegated responsibilities. They reduced the problem of remote schooling to using technology for learning curriculum content, downplaying the social aspects of education. They steered school operations, controlling and monitoring all stakeholders to ensure they met their accountabilities to the system, even at the cost of the wellbeing of teachers and students. Adding a digital learning specialist to the pedagogical leadership team removed the responsibility for the design of teaching and learning from the teachers and the PYP

coordinator, giving a tech entrepreneur the authority to decide the school's digital learning policy direction. The delegation of authority to a consultant was designed to ensure the school's outcomes agenda. The Junior School leadership team's role was reshaped to manage behaviours so that technology could produce the outcomes needed for the system.

School C

When culture was paramount, leaders asked the community to hold onto their ideals while they got through the crisis. For School C, the pandemic was "an existential crisis in meaning" (Mitroff, 2019b, p. 93). School C had the most to lose with a technology-first education. It had leveraged the popular metaphor of the avalanche of technology, a natural disaster that cannot be controlled to justify the school's child in nature narrative. It rejected technology as "a route to success" (Mason, 2018, p. 548). The leaders reinforced their commitment to an environmental agenda while asking the school community to use technology for continuity of the academic program. The school's whole identity was at risk. It could no longer position itself as a clear alternative to other schools in Melbourne, so spent time on perception management. The pandemic experience revealed that the digital world had not found a place in the alternative vision of School C. A transformational leadership stance was adopted by the PYP coordinator, who wanted the teachers to see both the potential of technology for learning and how inquiry was a good fit for their school. By promoting the Substitution, Augmentation, Modification and Redefinition (SAMR) model, which advocates for modification and redefinition of learning through technology, she alienated the staff who were strongly committed to their unique program.

Shaping teachers

The transition to remote learning "was layered on top of existing pressures" (Leask, 2022, p. 148) of teaching. It reshaped IB teachers. Naylor & Nyanjom (2021), through their research into educators' transition to online learning during the pandemic, identified four types of remote teachers: "futuristic pioneer … ambivalent educators … cautious pioneers … [and] … disillusioned educators" (p. 1242). This construct is useful to illustrate the formation of the teachers in the three PYP schools in Melbourne.

School A

Teachers in School A became "futuristic pioneers" (p. 1242). They had high institutional support. They were motivated to try new technology and engage students in new ways. They saw themselves as pioneers and felt they were part of a team. They were supported through a shared vision for going forward, a plan, and genuine collaboration. These educators took a constructivist approach and a facilitative role in learning, partnering with students. They used the technology tools for relationship building.

School B

Teachers in School B took on some characteristics of "ambivalent educators" and some of the "cautious pioneers" (p. 1242). They were ambivalent about the transition but felt supported by the school, which provided them with a digital consultant. They were cautious pioneers who made the transition out of a sense of duty. They felt that face-to-face education was superior and going online meant they would need to make compromises. They tended to apply in-person principles to online learning. They evaluated their own effectiveness at programming online learning through observing student engagement in tasks. Their performance was dependent on student acceptance of technology.

School C

Teachers in School C adopted some of the characteristics of “cautious pioneers” and some of “disillusioned educators” (p. 1242). They felt negative emotions towards technology. They were cautious pioneers who resented the situation. The PYP coordinator felt a loss of control and low support. The teachers believed that online learning was the lowest form of education with little opportunity to engage in experiential learning. The PYP coordinator felt that the teachers would not allow themselves to be creative. School C promoted face to face as better, but they had to deliver their program online. The teachers were conversant with the technology but had limited understanding of the way technology interfaces with experiential learning.

Shaping students

All schools developed students to be knowledgeable inquirers, forming them into a cosmopolitan child. They intentionally and unintentionally developed some attributes of the IBLP.

School A

Students were capable and resourceful, able to contribute to the community. The school developed students who could inquire through sensing, exploring and connecting with others and the world and designed opportunities for multiple perspectives, encouraging students to be caring and reflective problem solvers. The school’s approach fostered students’ ability to express international mindedness through a balance of living rationally and solving problems while also being caring, open-minded, reflective communicators.

School B

School B wanted students to willingly engage in technology to find the right answers to curriculum items. Students were managed through learning management systems; attendance was recorded when a student logged on and turning on the camera was a requirement to be counted as being present. Behaviour infringements and corresponding punishments were used to persuade students and parents alike to take responsibility for student learning. Students were expected to overcome struggles encountered in computer-based learning, assisted by daily wellbeing activities which developed resilience. The reliance on cognitivism reduced students to "a set of measurable skills that can be acquired through personalised learning, digital pedagogies [and] whole brain learner-centric approaches" (Bryan, 2022). The cosmopolitan child in School B was formed through calculation and planning. The approach unintentionally encouraged students to be risk takers. Through the simple act of turning off their cameras, they resisted computer-based learning.

School C

School C valorises the child's relationship with nature and links that to a cultural relationship with the national curriculum. Students were system thinkers who were caring, balanced and principled. A commitment to environmental education and saving the planet was their expression of international mindedness. The parents were prepared to commit to environment education but not at the cost of their child's academic success. During the pandemic students were shaped through busy work, waiting to go back in the natural world.

6.8 Conclusion

Remote learning separated “the place of learning from the source of leaning” (Harris et al., 2013, p. 927), creating new socio-spatial relations. This change was problematised differently in each school, which led to three very different solutions. The PYP coordinator, teachers, students and parents in each school resisted the new roles and relationships to varying degrees. In School A, they rejected a technology-centred curriculum and remained committed to their human-centred, action-oriented inquiry. In School B, the students turned off their cameras and parents refused to let children fail alone in the impersonal technology environment of computer-based learning. School C refused to move school to the computer all together. The PYP coordinators in School A and B were mindful of the need to maintain human relations. School A did this by using the affordance of technology for multimodal connectivity. School B tried to reintroduce wellbeing activities to build student resilience in the face of computer-based learning. School C made it through the pandemic by holding onto their beliefs.

7 Chapter 7: Discussion

7.1 Introduction

Chapter Seven consolidates the findings on the transition to emergency remote learning by three IB schools by tracing the formation of three localised regimes of truth within the pandemic policy context. The chapter discusses the convergence of facts, processes and commitments that produced three "strategic fields within which" three different "truths became tactical elements necessary for the functioning of a number of power relations" (Lorenzini in Cremonesi et al., 2016, pp. 67-68). They are represented as three localised scenarios pointing to the emergences of multiple digital IB educations, and possibilities for the future.

7.2 Outline of the research findings

The problematisations and their effects

The problem representations changed the place of school and put teachers into new socio material relations and obliged them to develop new ways of doing their job. The problematisations of PYP coordinators privileged some approaches to teaching, learning and assessment over others and determined the routines and expectations placed on students, parents and teachers in each school. The process transformed the ways of being and acting as a teacher, a student and a parent. Teachers took on the role of facilitator (School A), programmer (School B) and activity provider (School C). Their approach to student-centred learning continued to form knowledgeable inquirers. However, they different produced a different mix of IBLP attributes in the students: caring, open-minded, reflective communicators (School A), risk takers (School B) and caring, balanced, principled, thinkers (School C). Parents too were formed differently in response to each school's

situation. They acted as community members (School A), technology suppliers and teacher aids (School B) or guardians of sustainable education (School C). The actions of the three schools showed that a digital IB education was context dependent and emergent during the crisis.

Educational practices governed technology integration

The dedication of teachers to student-centred learning, their "improvisational practice" (Sorensen, 2023, p. 2) and their commitment to the school community and its values guided the PYP coordinator. From interviews, it was apparent that the teachers in all three schools worked till exhaustion applying learning design and curriculum expertise to integrating legacy technology into their practice. Through experimentation and on-the-job-training, they taught students and themselves to use the digital tools provided, adjusting to a relatively fixed "grammar of schooling" (Zhao, 2020, p. 30). Their digital transformation strategy normalised some practices and pushed others to the background, constructing new roles and responsibilities for teachers, students and parents. The experience of technology-first learning among three of the most advantaged schools in Australia was on par with the world average, as reported by UNESCO (West, 2023). Education became "less effective and less engaging when it pivoted away from physical school and teachers and toward technology exclusively" (p. 35).

Technology adoption and technology acceptance

The transition process occurred quickly, with minimal pre-planning. Within the space of a week, schooling moved online (Kidson et al., 2020). After ensuring each child had a device, schools then made three fundamental decisions: the places and spaces of schooling, the relationship between technology, pedagogy and learning, and the governance processes

needed to support remote learning. No school changed 'who they were' and only minimally changed their daily schedules and lesson structures.

The ends of education in each school drove their transformation strategy, exposing what they valued and the disposition and capabilities they fostered in students. Education lay at the core of all three transformation strategies. The coordinators tried to use technology as a means to an end, not an end in itself (IBO, 2011) often guided by the dominant discourses about technology and learning circulating at the time. Changing where school happened led to a reorganisation of the socio-material relations of schooling and education. In all three-schools, teachers and parents saw technology as a 'temporary' measure until they could get back to 'normal'.

7.3 Three scenarios of a digital IB school

In keeping with the exploratory and inductive design of the research using critical discourse analysis, the schools' responses are crafted into scenarios. The scenarios indicate how policies and practices are intertwined in the daily life of a school. They are representations of social issues, formed and legitimatised through the statements and actions of the constituents and their enactment of policy (Ball, 2012). They explore the foundational power knowledge truths, processes and obligations that guided three IB schools to integrate technology into teaching and learning and provide an empirical basis to examine the relationships between educational governance, technology and learning. Each scenario is depicted by a metaphor capturing the dynamic socio material relations at play. The metaphor 'through the looking glass' depicts School A. The PYP coordinator transported children and their families to other worlds that reflected theirs yet were different. Children were asked to engage in and reflect on the new reality. School B suffered from the 'ratchet

effect'. Once they accepted the digital learning consultant as their pedagogical leader and substituted her blended curriculum for the PYP framework, they set in motion a technology solution which outpaced their ability to manage the socio-emotional consequences. It propelled the school in a direction which, once set in motion, it could not reverse. The dilemma faced by School C in formulating a place for the digital without disrupting the delicate balance between their ecological and academic programs led to the scenario being named 'nature and technology do not mix'. Like oil and water, the oil remains in suspension and never mixes into the water unless a mixing agent is added to disrupt the natural properties of the two substances.

Scenario 1: School A: Through the looking glass

Problem representation: Being an inquirer

The 'problem' of using technology to mediate learning was represented as a constraint on student agency and students' ability to be inquirers. The solution was to use technology to support students to be in the world, relate to the community and have avenues for self-expression.

Figure 8: Data poem – Inviting kids into inquiry

Inviting kids into inquiry

Teachers use different ways to invite kids in
sometimes it would be in a 20 minute whole group session
or in 20 minute small group sessions
You would give the provocation
Set the kids off to do some exploring
then come back and share some information
lots of scavenger hunts
lots of looking outside your window to see what you could find
using the resources around you.
There was one unit

where we got kids to go on a walk down the street
to see what shapes they could see in the fences in the houses
and to take photographs
or to look at the numbers
which side's even?
which side's odd?
how do you record that?
Do you draw it?
Do you photograph it?
A lot of inquiry happened quite locally.

Spaces: School is everywhere

School A transposed the home into the child's personal classroom. Bedrooms became school camps and media rooms became auditoriums for school assemblies. The real world was a physical place connected by virtual spaces. School A's strategy was to help the children feel they were at school although they were at home. Place based learning reduced the distance between the student and their teachers. They "spatialised the curriculum" (Murphy Paul, Annie in Araya & Marber, 2023, p. 166) asking students to interpret their experiences and develop artefacts to share with others, turning learning experiences into "actual social encounters" (p. 167).

The influence of the IBO: Humanist Kantian education

School A committed to IB's humanist education and to the education of the whole child. It put ACARA standards to one side during the pandemic and focused on children's agency and the child as a caring, open-minded, reflective communicator who uses digital and analogue tools. School A created the conditions for students to use their senses and prior knowledge to understand the virtual and physical worlds. They were encouraged to observe their own learning processes through self and peer reflection. The goal was to accentuate the interplay of thinking, sensing and the children's own intuition to achieve new ideas. Both the teachers and the students learned through being in dialogue with each other and

the world. Multiple perspectives and storytelling underpinned the transdisciplinary program design using a combination of guided and open inquiry. For School A, knowledge is validated by multiple perspectives and self and peer evaluation (Churchman, 1971). Prioritising student voice and agency gave students the opportunity to interact with a variety of learning spaces and share their wonderings, findings and solutions with others. The Programme of Inquiry fostered the development of multiple perspectives by having students interact with the physical and virtual world. The school positioned students as discerning users and designers of technology (IBO, 2021b), which helped each child develop a sense of who they are in the world.

Privileging pedagogical knowledge: Trusting teachers

Pedagogical knowledge of practitioners in School A was given authority, rebalancing the power relations among senior leaders, teachers and community. Decision making served teachers, regularly checking in with them to see what they needed and communicating with the school community. The teachers' job was to facilitate and motivate students to interact in a variety of learning spaces – school events, at home, and in the wider community. Teacher judgement was trusted. Teachers were encouraged to experiment and improvise, orchestrating connections (Dron, 2023) between community and student learning.

Technology, pedagogy and learning: Entangled pedagogy

School A purchased 500 iPads for junior school students, first and foremost as a gesture of service to the community. Technology was entangled (Fawn, 2022) in their program as a mechanism "to extend an inquiry" (IBO, 2018d). The school's Digital Learning Design Team was at the service of teachers and students. The PYP coordinator rejects the idea that teachers can predict outcomes merely "through their choice of methods and use of the

tools" (Fawn, 2022, p. 713). She contends that agency is shared between and among human actors who, through embodied, socially and spatially distributed learning, partner with the technological and real world. Digital tools were communication and community building tools not learning tools. Learning was socially situated as a process of sense making. The school created the condition to use technology to extend learning beyond the content of the curriculum. Teachers designed tasks alongside the design of the learning environment and orchestrated a place-based experience for children and parents.

The formation of subjects

School A took a collective approach to navigating the new situation. Teachers planned together by bouncing ideas off each other, through sharing successes and encouraging each other with new ideas. They were motivated to try new technology and engage students in new ways. They saw themselves as "futuristic pioneers" (Naylor & Nyanjom, 2021, p. 1242) and felt they were part of a team.

"The interplay between the present as actual and the present as virtual" (Braidotti, 2019, p. 37) underpinned the formation of the child in School A. Students were formed as knowledgeable inquirers who were open-minded, caring, reflective communicators. Sharing the action of learning was what counted as successful student performance. Parents shared in their children's experiences through helping them build Gunyas in bedrooms and making damper in kitchens – make-believe camp sites. They watched school assemblies together from their media rooms. Students and parents were the object of place-based, student-centred inquiry.

Figure 9 summarises the scientific epistemology, discursive practices and the truth obligations underpinning School A's approach to digital IB education.

Figure 9: Through the looking glass: School A during lockdown

(Richards, 2025)

Possibilities for the future: Meaningful worldly experiences and connections

School A showed how technology can be a part of a social constructivist school program where students learn from each other, teachers and community members, and where the full spectrum of learning environments – local, digital and global – can be experienced by students and their families. School A showed the possibility for school to move beyond the four walls of the classroom and to allow each student to express themselves and become an active participant in life, solving real world problems for themselves and others. School A opened the possibility for "thing centred" (Vlieghe & Zamojski, 2019, p. 23) education, where education is neither student- nor teacher-centred but motivates children to take interest in the world and to be a part of it – for the world to be the learning environment, not the school, using practices of education to build a "healthy, harmonious connection to a world that is felt to be meaningfully connected to oneself" (Biesta, 2022, p. 3).

Scenario 2: School B: The rachet effect

Problem representation: Lack of digital expertise

The 'problem' of using technology to mediate learning was represented as a lack of digital expertise within School B because teachers were not trained in "technological pedagogical content knowledge" (Mishra, 2019, p. 76). The solution was to implement and manage a blended learning curriculum.

Spaces: School is in the brain

School B transformed the computer and software into the classroom. School B shaped the school as a cognitive place for children. Adults operated outside of the place of student learning. Teachers and the consultant were together in the collaborative planning meetings. The parents were with 'the kids'. The students were with technology. Information, filtered through an app, was the real world that children investigated, and from which teachers were expected to make generalisations about student progress towards national curriculum outcomes. The computer was an observation point to manage student learning.

The influence of the IBO: An indicator of high performance

For School B, the value of the IBO was as a global quality standard (Giddings, 2013) and an instrument for school improvement. School B replaced the PYP framework with the consultant's blended learning model, which transitioned IB inquiry-based learning into personalised computer-based learning grounded in a Leibnizian inquiry system (Churchman, 1971). Through the blended learning curriculum, teachers prepared lessons for students to demonstrate their ability to confirm knowledge using a combination of direct instruction followed by structured inquiry. In collaborative planning meetings, teachers and the consultant developed a written and assessed curriculum which would be

taught through technology, adding wellbeing activities at the start of each day to encourage student engagement. The teachers watched students produce the right answer using the software. The promise was that the new platform would provide the same outcomes as before. This time, students would apply the software functionality to curriculum content to demonstrate pre-determined curriculum outcomes.

Figure 10: Data poem – Our blended learning model is our curriculum

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Our blended learning model is our curriculum
has outcomes
educational goals
for each year level.
It's a programming curriculum.
With the blended learning model,
there's a purpose
why we choose the tools that we choose
making connections with learning,
they're very intentional,
purposeful.
Reflecting on
how well they used it
what can be used better,
how it could be used better.

Privileging technological knowledge: Education is a technical enterprise

When the school hired a digital learning consultant, it gave authority for decision making to technology expertise. A technology-driven parallel curriculum that would produce cognitive outcomes led to computer-based learning taking the lead. Agency was with the vendors of technology, not the educators, who were positioned as product consumers (Hogan et al., 2015), leaving the blended learner as a "co-producer of data and a target for (…) interventions" (Witzenberger & Gulson, 2021, p. 421). Curriculum design using "software as content" (Kjellsdotter, 2020, p. 830) reduced planning to selecting among the available technology options and assessing technological outcomes. Teachers were now looking to

see how students used the apps rather than how they developed and applied knowledge of the world. Teaching was done by the technology. The teachers' role was "understanding each tool's functionality" (IBO, 2018d). The substance of education was the use of software, leaving the students to acquire and validate knowledge through engaging with an algorithm. Learning was brain-based, procedural and predictable. The school's approaches to learning amounted to asking students to "think harder" (Murphy Paul, Annie in Araya & Marber, 2023, p. 158) and be more resilient, rather than "thinking with" (p. 160) the material world.

Technology, pedagogy and learning: Replacing soft skills with technical knowledge

School B tried to maintain a performative education, accepting a mix of the science of learning and behaviourist psychology. The "operating model" (Nichols, 2022, p. 9) placed the digital consultant as "an established part of [the] course design team" (p. 9) rather than as a support for the teacher professional. Teachers used their "pedagogical freedom" (Kjellsdotter, 2020, p. 835) to find ways to interpret general guidance on technology and learning into a new way of improving engagement and student outcomes. Collaboration became a functional tool to get students to use technology. It was not a social endeavour where teacher and student share experiences and develop relationships. The formula was straightforward – teachers inserted different technology applications into a set blended curriculum, substituting in different apps until they found the one that produced results which could be presented in student and school accountability reports. Expertise was moved away from teaching professionals located in shared spaces with students. New kinds of expertise took a prominent role – skills in digital data analysis, understanding "the

knowledge build into the software" (Kjellsdotter, 2020, p. 836), blended curriculum and student management systems.

The formation of subjects

The performative culture and purposeful implementation of the written, taught and assessed curriculum positions technology as both school and the educator. The computer was the school, and the software was the educator. This radically changed the roles and relationships within the school. It effectively excluded teachers from the act of teaching. The senior leaders redistributed accountabilities, placing technological expertise at the top of a hierarchical school structure. The consultant oversaw the blended learning model. The teachers' job was to select apps and observe how students engaged with them to achieve the outcomes of the blended curriculum. The teacher's role transformed. Curriculum design now revolved around programming. Teachers were "ambivalent" (Naylor & Nyanjom, 2021, p. 1242) about the transition but felt supported by the school when provided with a digital consultant. They made the transition out of a sense of duty.

Figure 11: Data poem – It is what it is

It is what it is
That's pretty much one of my go to statements at the moment
you do what you can do
parents appreciated that too.
It is all the same
just
a different platform
or
different forum
that we're in.

The learning community transformed into a volunteer workforce and technology suppliers. The school invested in the consultant and platforms, with the families picking up the cost and management of personal devices. The parents were expected to play a performative

role. The school delegated the responsibility for the management of students (e.g. truancy, special education) to the parents. The PYP coordinator, the head of junior school and the senior leaders spent their time making sure that staff, students and parents fulfilled their obligations to the system. School B showed what a performative digital PYP could look like. The student being formed was a tester of technological applications. The healthy struggle of learning pre-pandemic transformed into struggling to be well during lockdown. The instrumental use of technology separated "the social from the technological" (Inteview with Bayne in Jandric, 2017, p. 209), creating the need for wellbeing activities. It wasn't enough for students to demonstrate the outcomes, they had to do so happily and visibly, rendering them accountable to the school's socio-emotional and curriculum expectations. When teachers, students and parents refused to accept "the status assigned to them" (Lorenzini, 2023a, p. 9), School B tried to govern the community using attendance and assessment policies, exercising their power over them. Insisting that students keep their cameras on, that parents not help their students with assessments, and that teachers not expose students to the risk of guest speakers who had not completed working with children checks was frustrating and even unacceptable.

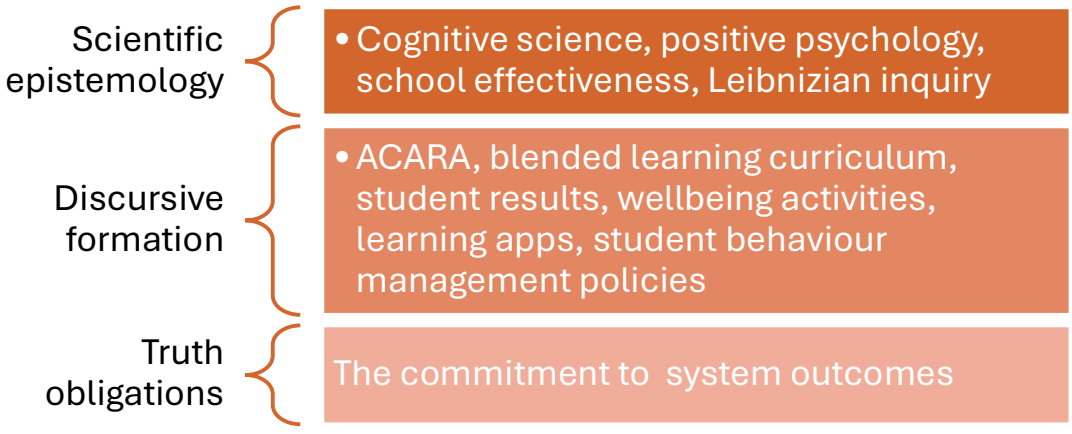
The children in School B turned off their cameras, *not* in defiance of the teacher but because they resisted being governed by technology. Turning off their cameras was their way of not consenting to being a subject of computer learning. One could hypothesize that the children were not refusing to be formed as students but as digital data. Turning off their cameras suggests that students felt alienated (Pangrazio, 2024) and did not accept the new regime of truth being installed through technology-first education. Nor did they or their parents accept the socio-material relationships that uphold that truth.

Interviews with parents may have confirmed the hypothesis that they were not resisting their children needing to demonstrate outcomes, but that they did not accept being the arbiter of the school's assessment procedure and being turned into invigilators. Nor did they accept the role of truant officer or being the one to provide special needs diagnoses on their own children when they turned off their cameras.

The school's digital management strategies unintentionally formed students as risk takers, an attributed of the IB learner profile. Teachers were uncomfortable with the technology first pedagogy which marginalised their teacher expertise, the importance of in-person collaboration among students and educators, and exposed their daily wellbeing activities as a poor substitute for the emotional work of teaching (Jones, 2020).

Figure 12 summarises the scientific epistemology, discursive practices and the truth obligations underpinning School B's approach to remote learning.

Figure 12: The rachet effect: School B during lockdown



(Richards, 2025)

Possibilities for the future: Genomics-based IB education

School B's experience showed how it is possible for buildings and teachers to become overheads, students to become datafied subjects, and for learning to move away from a psychosocial relationship between teachers and students. The possibility for teachers to encourage students to be discerning (IBO, 2021b) about the logic and ethos built into the software was not part of the consultant's blended curriculum, nor was the potential for students to design technological solutions themselves as described in the IB's AID model of technology integration (IBO, 2021b, p. 26). The school upheld a model of learning that constrains whole-child or whole-body learning and relied on behaviour management policies, be they wellbeing activities or truancy and special education policies, to keep students producing outcomes in the computer. The students' resistance to a technology first approach to learning was not likely an act of defiance towards school or a sign of their inability to achieve.

The approach to digital teaching and learning opened the opportunity to use technology to support wellbeing or, more accurately, perseverance, through emotional monitoring software (Pangrazio, 2024). This type of software can redirect children's attention to guide them back on task, much like the positive psychology wellbeing activities that the PYP coordinator tried to implement. School B showed what a performative digital PYP could look like. Leadership and governance in this context also has the potential to become algorithmic (Courtney, 2018) rather than socio-cultural. The real work of the school was managing technology adoption and acceptance and reducing the risk of invalid assessments, opening the door to computer-assisted assessments and assessment proctoring, a duty parents failed to provide.

Scenario 3: School C: Nature and technology do not mix

Problem representation: Protecting ecological education

The 'problem' of using technology in teaching and learning was presented as a change management issue. The PYP coordinator had to encourage two types of teachers – environmentalists and academicians – in two discrete educational programs (the Bush school and academics) to use the transformational potential of technology and an IB education without upsetting the ecological character of the school. The solution was represented as integrating the PYP framework into both the academic and bush programs.

Spaces: From heterotopia to utopia

School C transformed the Bush school into a utopia, a desirable yet inaccessible space for ecological learning. School became an unattainable imaginary space. During the pandemic, teachers provided traditional academic lessons using a combination of digital tools and worksheets while students were not able to learn in nature. Prior to the pandemic, School C had defined nature as the place for children to be. The academic program was a standpoint from which to reflect on the natural world. The Bush school transformed from a heterotopia to a utopia. When nature was not available, its unique program was in limbo. Metaphorically school was nowhere.

The influence of the IBO: Forerunners of alternative education

School C was attracted to the IBO's future-focused sustainability philosophy and international standing as an alternative to national systems. School C associated themselves with the founders of IBO who incubated an alternative to mainstream education (see Era 1, section 4c). Like the founders of the IBO who transformed themselves into international educators while others were stuck in a nationalist paradigm, School C maintained its stance

on alternative environmental education despite the national and global pressure to adopt a technological solution.

In the Bush school, pre pandemic, School C students were system thinkers who were demonstrated the IBLP attributes of caring, reflective and principled. The school honours the child in relation to nature and develops connections between learning in nature and the national curriculum. Students validated sense making in nature with logical thought. The goal of School C's alternative education is to link expert consensus and objective truth to sense making. Hegelian dialectic (Churchman, 1971) was central to its approach, asking students to use critical thinking to juxtapose sensing in the Bush school with the logical reasoning of the academic program to create meaning. There are two separate systems of validation at play pre pandemic: a dialectical interplay of thinking, sensing and intuition. Intuition was the means to bring ethics and logic together to produce an ecologically minded inquirer, a system thinker.

For the PYP coordinator "the biggest challenge of being online is what does inquiry look like?" (Julie). The PYP coordinator tried to promote an approach to inquiry in the academic program that was like experiential learning in the Bush school. However, during the pandemic, teachers used worksheets and more traditional transmission learning where students tried to find the right answer to knowledge questions. During the pandemic, the school reverted to validating inquiry learning through subject based academic reasoning.

Figure 13: Data poem – We've got a developing understanding of what inquiry is

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We've got a developing understanding of what inquiry is
a lot of teachers
equate inquiry with doing research
technology is used
to research
find information

and that would be what we do for inquiry.
(…)
it's probably the biggest challenge
the biggest challenge of being online
is what does inquiry look like
how can we facilitate inquiry
using technology
even though we can't be in our spaces?

Privileging sustainable education: Resisting technocracy

When a sustainable education was given authority in decision making, technology was treated as an existential threat to School C's alternative program that placed the child in nature. The discourse practices of transformational leadership became a tactic to validate the socio material relations promoted in the ecological program. The teachers' job was reduced to organising analogue student activities. Leaders reassured the community as they paused the ecological side of their program to focus on traditional academics, assuring parents that students would not fall behind.

Technology, pedagogy and learning: Technology undermines ecological learning

School C's firm commitment to sustainability and the eco-child and its unique program were all but suspended. The school was left with a traditional academic program and no basis for their claim of being an alternative to other independent schools in Melbourne. They represented digital learning as an approach for the traditional schools, not for their ecologically minded students. The school was paralysed when confronted with finding a place for the virtual world in the formation of the eco-students.

School C delivered school devices to the children's homes. When the teachers could not bring nature and human activity together during remote learning, academics came first. The PYP coordinator was optimistic about the potential of technology and tried to consult

with faculty on the benefits of integrating it into their program using the SAMR model, referencing IB teacher support materials on the integration of technology and learning (IBO, 2018e). She overlooked the fact that the school did not want to modify or redefine its unique program – the goal was to maintain it. This led teachers, on principle, to refuse to experiment with technology. It was used minimally and was not part of the school's vision for sustainable education. Teachers and parents felt "negative emotions about their transition" (Naylor & Nyanjom, 2021, p. 1245) to remote learning and resented the situation. They refused to go on the technology journey, rejecting that technology leads towards new and better futures (Mason, 2018; Weller, 2022). Learning became busy work, keeping students occupied until they could re-engage in nature.

The formation of subjects

The PYP coordinator tried to encourage the school to embrace the PYP framework into all aspects of the school program – experiential and academic. The Bush teachers resisted the PYP, viewing it as a threat to experiential learning in nature. Interestingly, the academic program teachers also resisted the PYP, viewing it as displacing them as experts and undermining the role of theoretical knowledge. The resistance by School C represents a new struggle for the role of nature and culture in schooling. Not only did the school extend the concept of international mindedness by fully embracing the ethos of 'sharing the planet', but it also questioned the role of teacher as pedagogue. The knowledge base of education was not only psychology and neuroscience but also environmental systems. School C remained aspirational waiting for the pandemic to pass. The formation of the eco-child became an aspiration.

Figure 14 summarises the scientific epistemology, discursive practices and the truth obligations underpinning School C's approach to remote learning.

Figure 14: Nature and technology do not mix: School C during lockdown

(Richards, 2025)

Possibilities for the future: Self-governing ecologically minded schools

School C's commitment to socio-ecological education and its stance on technology in education showed a school exercising its freedom to self-govern and resist the normalisation of digitised and datafied education. The school expressed its commitment to an alternative education, pre COVID-19 – an education that challenges Victoria's predominantly neoliberal education. It continued to express a firm commitment to ecological education and the formation of the eco-child in the face of the dominant pandemic governance of schools.

Preserving these ideals during the pandemic and maintaining community trust in this vision led the school to make the decision to reject a technology-first agenda and keep open the possibility of an education system that protects children from unregulated systems of "cognitive capitalism" (Braidotti, 2019, p. 39). This stance is beginning to emerge in Europe, where the Danish government states that "Danish educational institutions must be free

from commercial big tech" (The Ministry of Digital Affairs, 2024, p. 26). The statement specifically requires education tools to be "ad-free, and tracking-free, and to not use children's data for commercial purposes" (p. 26).

School C even resisted their own PYP coordinator's advice that it was possible to have an ecological education that uses technology in transformational ways, a stance taken by the IBO and perpetuated by their ambassador in situ, the PYP coordinator. School C is at the intersection of the environmental, cultural and digital, transcending binary thinking and "questioning the foundational role of humanity as it has been constructed in modernity" (Inteview with Bayne in Jandric, 2017, p. 197), opening new avenues to change "the default humanism that underpins most education practice" (p. 197) and encompassing all living things while finding a place for the virtual world.

Summary

The priorities, values and fears of the school leaders in each school, alongside the pandemic governance policies, created the conditions for different IB educations to emerge.

- Experimentation with entangled pedagogy (Fawn, 2022) emerged from prioritising student agency in placed-based inquiry.
- Following a blended curriculum model with a "technology-led"(Fawn, 2022, p. 712) pedagogy emerged from trusting the promise of technology to produce student outcomes.
- Traditional academics with limited use of technology emerged from a fear of technological logic destroying sustainable education.

Each coordinator represented the problem of school closures differently, leading them to situate school in different places, which amplified the system of power knowledge that pre-

existed in the school. . The scope and effect of their solutions were a function of the established discourse practice in the localised regime of truth. One school rejected the concept of technology for learning, yet continued to integrate technology into the learning to develop new thinking and connections. One embraced the discourse practices of technology-driven learning and one rejected their unique program being associated with digital education. In School A, futuristic teachers collaborated with the whole school community, entangling technology and pedagogy to facilitate the development of a child who does things and shares them with others. In School B, cautious teachers worked with a consultant to devise a technology-mediated program, unable to keep students happily engaged in a computer-based learning. In School C, disillusioned teachers kept students busy by scaffolding academic learning with a minimal use of technology.

7.4 How did the IBO shape the three schools?

Each school translated the broad principles of the PYP into their practices. All schools used a student centred approach to develop knowledge, skills and attributes of students. The aim to develop internationally minded students was less overt. Schools went back to the core commitments and reasons that initially prompted them to become IB schools. The legacy of a humanist education underpinned School A's place-based approach to remote learning and individual agency (See Era 2, Section 4.4). School B maintained a focus on achieving student outcomes for the national systems (see Era 3, Section 4.5). School C rejected its unique program being contaminated by technology solutionism (Milan, 2020). It even rejected the IBO's stance on the benefits of technology, preferring to reference the original IB value proposition where school was an alternative place to mainstream

education (See Era 1, Section 4.3). School C maintained its stance on the environment despite the local and global forces pushing technology solutionism into student learning.

School A

School A firmly committed to IB's inquiry-based social constructivist pedagogy. Technology for learning was never entertained by the PYP coordinator. She was focused on the education of the whole child and children as caring, open minded, reflective communicators. The school community was committed to human-centred inquiry learning and student agency. School A crafted a learning environment that guided inquiry into multiple perspectives in a real world that is both physical and virtual. The school placed a focus on the needs of teachers, valorising their expertise and trusting their judgement rather than evaluating their effectiveness. The school took the transnational learning environment for granted and pushed system accountabilities to one side.

School B

School B gravitated to the IBO's claims about high performance. It focused on narrow academic results which led the school to substitute technology solutions for the taught curriculum, embracing the promise of the power of technology for learning. The school interpreted giving "opportunities for learners to work more independently, expand their agency, and learn to use tools and strategies that they otherwise may not have" (IBO, 2020b, p. 3) as having students work independently on the computer. Co-creation of the written curriculum became inserting technology tools into the pre-set blended curriculum, programming students to demonstrate the outcomes of the state curriculum. The digital learning consultant became the pedagogical leader. "Their shared commitment to student and system outcomes gave the school licence to adjust the roles of teachers and parents.

Parents were teacher aides. The teaching professionals were relegated to managing the effectiveness of the blended curriculum model. School B showed what a performative digital PYP could look like.

School C

School C's holistic, environmentally friendly philosophy of school resonated with the IBO's vision of schools as guardians of the planet. Additionally, the school aspired to gain global status, like the IBO, as an alternative to national schooling. The PYP coordinator tried to encourage the school to embrace the PYP framework into all aspects of the school program, experiential and academic alike. School C provided inquiry that drew on task completion and logical reasoning in a temporarily sanctioned digital space in the students' homes. However, the school remained committed to its anti-technology stance in the face of both the IBO's technology friendly policies and the Australian government's technocentric continuity of learning policies. The school was forming itself as a new type of school community, alongside the IBO. The resistance by School C represents the struggle to remain true to its local context and deliver a new type of modern education, not a humanist but a post-humanist education.

The integration of the IBO into the local context

The localised regimes of truth in each school did not change significantly during the pandemic. It dominated the problematisations and the solutions to the pandemic influencing how each school incorporated elements of IB education into the assumptions and declarations about their remote learning program. Neither the IBLP nor the IB logo was at the centre of the school's transition to online learning. A commitment to local community values and to learning through crisis was central to all three strategies.

International mindedness

The internationally minded or cosmopolitan child was formed in School A through engaging in a local transnational environment and solving problems, forming students as caring, open-minded and reflective communicators. In School B, through a commitment to content and skills development, the child progressed into a knowledgeable person prepared for the future. School C's international mindedness was formed through bringing together nature and human activity, developing caring, balanced, principled thinkers. The eco-child as guardian of the planet, would continue to be developed, once school resumed.

The historical traces of the IBO

Many elements of the IBO were integrated into the principles and practices of the three schools during the pandemic. Each coordinator referenced the original reasons their school adopted an IB education to gain the community's commitment to remote learning. In some regard, each school represents a different policy era of the IBO. (Table 6, in Chapter 5, positions each school within their preferred IB era to illustrate the historical residue of the IBO on the localised remiges of truth of each school.)

- School A used the most recent IB curriculum guidance which positions the learner in relation to learning and teaching and the learning community, but it referenced the Global reach era where humanist education was used to developed cosmopolitan national citizens.
- School B was clearly guided by the original PYP curriculum when the IBO was first introducing technology as learning and standards-based education, in the IBO's internationalising national systems era.

- School C represents a future IB education where sustainability and student agency drive human development. That vision resonates with the founding IB educators who forged a new path for education that led to a more peaceful world.

All schools subscribed to the IB's meritocratic premise that IB education can produce intellectual elites, regardless of social status (Tarc, 2009).

Conclusion

Three different ways of *being* an IB school, doing IB or thinking of IB, three different commitments to student-centred inquiry and international mindedness, and three different types of teachers, students and parents emerged during remote learning in three IB schools in Melbourne. All three IB schools embraced a version of student centredness, be it through independent inquiry, personalised learning or conventional learning. Each school linked its local regime of truth to the pedagogy, brand or ideals of the IBO – forming globally connected students (School A), future ready candidates (School B) and ecologically aware citizens of the planet (School C). None explicitly mentioned international mindedness or the IB Learner Profile (IBLP), however, there was evidence of the attributes being formed in all three schools. All students were knowledgeable inquirers. Some were also being formed as caring, open-minded, reflective communicators (School A), others, unintentionally, as risk takers (School B) and others as caring, principled, balanced thinkers (School C).

All schools used technology to ensure continuity of student learning. However, teachers, students and parents resisted technology-mediated education to varying degrees. School A remained committed to human-centred placed based inquiry and resisted a technology first approach to education. The students in School B turned off their cameras and parents refused to let children fail alone in the impersonal technology environment of computer-based learning. School C courageously challenged techno-centric governance of education

and refused to move school to the computer. The three scenarios are an indication of the dynamic power relations operating in the global policy arena and the role teachers and students in schools play as policy actors. The agency of schools and teachers formed three local versions of IB education with the potential of producing different types of teachers and IB students. By incorporating IB and national policy statements into their local discourse practice, each school legitimised an IB education during COVID-19 in different ways.

8 Chapter 8: Research conclusions

8.1 Introduction

The impact of the pandemic on home and school was unprecedented. No one predicted that children would go to school each day by logging on from home to a school's digital platform. The policy to close schools, declared in service of international public health and the safety of the world population, entangled education in the regulation of society in new ways. The challenge for Australian IB schools and the IBO was how to transition a student-centred inquiry-based international education to remote learning in a policy context that deprioritises international education, positions education as a service, and technology as the answer to access.

My doctoral thesis uses the pandemic as a vantage point to compare the factors and relations that PYP coordinators said constituted IB education during the pandemic, and their relationship to the IBO and IB schools in the transition to remote learning. The thesis links the discursive practices of the IBO with those of middle leaders (PYP coordinators) in three IB schools in Melbourne, Australia, deconstructing the problematisations that underpinned the pedagogical approaches used to enact what became known as 'emergency remote teaching'. This final chapter situates the outcomes of the research within the historical trajectory of the IBO.

8.2 The Scope and direction of the research

The thesis does not seek to be representative of the experiences of all IB schools during the pandemic. It aims to critically analyse discourses about technology and education circulating up to and at the time of the pandemic, using interview data collected from three

PYP coordinators while they were transitioning their PYP Programme of Inquiry to emergency remote learning. Through an inductive analysis, the thesis provides a theoretical and empirical critique of the role of technology in IB education, questioning assumptions about technology for learning, educational governance and implementation of IB education. The thesis uses the narratives of PYP coordinators for their predictive value, providing conceptual tools for practitioners to trace their own problematisations about technology and education, and it analyses the discursive practices that contribute to the formation of teaching and teachers in local contexts. The results and conclusions of the investigation also provide insights for the IBO to reflect on the governance of IB schools and its policies and practices on inquiry and technology.

Taking a post-structural lens to the discourse practices surrounding the field of IB education and the narratives of three PYP coordinators, the thesis aimed to answer the research question and sub question below:

The research question

How did PYP coordinators shape teaching and learning, themselves and their students during the transition to remote learning during the COVID – 19 pandemic?

The sub question

How did the IBO shape IB schools and international education?

Each chapter in the thesis identifies and examines influences which have shaped the problem representations of the three PYP coordinators and their formation as educators during the pandemic. The WPR methodology provides the overall conceptual framework to identify the beliefs, values and constructs that enabled three IB schools and the IBO to

represent remote learning and its governance in particular ways. The analysis crystalises the problematisations of each PYP coordinator and the effects of their 'solutions' to pandemic education on teachers, students and parents in each school.

In this concluding chapter, I summarise the research and outline the empirical contribution to the field of IB education. I discuss the implications of the research findings on policy and practice of the IBO. Following this, a description of IB education in the post-pandemic era, Reaching out to common humanity, a vision for student flourishing (IBO,2022 - onwards), completes the historiography of the IBO outlined in Chapter 4. Finally, I propose areas for further research.

8.3 Summary of the research

The research design

The research design combines critical policy analysis and poststructural interview analysis to identify problematisations of emergency remote learning during the pandemic in three IB schools in Australia. The policy analysis examined discourses generated by international organisations and governments, while the interview analysis reached into the experiences of three IB PYP coordinators in three IB schools in Melbourne.

My research illustrates how the IBO treated the pandemic as a unique time in history, publishing statements about the need to work together for a solution to pandemic education in a time of crisis, reinforcing its humanist stance on education by encouraging teachers to guide the socio-material relations in education. The IBO enfranchised the IB community, shared its expertise with non IB schools free of charge, and aligned itself with the dominant narratives of the day: "We are in *this* together" (Braidotti, 2020, p. 465). The IBO supported digitisation through the production of numerous governance statements on

learning, teaching and technology, which also strengthened the role of technology in IB education. By acknowledging that expertise was distributed across the IB network, the IBO contributed to the agenda to digitise and datafy education, declaring itself and its schools as consumers of technology rather than leaders of digital education.

Using an inductive process, I relate the practices and experiences in IB schools (through the statement of PYP coordinators) to national and global education policy statements to examine assumptions underpinning how the three IB middle leaders in IB schools and the IBO problematised and constituted the transition of an IB education to online learning in pandemic conditions. The PYP coordinators integrated global, national and IB policy priorities into their school's processes while simultaneously incorporating their own sense of self as professional educators. Existing models of technology integration – Mishra's (2019) TPACK; the "SAMR model" (Puentedura, 2006 in Nichols, 2022, p. 6); even the IBO's AID 1 AID 2 model – were not used by the teachers trying to bring technology into the day-to-day of school life when face to face learning was unavailable. Teachers forged their own solutions to technology integration which was aligned to the existing contexts. The outcomes of the research provide critical insights into the IBO's educational governance relationships with schools, the schools' localised versions of a digital IB education, and the effects of technology integration on learning, teaching and the learning community. The study potentially adds to the literature on educational policy enactment, IB teaching and learning with technology, and the formation and governance of IB teachers.

Note that in what follows, I infer the actions of teachers more broadly from what the three PYP coordinators said and inferred, without necessarily noting it in each case. I am aware that since this research did not include observation or interviews of teachers, I did not verify this, in other ways beyond PYP coordinator statements, and hence it is a limitation in this

research, which I mention later, as being addressed through further research to explore how schools integrate IBO policy with local, state and sector contextual requirements. However, the contextual factors identified through my research in three IB schools provide significant insights into how, during a time of crisis, three IB schools used their own localised regimes of truth to determine each of their dominant approaches to digitised emergency remote learning, not guidance from the IBO, nor primarily IBO policy.

Teachers as policy actors

The IBO was not able to provide schools with reliable, ethical or scholastic guidance on the implementation of a digital IB education during emergency remote learning. In fact, the IBO deferred to teachers in schools, asking them to share their practices with others while encouraging teachers and students to take responsibility for IB teaching and learning. The IB documents were not taken as rules to be followed but principles that guide the emergence of "practical dispositions" (Vlieghe & Zamojski, 2019, p. 110), which supported teachers to respond to the pandemic. Teachers in schools interpreted existing curriculum documents and used the technology at hand in what they deemed to be purposeful implementation, responding in the moment to a dynamic and evolving local situation. Education policy based in an 'ideal' school which classifies intellectual ability (Arribas-Ayllon and Wakerdine, 2017) and uses current technological pedagogical models was not useful to teachers in the design and implementation of remote learning. Teachers and school leaders in the three IB schools used their initiative and professional judgement to manage pedagogy, resources and digital infrastructure to engage in curriculum renewal during the transition to online. This finding from my study contests the recommendation of UNESCO's report, *An ed-tech tragedy* (West, 2023) for the need to:

> strengthen teacher training and support; enhance school leadership and pedagogical management of schools; curricular renewal; smaller class sizes; and improve physical resources and infrastructure for schools and classrooms (p. 35).

There was little evidence in the three IB schools that a lack of training or insufficient leadership in schools, not even the wrong mindset or failure to innovate, could be attributed to the failings experienced during the digital transformation of IB education. The challenges were ethical and institutional rather than material and skill related. The speed of the transition, lack of consultation with teachers, low trust in technology, not meeting the needs of the whole child, and not changing management practices to accommodate the new socio-material relations (Downes, 2023) summarise the conditions and constraints teachers and their students juggled in the transition to online learning during the pandemic.

The problematisations of the three PYP coordinators

The PYP coordinators' interview discourse shows that the 'truths' teachers lived by were tested when school was distributed across home, school and the virtual world, and technology was inserted directly into every interaction between students and teachers.

- Katie (School A) framed the challenge as one of identity; being a leader, an inquirer and being online with the school community.
- Helen (School B) described the challenge as one of doing online teaching and learning, managing the written, taught and assessed curriculum to produce the school's accountabilities.
- Julie (School C) talked about the conceptual challenge of bringing an inquiry-based pedagogical framework into a community committed to ecological learning when the school had been displaced from its natural and classroom learning environments.

Localised versions of a digital IB education

The three IB schools enacted the policy to deliver school remotely in three different ways. Three local versions of a digital IB PYP education emerged from the PYP coordinators' translation of pandemic education policy into practices. Guidance and membership of the IBO helped schools produce and defend their approach to emergency remote learning, linking the localised purpose of education to the obligations of the IBO's humanist cosmopolitan education (Ben, 2021). Each school had a unique interpretation of emergency remote learning, which is captured in the scenarios in Chapter 7 and the metaphors used to describe their experience. The metaphors provide a heuristic to understand the way schools shaped teaching and learning and how teachers and students, in turn, were shaped by the integration of technology into their version of an IB education. The three metaphors are:

- School A: Through the looking glass
- School B: The rachet effect
- School C: Oil and water do not mix.

The PYP coordinator, in School A, 'transported' children and their families to other worlds that reflected theirs yet were different. Children were asked to engage in and reflect on the new reality. School A was guided by the most recent support material, *PYP principles into practice* (IBO, 2018d). The learner, the learning community and the virtual and real worlds became entangled as the teachers moved students virtually into the geographic spaces they had inhabited during face-to-face learning. Student agency drove the development of a placed-based learning environment where children solved real-world problems, sometimes in their homes in make-believe school camps and at other times through creating digital

artefacts to share with classmates. Students were being formed as caring, open-minded, reflective communicators sharing their experiences with others.

Once School B accepted the digital learning consultant as its pedagogical leader and substituted the PYP curriculum with her blended curriculum, it set in motion a technology solution which outpaced its ability to manage the socio-emotional consequences. School B was guided by the original PYP curriculum documents, *Making the PYP happen in the classroom* (IBO, 2009b). It used technology as learning, in a outcomes-based education. Teachers planned the written curriculum which was taught by technology. Students were formed as knowledgeable, and unintentionally, as risk takers. When digital skills development and assessment became the goal of schooling, in School B, students and parents felt alienated and isolated, prompting them to reject the technology-centric education. Students turned off their cameras and parents helped their children with computer-based assessment tasks, sometimes 'in secret'.

School C never resolved the dilemma of formulating a place for the digital without disrupting the delicate balance between its ecological and academic programs. It could not find a place for technology in its pre pandemic era, students in School C were formed as caring, principled, reflective thinkers when they were able to be in nature and in the classroom, connecting human activity and nature. However, during lockdowns, they could not be in nature, so students were being formed as knowledgeable through doing worksheets, with minimal use of technology. The leaders maintained the school community's commitment to sustainable education where technology had no place, forming students as principled while they waited to be in nature once again.

Despite all schools being IB schools, in the same city and same sector, with the same tech stack, the local context of each school differed, and the orchestration of technology and

learning differed. What remained constant were the obligations the schools had to the purpose of education in each school, which had been crafted from their local history, image of education and obligations to their own communities. School A maintained its commitment to community. School B held onto its system accountability agenda. School C never wavered from its commitment to an ecological education. There was not one IB approach to digital teaching practice during the pandemic. Each school maintained its localised regime of truth (Gore, 1993), curated IB practices and used technology to fit within it.

The formation of digital IB teachers

Poststructural interview analysis (PIA) (Bacchi, 2016a) is an explorative method of analysis that examines the effect of discourses on the self-formation of individuals. The statements made by each PYP coordinator in the semi-structured interview established their relationship to education, teaching and learning, and influenced their professional identity, actions and ways of thinking. Teachers' sense of being an education professional was intertwined with caring for the learning and teaching, for the child and for self. What PYP coordinators said about the transition to digital learning in their school revealed their beliefs about what differentiated them, their programs and their students from other schools, campuses and communities, exposing the norms operating within the local context. These norms contributed to the formation of teachers, students and parents.

- School A focused on being *in* the learning community, forming children as action-oriented inquirers and parents as supportive community members. The teachers took the role of learning partners and trusted professionals who improvised.

- School B combined the advice of a technology edupreneur and employed technology as a tool for effective learning (IBO, 2021b). This led teachers to become programmers, students to become app testers, and parents become teaching assistants who were responsible for technology procurement.
- School C focused on experiential learning in nature and rejected technology for education. Teachers could be neither environmental explorers nor pedagogues who collectively form the 'eco-child'. The whole community was in an indeterminate state, waiting to be in 'their spaces'. Children were kept busy with didactic learning on their laptops so they would not fall behind in the national curriculum.

The effects of technology on the three schools

The speed of the digital transition and fitting technology into the psychosocial spaces of an IB education was taxing and alienating. It required a lot more time and effort to implement than being with students in the moment, irrespective of the approaches to technology for learning. The potential of technology contributing to holistic learning was revealed in School A's place-based learning, while, in School B, the destructive effect of computer-based learning to student wellbeing surfaced. School C grappled with the hopes and fears of technology's potential – the hope that it could give all children a medium of expression, the fear that it would destroy the emergence of an eco-friendly education.

8.4 The Future of the IBO

The IBO's crisis governance

The *IB Crisis Framework* (IBO, 2021a), shifted the focus of IB education. Rather than prioritising the assessment of factual, conceptual and procedural knowledge of school subjects, it moved towards wellbeing and student competencies, towards a neuro-scientific

paradigm of socio-emotional learning and metacognition. It also moved international mindedness away from its traditional meaning that centred around intercultural understanding and multilingualism (Singh, 2013).

The IBO post pandemic

Post-pandemic, the IBO has adopted the construct of human flourishing (Van der Weele & Hinto, 2024). Wellbeing and learning are recast as student flourishing, and technology is obscured under the mantra of innovation. The emerging policy discourse post-pandemic reveals a commitment to human flourishing as the new manifestation of "the utopian ambition" (Vlieghe & Zamojski, 2019, p. 158) for a more peaceful world through education.

Reaching out to common humanity: A vision for student flourishing (2022-onwards)

The legitimacy of the IBO now rests on a revised evidence based logic alongside its "soft governance" (Zapp, 2021, p. 1022). This shift in focus can be seen in the increasing body of research commissioned by the IBO that is grounded in the sciences of learning, with research being published on: inquiry learning (Polman & Scornavacco, 2022), concept-based learning (Medwell, 2019), digital assessment literacy (Australian Council for Education Reseach, 2021; IBO, 2018a), design and computational thinking (Slotta et al., 2020), curiosity and creativity (Hopfenbeck, 2022) and wellbeing (Balica, 2020, 2021; Dix & Sniedze-Gregory, 2020; IBO, 2020a).

This research agenda, coupled with the pilot of fully online Diplomat Programme (DP) schools and DP digital assessments, positions the IBO within the parameters of the dominant global policy priorities coming out of the pandemic. Post-pandemic, global policy turns to the need for a full digital transformation of schools (Morris et al., 2022) to ensure

continuity of schooling. UNESCO, along with the World Bank and the OECD (Shultz & Viczko, 2021), all deemed increasing investment in technology post pandemic was necessary to be prepared for future crises. The IBO's post-pandemic policies position IB teachers as ready for the next technological shift, "the dawn of an AI revolution" (Dron, 2024, p. 7). The IBO aims to develop schools' capacity to deal with future crises through human capabilities and forming IB teacher innovators and hopeful IB students. The current research agenda signals a return to the IBO pushing out guidance to schools and placing its focus back on student assessment. The new regime of truth rests on the science of learning, forming teachers and students around human flourishing (Heinonen, 2025).

> The future of education requires a focus on key competencies that students will need to flourish, developing their uniquely human qualities that are unlikely to be replaced by technology. (IBO, 2025c)

Technology is rebranded as innovation and a route to hope and human flourishing during uncertain times. The IBO Asia Pacific global conference theme, in 2025, *Embracing innovation and inspiring action,* attest to this new union. The conference "stimulate[s] engaging conversations about curriculum, best practices for education, technology and new approaches to teaching and learning (IBO, 2025b)." Central to this agenda is student and teacher wellbeing.

> The International Baccalaureate (IB) is partnering with five acclaimed institutions globally to launch an exciting project to explore, study and measure student wellbeing in primary through secondary schools internationally. (IBO, 2023)

8.5 Empirical contribution to knowledge: Governance relations

IBO's governance during the pandemic

During the pandemic, when educational governance around the world focused on continuity of learning with digital technology, IBO's governance perspective changed. The

IBO sought commitments from its schools, not through compliance but by creating obligations to the global community. Rather than governing through compliance with IB policy, as per the usual processes, the IBO sought schools' commitment through an invitation to share their digital learning strategies for the benefit of all. The "societal reliance perspective" (OECD, 2020, p. 62) of governance changed the power relation between the IBO and PYP coordinators in schools, exposing how the IBO sought to add value to society by sharing support materials with the world. By curating and incorporating schools' strategies and processes for digital learning into IB communications, the IBO garnered a new level of commitment from its schools. Schools showed themselves as IB schools to the global community. Their statements became the statements of the IBO. The practices shared by schools enabled the IBO to develop *The IB Crisis Support Resources* (IBO, 2021a). This action temporarily reversed the relationship between the IBO and IB schools, revealing a new governance approach to the formation of IB schools. Through this process, the IBO champions its brand through the diversity of IB schools, representing them on the IBO website as innovative, tech savvy schools.

From policy maker to practitioner advocate

Conceptualising power as distributed and the problematisations as contextual revealed how the IBO facilitated the integration of technology into education. The IBO's new governance perspective meant the IBO focused on the enactment of an IB education in IB schools rather than top-down policy making. Traditionally, the IBO would conduct desk audits and empirical research to inform the writing of a curriculum document, then socialise it through creating teacher support material (TSM) (IBO, 2020b) which provided curated examples of the implementation of the policy from IB schools. With the advent of the pandemic, this process was reversed. The IBO facilitated the development of a digital TSM

on technology and learning during the pandemic before it wrote its policy on learning and technology (IBO, 2021b) a year later. The research paper investigating IB pandemic teaching and learning (Jacovidis et al., 2023) came out after that. The urgency of the pandemic situation forced the IBO to think differently about policy processes and the locus of expertise regarding digital teaching and learning. The IBO placed authority in the expertise of IB schools, where knowledge about the digital transformation of teaching and learning guided the IBO's response to the pandemic. The improvisational skills and expertise of IB teachers led the agenda for teaching and learning during lockdown.

For the first time since the foundation years, IB schools led policy development. Policy was not developed by experts in the IBO but by teachers, students and parents in schools living every day the reality of online schooling. To maintain the commitment of schools, the IBO created an obligation to the global community and an opportunity for schools to publicly declare themselves as IB schools to the world. By shifting the scientific epistemology to wellbeing and learning through crisis, the IBO foregrounded humanity.

The IBO has never directly challenged dominant institutional structures, preferring to invite schools to commit to the IB through accepting its mission and the IB standards and practices. During the pandemic, this did not change. The IBO reset its education model to accommodate the global shut down of schools. When the digitalisation of schooling was the policy direction of the day, the IBO supported schools to integrate technology into teaching and learning in a context of "us in crisis" (IBO, 2020b), advocating personalised learning and wellbeing within an active community.

8.6 Implications for IBO policy and practice

"The Great Distance Learning Experiment" (Hamilton & Hattie, 2021, p. 2) forced students and teachers to engage through digital technology, giving Big Tech the opportunity to beta test selected digital platforms and products in almost every school worldwide. As the first iteration of a fully digitalised and datafied global education system, the test proved it was possible to take schools fully online, with some adjustments. The experience of three technology-rich, affluent IB schools in Melbourne supports this contention. The harms of technology during remote learning extended deep into the ethical behaviour of Big Tech and the organisations and governments that ignored or discounted them. These harms included child protection issues, digital safety, student privacy, and data mining (Human Rights Watch, 2022).

For IB schools, the digital divide is not one of access to technology but the development of digital capability. The IBO policy logic is that through undertaking an IB education, students become discerning users and designers of technology, able to make a difference in the world, or to reap 'digital dividends', a phrase overheard at an IB conference in 2024 and reminiscent of the World Economic Forum's financial definition of student equity (Shultz & Viczko, 2021).

Digital education governance

The experience of digitally mediated education in the three schools also exposed the myth of the neutrality of technology. Its integration into the day-to-day activities of school affected all aspects of school life. Unlike national policy agendas which promoted technology solutionism, the IBO's policies and practices assigned responsibility for the quality of learning to teachers and students. The pivot in the IBO's governance relations

with schools during the pandemic reinforced the key role played by schools in problematising the relationship between technology and learning. Having the technology is not the only pre-condition of digital schooling. In fact, for the three schools in the study, continuity of IB learning was contingent to the ways of being an IB inquiry teacher, doing student-centred teaching and learning, and conceptualising technology-mediated inquiry. The improvisational practices of teachers were central to the success of pandemic education in the three schools. Teachers were the policy actors who led the educational agenda in each school and drove change and stability among the school community. The orchestration of technology and learning within the local school context changed the roles and relationship of teachers, students and parents. The new roles and relationships moved some teachers and students away from the common binary view of conventional education vs online education (Nichols, 2022). Although all the schools wanted to return to normal, be with children and reclaim pedagogical leadership, the possibility of a post-digital IB education started to emerge among the shifting relations between IB schools, the IBO and Edtech.

Inquiry in IB education

Given an IB education values knowledge systems alongside the development of student capabilities, the absence in IB documents of different inquiry systems and how inquirers are positioned in relation to knowledge and its validation is surprising. By limiting guidance on inquiry-based learning to pedagogical processes, the IBO obscures the scientific epistemology underpinning its education system. The guidance does not help teachers understand the relationships to knowledge formed through the inquiry systems designed into the Programme of Inquiry, nor does it articulate how to support primary school

students to build different ways of knowing. It is not until students are in the IB Diploma Programme that they study Theory of Knowledge and explore how they know what they know and who they are as a knower. It may be timely to review *What is an IB education* (IBO, 2019), linking inquiry systems to the approaches to teaching and learning and opening the discussion about the different types of 'knowledgeable inquirers' being formed through an IB education. With the increased influence of technology in education, the IBO could investigate the socio-material relations of digital learning and build a stronger community of practice around technology and inquiry so that teachers and students can be the 'digital designers' referred to in the IB curriculum documents.

Inquiry and technology

Dron's concept of "technology of learning" (2022) provides a way to frame an IB education as a 'technology of inquiry' and as the orchestration of hard and soft techniques to achieve a social end. To participate in the orchestration of technologies, teachers and students must sometimes follow pre-determined rules, while at other times more nuanced techniques are needed. Techniques of offloading information, re-spatialising, and re-embodying cognition were all used by the students and teachers in the three schools. None of these are part of the IB's approaches to learning nor do they appear in *Learning, teaching and leading with technology* (IBO, 2021b). In its review of guidance to schools, the IBO could empower educators to influence the international digital ecosystem through further developing a technology of inquiry education framework that nurtures and "develops natural curiosity in students" (IBO, 2019, p. 6), building on the recent IB studies on curiosity and creativity (Anderson et al., 2022; Hopfenbeck, 2022). Reconceptualising inquiry as soft techniques in the orchestration of socio-material relations could form part of the IBO's networked and

societal relevance governance perspective in support of the new vision of hopeful students and innovative teachers.

8.7 Further research

The exploratory nature of the thesis and the small sample size of IB schools limit the generalisation of the outcomes. Not only are all schools in the study from Melbourne, but they are also all from the high-fee independent sector, typical of IB schools in the Asia Pacific region (Lee et al., 2024) but not globally. However, it is the methodology and focus on the narratives of PYP coordinators in schools that makes the thesis a valuable contribution to IB education. In fact, the limitations point to a need for more research at the level of policy enactment in schools and point to the complexity of conducting research in international education. The need for research that does not aim to find universal solutions for unique contexts but to understand the forces that drive educational practice in these unique contexts is one tangible outcome of my thesis. Research on the dilemmas and decisions IB schools faced in balancing their allegiance to the IBO and their obligation to their national systems during one time period, exposed multiple issues needing further investigation.

Inquiry and technology in IB education

The roles and relationship between technology, learning and inquiry in IB education emerged as an area of need in my study. The three scenarios provide a jumping off point for further investigation into the knowledge systems and ethics embedded into inquiry pedagogy, educational technologies and the socio-material relations of learning in online spaces. The effect of hardening and softening of technologies (Dron, 2023) on the formation of students in formal education contexts could provide valuable insights to support IB schools further embed technology into inquiry learning.

Problematising IB education in local contexts

WPR is a valuable methodology for research in schools. Asking schools to trace the problematisations of their enactment of IB education could reveal the conditions of emergences and underlying assumptions upon which educational programs rest. It could provide opportunities to reflect on the effects produced through teaching and learning with technology and the formation of teachers and students under different conditions. It is important for the IBO to reflect on the decentring of international mindedness in the IBO crisis framework during a time of renewed nationalism and populist politics (Rizvi et al., 2022). The intersection between and motivation behind global and national interests needs to be continually revisited, as does the extent to which international mindedness is "associated with equity, human rights, mutual understanding, peace, and sustainability" (Wright et al., 2024, p. 5).

Being educators in a transnational post-digital world

This is one of the few, if not the only study, that utilises poststructural interview analysis (PIA) (Bacchi, 2016a) to examine the subject formation of IB teachers and students, and by extension, of parents. PIA could be more broadly applied to understanding the formation of IB teachers in different contexts and different situations. It could be used to explore how teachers want to partner with digital technologies and develop "new dispositions towards teaching and towards knowledge" (Bayne, 2010, p 11 in Jandric, 2017, p. 203) formed through their practice in online spaces. This line of inquiry could inform strategies to improve teacher wellbeing or to develop a teacher profile like the IB Learner Profile.

8.8 Conclusion

Rapid transition to remote learning during the pandemic for teachers in three IB schools (through the views of the PYP coordinators) drew on strongly held beliefs about education and teachers' roles as educators. For each school, the school's history and its interpretation of an IB education, rather than technology integration models promoted in policy statements and the IBO's crisis response framework, shaped teaching and learning, teachers and students. The three schools referenced the discourse practices of the IBO that originally motivated them to become an IB school. The IBO's crisis policies opened spaces for schools to co-create local versions of digital IB education.

I argue that the three schools, the IBO and the Australian government pushed international education to the background, allowing corporate goals to overshadow individual student needs. The Australian Prime Minister told international students to go home, effectively alienating those committed to international education and potentially undermining a commitment to international mindedness or transnationalism. The IB Learner Profile was replaced by the IB logo in the IB Crisis Framework, and none of the IB coordinators mentioned the learner profile or international mindedness explicitly in their interview responses. Ultimately, each PYP coordinator developed solutions that upheld their commitments to the local community and integrated IB policy and practices and the available educational technology into the school's localised regime of truth, which reflected both the history and positioning of each school within its community, state and sector context.

Additionally, I argue my research showed the IBO to be an intermediary organisation, supporting schools to navigate the socio-political issues of the day. As outlined in chapter 4, when global stability and peace were international imperatives after WWI, the

international schools of the time committed to promoting intercultural understanding. Then, when the economy globalised and international mobility was the imperative of the day, the IBO re-adjusted to offer a standards-based continuum of international education from pre-Kindergarten to Year 12. As IB education expanded beyond Anglo western countries, the IBO shifted its focus to the individual outcomes of learning, as demonstrated in the profile of an internationally minded person. In the aftermath of the pandemic, the IBO is affirming the role of an IB education in human flourishing and student wellbeing.

Finally, neither the IBO nor IB schools tried to disrupt existing school structures and processes, nor change the goals of education during the pandemic. The schools and the IBO tried to maintain the educational ethos and goals established pre-COVID-19, while addressing the side effects of digitisation as they emerged. The IBO's promissory statements about technology in educating future citizens continued to rest on the premise that humans guide the socio-material relationship between technology and human development in educational contexts. It also became apparent that, like IB schools, the IBO is a consumer of technology and a subject of the agenda to digitise and datafy education. Given the small amount of research (Bunnell, 2019; Gardner-McTaggart et al., 2024; Resnik, 2016; Tarc, 2009) on the eras of IBO policy and the processes by which schools combine their local, state and sector contexts with IBO policy, more critical research is needed into the relationship between teaching, technology and the ends of education within IB schools. It will be important for the IBO to continue to act as an intermediary and amplify the narratives and problematisations of local school communities as they develop the capacity to navigate and shape teachers and students to take up the challenges of a post-digital globalised world.

Appendix A Ethics Approval

26 August 2020

HUMAN ETHICS LOW RISK PANEL

APPROVAL NOTICE

Dear Ms Susan Richards,

The below proposed project has been **approved** on the basis of the information contained in the application and its attachments.

Project No:	2087
Project Title:	Leading technology for learning in primary education
Primary Researcher:	Ms Susan Richards
Approval Date:	26/08/2020
Expiry Date:	30/06/2024

Please note: *Due to the current COVID-19 situation, researchers are strongly advised to develop a research design that aligns with the University's COVID-19 research protocol involving human studies. Where possible, avoid face-to-face testing and consider rescheduling face-to-face testing or undertaking alternative distance/online data or interview collection means. For further information, please go to https://staff.flinders.edu.au/coronavirus-information/research-updates.*

Appendix B Interview Questions

Technology and education

Can you give me some examples of how teachers at your school are using technology for learning?

Do you have a technology policy? Would you be willing to share it with me?

What are your school's educational goals around technology and learning?

Perceptions and attitudes

How does your community perceive digital learning?

How would you describe the teachers' attitudes to digital learning?

Digital skills and knowledge

How intentional are teachers in the selection and use of digital tools?

How do teachers learn to use technology to optimise the design of learning?

Learning and technology

Can you talk about how teachers use technology to support inquiry?

How well prepared do you think your teachers were for transitioning to online learning?

What are your next steps to help teachers develop this further?

Technology leadership

How has the changing government policy impacted your leadership decisions around technology for learning?

Have new forms of instructional leadership emerged to promote a culture of learning in digital or blended learning spaces?

How has the experience of leading through the pandemic highlighted areas needing review in the school's policy and practices in digital learning?

Appendix C Table of IB policies analysed

IB technology policies	Year	IB policy and curriculum documents	Year
Learning, teaching and leading with technologies	2021	IB public website toolkit	Current
Purposeful technology integration	2018	Mission	1998
Online learning, teaching and education continuity planning for schools	2020	What is an IB education	2017
Technology section of the *PYP principles into practice*	2018	IB PYP Principles into Practice	2018
The role of ICT in the PYP	2011	IB programme standards and practices	2020

Appendix D List of data poems

School A	School B	School C
1. Age-appropriate technology access then and now 2. Online communication tools - from zero to 100 3. Staff PD – just in time, just for you 4. Into a rhythm 5. Survival leadership 6. Management leadership 7. Innovation leadership 8. The leadership backbone 9. Inquiry designed as the backbone of teaching and learning 10. They certainly are using it [inquiry] 11. Inviting kids into inquiry 12. Kids had the Internet 13. Engaged and motivated 14. Inquiry learning – alongside literacy and numeracy	1. It is what it is 2. The 4th lockdown 3. Collaborative planning meetings 4. BYOD 5. User agreements 6. Incursions – applying rules 7. Our blended learning model is our curriculum 8. Wellbeing 9. Community and parent knowledge 10. Parent knowledge 11. Teacher attitudes to technology 12. Culture of growth 13. We have a 'digital learning consultant' 14. Systems and a consultant 15. User testing Apps for knowledge production 16. Time for reflection 17. As a PYP coordinator 18. Our teaching and learning 19. Being present in a zoom 20. Kept up the discussions 21. Assessing 22. Instructional leadership 23. Attendance 24. Tech first or pedagogy first? 25. Open minded to technology	1. The school 2. Getting the hardware in place and making decisions on what to use 3. The tech 4. Educational goals around technology and learning? 5. Teachers selecting and using digital tools 6. We've got a developing understanding of what inquiry is 7. Traditional academics with some amazingly rich experiential learning 8. My belief 9. Plans 10. Community perception of digital learning 11. Back on site 12. Timetable

Appendix E Summary of WPR analysis

Topics	School A	School B	School C
Problem representation	Unable to discover the world in its totality	Lack of technological expertise	Existential threat
Solution	Create a communication system	Hire digital consultant to work with teachers	Bring campuses and programs together
What knowledge was given authority?	Teacher pedagogic knowledge	Edtech	Sustainability and content knowledge
Place of school	Everywhere – real world is physical and virtual	In the brain and the computer	In nature and in the classroom
L&T during pandemic	Place based	Computer based	Worksheet based
Technology and pedagogy	Entangled	Technology first	Pedagogy first
Collaboration	With entire community	Teachers with the consultant	IT and L&T began to meet
Teachers' outlook	Futuristic pioneers	Cautious pioneers	Disillusioned
Teachers' job	Facilitate student-centred learning Keep students motivated through interaction in a variety of learning spaces, school events, at home and in the wider community	Program technology-mediated teaching Keep students engaged through the curriculum	Keep students doing things
Teachers	Facilitate	Plan purposeful use of technology	Scaffold

Student	Doing things that can be seen	Happily showing curriculum outcomes	Saving the planet
Cosmopolitan child	living rationally and solving problems while also being empathetic inclusive, and tolerant	Formed through calculation and planning, and knowledge development	Eco-certified – formed through bringing together nature and human activity
Inquirer	Sensing, exploring and connecting with others and the world	Finding the right answer and show your work	Validating sense making in nature with logical thought
Knowledgeable	Multiple perspectives	One true formula	System thinker
Other LP attributes	Caring, open minded, communicator	Knowledgeable, risk taker (turn camera off)	Caring, principled, thinker

Appendix F Letter of introduction to participants

Flinders UNIVERSITY
College of Education, Psychology & Social Work

Location Address
GPO Box 2100
Adelaide SA 5001

P: +61 8201 3532
lindsey.conner@flinders.edu.au

LETTER OF INTRODUCTION

To whom it may concern

This letter is to introduce Sue Richards who is a Doctor of Education student in the College of Education, Psychology and Social Work at Flinders University. Sue is an educational consultant based in South Australia and is conducting this research with the support of the College of Education, Psychology and Social Work at Flinders University.

She is undertaking research leading to the production of a thesis on the subject of "**Leading technology for learning in primary education**. This research seeks to explore:

- Changing education policy and its impact on primary schools leaders
- school leaders' perspectives about the relations that emerge from government policy in technology and education and leadership practice in schools
- how policy shapes and influences school leaders and how in turn school leaders can shape and influence education and practice

Sue would like to invite you to assist with this project by completing an online questionnaire which covers certain aspects of the aims above. No more than 10 minutes would be required. After the closure of the questionnaire, a small number of school leaders will be invited to participate in an interview. Your willingness to participate in the interview phase can be indicated at the conclusion of the questionnaire, as well as possible arrangements that suit you. Such an interview would be conducted at a place of your choice or online. It is envisioned that this will take no more than 45 minutes.

Be assured that any information provided will be treated in the strictest confidence and none of the participants will be individually identifiable in the resulting thesis, report or other publications. You are, of course, entirely free to discontinue your participation at any time or to decline to answer particular questions. Since Sue intends to make a recording of the interview, Sue will seek your consent, on a consent form, to record the interview, to use the recording or a transcription in preparing the thesis, on condition that your name or identity is not revealed and or that the recording will not be made available to any other person. This consent form will be e-mailed to you and can be e-mailed directly to her at the following e-mail address: sue.richards@flinders.edu.au.

Any enquiries you may have concerning this project should be directed to me at the address given above or e-mail lindsey.conner@flinders.edu.au

Thank you for your attention and assistance.

Yours sincerely

Professor Lindsey Conner

Flinders University

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project number: 7931). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 3116, by fax on 8201 2035 or by email human.researchethics@flinders.edu.au

INSPIRING ACHIEVEMENT

Appendix G Participant Information sheet

Sue Richards
Doctoral Candidate
College of Education, Psychology and Social Work
Flinders University
Education Building

INFORMATION SHEET

Title: Leading technology for learning in primary schools

Researcher:
Ms Sue Richards
College of Education, Psychology and Social Work
Flinders University
Ph: 042238300

Supervisor(s):

Prof Lindsey Conner
College of Education, Psychology and Social Work
Flinders University
Ph: 0421 007 332

Dr Bev Rogers
College of Education, Psychology and Social Work
Flinders University
Ph: 0417251218

Description of the study:
The study is part of a Doctor of Education degree at Flinders University and supported by Flinders College of Education Psychology and Social Work. It will investigate the government policy to ban mobile phones in Australian schools and its effect on education.

Purpose of the study:
This project aims to explore:

- Changing education policy and its impact on primary schools leaders
- school leaders' perspectives about the relations that emerge from government policy in technology and education and leadership practice in schools
- how policy shapes and influences school leaders and how in turn school leaders can shape and influence education and practice

¶

- What will I be asked to do?¶

As school leader of a South Australian Primary School offering the International Baccalaureate Primary Years Programme, you will be asked to complete a brief survey on the changes implemented to accommodate student learning during the COVID-19 pandemic in your school context. At the end of the survey you will be invited to participate in an interview, either virtually or in person about technology for learning. The researcher will ask the participant about:¶

- → their school's policies and practices for remote learning;¶
- → technology's contribution to student learning;¶
- → the school community's perceptions and¶
- → the teachers' skills and knowledge in this area.¶

The interview will take between 30–45 minutes. Participation is entirely voluntary. The interview will be recorded using a digital voice recorder. Once recorded it will be transcribed and stored on a password protected file on the researcher's computer. The transcript will be shared with you to verify its accuracy and for comment before it is used in the study.¶

¶

- What benefit will I gain from being involved in the study¶

Your participation in the study will support your understanding of mobile learning in technology for learning and how it can be harnessed to increase engagement.¶

¶

- Will I be identified by being involved in the study?¶

Once the interview has been typed up and saved as a file, the voice file will be destroyed. Any identifying information will be removed. The file will be stored on a password protected file that only the researcher has access to. The school and research participant will be anonymised in the transcripts of research study and any publications about the study. They will not be individually identifiable, and their comments will not be linked directly to them.¶

¶

- Are there any risks or discomforts if I am involved?¶

The researcher anticipates no risks from their involvement in this study; however, given the nature of the project some participants could experience emotional discomfort. Participants will share their thoughts and perceptions on their and others' decisions about the educational use of mobile phones in their school. If you have any concerns regarding anticipated or actual risks or discomforts, please raise them with the researcher.¶

¶

- How do I agree to participate?¶

An information pack which contains a letter of introduction, information sheet, brief questionnaire and consent form will be given to all potential participants. Participation is voluntary. An answer of no comment can be given if the participant does not want to answer particular questions. A consent form is attached to this information sheet. If you agree to participate in the study, please read and sign the form and return it to me via email on sue.richards@flinders.edu.au¶

¶

When will I receive feedback?

On the completion of the study you will be asked if you would like to see the outcomes. They will be sent to you if you would like to see them.

Thank you for taking the time to read this information sheet and we hope that you will accept our invitation for your students to be involved.

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project number No. 2087). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 3116, by fax on 8201 2035 or by email human.researchethics@flinders.edu.au

Appendix H Participant consent form

CONSENT FORM FOR PARTICIPATION IN RESEARCH

(by interview)

I have read the attached information sheet and agree to take part in the following research project:

Title	**Leading the use of mobile phones in education**
Ethics Approval Number	**TBA**
Researcher	**Sue Richards**

1. I …… have read the information provided and understand the reason for my involvement in it. My consent is given freely. ☐
   (Please write your full name in the space provided above)
2. Details of procedures and any risks have been explained to my satisfaction. ☐
3. I consent to being interviewed and audio recording of my information: YES ☐ NO☐
4. I am aware that I should retain a copy of the Information Sheet and Consent Form for future reference. ☐
5. I understand that I may not directly benefit from taking part in this research. ☐

6. I understand that participation is entirely voluntary, and I am free to withdraw from the project at any time; and am free to decline to answer particular questions. ☐

7. I understand that I may ask that the audio recording be stopped at any time, and that I may withdraw at any time from the session or the research without disadvantage. ☐

8. I wish to remain anonymous YES☐ NO☐

9. I understand that only the researcher on this project will have access to my research data and raw results. ☐

10. I understand that while the information gained in this study will be published as explained, I will have the opportunity to check the transcript of my interview. ☐

Participant's signature……Date……...

I certify that I have explained the study to the volunteer and consider that she/he understands what is involved and freely consents to participation.

Researcher's name…….....

Researcher's signature……. Date…….

NB: Two signed copies should be obtained (one for researcher; one for participant). The copy retained by the researcher may then be used for participant review and approval of interview transcripts (point 8) where relevant.

Review / Approval of Interview Transcriptions

11. I, the participant whose signature appears below, have read a transcript of my interview participation and agree to its use by the researcher as explained.

Participant's signature……Date……...

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee in South Australia (Project number 8506). For queries regarding the ethics approval of this project please contact the Executive Officer of the Committee via telephone on +61 8 8201 3116 or email human.researchethics@flinders.edu.au

Appendix I Table of inquiry systems

Inquiry system/ features	One true formula Leibnizian	Expert consensus Lockean	Multiple perspectives Kantian (a combination of Expert Agreement and One True Formula)	Expert disagreement, dialectic Hegelian	Systems thinking, Singerian
Way of knowing	Pure theory	Seeing, hearing, touch sensing	A priori knowledge exists and the inquirer has input into the system	The interplay of thinking, sensing and intuition Intuition breaks the conflict to create new ideas	Multiple, interdisciplinary
Objectivity verification	Based on logical reasoning, internal cohesion of the model	Verification of empirical truth through consensus of many inquirers The truth of a sentence comes from logic	Self examination is essential to validate a priori knowledge	The acts of the inquirer can be observed by another system	The process brings in different forms of knowledge such as art, humanities, science, etc.
Knowledge comes from	One discipline, hard science e.g. chemistry	Putting together pieces of information and attaching properties to them	Decisions based on at least two different points of view	Knowledge comes from the conflict of ideas	Ethical and aesthetic as well as logic
Theory and data	Theories are independent of data, facts	Data can be gathered without a presupposed theory	Data, facts and observations are not theory free, a separation between	Objects gain their form and intelligibility from space, time and the categories	Pushes teleology to the extreme as it builds on prior knowledge and the interaction

Inquiry system/ features	One true formula Leibnizian	Expert consensus Lockean	Multiple perspectives Kantian (a combination of Expert Agreement and One True Formula)	Expert disagreement, dialectic Hegelian	Systems thinking, Singerian
			method of data gathering and theory building		of multiple disciplines
Method	Processing symbols to classify and rank facts	Intuition plays a role in creating the right generalisations and the right kind of models to apply to data	Comparing points of view based on critical thinking, the statistician can act as though the set of data is all that is needed to make inferences	Juxtaposing different or conflicting ideas	No field of knowledge is superior to another
inquirer	Model builder	Can observe their own processes through reflection	The inquirer is part of the system	Movement from thesis to antithesis to synthesis lead to self-awareness and improvement	Capture the entire system not just one aspect, science also encompasses humans
Purpose	To improve our image of nature	To create a net of sentences from the available data	Allows two forms of decision from given to solution or formulate the given so the solution is the easiest,	Tell a story underpinned by drama and use the explicit to highlight the implicit Teleologic orientation	Progress Seeks not to find solutions but create new and better problems to achieve human societal goals

Inquiry system/ features	One true formula Leibnizian	Expert consensus Lockean	Multiple perspectives Kantian (a combination of Expert Agreement and One True Formula)	Expert disagreement, dialectic Hegelian	Systems thinking, Singerian
			simplest or efficient		

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