Marino Institute of Education

Teachers' Perceptions of Professional Development in Inquiry-Based Learning

Settings

By

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I hereby declare that this dissertation has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where stated otherwise by reference or acknowledgement, the work presented is entirely my own. The work was done under the guidance of Dr. Karin Bacon at the Marino Institute of Education, Dublin. I agree that the library may lend or copy this dissertation upon request.

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Abstract

This dissertation explores the perceptions of teachers in an inquiry-based learning (IBL) setting regarding professional development (PD) in order to empower them in their journey as IBL educators. The research focused on a case study of a primary school in Ireland that follows the International Baccalaureate Primary Years Programme (IB PYP) in line with IBL. This research was conducted during the Covid-19 pandemic, which impacted the research methods as well as the topic being studied. An inquiry cycle was used to frame the research, since it is a tool widely adopted in IBL settings. A qualitative approach was employed to generate data, incorporating document analysis and individual interviews with seven teachers. The transcripts were coded and four main themes emerged: IBL, IBL Teacher Characteristics, IBL PD, and Community of Inquiry. Findings revealed that teachers benefit from formal and informal instances of PD. Findings also suggested that embracing collaboration and providing teachers with the time to meet in a safe space are key in developing a community of inquiry. Modelling and reflection have been highlighted as key components of effective PD. Finally, this research found that teachers are more willing to participate in and benefit from PD if they can assess their own needs and be active participants in finding PD opportunities. Time has emerged as the main barrier to PD, followed by funding. Insights from this research may prove useful to schools and organizations that value and promote IBL as well as PD policymakers.

Keywords: inquiry-based learning; IBL; inquiry cycle; International Baccalaureate; Primary Years Programme; professional development; teacher empowerment

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Table of Abbreviations

CAQDAS - Computer-assisted qualitative data analysis software

CELTA - Certificate in Teaching English to Speakers of Other Languages

CP - Career-Related Programme (International Baccalaureate)

DP - Diploma Programme (International Baccalaureate)

DYCA - Department of Children and Youth Affairs

HSE - Health Service Executive

IBEN - International Baccalaureate Educator Network

IBL - Inquiry-Based Learning

IB/IBO - International Baccalaureate/ International Baccalaureate Organization

ISS - International School Services

MERC - Marino Ethics in Research Committee

MYP - Middle Years Programme (International Baccalaureate)

NIBS - Norwegian IB Schools Association

PD - Professional Development

PISA - Programme for International Student Assessment

PRIMAS - Promoting inquiry-based learning in mathematics and science education across Europe

PYP - Primary Years Programme (International Baccalaureate)

WHO - World Health Organization

ZPD - Zone of Proximal Development

Chapter 1: Introduction

Education is changing. Ireland is moving away from more traditional ways of teaching. Examples of this move are the increase in International Baccalaureate (IB) private schools in the country, from one school prior to 2010 to a total of five in 2020 (International Baccalaureate Organization, [IBO], n.d.-a); the increase of Educate Together public schools, from fourteen schools in 1995 to 114 in 2020 (Educate Together, n.d.); and the emergence of courses such as this Master's in inquiry-based learning (IBL), which began in 2018.

My journey in IBL started over ten years ago, as a first grade teacher in an IB school in Uruguay. This role changed my views on education and marked my teaching path. Since then, I have moved not only countries but continents, and yet here I am still learning about IBL. I am now part of the leadership team at Leinster School[1] and it is the work of the teaching team that has inspired this dissertation. I decided to focus on professional development (PD) for IBL teachers to further my understanding of this area and in doing so be able to make impactful changes that benefit the teachers at Leinster School and potentially others as well.

If the Covid-19 pandemic has taught us one thing about educators, it is that they adapt. When faced with adversity and unforeseen challenges, they rise to the occasion. Teachers across the globe have reskilled in months, even weeks, to be able to reach their students in a new context. This shows not only the commitment and capabilities of teachers but also the importance of meaningful PD. Schools, workshop leaders, and policymakers should question what types of PD will engage teachers and provide them

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[1] Leinster School is a pseudonym and the school will be referred to as such throughout the dissertation.

useful tools and ideas to implement in their classrooms. My goal is to contribute to the analysis of what type of PD benefits IBL educators in particular.

The objective of this research is to analyse teachers' perceptions of PD to empower their journey as inquiry teachers. As an educator, I have attended PD events that have been groundbreaking, as well as others that were not relevant to my practice at all. Now that I am in a position to plan PD opportunities for others, I want to make informed choices that benefit the teachers and the school.

The research focuses on the case study of Leinster School, a primary school where IBL is the main teaching pedagogy. Further details of the context are provided in Chapter 3. The findings of this research should also be taken into consideration when creating a five-year PD plan for Leinster School. Even though it is not possible to generalise from one case study, this research and its findings could be useful to other schools or policymakers. It could potentially be of interest to schools that have implemented or wish to implement an IBL approach. Furthermore, organizations that promote IBL, such as IBO, might be interested in exploring and replicating this study in other settings.

Through an inquiry process, I will explore tensions and questions regarding PD in IBL. Modelling the reflection process encouraged in IBL, I designed a set of questions at the beginning of this research and revisited them after the literature review.

The initial questions which guided the literature review were:

- When does a teacher perceive him/herself as an inquiry teacher?

- What is the best kind of PD to build an IBL community?

After engaging with the literature, the questions have been refined as follows:

- What are the characteristics of teachers who value IBL?

- What evidence do teachers present in defining themselves as teachers who value IBL?

- What PD is more effective in developing a community of inquiry?

  - What are the key elements and characteristics of effective PD?

  - What evidence is there that teachers are empowered in their roles by PD?

The first set of questions aimed to understand what factors contribute to teachers' perceptions of themselves as inquiry teachers. The second set explores the perceived benefits and drawbacks of certain types of PD within the context of IBL.

Inquiry cycles are widely used in IBL settings as a way of guiding the learning process and making it visible to students and teachers (Pedaste et al., 2015). For the purpose of this research, I adopted Murdoch's inquiry cycle (Appendix A), which contains the following phases:

- Framing the inquiry
- Tuning in
- Finding out
- Sorting out
- Going further
- Reflecting and acting
- Evaluating

Murdoch, 2015

The rationale for choosing this particular cycle of inquiry is provided in Chapter 2 as part of the literature review. I have used this inquiry cycle to organise my thinking throughout the chapters. It is important to note that inquiry cycles are not linear in nature. Therefore, trying to identify and match phases of the inquiry cycle with chapters of this dissertation has not been a straightforward matter, however, this emphasises the nature of inquiry and its role in this research.

Figure 1. Adaptation of Murdoch's Inquiry Cycle to illustrate this dissertation.

This introduction is linked to the *framing the inquiry* phase, given that it is where goals are identified and the context is established. Chapter 2 focuses on the review of literature, which relates to the *framing the inquiry* and *tuning in* phases. The chapter centres on gathering existing information to see the bigger picture and fine-tuning the key questions that will drive the inquiry. Chapter 3 focuses on generating data through research, which is the *finding out* phase of the inquiry. Data has been generated through a case study, including interviews and document analysis. Chapter 3 also has some elements of *framing the inquiry* as it describes the context of the case study. Chapter 4 corresponds to the *sorting out* phase, which includes analysing the information gathered and interpreting it to reach conclusions. Chapter 5 is a combination of the *evaluating* and *reflecting and acting* phases. The research is reviewed, recommendations are made,

and further goals are set. It is my intention to use these findings to inform future practice at Leinster School. It is challenging to pinpoint the *going further* phase to a single chapter since it is part of the ongoing process of shaping and re-shaping the research based on the findings and reflections. This is a simplification of the inquiry cycle, as in reality elements of all phases may be found throughout the research. As it will be explored in the next chapter, inquiry cycles are useful tools although complex in nature.

Chapter 2: A Review of the Literature

This chapter presents an overview of the literature in relation to inquiry-based learning (IBL), professional development (PD) and teacher empowerment. All three topics are presented in the context of primary school education. The initial questions which guided the literature review were:

1. When does a teacher perceive him/herself as an inquiry teacher?

2. What is the best kind of professional development to build an IBL community?

Modelling IBL, these questions have been revisited as part of the inquiry process. The refined questions can be found at the end of this chapter.

As stated in the introduction, the dissertation is organised following a cycle of inquiry (Appendix A), modelling the process students undergo in IBL:

Figure 2. Depiction of Murdoch's Inquiry Cycle (Murdoch, 2015, pp. 78-80).

This review of the literature mainly corresponds to the *tuning in* phase, focusing on the gathering of existing information on the topic to be explored. However, it is also related to the *framing the inquiry* phase, as the information gathered through the review of existing literature had a direct impact on the overarching questions that framed the inquiry and moved the research forward (Fig. 1, p. 4).

This chapter begins by exploring elements of IBL, the inquiry cycle, and characteristics of IBL teachers. Later in the chapter, there is an examination of PD in the context of primary schools within an IBL framework. The chapter draws connections between PD, a community of inquiry and teacher empowerment. Finally, the research questions are revisited in light of the literature review.

2.1 Inquiry-Based Learning

IBL is a way of thinking about education, a stance, as Short (2009) called it. Kath Murdoch (2015) and Kathy Short (2009) are two key current advocates for IBL for the purpose of this research. However, IBL can be traced back to the work of Dewey, Bruner and Vygotsky. According to Dewey (1916, 1938), learning occurs most effectively when tied to solving problems in real-world situations. His pioneer work in constructivism is closely linked to inquiry as a pedagogy (Hyslop-Margison & Strobel, 2007). Bruner (1966) emphasised the importance of organising the curriculum in a spiral manner, which means revisiting key concepts with increased complexity so that students advance in their learning by using the foundations of their existing knowledge. Dewey (1916) and Bruner (1966) developed constructivist theories of learning, the basis of which is that learners actively construct their knowledge, as opposed to being passive recipients. Vygotsky (1978) highlighted the role of social interactions in learning, articulating the concept of "Zone of Proximal Development" (ZPD). According to this concept, students' learning occurs when they step beyond their current knowledge but close enough to be able to perform when guided by peers or teachers. This social element takes constructivism a step further, where learning occurs within a community, which is key to the learner's success. The importance of collaboration in the co-construction of knowledge is key in IBL (Harste, 2001).

IBL is a constructivist approach to teaching and learning, where learners are at the centre, making connections to their prior knowledge and using an array of tools in order to deepen their understanding of concepts. Blessinger and Carfora (2015) underlined how IBL is connected to real-life and therefore encourages lifelong learners. IBL is collaborative in nature, with an emphasis on creating a community of inquiry. A community of inquiry is a safe space where learners can explore questions and problems relevant to them, with the teacher acting as a guide or facilitator. In IBL there is explicit teaching and learning of transferable skills, such as "self-management, collaboration, communication and of course research" (Murdoch, 2015, p. 15). Short (2009) emphasised the importance of how to learn and not just what to learn. She defined inquiry as a "collaborative process of connecting to and reaching beyond current understandings to explore tensions significant to learners" (Short, 2009, p. 3). The collaborative nature of IBL should be reflected in PD.

<div align="center">2.2 Inquiry Cycle</div>

A disputed aspect within IBL is the use of inquiry cycles (Murdoch, 2013). Inquiry cycles are visual representations of the inquiry process, which deconstruct the process into phases to make it more explicit. Inquiry cycles can be compared to "visible thinking" strategies, which are a series of tools and routines used to guide students' learning processes (Ritchhart, Church, & Morrison, 2011). Visible thinking routines aim to deepen students' learning. These tools are presented as routines because the intention is that they become a core element of the classroom. Their flexibility allows them to be used with different age groups and regardless of the subject at hand. Similarly, inquiry cycles can be integrated into the classroom as a tool to guide learning and explicitly focus on the process.

There is not a unique inquiry cycle broadly adopted, but rather different designs that range from a simple three-part cycle to more complex diagrams with up to ten steps linked together in a multidirectional manner. However, there is an underlying commonality between the various inquiry cycles. Pedaste et al. (2015) conducted a systematic literature review of existing inquiry cycles, in an attempt to identify common characteristics and develop a new version of an inquiry cycle that combined features from existing ones. The authors noted that current inquiry cycles frameworks have been developed based on historical views of IBL (Pedaste et al., 2015). Therefore, even though Dewey (1933) did not create an inquiry cycle per se, it can be noted that he was already outlining key elements that served as a foundation for inquiry cycles.

In their analysis, Pedaste et al. (2015) found 109 terms, which they first consolidated into a list of 34 inquiry activities, and finally merged into five main phases: "orientation, conceptualization, investigation, conclusion and discussion" (Pedaste et al., 2015, p. 51). This comparison of inquiry cycles highlighted the underlying similarities between the different versions and therefore what could be called the essence of an inquiry cycle.

I have taken Murdoch's (2015) inquiry cycle and compared it to the work of Pedaste et al. (2015). One of the reasons I selected Murdoch's (2015) inquiry cycle for the purpose of this dissertation is because it was adopted by the teaching team at Leinster School. In the book *The Power of Inquiry,* Murdoch (2015) explained the intention of each phase in detail, which allows educators to delve into a deeper understanding of its implementation. The guiding questions, examples of work and planners have proven helpful particularly when training teachers new to IBL at Leinster School. Figure 3

shows how Murdoch's (2015) inquiry cycle phases relate to the phases developed in

Pedaste et al. (2015) analysis.

Figure 3. Phases of Inquiry
On the left, the five main phases of inquiry as illustrated by Pedaste et al. (2015,
p. 51). On the right, Murdoch's (2015) inquiry cycle phases.

Murdoch's (2015) inquiry cycle is used to frame this dissertation, modelling students'

inquiry process. As an educator, I find this cycle to be a useful tool to guide and

visualise the learning process. As mentioned earlier, using an inquiry cycle allows the

learning process to be explicitly defined and shared with others. This idea of focusing

on the process of learning and making it clear is linked to the development of

metacognition and reflection (Bransford, Brown, & Cocking, 2000).

One of the difficulties of successfully implementing an inquiry cycle is unintentionally

using it as a recipe or series of steps (Murdoch, 2013). However, Murdoch (2015)

explained that the key is for students and teachers to fully understand the cyclical and

flexible nature of the inquiry cycle, and be comfortable moving throughout the cycle in different directions. As Burke reflected, inquiry is a complex process, and simplifying it does not change its underlying complexity (as cited in Harste, Woodward, & Burke, 1984).

2.3 IBL Teachers

Teaching and learning are, or arguably should be, two sides of the same process. As Harste pointed out, "education is inquiry and inquiry is education" (Harste, 2001, p. 2). For this reason, in order to discuss IBL, it is fundamental to consider the role of the teacher.

IBL moves away from more traditional views on education, and therefore it might differ from a teacher's initial understanding of education or indeed their personal experience (Biesta, Priestley, & Robinson, 2015). This research focuses on teachers who work in a setting that values IBL. However, it is important to note that there are teachers who advocate and implement IBL in their classrooms within schools that do not focus on IBL. Research conducted by Wolkenhauer and Hooser (2017) highlighted the importance of teacher advocacy in their beliefs in education. IBL can be challenging and pose difficulties (Quigley, Marshall, Deaton, Cook, & Padilla, 2011) and sometimes requires a shift in mindset for teachers and schools. It is therefore key to develop an ongoing understanding and belief in IBL in order to commit to it.

According to Golding (2012), the existential problem for inquiry teachers is to balance how to enable students to access valuable knowledge while allowing them to inquire for themselves. Golding (2012) explained that one extreme is to take full control of the learning experience, while the other one is to abandon students to their own devices. Inquiry skills are not developed autonomously, and if students are given too much

freedom without having the necessary skills, they will not be able to inquire critically (Guccione, 2011). Teachers should not follow a set of steps, but rather have to develop the ability to judge the needs of their students in each situation (Golding, 2012). Through a series of metaphors, Golding (2012) described how a teacher might identify their role, which is considered a key element of resolving the paradox on how to balance the amount of assistance provided to make an inquiry meaningful. He highlighted the teacher as "expedition-educator stance" (Golding, 2012, p. 97), which is where the teacher creates a learning path together with the students. In this scenario, the teacher provides balance, co-inquires with the students, and gives students space to find their own road. Through class examples, Kidman (2017) demonstrated how the role of the teacher changes throughout the lesson in line with the needs of the students. The type of support needed depends on where the students are in terms of their inquiry skills. Given that this ability for discernment is far from straightforward, teachers need support and guidance to become competent in this matter, which is where PD plays a crucial role. Teachers in IBL need to be flexible in order to differentiate and adapt their teaching to suit the needs of their students (Wolkenhauer & Hooser, 2017).

Curiosity

Curiosity is a key element in IBL. It can be defined as an interest in the world and people around us (Gordon, 2018). It facilitates cognitive development, personal growth and well-being in teachers and students alike. Curiosity can be cultivated, which is key in empowering learners. It can be argued that curiosity is somehow contagious, therefore, if a teacher is curious and shares this with a class, it will positively impact the students into being curious as well (Birenbaum & Nasser-Abu Alhija, 2020).

Several authors have agreed that the development and promotion of curiosity have not always been seen as key aspects of education (Birenbaum, 2003; Gordon, 2018; Zimmerman & Schunk, 2001). Birenbaum (2003) criticised traditional teacher-centred instruction, claiming that students do not develop their natural curiosity but rather suppress it, as a result of a tacit understanding that the teacher is in charge of asking questions and guiding the learning process. Looking at this from the opposite perspective, it can be argued that a learner-centred approach to education such as IBL sets the context for the development of curiosity. Therefore, as Zimmerman and Schunk (2001) have claimed, it is crucial for lifelong learners to be inquisitive and self-regulated.

A recurring aspect of describing the elements important in IBL is that the characteristics one wishes to cultivate in the learners should be present in the teacher as well. As Harste pointed out, "nothing teaches like demonstration" (Harste, 2001, p. 13). Teachers who are visibly curious about the world and share this curiosity with their students can spark the same attitude in them. Teachers should demonstrate these characteristics in their role as teachers as well as in their own development, which is the focus of this research. In recent years, the "PRIMAS project: Promoting inquiry-based learning in mathematics and science education across Europe", was developed in the European Union. It was an international project that united fourteen universities in the promotion of IBL both in the classroom and in teacher PD. The PRIMAS guide mentioned curiosity as a key attitude that teachers engaging in this project required (PRIMAS, 2011).

Collaboration

Collaboration is when two or more people work together to achieve a shared goal through an exchange and refinement of ideas. In IBL, collaboration is deemed a key element, by which participants achieve deeper understandings thanks to the collaborative aspect (Blessinger & Carfora, 2015). Collaboration does not equate to cooperating or dividing tasks, but rather engaging in meaningful discussions to explore issues from different perspectives and for all the involved parties to advance in their learning process by building on each other's ideas.

Collaborative skills are a key component of a community of inquiry. Collaboration allows teachers to work as part of a team and engage in reflection with others to deepen their understanding. Relational trust must exist between the participants to collaborate effectively. In order to promote and ensure collaboration among teachers and students, the school as a workplace needs to encourage this approach to teaching and learning. From a practical viewpoint, this means for example ensuring that teachers have sufficient time outside of teaching hours to collaborate with their peers (Lin, Lee, & Riordan, 2018). Burton (2012) suggested that a recurring problem at schools is the lack of time for teachers to collaborate.

Reflection

Reflection is a key trait teachers need to have in order to improve their teaching. Engaging in PD successfully means having the time and skills to reflect on current beliefs and practice, and how these might be impacted by the newly acquired skills or ideas. Reflective teachers are more likely to incorporate reflection as a key element of their instruction, developing in students the tools to become reflective learners (Hardwick, 2019).

2.4 Professional Development

Professional development (PD) can be defined as a "unique process that aims to provide participants with a new set of experiences, skills, resources and knowledge that will support them as they implement the ideas they have studied in the field" (Holmes, Signer, & MacLeod, 2010, p. 76). PD includes formal and informal experiences that can take place within the institution or outside (Dabbagh & Kitsantas, 2012).

PD is necessary for teachers to stay up-to-date and improve their practice, which in turn leads to a better education for students (Holmes, Preston, Shaw, & Buchanan, 2013; Lawless & Pellegrino, 2007). As in many other professions, a teacher's initial degree may not be sufficient throughout their career, due to possible changes in educational perspectives, context, and tools available, as well as their own understanding of teaching and students' needs. Therefore, teachers need ongoing PD, in-work mentoring and a reflective attitude to continue to develop professionally (Helleve, 2009).

As Mashaw (2012) suggested, measuring the effectiveness of PD can be difficult. The purpose of this study is to shed light on this matter within the context of IBL. Several perspectives can be taken into consideration when measuring the effectiveness of teacher PD, such as the fulfilment of expectations, content coverage and impact on the teaching practice. For the purpose of this research, teachers' perceptions of the effectiveness of PD will be explored. As the participants of PD events, their perception of the effectiveness of a course or other type of PD can be considered of paramount importance in terms of their attitude towards future PD, as well as a school's choice of PD investment.

The focus of this research is on PD that targets IBL within the context of the International Baccalaureate Primary Years Programme (IB PYP) curriculum. In

education, PD has the power of impacting teachers' beliefs and practices, student learning, and educational reforms. It may lead to career advancement, financial gain, and personal growth (Villegas-Reimers, 2003).

A PD school plan should align with the values of the school and regulatory body. In the case explored, the characteristics of IBL have to be present in the type of PD facilitated by the school to comply with International Baccalaureate Organization (IBO) requirements, which are detailed in the next section.

PD can impact a teacher's beliefs, which in turn can translate into change in their classroom instruction (Hirsh & Killion, 2009). IBL is considered by certain authors to require more in-depth expertise and a more refined set of teaching skills compared to traditional education (Taitelbaum, Mamlok‑Naaman, Carmeli, & Hofstein, 2008).

The value of the PD for the participant will depend on variables such as the teacher's prior knowledge, their goals, and their educational needs. For instance, if the PD is based on using interactive whiteboards and some participants know they will not have access to this technology in the near future, then it may not be of immediate interest to them and therefore the opportunity for learning might be lost.

Smith (2003) indicated that teachers who engage in PD benefit from trying new things and experience higher job satisfaction. A study on the effectiveness of PD highlighted the importance of including collaborative and reflective aspects (Garet, Porter, Desimone, Birman, & Yoon, 2001). According to Smith (2003), participating in PD also increases curiosity and encourages reflection.

Modelling

Modelling can be a successful approach to link theory and practice. In a study that analysed the impact of PD programmes, modelling was cited by 86% of the participants

as useful (Timperley, Wilson, Barrar, & Fung, 2007). A study in Australia focused on

modelling of inquiry as the main approach to engaging pre-service teachers in IBL

(Preston, Harvie, & Wallace, 2015). The European project PRIMAS also recommended

modelling as a way of teaching a skill to teachers (PRIMAS, 2011). According to an IB

study on the impact of IB PD, modelling and practice during a workshop, as well as

practice and feedback after the workshop are two factors that may result in higher levels

of success of PD (Calnin, Mason, & Qing, 2019). Since teacher PD focuses on how to

teach, it should be taught in line with the educational framework being sought (Vrasidas

& Glass, 2004), which in this case is IBL.

Collaboration

Collaboration is another key aspect of effective PD in line with IBL. Collaborative PD

might take place within the realm of a school, or in conjunction with other participants.

IBL teachers promote collaboration in the classroom and collaborate with colleagues in

the co-construction of knowledge and deeper understandings (Short & Burke, 2001).

Collaborative PD tends to be hands-on and actively involves teachers. This type of PD

appears to align better with IBL than a more traditional lecture-style PD. Alternative

approaches to PD include teachers mentoring or assisting new teachers. These are

ongoing, informal ways of PD that might not always be perceived as important, planned

or recorded in the same way as more traditional ones. Nevertheless, there is intrinsic

value in these instances of learning (Eraut, 2004) and therefore they will also be

explored as part of this research. A recent study on the effectiveness of IB PD

highlighted the importance of active teacher collaboration in PD (Calnin et al., 2019).

Online Professional Development

In recent years, online alternatives, such as online workshops and webinars, have become increasingly popular. Even though there is no conclusive data yet, the impact of the current pandemic on the amount of hours teachers have dedicated to online PD will probably be a matter of future research. A recent study about the experiences of teachers in Ireland during the pandemic in 2020 highlighted the need teachers had for upskilling and the online offer made available to target this necessity (Dempsey & Burke, 2021). In fact, professional growth and IT upskilling have been cited as some of the positive takeaways from a challenging year (Dempsey & Burke, 2021).

Online learning is usually more flexible in terms of time, can sometimes be done during working hours, and does not involve travelling. Furthermore, it tends to be less expensive, both considering the cost of the workshop itself and related costs such as transport or food. Due to these factors, it is usually easier to afford online PD, as long as there is access to technology (Organization for Economic Co-operation and Development, 2020; Sherer, Shea, & Kristensen, 2003). However, there is still an argument in favour of the value of face-to-face workshops. One of the main advantages of attending a workshop in person is the opportunity to network with colleagues from other schools or countries. Nevertheless, the cost and travel demands can make face-to-face workshops less practical in a fast-paced environment where there is a constant need for upskilling (Sherer et al., 2003).

A study that compared online and face-to-face PD concluded that if all other elements are kept the same, there are no significant differences in what is gained from attending face-to-face or online PD (Fishman et al., 2013). The clear advantages of these findings are that participating in online PD can usually be more economical and time-efficient.

Online PD is usually accessible to teachers that might otherwise not be able to access that type of PD in their region.

In IB PD in particular, workshops that are offered both face-to-face and online with the same content are organised slightly differently. Face-to-face workshops last three days, whereas online workshops are spread over a period of four weeks.

Characteristics of Professional Development

PD is more valuable to teachers if it is context-specific as opposed to more general (Darling-Hammond, Hyler, & Gardner, 2017) as it gives teachers the opportunity to apply the new knowledge, materials and techniques in their classroom practice. A clear example of this is what happened in 2020 when teachers turned to webinars, their peers, and online professional communities to re-skill in order to use the necessary platforms for conducting virtual learning effectively particularly during a global pandemic. This exemplifies the importance of PD being accessible and relevant to the participants to be effective and equip them with the necessary tools to enhance their teaching practice.

As stated before, this chapter focuses on understanding what characteristics make PD relevant and meaningful to teachers in the context of IBL. PD is key in developing an ongoing and deepening understanding of IBL and applying it in the classroom effectively (Capps, Crawford, & Constas, 2012). PD providers are becoming increasingly aware of the principles underpinning andragogy, i.e. adult learning (Calnin et al., 2019). Teachers benefit from constructing their own knowledge, and learn more effectively when actively engaged in questioning, reflecting or experimenting in ways that are relevant and applicable to their jobs (Brookfield, 2001; Desimone, Porter, Garet, Yoon, & Birman, 2002; Supovitz, 2001).

Barriers to Professional Development

When exploring access to PD, finances and time can be listed as the main obstacles teachers face when willing to engage in PD (Zhang, Shi, & Lin, 2019). Time has been listed as the number one barrier to engage in PD both in an international study on PD (Van der Klink, Kools, Avissar, White, & Sakata, 2016) and a study on the effectiveness of IB PD (Calnin et al., 2019).

2.5 International Baccalaureate Organization and Professional Development International education is an ambiguous term that may signify different things depending on the context. In order to clarify, the terms "international schools" and "IB schools" are defined, since the school in the case study is both an international school and an IB one. A detailed description of the context of the case study is included in Chapter 3.

International schools have become more prevalent for reasons such as globalisation (Doak, 2018). International schools are often referred to as such because they have an international body of students, follow an international curriculum, or both. The school being analysed in this case study has an international body of students and staff, and follows the IB PYP curriculum, which is an international curriculum.

International schools usually offer in-school PD opportunities, as well as attendance to workshops and conferences (Doak, 2018). According to Black and Armstrong (1995), for international schools, PD may be a more difficult endeavour due to schools usually being isolated and having fewer opportunities to network with similar schools in the same area. An additional difficulty for some international schools may be staff turnover, which means that the school's financial investment in further development for a teacher might not have a long-term benefit on the school if the teacher leaves. Doak (2018)

argued that while this may be true, it is still valuable for schools to invest in PD as it makes teachers as a whole better qualified. The logic behind it is that if all international schools invest in PD, then all the teachers that change locations will be more qualified than if schools seldom invest for fear of teachers leaving.

The International Baccalaureate Organization (IBO) is a non-profit organization that offers four educational programmes: the Primary Years Programme (PYP), the Middle Years Programme (MYP), the Diploma Programme (DP) and the Career-Related Programme (CP). The IBO was founded in 1968 in Geneva and offered 16-18 year old students an international alternative to pre-university exams, hence the name "International Baccalaureate" (IB). Since then, the organization has grown in the number of schools and programmes offered. The IB continuum now caters to students aged 3-19. IB programmes have a positive reputation as rigorous, concept-driven, inquiry-based pedagogical frameworks that develop students' knowledge, cognitive skills, and values (Dickson, Perry, & Ledger, 2018).

The IB programmes aim to educate students with the "skills and dispositions needed for taking responsible action for the future" (IBO, 2019, p. 1). The IB curriculum is grounded in the work of Dewey, Piaget, and Bruner for students to develop critical thinking skills (Hardwick, 2019). PD for teachers working in IB schools should align with the elements highlighted in the organization's mission statement:

> The International Baccalaureate aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.
> To this end the organization works with schools, governments and international organizations to develop challenging programmes of international education and rigorous assessment. These programmes encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.
>
> (IBO, n.d.-b)

IB education engages students in critical thinking across and through disciplines, cultures, and nations. IB also emphasises the importance of being "lifelong learners", with a focus on the "learner profile" attributes, a set of dispositions that members of an IB community should strive to develop. The learner profile is one of the key aspects of the IB curriculum. It features ten attributes that the IB programmes commit to developing in its students. These attributes go beyond academics, responding to the question: what sort of people do we want learners to become? The IB learner profile focuses on students being: inquirers, knowledgeable, thinkers, communicators, principled, open-minded, caring, risk-takers, balanced, and reflective (IBO, 2019). Highly interconnected with one another, one of the attributes is being "inquirers", which is defined as those who are curious, and develop inquiry and research skills, lifelong learners who can learn independently and collaboratively (IBO, 2019, p. 3). Furthermore, when describing the approaches to teaching in IB programmes, the first element is "based on inquiry", which is defined as students "finding their own information and constructing their own understandings" (IBO, 2019, p. 6). Another important aspect of an IB education is its "worldwide community of educators" (IBO, 2019, p. 8). The following elements of an IB education are central to this research:

- IB schools have inquiry-based teaching and learning at their core.
- IB schools focus on lifelong learners. This can be understood to refer to students in IB schools, but also the broader community, which would include its teachers. Therefore, PD as discussed in this research is of significant importance in the context of IB schools. This can be further supported by the requirements and offer of professional development by the IBO.

- IB places emphasis on community and collaboration. These characteristics of IBL are important both for students and for teachers. Therefore, PD in line with IB and IBL should be collaborative in nature.

These key elements of IB are explored through the research questions and in the findings in Chapter 4.

The IBO organises and requests teachers to take part in IB-recognised professional development workshops to ensure appropriate teacher support following IB standards (Hardwick, 2019). The organization requires leadership and staff to participate in IB-recognised professional development (IBO, 2018). Research conducted in IB schools highlighted the opportunities that exist for in-school PD in these settings. This comprises informal PD that comes for instance from observing or learning from peers (Walker, Bryant, & Lee, 2014). Another IB-funded research study explored the importance of PD in the primary years of IB, where researchers found out that teachers depend on ongoing PD to improve their practice (Day, Townsend, Knight, & Richardson, 2016). The participants of this study highlighted the importance of fostering a school community where teachers can innovate and put in practice new learnings and ideas (Day et al., 2016). It can be argued that, in the same way, that teachers foster a culture of innovation and reflection within the classroom, so should leadership foster said culture within the teaching team.

A research study conducted in IB schools observed that teachers who participated in IB PD appreciated these events as an opportunity to network with colleagues, learn and trial new strategies to promote IBL (Boal & Nakamoto, 2020). PD also gives teachers the possibility to bond with their peers and heightens the teachers' sense of professionalism. The focus on PD was found to be one of the aspects of the IB that

contributed to a better school climate in the schools that took part in the research study

(Boal & Nakamoto, 2020).

IB provides schools with Standards and Practices to guide the implementation of the

programmes. The following points refer to PD:

> *The school ensures that leadership and teachers participate in appropriate and timely professional learning to inform their practice. (0203-02)
> *The school complies with IB-mandated professional development requirements, as outlined in IB documentation. (0203-02-0100)
>
> (IBO, 2018, p. 9)

At present, the minimum PD requirements for an IB PYP school such as Leinster

School are as follows:

> - An IB programme coordinator appointed during the period under review must attend an IB workshop, category 1, 2 or 3, relevant to the role.
> - Teachers hired during the period under review must participate in an IB workshop, category 1, 2 or 3.
> - One teacher, coordinator or head/principal from each IB World School implementing the PYP must attend the "Building for the future" transition workshop by 31 December 2021. Schools with IB educators who have successfully completed the expectations for the IB educator network (IBEN) are exempt from this requirement.
>
> (IBO, 2020, pp. 2-3)

Schools are encouraged to use a chart to plan the PD needs of the school and later

indicate how these needs have been met. IB PYP schools undergo an evaluation process

every five years. It is an IB requirement that the teachers, coordinators, and heads of

school that are appointed during the five-year period under review must participate at

least in one workshop relevant to their new role. At times, there may be additional

requirements. For instance, there is a current requirement that at least one staff member

participates in the "Building for the future" transition workshop by 31 December 2021

in line with changes to the PYP.

The evaluation process consists of a self-study as well as a visit from two members from the International Baccalaureate Educator Network (IBEN). The rigorous self-study aims at the school reflecting in order to identify areas of growth and establish goals for further development. The IB regional manager and the IBEN visiting team provide support and guidance during this process.

The IB evaluation process is based on the underlying concept that a school is a community of learners, and as such, is constantly evolving. After receiving its authorisation, schools reflect on feedback from their members and from the IBEN visiting team to develop an action plan and continue to deepen their understanding of the IB programme/s. This cycle of learning lasts five years, and each evaluation is seen as an opportunity to reflect on where the school is, celebrate its areas of growth, and put an action plan in place to further develop other areas as needed. The rigorous self-study is a key element of this process, where the whole school community is involved: teachers, administration, leadership, students, parents, and alumni. This process of reflection allows the school to identify its strengths and areas of growth and the IBEN visit is the first step in creating a plan for the next cycle. This idea of a school having strengths and areas for growth is parallel to the constructivist mindset that IBL incorporates in the classroom.

PD is a part of the ongoing betterment of a school, based on the premise that as teachers deepen their understanding of inquiry, this translates into the classrooms. IB offers different workshops and seminars that aim at supporting schools in their processes. Furthermore, each school may combine IB official workshops with other types of PD. This means schools have freedom and flexibility in terms of PD, so long as they comply

with minimum expectations and engage in PD that aligns with the development of the school in line with the IB guidelines.

Every year, IB publishes a catalogue with the workshops on offer, and schools use an online engine to search for the dates on which they are available.

Table 1

IB PD Search Engine Filter Parameters (IBO, n.d.-c)

Paramenters	Options					
PD Topic Area	Primary Years Programme	Middle Years Programme	Diploma Programme	Career-Related Programme	Leadership	IB Education
Event Type	Face-to-face	Online	Virtual			
Category	1	2	3			
IB Region	Africa, Europe, Middle East	Americas	Asia Pacific			
Language of Delivery	Chinese	English	French	Japanese	Spanish	Other
Key Words Dates Country/ Territory						

IB publishes dates in advance, for example in February 2021, workshops have been scheduled until June 2022. However, all workshops are subject to cancellation closer to the date, for instance, if a minimum number of participants is not reached. Almost one third of the workshops currently being offered are specific to the PYP. Of these, a vast majority (over 70%) are in English. The "other languages" option currently yields results in German, Arabic, Hindi and Korean. The "Leadership" and "IB Education" workshops are generally also marked as appropriate for the four programmes, which means they are more general to IB as opposed to programme-specific. Face-to-face workshops last 15 hours over three days, while online workshops are spread over a four-week period. Some workshops are only offered face-to-face and in certain regions,

however, there are plenty of options in the online offer, and a school could focus solely on online IB PD if it suited its needs. In 2021, IB launched virtual workshops to temporarily substitute face-to-face workshops, which were temporarily suspended due to the Covid-19 Pandemic. Virtual workshops take place synchronously over 3-6 days. Nobody in the case study had participated in this new type of IB workshop at the time of this research.

Workshops are divided into three categories. Category 1 workshops are recommended for educators new to IB, Category 2 for those who want to develop their expertise in a programme, and Category 3 for educators who wish to delve more deeply into a particular subject or area. IB usually requires teachers to start with a Category 1 workshop, although exceptions can be requested on a case-by-case basis.

IB also offers the possibility of requesting in-school workshops either for a specific school or a cluster. This option is quite useful for larger schools, both financially and logistically, as it allows for all teachers or a large group to attend PD simultaneously. In-school PD can help develop the school's understanding of a programme altogether. On the other hand, the opportunity of networking with other schools is lost.

Teachers that work in IB schools have access to an internal IB platform. There, they can find IB resources such as guidelines, case studies, and discussion boards. In recent months IB has launched two types of free online workshops. "Nano PD" are 30-minute interactive workshops that have short videos and tasks for teachers to engage and reflect on different areas of the IB curriculum. In 2020, the organization also hosted a series of two-hour webinars aimed at teachers from all IB programmes.

Finally, IB has its own network of educators, IBEN, who work directly for IB for instance visiting candidate schools and providing workshops. These educators receive additional IB training as part of their role.

In a study that focused on users of IB PYP workshops, ninety per cent of the teachers interviewed claimed that workshops had a moderate to great impact on their teaching practice (Burton, 2012). Research showed that IB PD at primary school level is mainly experienced through attendance to off-site IBO events, such as workshops and conferences (Burton, 2012). It will be interesting to see how this data shifts after 2020-2021 when most face-to-face IB events have been cancelled.

2.6 Community of Inquiry

A community of inquiry can be defined as "a group of individuals who collaboratively engage in purposeful critical discourse and reflection to construct personal meaning and confirm mutual understanding" (Garrison, 2017, p. 3). Communities of inquiry allow for joint planning, team teaching teams, and purposeful collaboration within a setting. A study that focused on two IB schools found that in schools where there are policies and structures in place that foster collaboration, teachers have greater opportunities to engage with one another in communities of inquiry which in turn promotes teacher agency and develops leadership skills (Lin et al., 2018).

As Baker (2014) explained, the fact that society has embraced lifelong learning as fundamental means that teachers are expected to continue developing their own education. When teachers are lifelong learners, they improve their teaching practice, which benefits student learning and achievement (Lawless & Pellegrino, 2007). After exploring PD in IB PYP schools, Burton concluded that when teachers participate in PD

as a team, they are able to extrapolate "off-site resources to internal, on-site practice" (Burton, 2012, p. 145).

A longitudinal study carried out in England between 2002 and 2004 concluded that PD sustained in time and carried out in collaboration with colleagues is more likely to produce positive change in the classroom (Boyle & Lamprianou, 2006; Boyle, Lamprianou, & Boyle, 2005; Boyle, While, & Boyle, 2004). When teachers face similar challenges and have the opportunity to share practices and reflect together, they find the time, space and support to implement change in their practice. As a consequence, teachers obtain academic and professional results as well as an enhanced community feel and stronger relationships among staff (Arbaugh, 2003).

According to Hattie (2012), teacher collaboration has a significant impact on student achievement as well. An international study that researched the commonalities among countries that ranked highest in education in international measures such as Programme for International Student Assessment (PISA) found five main characteristics (Wei, Darling-Hammond, Andree, Richardson, & Orphanos, 2009). Three of these are directly linked to the PD of teachers, namely: free initial teacher graduate programmes, mentoring for newly-qualified teachers, and extensive PD with time for planning and collaboration within working hours (Wei et al., 2009). The study highlighted a significant difference between countries in the time allocation for teachers to spend on planning, collaborating, and participating in PD. It compared the situation in the US, where on average teachers have 3-5 hours a week, with high-ranking Asian and European countries where teachers have 15-25 weekly hours to dedicate to these activities. The study concluded that having the time for PD as part of the working day allows PD to be ongoing, collaborative and context-specific, with changes in practice

being sustained over time through analysis of problems, collaborative reflection, and implementation of new procedures (Wei et al., 2009).

2.7 Teacher Empowerment

Etymologically, empowerment comes from the word "power". It is a social process by which power relationships shift. When a person is empowered, they have the opportunity to challenge the status quo and modify it. As Page and Czuba (1999) pointed out, empowerment is a social construction important in several disciplines, including education, psychology and organizations.

Short suggested that empowered individuals trust their "skills and knowledge to act on a situation and improve it" (Short, 1992, p. 6). Referring to education in particular, she further stated that empowered schools are organizations that facilitate this. Therefore, the concept of teacher empowerment could be seen as having two dimensions. On the one hand, teachers need the abilities and skills to make positive changes in the school or classroom. At the same time, the school environment needs to view teachers as leaders and provide them autonomy and support to act. This research focuses on the PD that teachers perceive as empowering, as well as which elements in a school's environment allow them to flourish.

Murdoch (2015) stated IBL is empowering for both teachers and students. Several studies have also stated that IBL can be challenging for teachers (Capps & Crawford, 2013; Correia & Harrison, 2020; Crawford, 2007). Teachers are seen as lifelong learners, with the same dispositions that they need in the classroom as leaders, in their own professional life as learners. As Murdoch and Wilson (2008) explained, developing the teacher's journey as a professional is core to supporting students in their learning.

Self-assessment and reflection are key elements of the inquiry process, both for teachers and students. In line with IBL, in constructivist communities, teacher empowerment and collaboration are at the core of student learning (Amzat & Valdez, 2017).

Murdoch and Wilson (2008) discussed the importance of creating a learning community in the classroom. It can be argued that this is equally important at a school level when looking at teachers and leadership as a community.

Agency is an important part of teachers' professional autonomy (Oosterhoff, Oenema-Mostert, & Minnaert, 2020). Individual expertise includes knowledge and beliefs. Teachers' beliefs can change throughout their education. Having an inquisitive attitude gives a teacher the tools needed to reflect on their practice, continue to develop professionally, and have confidence in their way of acting. Agency and self-confidence go hand in hand and are important for teachers both to incorporate or reject change, by analysing their students' needs and trusting their expertise as educators.

When teachers are in charge of leading workshops and working with their colleagues, this allows for a true atmosphere of collaboration and co-learning (Wei et al., 2009), which empowers both the presenter and the rest of their colleagues. Giving teachers the opportunity to reflect on their practice, identify their needs and create a plan to address these needs empowers them as practitioners (Fishman, Marx, Best, & Tal, 2003). Broad highlighted that funding can diminish teachers' agency in choosing PD, in cases where teachers feel that organizations fund PD that suits organizational needs and not necessarily individual teacher needs (Broad, 2015). As stated by Glackin (2018), a teacher's belief in their own ability is directly related to their willingness and ability to engage in effective PD. Furthermore, teachers are agents of change when they

"challenge students to question, inquire, collaborate and take action" (Burton, 2012, p. 145).

Lifelong learning is necessary because it is not possible to learn everything in school and university since things change and people face new challenges. It is therefore a key asset in a professional to have the capacity to manage their own learning throughout their career. This willingness to reflect and improve on practice is empowering and highly connected to personal agency (Sharples, 2000).

2.8 Research Questions

Modelling the inquiry process, the initial questions have been revisited following the literature review.

The initial questions which guided the literature review were:

- When does a teacher perceive him/herself as an inquiry teacher?

- What is the best kind of PD to build an IBL community?

The reviewed questions are listed at the end of this section.

The literature on the topics of IBL, PD and teacher empowerment shows that schools, teachers and governments agree on the importance of continuous teacher PD. However, more research needs to be done in terms of understanding the types of PD that are more suitable in IBL settings and to agree on how to facilitate these.

When analysing PD in the context of international education and the IBO, additional aspects come into place. These include the mobility of staff, which means return on the investment in teacher education might not be as straightforward as in other settings. Furthermore, the IBO in particular has a set of requirements that highlights the importance placed on PD from the organization, but the need to prioritise mandated PD may also stop schools and teachers from engaging in other valuable instances of PD.

With all this in mind, and considering the important role teacher empowerment plays in developing better, more confident teachers, bringing their perspective into the scene is necessary.

Given that the process of inquiry is non-linear in nature, the research questions have been refined after engaging with the literature. As Agee (2009) explained, good questions are of the utmost importance in qualitative research, and it is, therefore, key to refine them time and again to make sure they target specifically the focus of the research before moving on to consider how best to answer the questions.

 Reviewed questions:

- What are the characteristics of teachers who value IBL?

    - What evidence do teachers present in defining themselves as teachers who value IBL?

- What PD is more effective in developing a community of inquiry?

    - What are the key elements and characteristics of effective PD?

    - What evidence is there that teachers are empowered in their roles by PD?

Chapter 3: Research Methodology

This chapter describes the research methodology employed in this study in order to answer the questions: what are the characteristics of teachers who value inquiry-based learning (IBL) and what professional development (PD) is more effective in developing a community of inquiry. This chapter begins by outlining the research design and the advantages and limitations of a case study as well as providing information on the context. Then, instrument design, data collection procedures and data analysis are discussed. Ethical implications, research bias and piloting information are also addressed in this chapter.

The focus of this chapter corresponds to the *finding out* phase of the inquiry cycle, the stage where we gather information in order to address the questions guiding the inquiry. As explained in the introduction, the inquiry cycle is not linear in nature, and it is common for phases to be repeated and multi-layered. In this chapter, the description of the context of the case study is aligned to the *framing the inquiry* stage (Fig. 1, p. 4).

The Impact of the Covid-19 Pandemic

In December 2019, there was a cluster of pneumonia cases reported in China. These were later identified as a novel coronavirus, which was named Covid-19. Throughout 2020, Covid-19 spread throughout the world, and on 11th March 2020, the World Health Organization (WHO) declared it a pandemic due to the "alarming levels of spread and severity" (World Health Organization, 2020). There was still a global outbreak of Covid-19 at the moment of conducting this research. In Ireland, schools were closed on 13th March 2020 as part of the measures taken by the Irish government (Government of Ireland, 2020). Between March and June 2020, Leinster School provided virtual lessons to its students. Schools reopened physically in August 2020

after the summer holidays (Government of Ireland, 2020). However, primary schools

closed again due to high levels of transmission in January 2021 and reopened in phases

in March 2021 (Government of Ireland, 2021). School closures were part of a series of

restrictions that took place, including the inability to meet with people from other

households. This research has been impacted by the pandemic, particularly in terms of

how to carry out the interviews. Furthermore, the pandemic has made it impossible to

have face-to-face instances of PD since March 2020. This restriction is still in place in

Ireland over a year later, in May 2021. There has been an increased offer of online

webinars, particularly regarding strategies and applications for online teaching to meet

the needs of teachers and schools worldwide.

3.1 Study Design

When designing this research study, the first step was to decide which approach to

research was most suitable to answer the questions proposed. In general, researchers

adopt a qualitative perspective when the research questions focus on understanding

individual perspectives of the world (Punch, 2005). In qualitative research it is possible

to explore reality based on individual perspectives, following what is known as

interpretivist paradigm (Denscombe, 2014). The positivist paradigm, on the other hand,

focuses on reality based on unique, hard facts. It is usually associated with quantitative

data, scientific experiments and exact figures. In this case, the focus is on teachers'

perspectives on a matter, and as such, follows the idea that social reality is subjectively

constructed (Denscombe, 2014).

Within qualitative research, I explored the possibility of carrying out action research,

doing a survey, or focusing on a case study. The time restrictions of the research project,

paired with the challenges faced by teachers as a result of the Covid-19 pandemic, made

me decide against action research, as the wellbeing of the teachers was of utmost importance and this would have added more workload at a time where they were having to reinvent several aspects of their teaching practice.

Another avenue explored was conducting a survey and following it up with focus groups. In this scenario, the teachers contacted would have been from a variety of IBL schools worldwide. A clear advantage to this approach would have been good generalisability of the data. The timeframe of the study and the ethical implications of conducting international research were the main reasons why I decided against this approach.

Finally, I decided to carry out the research through a case study. As explained in Chapter 1, I work at a school that promotes IBL. Carrying out a case study at my workplace was possible even with the Covid-19 restrictions. Furthermore, the data generated and analysed through the research is of particular relevance to my role. The questions focus on the perspectives of teachers and therefore a qualitative perspective was deemed appropriate in order to explore people's recounts and delve into the complexities of human nature. A case study allows for a problem to be studied more in-depth and it is the most appropriate strategy to analyse how different elements interact in a particular context (Denscombe, 2014). Case studies can be used in education research to develop and implement policies (Mills, Durepos, & Wiebe, 2010). In the context of this particular research and for these particular research questions, I decided to analyse the perspective of teachers on PD in one specific setting. This allowed me to understand what type of PD is relevant to develop IBL in a specific setting, and possibly provide suggestions for future improvements in this school.

3.2 Context

The school selected for this case study, Leinster School, is an independent, primary

school located in Dublin, Ireland. The school follows the International Baccalaureate

Primary Years Programme (IB PYP). As it is an independent, private school, it does not

follow the Irish National Primary School Curriculum. Leinster School is a small school,

with around fifty students, divided into four multigrade classes. The school community

is international, representing over twenty nationalities between students and staff.

As mentioned in Chapter 2, IBL is at the centre of the IB PYP. Leinster School was

founded in 2007 and from its inception has been committed to teaching and learning

through inquiry.

Leinster School was subject to authorisation from the International Baccalaureate

Organization (IBO), which included a consultation in 2008, an authorisation visit in

2009, and finally receiving the authorisation certificate in 2010. After the initial

authorisation, periodical evaluations are carried out to ensure oversight of the

programme. The school undergoes an evaluation every five years, and this process takes

approximately 12 months. Leinster School has since received two further evaluation

visits, and the next evaluation visit is scheduled for 2025. The head of school, if

appointed during the period under review, must participate in a relevant IB workshop or

attend an IB Global Conference or an IB Heads World Conference. The head of school

may designate someone to participate in the workshop, provided that the designee has

decision-making authority over the indicated IB programme.

The school had its latest evaluation in 2019, and the current five-year period is from

2019 to 2024. During this period, the PYP coordinator and head of school have attended

the "Building for the Future" workshop which was required due to recent changes in IB

PYP. All the participants in this research have attended at least one official IB workshop, and in several cases, more than one.

At Leinster School, PD takes place in a variety of ways. Between 2016 and 2020, five members of staff attended a total of six different face-to-face workshops, and two other teachers attended a global conference. Additionally, twelve staff members participated in twelve IB online workshops. In three different opportunities, two people attended an instance of PD together, with the objective of collaborating throughout the process.

Leinster School aims at funding IB PD on a yearly basis. In order to decide who should attend IB PD, the leadership team evaluates the most urgent needs. This is done on a yearly basis as the staff and circumstances change. Priority is given to teachers who have started in a new role at the school, followed by teachers who are new to IB. Then, the needs of other teachers are evaluated, ensuring there is a fair balance between members of staff, a rota of sorts though taking into consideration possible changes in staff or roles that might need to be prioritised.

Members of IBEN work directly for IB, visiting candidate schools and providing workshops. At present, nobody at Leinster School is a member of the IBEN. However, Leinster School hosted in-house IB PD in 2013 and 2014, when the leadership team was integrated by IBEN members.

Attending IB workshops is important to keep in line with the programme requirements (IBO, 2020). Furthermore, these workshops provide an opportunity to learn from fellow IB educators and to meet colleagues from other schools. In the case of Leinster School, being a small school in a country with few IB schools, it provides teachers with a much-needed instance of networking and collaboration with like-minded educators.

However, official IB workshops can be expensive, and in small schools they can take up a large amount of the budget for PD.

In its PD records, Leinster School classifies PD into three categories:

- in-house PD for all staff;

- IB PD based on needs, IB requirements, balance between staff members, and opportunities;

- and other types of PD based on opportunities, cost and value for the school.

As mentioned in the literature review, a challenge for international schools can be staff turnover (Doak, 2018), which means the investment in PD may sometimes have a short-term effect and it can be more difficult to continue building on the staff's development. This can be aggravated when the school is small, as in this case study, since hiring speakers for the whole school is less financially efficient than in larger schools.

Leinster School also invests in PD that is related to the safety and wellbeing of teachers and students. All members of staff undertake the "Introduction to Children First" e-learning programme developed by three government groups in Ireland: Child and Family Agency (Tusla), the Department of Children and Youth Affairs (DCYA) and the Health Service Executive (HSE). The programme is based on "Children First: National Guidance for the Protection and Welfare of Children" (Department of Children and Youth Affairs, 2017) and the Children First Act (Government of Ireland, 2015). This programme gives staff an overall understanding of how to recognise and report child abuse and the responsibilities of adults working with children to safeguard them. Also in relation to safety, Leinster School organises annual First Aid courses, provided by an external First Aid instructor. Even though these instances of PD are not directly linked

to IBL, they are a fundamental part of Leinster School's PD plan as they help create a safe environment for the whole community.

Leinster School staff engage with PD from other local and international providers. Decisions on what PD to invest in have been based on teachers' needs as well as PD on offer. Leinster School staff have attended several workshops offered by the Irish provider "The Ark", a cultural centre for children aged 2-12 whose values align with those of Leinster School and IBL. The Ark focuses on multidisciplinary cultural experiences for and by children and cherishes concepts such as creativity, collaboration, and learning from mistakes (The Ark, n.d.).

In the last twelve months, several members of staff engaged in online webinars which focused on different aspects of virtual learning. Amongst these, those provided directly by IB, by the International School Services (ISS), and by Toddle are to be highlighted due to their relevance to IBL approaches to education. Furthermore, staff recently participated in an online conference organised by the Norwegian IB Schools Association (NIBS).

Aside from PD from external providers, Leinster School invests time and resources in internal PD. Leinster School has hosted in-house PD workshops on IBL and Differentiation, led by IBL experts. Each year, staff meet for five days prior to the start of the school year. These days are dedicated to reviewing policies and procedures, creating staff essential agreements for the year, and planning collaboration. Throughout the year, staff meet once a week for an hour to discuss both housekeeping points as well as plan whole school events, review policies or procedures where necessary, collaborate and share experiences. Once a week, teachers also meet in smaller groups for IBL and IB related instances of PD. These meetings are also an hour long and vary in focus

depending on existing needs. For the past fifteen months the meetings have varied in format, sometimes being online, other times being a collaboratively written document instead. This has been in response to the limitations posed by Covid-19 restrictions as well as the need to look after the teachers' wellbeing at times of stress and change.

3.3 Research Instruments

Denscombe (2014) identified four main instruments in social research: questionnaires, interviews, observations, and document analysis. The advantages and disadvantages of each instrument have to be discerned in the context of the research. This has been influenced by pragmatic underpinnings, therefore a case study would be fitting in this context. One of the advantages of case studies is the possibility of using multiple sources of data (Yin, 2009). For this case study, one-to-one interviews and document analysis were selected. The use of questionnaires was considered, however, interviews were preferred as they yield richer data (Cohen, Manion, & Morrison, 2017). Researchers sometimes prefer questionnaires with a combination of open and closed questions to gather more detailed responses. However, since I had direct access to the participants, an interview, where they could speak at length and which allowed me to further elaborate on follow-up questions was considered more advantageous. A questionnaire could be useful with these research questions if the starting point were a larger sample, for instance, teachers from different IBL settings, followed by a smaller number of in-depth interviews.

In this case study, the data came from individual semi-structured interviews and document analysis. A semi-structured interview, as the name suggests, is a type of interview where the researcher plans a series of questions, but has flexibility while conducting the interview to slightly change the plan, adding or removing questions,

based on the responses. The advantages of interviews are that one usually receives more in-depth information compared to other instruments such as questionnaires (Bell & Waters, 2014; Boyce & Neale, 2006). The questions required detailed contextual information and the same result would not have been achieved through a questionnaire. The semi-structured design allowed for the interview questions to be planned and trialled in advance, whilst maintaining flexibility for each interview.

A disadvantage of carrying out interviews is that they are time-consuming (Boyce & Neale, 2006). Furthermore, there is a danger of researcher bias, more so than when using other instruments that may be considered more objective, for instance, a questionnaire or scientific experiment (Denscombe, 2014). Questions have to be crafted carefully to limit potential bias and avoid leading questions (Bell & Waters, 2014; Boyce & Neale, 2006).

The interview questions were trialled through a pilot interview and reviewed following a reflection process. The original interview questions can be found in Appendix D, followed by the refined plan in Appendix E, which was created after piloting the questions.

Interviews were held individually in order to get more in-depth information from each participant. Group interviews possess the advantage that through discussion, alternative viewpoints can be expressed and participants can give further reasons or examples to explain themselves (Cohen et al., 2017). However, there also exists the possibility of one or two participants taking the lead and not everyone being equally heard (Smithson, 2000). In this research study, the head of school was one of the interviewees, and this imbalance in power between participants would not have been conducive to an open environment for everyone to speak freely. Holding one-to-one interviews gave each

teacher the space to express their unique views confidentially. Participants have had different PD experiences which were worth exploring separately. Furthermore, it is important to note that the participant group size made it manageable to hold individual interviews.

Interviews are a flexible tool to collect information, where the interviewer and interviewee engage in meaningful conversation and discuss their views and interpretations of the world around them (Cohen et al., 2017). The interviewer aims at building trust, showing curiosity and being unobtrusive (Cohen et al., 2017). In this case, the trust had been built in advance as the participants are colleagues that I have worked with for several years. The interviewees understood and in many cases shared my interest in PD in IBL.

The interviews took place over a three-week period of time, during February and March 2021. Where possible, interviews were held in person, as originally planned. However, due to Covid-19 related restrictions, the majority of the interviews had to be held online. Video calls were selected over other methods such as telephone calls since they allow for more natural communication to occur and both the interviewer and interviewee to observe and respond to non-verbal cues (Salmons, 2016). Video calls can be considered the closest technology to recreate the face-to-face experience (Krouwel, Jolly, & Greenfield, 2019). Researchers may decide to use other technologies based on the topic, however, in this case, face-to-face interviews were the preferred option and video calls used as a substitute where needed. As with face-to-face interviews, for online interviews, it is important to choose a safe space, where participants feel at ease. Virtual meetings were held using Google Meet, which is part of the G Suite platform I had access to through my college email (isan@tcd.ie). The platform Google Meet was

selected in this case because all interviewees had previous experience with it and the majority used it on a daily basis during school closures. All participants had access to devices and the internet. Using a platform, participants have access to and have used in the past helps in making the interview easy to access (Salmons, 2016). Participants were given a choice of day and time when to have the interview to accommodate their personal and professional needs. Interviews were held at various times of the day, ranging from 10:00am to 8:00pm.

As schools reopened while I was still conducting some interviews, the remaining participants were given the option of having the interviews online or in person. Two teachers preferred having their interviews in person, and these were conducted outside working hours in their classrooms. The main difference observed when having the interviews face-to-face was that they were slightly longer in duration and that the participants had physical samples of work around them that they were at times referencing. However, there were no major differences in the data generated and therefore all interviews were analysed together regardless of whether they took place online or face-to-face.

Each teacher was approached individually and received a written and verbal description of the research (Appendix C). Nine participants were approached. One was selected to take part in the pilot, and one declined the interview. Therefore, one pilot and seven interviews were conducted.

The following table indicates the dates each interview took place, and whether there was a follow-up conversation or not. Each participant received a copy of the transcript and was invited to have a follow-up conversation approximately a week after the original interview. This optional chat was an opportunity to further discuss any of the topics

from the interview or provide additional examples. Participants were given the

opportunity to withdraw from the study after reviewing the transcript of their interview.

No participant requested to withdraw.

Table 2

Interviews Schedule

Participant	Date	Format	Follow-up
Pilot	16.02.2021	Online	N/A
Emily	23.02.2021	Online	No further information
Beth	23.02.2021	Online	09.03.2021
Crystal	24.02.2021	Online	08.03.2021
James	02.03.2021	Online	No further information
Claudia	08.03.2021	Online	No further information
Amy	10.03.2021	In-person	No further information
Mary	11.03.2021	In-person	No further information

I used an external digital recorder (Sony IC recorder) to record the audio of the

interviews, as well as the application Otter to record the audio and produce an automatic

transcription, which was then reviewed and edited for accuracy by me. I also took notes

to record non-verbal aspects of the conversation, highlight key points, and annotate

reminders for follow-up questions.

3.4 Piloting

A pilot is an opportunity to trial the questions, have a better understanding of the time

the interview will last, and help the interviewer become more confident in the role. It is

important to use effective interview techniques, such as: asking open questions,

refraining from giving personal opinions, and being aware of body language (Boyce &

Neale, 2006). A pilot also provides the opportunity to review the quality of the

questions in terms of content and clarity.

For the pilot, I interviewed a single-subject teacher from Leinster School. I am aware that the participant's background and teaching experience are slightly different from those of the homeroom teachers interviewed as part of the research. However, this person was considered a suitable pilot participant since she possesses similar characteristics and works in the same setting as the rest of the participants. The purpose of the pilot was to review the questions, check the timing, and trial the technology. In this case, the pilot was conducted via Google Meet, recorded in two different audio devices, and automatically transcribed by Otter. Even though the transcript was not used as part of the analysis, I decided to transcribe it anyway to familiarise myself with automated transcription and with the transcription process as a whole. The questions used in the pilot can be found in Appendix D. Following a process of reflection, the interview questions were reviewed (Appendix E).

The questions were grouped into three sections and the number of questions reduced from 14 to 12. The background information section was condensed, as this section took longer than planned during the pilot, considering that it intended to set the context for the rest of the questions. A sub-question was added to follow the question: "How do you personally evaluate the effectiveness of PD?" This sub-question was intended at obtaining more detailed information from the participants on this matter. The question "What form of PD would you like to partake in more often?" was changed to "What type of PD would you like to engage in next and why?" which was more specific. A question regarding barriers to PD was added as well. I consciously avoided the terms 'formal' and 'informal' PD in the questions to avoid influencing the participants in their responses.

3.5 Ethics and Positionality

This research was carried out based on the assumption that continuous PD is valuable for the individual teacher as well as for the institution as a whole. My position is also that IBL is a progressive and valuable stance in education. IBL requires everyone involved to be a lifelong learner, and this includes myself as the researcher as well as the teachers subject of the interviews.

This research was approved by the Marino Ethics in Research Committee (MERC) as well as by the head of school at Leinster School. Each participant was invited to participate individually and it was made clear that their participation was completely voluntary. It was not disclosed to any participant who else had accepted to take part. Participants had to sign consent forms in advance and were given the opportunity to read the transcript of their interview and withdraw from participating.

This research involved adults who did not face any type of risk or negative consequence from participating. The interviewees did not receive any incentives or additional benefits from participating. There were no negative consequences for those who decided not to take part either.

The participants were informed of the possibility of the school being identified by others due to its characteristics, as well as the possibility of the participants being identified by those close to the school. However, the data from the interviews was not disclosed to any other members of staff or the school leadership team.

Upon careful consideration, I decided to carry out the interviews myself and not rely on a third party. In qualitative research, knowledge is constructed by people and therefore the researcher plays an important part in this process. With this in mind, there are advantages and limitations to working as an insider researcher. The advantages include

ease of access to the participants as well as prior knowledge and understanding of the context (Saidin, 2017). Nevertheless, it is important to remain objective, not let one's perception of the situation interfere with what the participants express. Prior to the interview and during its course, it is important to ask participants not to make assumptions about the interviewer's knowledge or posture and to express their thoughts as clearly as possible. Furthermore, the current pandemic would have made the logistics of delegating the interviews cumbersome, and in my opinion, it would not have been worthwhile. Being aware of the possible risk of bias is the first step in mitigating it. Steps taken to mitigate bias also include revisiting questions to avoid leading questions (Agee, 2009). Ethically, it is fundamental to ensure participants are aware of the research and that their participation is voluntary (Bell & Waters, 2014).

The documents I had access to as an insider researcher are accessible to all staff members at Leinster School and no confidential information has been reproduced in this study.

The school and the individual participants were explained the objectives of the research, the method and duration of the interviews, details regarding confidentiality of the data, and publishing of the research study. The existing relationship with all participants provided an existing level of trust. The topics explored during the interviews were not highly sensitive and therefore a high level of participation was expected.

Analysing and understanding the power dynamics in place is key as an insider researcher (Costley, Elliott, & Gibbs, 2010). As mentioned when describing the context, Leinster School is a small workplace, with ten staff. Several members of staff, including myself, have had different roles throughout the years, which makes the structure of the workplace and power dynamics multi-layered. Currently, I work both as a classroom

assistant and as part of the leadership team. Furthermore, the horizontal structure and collaborative nature of the school add to the complexity of the power dynamics in place. It was important to emphasise that participation in this study was voluntary and that the conversations held during the interviews would not be shared with anyone. If there were topics that the participants wanted to discuss further outside the research, they had to raise them again after the interview. The duration of the research and the fact that each participant was asked to participate in only one interview was helpful in not changing the dynamics as it could have happened in more extended research. The interview with the head of school could be considered different due to the power dynamics in play. A trusting relationship, as well as a clear acknowledgement of the boundaries of the research and the confidentiality of all interviews, were key.

<div align="center">3.6 Participants</div>

There are four multigrade classes in Leinster School and four homeroom teachers. Eight teachers were contacted: the current homeroom teachers, the head of school, and former homeroom teachers were invited to participate. However, one person preferred not to participate in the research, therefore there were seven participants. The former teachers were invited to participate in order to have a larger sample. Furthermore, it was interesting to analyse whether these participants had a different view from those still in the workplace. The teachers selected worked in the school in the last five years, under the same leadership as current teachers, meaning that the context and circumstances of the school were not so different from the time the data was generated. I decided to focus on homeroom teachers only to make the findings more specific since including single-subject teachers added other variables, such as the nature of the subject they taught, the class dynamics or the time spent with each classroom. Furthermore, it would

not have been possible to maintain confidentiality if discussing subject matters, since there is only one specialist teacher for each subject area. The head of school has been included in the research as she has previously worked at Leinster School as a homeroom teacher. She has both organised and participated in PD instances and her views were equally important in analysing the case study. I was aware that the power dynamics in this interview would be different.

The participants are teachers with a degree in primary school teaching and two or more years of experience as homeroom teachers in an inquiry-based setting. The teachers come from a variety of backgrounds and their initial teaching degree is not from Ireland. A consequence of this is that the teachers' degrees, although similar in nature, may be slightly different in length and focus. Details regarding their country of origin or initial teaching degree have not been included in order to preserve confidentiality.

The objective of interviewing these teachers from Leinster School was to understand their perspectives on PD and how it relates to creating an IBL environment for the students.

Table 3

Participants' Background Information

Name (Pseudonym)	Teaching Qualifications	Years of Experience in IBL Settings	PD related to IBL
01 Emily	Bachelor of Education CELTA	4 years in 1 IBL school	Making the PYP happen in the early years IBL Differentiation
02 Beth	Bachelor of Education	8 years in 3 IBL schools	Introduction to the PYP Visual thinking Making the PYP Happen Play-based learning, inquiry in the early years Getting personal with inquiry learning (Kath Murdoch) Making the PYP library the hub of learning IBL Differentiation IB Global Conference
03 Crystal	Master of Education CELTA	5 years in 3 IBL schools	Making the PYP happen The role of the librarian Assessment in the PYP
04 James	Bachelor of Education Master in Learning Difficulties and Language Disorders	3 years in 1 IBL school	An introduction to the PYP curriculum model IBL Differentiation The IB teacher professional Strong central ideas Learning in a transdisciplinary world Inquiry happens everywhere The role of mathematics The power of reading Inclusive learning environments
05 Claudia	Bachelor of Education Master of Education	10 years in 1 IBL school	Making the PYP happen Assessment Inquiry Differentiation Action Play-based learning in the PYP The role of the coordinator Symposium on IBL IBL Differentiation Building for the future
06 Amy	Bachelor of Education	3 years in 2 IBL schools	Investigating inquiry Living and learning globally PYP PD learning resources - workshop nanos Making the PYP happen: Implementing agency Designing a learning environment to support play, inquiry and agency The use of synthetic phonics to support the teaching of early reading and writing in an IB school
07 Mary	Master of Education	2 years in 1 IBL school	PYP PD learning resources - workshop nanos Making the PYP happen: implementing agency Designing a learning environment to support play, inquiry and agency The use of synthetic phonics to support the teaching of early reading and writing in an IB school

Each participant chose their own pseudonym. Participants were made aware of the fact that although care had been taken to make their interviews confidential, absolute anonymity could not be guaranteed. The participants may be identified by those close to the school, and the school may be identified due to its characteristics.

All participants were provided with a copy of the transcript to ensure they agreed to all their responses being used as part of the research. This was particularly important in the case of the head of school, who may be more easily identified than others. All participants had the option of withdrawing from the study until a week after they had received the transcript from the interview. No one requested to withdraw from the study nor to have any of their responses removed.

3.7 Document Analysis

Triangulation is the process of cross-checking findings, i.e., it is when the researcher uses different methods to confirm or challenge findings. Triangulation allows data to be examined for reliability and validity (Bell & Waters, 2014). In order to triangulate the data and cross-check findings from the interviews, I analysed school documentation. I took a problem-oriented approach, which means examining documents to answer specific questions.

Documents can be primary or secondary sources (Denscombe, 2014). In this case, documents from the period under research have been used, which are classified as primary sources of information. Primary sources are many times inadvertent sources, in that they have not been originally created for the purpose of this or any other research (Cohen et al., 2017). The documents were critically analysed and key information such as the author, original purpose, and possible bias was taken into consideration.

These were the documents analysed:

- School policies

- Staff handbook

- Staff meeting agenda

- PYP meetings

- Action plan

- PD records

- Budget for PD

School policies were reviewed. There is no school policy on PD. However, PD is mentioned in the staff handbook, which all staff receive upon commencement of employment. This document is reviewed annually by the head of school. The handbook contains the school's mission statement, which includes the phrase "Leinster School strives to be a centre for professional and curriculum development". The handbook also specifies that a minimum of seven days are dedicated to PD at the beginning and end of the academic year, as well as stating the possibility of staff attending further PD days. Staff receive a weekly document with a staff agenda. Some items are to be discussed during staff meetings, whereas others are to inform the staff of upcoming or important events. The staff meeting agenda is primarily written by the head of school, however, all members of staff can add to it as necessary. In the current academic year, the following instances of PD were announced or discussed during staff meetings:

- Class observations (including leadership team and peer observations)

- Report writing PD

- Comparative report of hybrid learning across IB schools

- Cooperative organization of curriculum PD for parents

- IB webinars

- IBL webinars from independent providers

- IB school conference

- Reflection on IB articles

PYP meetings are an opportunity to collaborate on different areas, such as whole school events, assessments, brainstorming of class provocations, reviewing curriculum documentation, reflecting on IB documentation, and reflecting on teaching practice. PYP meetings are run weekly and involve hands-on work based on upcoming events and teacher requirements.

The action plan incorporates commendations and recommendations from the latest IB evaluation visit as a form of ongoing assessment. Leinster School received the following commendations related to PD:

- For providing all stakeholders with regular opportunities to develop a better understanding of and commitment to the programme.

- For responding to the teachers' needs to have time to plan collaboratively.

- For its distinct culture of collaboration through teachers formal and informal planning meetings.

- For continuous collaboration evident through formal and informal teacher planning meetings.

It was also noted that "according to the school's PD document the school meets the programme requirement for IB-recognized PD for administrators and teachers".

The school keeps an updated record of PD attended by staff. Certificates of IB PD are filed for IB evaluation purposes. Each staff member has access to their personal file as

well as the collective PD file. Staff are encouraged to share with their colleagues

interesting findings, reflections and resources after attending PD instances.

The budget for PD is part of the school's annual budget. This is in the realm of the

school administrator and the Board of Directors. The budget for PD varies annually

based on factors such as enrollments. Within the PD budget, decisions are made by the

leadership team on which members of staff to prioritise. This is based on IB

requirements, staff needs and rotation where possible. It is a complex system that is

difficult to plan more than a year in advance due to changes in staff and budget.

<div align="center">3.8 Coding</div>

The interviews were coded at a sentence level, identifying topics and themes to analyse.

Each participant chose a pseudonym, and care was taken to clean the data from other

markers that could make the participant identifiable to others. Patterns and categories

that emerged from the interviews are explored in the analysis, in line with the literature

review.

I investigated the possibility of coding the raw data using G Suite tools or

computer-assisted qualitative data analysis software (CAQDAS). For the nature and

scope of this research, I decided to do the coding manually. First, I prepared each

transcript page, with double space and numbered lines per page. Then, I created codes at

a sentence level, which were marked as comments in the document. In a spreadsheet, I

organised the codes into four categories: IBL, IBL Teacher Characteristics, IBL PD, and

Community of Inquiry. A total of 266 codes were created through the initial coding.

Next to each code, I annotated the interviews in which it had been used, using the

interview's number as a reference. These notes served two purposes: to identify the

codes most often repeated and to facilitate access to the interview needed for reference. The coding process is illustrated in Appendix F.

3.9 Confidentiality

All interviews were held on an individual basis. Participants were approached individually and no one was informed of who the other participants were. The recordings and transcripts were securely stored in an encrypted device. Pseudonyms were used for the school and the participants in the raw data and throughout the research. The recordings and transcripts are kept for 13 months after the submission of this research. After this period, all the raw data will be securely destroyed.

3.10 Limitations

The research was conducted over a six-week period. The time frame allowed was a limiting factor that had to be taken into consideration when planning the research. Other limitations arose from the types of PD that the participants and I had experienced, as this limited our ability to reflect on other types of PD that may exist. Furthermore, all the participants interviewed had only experienced IBL in IB school settings. This limited their ability to reflect on characteristics of IBL in other settings, separate from IB PYP schools.

Even though case studies are valued for their in-depth analysis of a specific situation, findings cannot be generalised due to the subjectivity of the context. Nevertheless, the findings can be used as a basis for other similar settings, for example, another Irish school of a similar size, another IB school in Ireland or abroad, or a group of IB schools for a more exhaustive study.

Chapter 4: Findings, Analysis and Discussion

The objective of this chapter is to analyse the themes that emerged from the data generation and compare them to the themes from the literature review in Chapter 2. The goal of this research was, through a case study, to answer the following questions, as identified in Chapter 2:

- What are the characteristics of teachers who value inquiry-based learning (IBL)?

    - What evidence do teachers present in defining themselves as teachers who value IBL?

- What professional development (PD) is more effective in developing a community of inquiry?

    - What are the key elements and characteristics of effective PD?

    - What evidence is there that teachers are empowered in their roles by PD?

The findings have been organised into themes that arose from the above questions in order to see how they relate to the themes presented in the literature review in Chapter 2. I was also open to the possibility of other themes that could emerge from the data generated, even if they had not been contemplated in the literature review. These unexpected findings have been collected at the end of this chapter.

This research has been visually organised following an inquiry cycle. In this chapter, the focus is to classify and make sense of the information previously generated. This corresponds to the *sorting out* phase of the inquiry cycle, where the intention is to interpret the information and gain new understandings (Fig. 1, p. 4).

Excerpts from the interviews used to illustrate the findings are cited using the following abbreviations: int., p./pp., l./ll. which stand for: interview, page/pages, line/lines. Ellipsis [...] has been used to indicate omissions and square brackets [ ] to add missing words.

4.1 Categorisation of Data

Codes were added to each interview transcript. A total of 266 codes were collated and categorised into four main themes: IBL, IBL teacher characteristics, IBL PD, and Community of Inquiry (Appendix F). In some opportunities, the same wording was used for two different codes depending on the context, e.g. "hands-on" for IBL and IBL PD.

The codes under IBL contain keywords and phrases that were used when defining IBL, discussing its advantages and the participants' experience with it. Within its 56 codes, the IBL theme included: "connections", "makes sense", "mistakes as learning opportunities", "previous experience", "real-life skills", "student agency", "student-centred", "student-led", and "student questions". The codes used to describe IBL were compared to those used to describe teachers who value IBL and the characteristics of IBL PD.

Within the 29 codes under the IBL teacher characteristics theme, the most prevalent ones were: "creative", "flexibility", "learner profile", "open-minded", "passionate", "teacher as facilitator", and "teacher as learner". The characteristics of teachers who value IBL are explored in the next section.

The IBL PD theme contained the largest amount of codes. This was expected, given the focus of the research. A total of 149 codes were originally recorded and after reviewing and merging some codes, 112 were logged. Some of these codes were: "accessibility", "collaboration", "exchange", "face-to-face", "IB PD", "learn from others", "reflection", "teacher's choice and needs", and "time". Other codes in this theme were unique to each participant, for instance when discussing possible topics for PD.

A total of 31 codes were recorded under community of inquiry. These included "agency", "leadership support", "peer observations", and "school as a community". These codes are analysed and compared to the literature review regarding teacher empowerment and community of inquiry.

4.2 Characteristics of Teachers who Value Inquiry-Based Learning

All the teachers interviewed, i.e., seven out of seven, identified themselves as teachers who value inquiry. This was expected given that the context of the case study is a school that promotes IBL. The participants showed clear passion and advocacy for IBL. For instance, Claudia explained: "I think inquiry-based learning is the best way to prepare students to acquire knowledge, to retain knowledge and to really enjoy what they're doing with it" (int. 5, p. 2, ll. 2-4). Amy similarly stated: "I've seen first hand how the children can learn so much better from being in an environment that is inquiry-based" (int. 6, p. 1, ll. 16-17).

For some teachers, like Amy, IBL was introduced in college. "It's something that I've been taught to do from the very beginning [...] it was something that was just ingrained in me from the get-go" (int. 6, p. 16, ll. 24-26). However, most participants came across IBL later in their careers. Emily explained: "I suppose it appealed to me because I came from a background where that was not what we did in the classroom. And it was so different. And it was so progressive, and it just made sense" (int. 1, p. 1, ll. 23-24). The phrase "it makes sense" was used in four of the interviews when discussing why IBL appealed to them as teachers. Participants claimed that once they saw IBL in action, they were sold. "It's just a more authentic way of learning", said Beth (int. 2, p. 1, l. 14). In all cases, the teachers were passionate about the benefits of IBL and wanted to continue teaching through inquiry and further developing their careers as IBL educators.

There was consensus in the key characteristics a teacher who values inquiry must possess. According to the participants, a teacher who values inquiry has to be creative, flexible, open-minded and passionate about teaching. For example, Claudia stated:

> The teacher has to really think creatively, they have to be passionate and they have to be willing to move and change on their feet as they go. So, one child's question might lead the inquiry in a completely different direction than the teacher expected and they have to be willing to just adapt really quickly and go with it. But keep the whole class focused and together at the same time.
>
> (int. 5, p. 3, ll. 18-22)

These characteristics align with those identified in the literature review. Several authors mentioned the importance of teachers being flexible, passionate and creative (Guccione, 2011; Wolkenhauer & Hooser, 2017).

Teachers also agreed that in IBL, the teacher's role is different from the traditional one. Amy for instance said teachers have to "let go part of the role as a teacher" (int. 7, p. 2, l. 28). Beth highlighted: "You have to really be a good listener because you really have to hear what the kids are interested in and care about that enough to shape their learning experiences around it" (int. 2, p. 3, ll. 9-10). In IBL, teachers have to be open to taking a step back, observing, listening to their students and learning together with them (Kidman, 2017).

Mary recalled a recent episode where students were brainstorming their prior knowledge on ecosystems, and an impromptu debate on whether sharks were "dangerous" or "helpful" arose between two students. She noticed that all students were interested in this debate and guided students into thinking where they could find more information to further understand this matter. Students went to the library, located

non-fiction books related to the oceans, found the entries needed in the glossary, and read the information to reach a conclusion. Mary recalled: "it was amazing watching that whole process and I didn't do anything"(int. 7, p. 2, ll. 18-19). We further discussed the meaning of "not doing anything" and what Mary had actually done, which was to give students agency, tools and space to inquire into their interests, offering support where needed. This anecdote resonates with the importance of collaboration and co-construction of knowledge in IBL, as discussed by Short and Burke (2001). Teachers also used figurative language to describe the role of the teacher in IBL. Amy said IBL teachers need to be able to "think on their feet" (int. 6, p. 2, l. 22), while Beth compared the role of the teacher to that of a "juggler" (int. 2, p. 2, l. 9). These images resonate with Golding's (2012) use of metaphors to describe the less traditional role of the teacher as an "expedition-educator".

The majority of the participants mentioned that teachers who value IBL "should embody the learner profile" (int. 3, p. 3, l. 5). Five out of the seven participants referred to the learner profile (Ch. 2, p. 20), which is a set of personal attributes central to the International Baccalaureate (IB). Interestingly, the two participants who did not mention any of the attributes were those that have not worked in an IBL setting in the last 12 months. The attributes most frequently mentioned were "open-minded", which was referenced in four interviews, and "reflective", which was also mentioned by four teachers. The prevalence of certain attributes in the interviews should not be interpreted as a ranking of importance, but rather the relevance of these attributes over others in the subject matter discussed. It is easy to imagine that if the focus of the interviews had been a different one, attributes such as "caring" or "principled" would have been used instead.

4.3 Professional Development and Inquiry-Based Learning

Teachers agreed that IBL can be challenging, which is in line with the findings from the literature review (Quigley et al., 2011). All teachers highlighted that both formal PD and informal, ongoing support from their colleagues has been key in constructing their own understanding and improving their practice. As Beth said, "[IBL] pushes the teacher further as well" (int. 2, p. 1, ll. 16-17).

When discussing attitudes towards PD and its role in a teacher's career, the participants mentioned characteristics that teachers who value IBL share: to be willing to try new things, reflect on their practice, collaborate with others, and be curious. These findings resonate with the literature review, where curiosity, collaboration and reflection were highlighted as key traits for IBL teachers (Birenbaum & Nasser-Abu Alhija, 2020; Burton, 2012; Hardwick, 2019).

Six out of seven teachers mentioned the importance of being open to trying new approaches or ideas learnt during PD. Amy, for instance, said "I generally like to try things out", explaining that sometimes ideas need to be tailored and adapted to the context (int. 6, p. 6, ll. 1-2). Related to the importance of teachers' willingness to try new things, is whether the PD provides practical ideas. As Claudia mentioned, "[PD] is effective if there's things that I feel like I can take away and apply" (int. 5, p. 5, l. 25). There was no mention from participants about major job satisfaction due to PD. Nevertheless, there was a positive attitude towards PD, and all participants mentioned one or more areas of IBL that they would like to explore through PD next, which may indicate the participants are willing to continue engaging in PD.

All participants highlighted the importance of collaboration in PD. James expressed his desire to attend a formal PD event outside of school with his colleagues. He thinks that

it would add value to the PD as colleagues could collaborate during and after the workshop, implement new practices and reflect as a group (int. 4, p. 5). Several authors have highlighted the advantages of participating in PD together with colleagues (Arbaugh, 2003; Boyle & Lamprianou, 2006; Burton, 2012). Claudia also mentioned that if the whole team had the possibility of attending an IB PD workshop together, this would add even more value to the experience. "I think it'd be amazing, with other schools and another place, face-to-face. I think we'd learn so much. I think we're the type of team that would come back and change everything around" (int. 5, p. 10, ll. 21-23). Claudia exemplifies how open-minded the team is, which is one of the IB learner profile attributes mentioned in Chapter 2 (IBO, 2019).

Mary echoed how in IBL students' curiosity is fostered, and in line with this teachers should be curious themselves (int. 7, pp. 1-3). James expanded on this idea, explaining that when a teacher makes connections between the learning happening in the classroom and their own interests or experiences, they are setting an example and opening the door for students to do the same thing (int. 4, p. 3).

The interviewees valued taking part in PD that acted as a catalyst for them to try new approaches in the classroom. Five teachers emphasised the importance of reflection when applying new ideas into their own context. Mary described a PD in which reflection was a key element of the process:

> What we did was we asked ourselves, we came up with a list of questions [...]
> We researched [...] We came up with a plan [...] We implemented the plan in the
> classroom. And then we came back and we shared, we reflected. And so it's kind
> of going through the whole inquiry process as a teacher [...] We actually went
> back and asked ourselves more questions, and then we tweaked it, we did it

again and improved it and then we presented it as a PD to the whole school

community.

<div align="right">(int, 7, p. 4, ll. 3-11)</div>

Teacher reflection was mentioned as an important aspect of PD in the literature review

(Garet et al., 2001; Smith, 2003). Mary's account is also an example of modelling,

which was referenced in Chapter 2 as a key component of effective PD (Calnin et al.,

2019; Vrasidas & Glass, 2004). IBL is student-led and student-centred, and therefore,

PD in line with IBL should be teacher-led and teacher-centred, as the teacher becomes

the learner in this context. When describing the type of PD activities preferred, teachers

once again drew parallels to their classrooms. As Beth mentioned, "for inquiry-based

teachers, the professional development looks, or should at least look quite different to

the traditional methods" (int. 2, p. 3, ll. 20-21). The participants agreed that PD should

mimic students' experience, that is to say, immerse teachers in IBL as participants.

Recalling a particularly useful in-school workshop, Emily highlighted "it was good

because we were doing exactly what our students would have been doing" (int. 1, p. 4,

ll. 12-13). Crystal also remembered an IB face-to-face workshop where the focus was

assessment, highlighting "we actually got to experience the different assessments [...] as

our students would be experiencing them, so that was really great" (int. 3, p. 4,

ll. 19-21). Beth contrasted the difference in theoretical and practical experiences,

"instead of lecturing us on the theories of the difficulties these students may face or how

they might be feeling [...] the instructors put us in the shoes of the children" (int. 2, p. 5,

ll. 13-15). Mimicking students' experience in an IBL setting means bringing the same

principles into the PD: co-constructing meaning, putting the participants at the centre

and fostering collaboration and conceptual understandings through first-hand, authentic

experiences. Several previous studies have reached similar conclusions, modelling has been praised as a strong, preferred method in adult education (Timperley et al., 2007; Preston et al., 2015; European Union Seventh Framework Programme, 2007-2013; Calnin et al., 2019).

Participants expressed clear preference towards PD opportunities where there was practical, hands-on, experiential learning that allowed them to reflect on their practice and bring tools or ideas into the classroom. Claudia voiced: "If I just go to a workshop and it's all just about theory and it's nothing really I would apply I would think it'd be completely ineffective and not worthwhile" (int. 5, p. 5, ll. 26-27).

In formal instances of PD, teachers also valued the opportunity to exchange ideas with colleagues from other schools. Four out of seven teachers mentioned school placements and class observations as great opportunities for learning. Although linked to modelling, the strong focus on observing other schools had not been apparent in the literature review. James, for instance, highlighted "the opportunity to actually see another teacher in a real context, I think it's better than if they just tell you, when you actually see it" (int. 4, p. 13, ll. 10-12). This affords teachers the chance to see teaching and learning in action, observing the teacher, the students, the materials and the classroom come to life.

Similarly, Beth stated:

> I really do think there's a huge advantage of being in somebody else's school,
> and really seeing it and really seeing what it looks like. I mean you can tell a lot
> about what's going on in a classroom from the way it's structured and what's up
> on the walls.

(int. 2, p. 9, ll. 3-6)

Claudia was also in favour of PD with other schools, explaining that "it gives you the different perspectives of what other people are up to, maybe their schools are really big, maybe their school they speak a different language [...] it makes it more dynamic to bounce ideas off each other" (int. 5, p. 6, ll. 17-21).

All seven interviewees highlighted the importance of collaboration with colleagues. As students co-construct learning in the classroom, reaching higher levels of understanding thanks to collaborating with one another, so do teachers (Short & Burke, 2001). Teachers spend long hours working with their students, but when it comes to reflecting on their own practice and innovating, they also need the space to do so with other teachers. All the participants gave examples of learning from other teachers either through observing their classes, exchanging ideas at PD events or through informal interactions. The coffee breaks and side talks both at work and during PD workshops were highlighted as the place where real conversations happen. Emily mentioned, "teachers giving other teachers ideas and questions" (int. 1, p. 5, ll. 14-15). To Beth, an added advantage of international schools is working with colleagues who have in turn worked in other countries. "Teachers have quite often worked in a few different other places and so they had an exchange of ideas with, you know, hundreds of other people as well so I mean you get a wealth of knowledge just talking to your colleagues in the

school" (int. 2, p. 7, ll. 9-11). Even though IBL can occur in schools that are not international, due to the participants' experience, other aspects such as the advantages of working in multicultural environments were mentioned. Crystal also highlighted the added value of "having other people there who were going through the same things [...] that was the most salient piece of learning that I took from that workshop" (int. 3, p. 8, ll. 24-26). For Claudia, "in this profession it is all about collaboration and working with other people" (int. 5, p. 5, l. 3).

Four out of the seven teachers interviewed mentioned the size of the group as important, preferring smaller groups where they can interact with all participants. One of the reasons was that "everyone can be heard and you can have a much more in-depth exchange of ideas" (int. 2, p. 6, l. 2). In line with being a lifelong learner, James highlighted that a good PD may not only bring new knowledge but also "brings you to new questions" (int. 4, p. 9, l. 5) and fosters further inquiry.

<div align="center">4.4 Accessibility to Professional Development</div>

After discussing the benefits of engaging in PD, teachers centred on the challenges and barriers that can limit their access to PD.

Six out of seven participants mentioned time as a barrier to PD. Teachers highlighted that it can be difficult to find the time within their schedules to engage in PD. If workshops take place during full teaching days, then the challenge is on the school to provide a substitute teacher, but also on the teacher to leave everything in place in their absence. When PD takes place over weekends or school holidays, there is the question of balance and the teachers' right to rest. Teachers also talked about the difficulty to focus on PD after a full day of teaching, particularly at busy times of the year where there may be other demands such as writing report cards or organising special events.

Time was also mentioned as one of the key factors a school can provide in order to foster collaboration amongst its teachers.

The second main factor mentioned in relation to accessibility to PD was money. Four out of seven participants mentioned financial constraints in reference to the cost of PD and the school's budget. Time and finances were listed as the two main challenges to PD in the literature review in Chapter 2 (Calnin et al., 2019; Van der Klink et al., 2016; Zhang et al., 2019).

The head of school unsurprisingly was the person who talked the most about this factor, explaining that it is challenging to prioritise funding for PD, considering IB requirements, school needs and fairness to staff. As discussed in Chapter 3, Leinster School is a small, non-profit, independent school, meaning that it needs to finance all of its professional development without state funding.

Other limitations to accessing PD mentioned were opportunities based on geographical location and limited offer of PD in other languages. This was not mentioned in the literature, however, it would be interesting to explore literature in other languages or from other countries which may present a different perspective. Online PD can potentially breach some of these gaps in terms of accessibility.

There is no doubt that the Covid-19 pandemic has forced institutions to think about PD in a new way. As mentioned in the introduction, the impact of the Covid-19 pandemic influenced my decision to focus on this research, in order to better understand teachers' needs.

The participants interviewed voiced their preference for face-to-face interactions, mentioning online PD as necessary but temporary measures. It would be interesting to

explore if perceptions of PD settings change in the coming years due to a shift towards online PD and new opportunities for virtual interactions.

<div style="text-align:center">4.5 Community of Inquiry</div>

When discussing the characteristics a school should foster to develop a community of inquiry, these were similar to the ones found in a classroom that fosters IBL. This parallel between the two makes sense, as inquiry classrooms do not, or should not, happen in isolation, but rather be part of a larger community of inquiry that involves the whole school, i.e., students, staff and families.

One of the characteristics mentioned was that a school should be a safe space, where "mistakes" are seen as learning opportunities. "Leinster School was good at putting everyone at ease and making it okay to share ideas, even if your idea wasn't right, or like, you know, there was no right or wrong" (int. 1, p. 7, ll. 26-27). James added: "The best professional development ever is just doing things in your class and making mistakes and learning from those and then being able to share them with your colleagues or hear their opinions" (int. 4, p. 16, ll. 6-8). Claudia explained it is key to have "a really safe space that people don't feel judged, and that they feel that they're eager to share their expertise, but also they're really open to seeing what other people are doing and commenting on it in a constructive manner" (int. 5, p. 11, ll. 24-26).

As mentioned before, teachers agreed that providing time for teachers to meet is essential to allow for collaboration, meaningful discussions and building trust amongst staff. Crystal highlighted "this is not always feasible or easy, but allowing time for the teachers to get together to be able to speak and not only horizontally but vertically as well" (int. 3, p. 9, ll. 21-22). James also made reference to "setting specific times for collaboration, and just offering opportunities for teachers to meet" (int. 4, p. 13,

ll. 10-11). The importance of collaboration was mentioned throughout all interviews, both when talking about networking in PD events and everyday interactions with colleagues. Teachers advocated for school schedules to be organised considering this factor and having in-built opportunities for both staff meetings and informal chats. At Leinster School, the pandemic has hugely impacted the opportunities for small group interactions amongst teachers, due to periods of online teaching and restrictions posed in line with government guidelines. This has probably made teachers even more aware of the role that these chats have in co-constructing learning. In the document analysis in Chapter 3, it was highlighted that the IB evaluation praised Leinster School for its "distinct culture of collaboration" (Ch. 3, p. 50).

To Mary, her colleagues and school support were key in her development and understanding of IBL. Amy explained she benefits from attending PD with colleagues, which gives her the opportunity of "talking to someone who's done the same thing" (int. 6, p. 10, l. 13) and this helps her with implementation and reflection of her practice. Crystal also emphasised the importance of working with like-minded colleagues, "to be able to get advice or to bounce ideas off each other. Inquiry is not just bound to the classroom, [...] it's a way of life" (int. 3, p. 9, ll. 12-15). The concepts of collaboration and co-construction of knowledge highlighted during the interviews echo the findings from the literature review. (Lin et al., 2018; Short & Burke, 2001).

4.6 Teacher Empowerment

Teachers agreed that implementing IBL can be challenging, especially when first starting.

> I thought this could be something really cool to just learn about and see if it's
> something that I liked. Because it's not easy to teach. You know, when you're

coming from a background that you didn't really learn about inquiry-based, it

was always like a buzzword in teaching, but nobody ever really practised it.

(int. 1, p. 1, ll. 27-30)

As a teacher, in some ways, for me at least, it's harder. Just because it's a total

like, it's just a different way of teaching, and you have to get used to that.

(int. 7, p. 1, ll. 22-23)

However, it was clear that all the teachers interviewed valued the learning opportunity

that embarking in IBL has signified for themselves and their students. "I just thought it

made sense, compared to everything else I had been shown" (int. 5, p. 5, ll. 22-23). "I've

fallen in love with it and I want to continue it (int. 7, p. 1, ll. 18-19).

Mary explained agency is key in engaging in meaningful PD, "Giving teachers choice, I

definitely think that's so important because again if you are told what professional

development to do it's not as beneficial, just like students" (int. 7, p. 10, ll. 4-6). James

was thankful for the opportunity to voice his opinion regarding what IB workshop the

school would fund for him to attend, explaining that it gave him the possibility to reflect

on his practice, identify an area he wanted to improve upon and attend a PD that guided

him. Teachers highlighting the importance of having a say in their PD resonates with the

findings of Fishman et al. (2003). Attending PD with a specific need in mind makes the

participant more willing to spend time, engage, and implement new learning in their

classroom. From a leadership perspective, it was explained that the individual needs

perceived by each teacher have to be balanced with the school's budget, PD available

and ensuring that fair opportunities are provided across the board. To this list, we can

add the requirements of the school, which in this case study are dictated by the

International Baccalaureate (Ch. 2, p. 22).

The participants view PD as something both necessary and enjoyable. Amy explained that PD is simply a necessity both for her as a teacher and for her students, "if I don't keep learning, I become stagnant, the children don't get to grow " (int. 6, p. 3, l. 11). Mary explained that teachers who value inquiry "need to be willing to continue to learn and to keep up with their professional development" (int. 7, p. 3, ll. 4-5). Mary is conscious of her professional growth since she started working in an IBL setting, "I'm much more reflective now as a teacher" (int. 7, p. 12, l. 18). James reflected on how sharing knowledge with his colleagues has empowered him professionally.

4.7 Unexpected Findings

An unexpected occurrence during the interviews was that several participants first focused on formal instances of PD, particularly workshops that took place outside the school. However, all teachers later highlighted the importance of learning from and with colleagues. The interview questions were carefully posed so as not to guide the participants into incorporating nor excluding certain types of PD, but rather allow them to give their own definition. For instance, Emily ventured "I never really considered that to be professional development, until I just kind of said it out loud" (int. 1, p. 6, ll. 4-5). When discussing how PD had empowered him as a teacher, James responded: "Surprisingly, it's been more the informal professional development" and later added "when I was saying it I was actually thinking, 'Oh, I didn't mention these before'" (int. 4, p. 3, ll. 3 & 16). Mary became aware of her reflection process: "These [the questions] are making me think" (int. 7, p. 3, l. 19). The interviews did not attempt to change the participants' views on any of the points discussed. Nevertheless, opportunities for reflection are always welcome in education, and I was therefore glad to have these in-depth conversations with the participants.

Several participants highlighted the importance of seeing other classrooms and physical settings. There was consensus among the participants who mentioned this that having PD in a classroom posed advantages. The literature review discussed the possible preferences between face-to-face or online workshops, but there was no reference to visiting or focusing on pictures of the learning spaces in particular. Mary benefitted from "being able to see how they set up their learning space" (int. 7, p. 7, l. 4). Claudia recalled a PD on play-based learning and inquiry in the early years where she gained "ideas of how to set up your classroom" (int. 5, p. 5, l. 13). Beth praised the benefits of "watching people working with the same age group I was with and just even just seeing the different layout of the classroom" (int. 2, p. 4, ll. 14-15). Amy recalled a PD that focused on the learning space:

> How she set up her classroom so that it was inquiry-based and that the children could get the most out of it. And it was nice to see that she came up with some nice new ideas that I hadn't thought of, but it was also reassuring because what she was showing was what we were doing in the classroom.
>
> (int. 6, p. 3, ll. 25-27)

This finding was interesting because seeing other learning spaces was highlighted by five out of seven interviewees as a significant aspect of PD and therefore could merit further study. This finding could impact future decisions on where to host PD and how to include this aspect in an online setting. It is worth noting that the participants were talking about seeing the learning spaces of other schools. My understanding would be that they did not include the learning spaces of their colleagues at Leinster School because it is a close community where teachers are well used to going into each other's classes. Teachers go into other classrooms for staff meetings, class visits and simply to

talk to their colleagues. Therefore, they are used to seeing their learning spaces and discussing ideas where relevant.

Amy mentioned that teachers benefit from new learning at PD events, but also feel reassured when they see elements of their practice in them. Arguably, it may be beneficial for participants to see some of their practices reflected by experts, however, it is also important to be challenged by new ideas and perspectives.

Three of the participants think that they have been extremely "lucky" in their careers, in terms of the schools where they have worked and the PD opportunities they have had. This was not the focus of the study, however, it would be interesting to research teachers' understanding of their own careers and the weight factors such as training, luck and experience may have.

Even though the participants mainly described PD as positive experiences, there were some comments regarding competitiveness that were unexpected. James warned against PD where attendees from different schools may be competing to give examples that portray their schools in a better light than others (int. 4, p. 5). Beth explained that in online workshops with asynchronous tasks sometimes instead of collaboration "it's a competition about who's submitting the best one" (int. 2, p. 8, ll. 17-18).

<div align="center">4.8 Conclusion</div>

A school's PD strategy will be dependent on a series of factors such as requirements, size, budget, and needs. Schools, particularly those that value IBL, should try to incorporate teachers' voices into the decision-making process as much as possible (Fishman et al., 2003). Teachers have to dedicate their time and effort to attend these PD events. Schools benefit from investing in PD events that are as useful as possible, and therefore listening to teachers' needs and making them active agents of the process is

key. This may look different in every school, and compromises have to be made. The findings at Leinster School showed that teachers have a variety of specific needs as they work with a range of ages and have different background knowledge. At the same time, several teachers expressed a desire to attend PD events with their colleagues. Teachers benefit from collaborating with others, whether these are colleagues from work or other schools. Collaboration, co-construction of knowledge and reflection are key elements in PD for teachers in IBL settings.

Face-to-face PD events, although they may be more costly and time-demanding, are deemed more beneficial by the participants of this research. This finding is not directly supported by the literature, which lists a series of advantages posed by online PD and merits further study, particularly in light of current events. When led in an inquiry manner, the face-to-face discussions can be rich and beneficial. Furthermore, teachers use coffee breaks to network and continue the conversation, meaning that the event as a whole is an opportunity to grow professionally. On the other hand, online PD opportunities are becoming more common. They possess a series of advantages, such as being more cost-efficient for the organiser and the participants. Furthermore, online PD workshops are more accessible to a larger audience irrespective of their geographical location. The Covid-19 pandemic has increased the surge of online options, and we do not know how this will change the future landscape. However, if the tendency will be towards online workshops, based on the findings from this study, there should be a focus on how to make them more collaborative. This may include prioritising synchronous sessions, creating breakout rooms and if possible limiting the number of participants. When there is a small group participating, it is easier to use features such

as the chat or participants unmuting themselves and speaking to the whole group. These features help mimic the face-to-face experience.

Giving teachers a space to lead PD in topics of their interest can be beneficial in furthering everyone's learning as well as empowering teachers. In-school presentations may give teachers the confidence to lead external PD, which in turn can advance their career and understanding.

Chapter 5: Conclusion

The objective of this research was to identify how teachers in inquiry-based learning (IBL) settings perceive professional development (PD). I decided to focus on teachers as in my current role as part of the leadership team of a primary school I am in a position to implement changes that could positively impact these teachers' access to PD. The case study has allowed me to better understand what type of PD teachers value in IBL settings. It has also impacted the way I view PD and how I describe the school's practices to prospective teachers and parents, particularly focusing on what the school does to promote a community of inquiry amongst its teachers.

Kath Murdoch's (2015) inquiry cycle has been used throughout the dissertation to organise and visualise the journey, modelling that of a student in an IBL setting. This chapter focuses on the *evaluating* and *reflecting and acting* phases of the inquiry cycle (Fig. 1, p. 4). The limitations of the research are pointed out, together with recommendations for further study. This chapter serves as a reflection of the information gathered and analysed in order to put findings into practice.

5.1 Limitations and Further Research

The research was carried out during a six-week period. The time constraints were a limitation of this research, as well as the size of the sample. The case study was selected due to access to the school as well as relevance to the research questions, however, the size of the school limited the number of participants available. As previously mentioned, similar research could be done with a larger sample of teachers who value IBL from different backgrounds.

Some of the participants equated IBL with the International Baccalaureate (IB). This had been anticipated in Chapter 3 as a possible limitation since the participants only

experience of IBL has been in IB settings. Likewise, some teachers referred to the international aspect of IBL schools. IBL can be incorporated into national or international schools, as explained in Chapter 2. However, the participants of this case study are all international teachers with experience in one or more international schools. A further study could compare teachers who value IBL and work in national and international schools to explore if there are significant differences.

One aspect all the teachers interviewed had in common was that their own experience in school had been through traditional education. It would be interesting to explore the attitudes of teachers that experienced IBL themselves from an early age. This could be the focus of a different research study with two comparative groups of educators.

The participants and the researcher's experiences are also a limitation of this study since participants could only reflect on PD opportunities that they had experienced.

As previously mentioned, this research took place during the Covid-19 pandemic. This scenario posed limitations on how the research could be conducted, having to resort to technology to access people and resources that could not be accessed in person. The pandemic also impacted the personal and professional lives of the participants, including but not limited to current access to PD. Furthermore, daily interactions with the students and colleagues have been different throughout the past fifteen months compared to the way the school from the case study operated prior to the pandemic. Once the Covid-19 pandemic is over, it would be interesting to observe how the nature of PD evolves and if teachers modify their preferences, particularly in terms of online formats.

5.2 Summary of Findings

Teachers who value IBL are passionate educators who find teaching through inquiry a worthy challenge. These teachers are flexible and open to deconstructing their learning and working with students in a less traditional manner. Teachers who value the authenticity of IBL understand that we are all lifelong learners.

These teachers value PD as opportunities for growth and reflection. They attend PD with an open, curious mind and embrace opportunities for collaboration and co-construction of knowledge with peers.

The participants distinguished between formal and informal instances of PD. Formal PD are workshops or lectures that teachers attend. These should incorporate modelling, which is immersing teachers in IBL and replicating the type of engagements students face in the classroom. Modelling was highlighted as the key characteristic PD should have in IBL settings. Modelling is authentic and incorporates the key characteristics of IBL: collaboration, co-construction of knowledge and reflection.

Participants also expressed their preference for attending PD with colleagues in order to extend the reflection and collaboration process in the workplace. Teachers also voiced their preference for face-to-face PD over online workshops. This finding merits further study after the pandemic.

Informal PD is viewed as ongoing opportunities for collaboration, discussion and co-construction of learning with colleagues. Teachers highlighted the key role informal PD has had in their understanding of IBL. Informal PD is closely linked to building a community of inquiry where teachers are empowered and learn from one another. A community of inquiry needs to be a safe space, free of judgement, which allows

teachers to try new things and learn from their "mistakes". Members of a community of inquiry feel supported by their colleagues.

Teachers feel empowered by PD, particularly when they have an active role in deciding what type of PD to attend. This sense of agency allows teachers to reflect on their needs and choose PD opportunities that are relevant to those needs.

5.3 Recommendations

The recommendations made are based on the findings of this case study. They may be useful in similar settings or serve as a basis for further research.

The first recommendation is to make a short-term and medium-term PD plan for the school that allows for flexibility, as unexpected events may change the needs and priorities of the school, as happened during the course of this research with the Covid-19 pandemic.

It is also recommended to incorporate the teachers' voices into the decision-making process. This element may look different according to each setting, however, teacher reflection, identification of individual needs, and PD that targets those needs have been found to be key elements in efficient PD.

Teachers gain professional growth both from formal and informal PD. It is therefore important to invest in creating a community of inquiry that fosters collaboration and co-construction of knowledge amongst its staff. Schools can plan for teachers to have designated time and space to meet with one another in constructive ways.

Effective PD should incorporate modelling of the target skills, as this has been highlighted by the literature review and the participants as a key element of adult PD. PD should also foster teacher reflection. This includes teacher agency when reflecting

on their needs, as well as opportunities to put ideas into practice and reflect on the outcome.

Finally, it is important to prioritise time for teachers to engage in PD as part of their workload and not as something additional for teachers to do on their personal time.

5.4 Closing Words

My initial interest in improving the work experience of staff through PD made me focus on what teachers prioritise and why.

It was reassuring to see how many elements from the data generated resonated with the literature review. This experience has empowered me as a researcher and educator in better understanding the role of PD for teachers in IBL settings.

In line with the cycle of inquiry adopted for this research (Fig. 1, p. 4) and as it is often the case with inquiry, new learnings lead to further questions. I am curious about how the offer of PD will continue to change due to the impact of Covid-19, and what impact this will have on teachers' preferences and access to PD. The idea of travelling abroad and spending three days with hundreds of educators from different countries seems completely unattainable at present. However, education is always evolving and I look forward to seeing how IBL in particular will adapt its PD opportunities to meet the needs of educators.

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Appendices

Appendix A - Murdoch's Inquiry Cycle

Framing the inquiry
- establishing a worthwhile context and compelling question
- identifying conceptual underpinnings
- making links with the system/school curriculum
- identifying understanding goals
- identifying key skills and dispositions
- identifying possible indicators of understanding

Tuning in
- provoking interest, curiosity, tension or uncertainty
- gathering data about students' existing thinking, knowledge, feeling and understanding
- helping students make connections with the key concept/s
- providing purpose, the big picture and authenticity
- motivating, exciting, engaging

Finding out
- gathering new information to address the compelling question
- developing the required research skills
- learning how to organize and manage the process of finding out
- having some shared experiences that will allow us to talk and share our thinking with others
- stimulating curiosity through new experiences and information
- learning how to efficiently record information gathered

Sorting out
- comprehending – making meaning of the information gathered
- revealing new thinking and deeper understanding
- answering questions
- reviewing/revising early thinking and synthesizing
- interpreting the information and communicating with others

Going further
- opportunities for students to pursue questions and interests arising from the journey so far
- learners work more independently on investigations

Reflecting and acting
- helping students apply their learning to other contexts – to put the learning to use
- enabling students to reflect on what and how they have learned and set goals for the future
- assessing final understanding and growth in skills

Evaluating
- reviewing the inquiry to identify strengths and weaknesses
- identifying recommendations for future planning

Murdoch, 2015, pp.78-80

Appendix B - Letter to the Head of School

5th February 2021

Dear XXXX,

I am writing to seek authorisation to carry out research at Leinster School. This research study will be submitted as part of my Master's in Education - Inquiry-Based Learning degree, at Marino Institute of Education. This research study investigates Professional Development and Empowerment from the Perspective of Inquiry-Based Teachers. The research project involves learning more about teachers' perceptions on what type of professional development is most useful at developing a community of inquiry. I hope that the findings of the study might inform future decisions regarding professional development at Leinster School.

As part of the study, I would like to interview you, current teachers and former Leinster School staff. Each person will be contacted individually to ask them if they are willing to take part in the study. The interviews will be after school hours and will not impact my work schedule or that of the participants. I would also like to approach one staff member to pilot the interview questions.

I am also seeking authorisation to analyse school documents related to professional development. This may include school policies, staff meeting minutes, budget for professional development, school's action plan, documentation of past and future professional development. All the documents will be kept in their original place, with data collected in the form of note-taking for the purpose of the case study. The data I collect will be stored in line with GDPR regulations and the school will remain anonymous.

The interview with you will last for 30-40 minutes and it will be digitally recorded. The interview will take place in school, at a time convenient for you. Should this not be possible due to Covid-19 related regulations, the interview will take place online, using Google Meet. The audio of the interview will be kept in a secure location and will only be accessible to me as the researcher. The transcript will be accessible only to me and my supervisor.

The interview will focus on your perception of the professional development opportunities you have experienced and how these experiences have shaped you as an inquiry teacher. I will ask you a few questions related to your educational background, where you see yourself as an IBL teacher, and what instances of professional development have been important to you.

A few weeks after the interview, I will ask you if you would like to discuss anything else in a short conversation. This is an optional conversation, in case you remembered another element that might be useful to the questions from the interview. I will also show you the transcript of your interview in case you want to review it.

You have a right not to participate in the study. You also have a right to withdraw your interview after it has happened, up until the time when I start analysing the data. This will be a week after showing you the transcript of your interview.

The dissertation may include excerpts from the interview, without attaching your name to them. The audio and transcript will be retained only for the purpose of the current study. Once the study is completed, the data will be destroyed 13 months after the submission of the dissertation, in line with the schedule outlined in the Institute's data retention schedule.

I hope Leinster School sees value in this research and authorises me to conduct it in the school. There are no risks or direct benefits in participating in the interview. While every effort will be made to ensure your identity is protected (use of a pseudonym of your choice for example), there is a chance, for example, that someone might recognise the school.

I can answer any further questions you have regarding the research, the data collection, or the dissertation. You may also contact my supervisor for the project, Karin Bacon (Karin.Bacon@mie.ie).

This research study will be submitted as part of my Master's in Education - Inquiry-Based Learning degree. The study or a summary of the study might be submitted to the International Baccalaureate, for example, to feature in its educational blog (https://blogs.ibo.org/sharingpyp).

This study has been considered from an ethical perspective by the Marino ethics in research committee. Should you have any questions or concerns about the ethical approval or conduct of this study, please contact MERC@mie.ie

Kind regards,

Naná Isa
isan@tcd.ie

You will be given a copy of this information to keep for your records.

Statement of Consent:

Naná can approach staff to ask them to participate voluntarily as part of this research study	Yes	No
Naná can examine some school documentation related to Professional Development	Yes	No
Naná can approach a staff member to ask them on a voluntary basis to pilot the interview questions	Yes	No
Naná can interview me as part of the research study	Yes	No

Signature:_____ Date: _____

Signature of Investigator:_____ Date: _____

Appendix C - Letter to the Pilot Participant

8th February 2021

Dear XXXX,

I am writing to ask for your help with a research study that investigates Professional Development and Empowerment from the Perspective of Inquiry-Based Teachers. This research study will be submitted as part of my Master's in Education - Inquiry-Based Learning degree at Marino Institute of Education. The research project involves learning more about teachers' perceptions on what type of professional development is most useful at developing a community of inquiry. I hope that the findings of the study will inform future decisions regarding professional development.

I would like to conduct a pilot interview with you. The interview will last around 45 minutes and will be digitally recorded. The interview will be individual and take place online, using Google Meet.

The interview will be semi-structured, which means I will have some questions ready and might add follow-up questions based on your responses. The interview will focus on your perception of the professional development opportunities you have experienced in your current school setting and before. I am mostly interested in how these experiences have shaped you as an inquiry teacher. I will ask you a few questions related to your educational background, where you see yourself as an IBL teacher, and what instances of professional development have been important to you.

As this will be a pilot interview, your responses will not be used for the research. However, this is a very important step, as it will allow me to fine-tune the interview questions in line with my research. Therefore, I would greatly appreciate your participation.

The data from the pilot interview will be kept secure and only accessible to me as the researcher. Once the study is completed, the data will be destroyed 13 months after the submission of the dissertation, in line with the schedule outlined in the Institute's data retention schedule.

I can answer any further questions you have regarding the research, the data collection, or the dissertation. You have the right to choose not to participate. You may also contact my supervisor for the project, Karin Bacon (Karin.Bacon@mie.ie). You will be asked to sign a form (below) indicating agreement to participate in the pilot.

This research study will be submitted as part of my Master's in Education - Inquiry-Based Learning degree. The study or a summary of the study might be

submitted to the International Baccalaureate, for example to feature in its educational blog (https://blogs.ibo.org/sharingpyp).

This study has been considered from an ethical perspective by the Marino ethics in research committee. Should you have any questions or concerns about the ethical approval or conduct of this study, please contact MERC@mie.ie

Yours faithfully,

Naná Isa

isan@tcd.ie

You will be given a copy of this information to keep for your records.

Statement of Consent:

Please read the question below and indicate whether or not you would be willing to participate in the study as described.

Do you consent to be interviewed as a pilot and to have the interview recorded?	Yes	No

Signature:_____ Date: _____

Signature of Investigator:_____ Date: _____

Appendix D - Letter to the Participants

18th February 2021

Dear XXXX,

I am writing to ask for your help with a research study that investigates Professional Development and Empowerment from the Perspective of Inquiry-Based Teachers. This research study will be submitted as part of my Master's in Education - Inquiry-Based Learning degree at Marino Institute of Education. The research project involves learning more about teachers' perceptions on what type of professional development is most useful at developing a community of inquiry. I hope that the findings of the study will inform future decisions regarding professional development.

There are two parts to the study: (i) an interview and (ii) a follow-up conversation. The interview will last 30-40 minutes and it will be digitally recorded. The interview will be individual and take place in school, after working hours. Should this not be possible due to Covid-19 related regulations, the interview will take place online, using Google Meet.

The interview will be semi-structured, which means I will have some questions ready and might add follow-up questions based on your responses. The interview will focus on your perception of the professional development opportunities you have experienced in your current school setting and before. I am mostly interested in how these experiences have shaped you as an inquiry teacher. I will ask you a few questions related to your educational background, where you see yourself as an IBL teacher, and what instances of professional development have been important to you.

A week after the interview, I will ask you if you would like to discuss anything else in a short conversation. This is an optional conversation, in case you remembered another element that might be useful to the questions from the interview.

I hope you will be willing to participate because your responses are important and a valued part of the study. Your participation will remain strictly confidential. Your name will not be attached to any of the data you provide. You are welcome to discontinue participation in the study at any time, should you wish to do so. The risks of participation in the study are very low and of a social or reputational nature. While every effort will be made to ensure your identity is protected (use a pseudonym of your choice for example), there is a chance, for example, that someone might recognise the school for its characteristics, or someone who knows the staff at the school might recognise that you took part in the study. However, the audio of the interview and its transcript will be kept in a secure location and will only be accessible to me as the researcher. The dissertation may include excerpts from the interview, without attaching

your name to them. The audio and transcript will be retained only for the purposes of the current study. Once the study is completed, the data will be destroyed 13 months after the submission of the dissertation, in line with the schedule outlined in the Institute's data retention schedule. There are no direct benefits in participating in the interview, although I hope you see the value this research may have for the school. You will be asked to sign a form (below) indicating agreement to participate in the study.

I can answer any further questions you have regarding the research, the data collection, or the dissertation. You have the right to choose not to participate. You may also contact my supervisor for the project, Karin Bacon (Karin.Bacon@mie.ie). You will be asked to sign a form (below) indicating agreement to participate in the pilot.

This research study will be submitted as part of my Master's in Education - Inquiry-Based Learning degree. The study or a summary of the study might be submitted to the International Baccalaureate, for example to feature in its educational blog (https://blogs.ibo.org/sharingpyp).

This study has been considered from an ethical perspective by the Marino ethics in research committee. Should you have any questions or concerns about the ethical approval or conduct of this study, please contact MERC@mie.ie

Yours faithfully,

Naná Isa

 isan@tcd.ie

You will be given a copy of this information to keep for your records.

Statement of Consent:

Please read the question below and indicate whether or not you would be willing to participate in the study as described.

Do you consent to be interviewed and have the interview recorded?	Yes	No
Do you consent to the interview being transcribed and the data used to analyse teachers' perceptions of Professional Development in regards to Inquiry-Based Learning?	Yes	No

Signature:_____ Date: _____

Signature of Investigator:_____ Date: _____

Appendix E - Pilot Interview Questions

Research Key Questions:
- What are the characteristics of teachers who value <mark style="background-color: yellow">inquiry-based learning</mark>?
    - What evidence do teachers present in defining themselves as teachers who value <mark style="background-color: yellow">inquiry-based learning</mark>?
- What <mark style="background-color: lightgreen">professional development</mark> is more effective in developing a community of inquiry?
    - What are the key elements and characteristics of effective <mark style="background-color: lightgreen">professional development</mark>?
    - What evidence is there that teachers are <mark style="background-color: cyan">empowered</mark> in their roles by <mark style="background-color: lightgreen">professional development</mark>?

INTRODUCTION

I want to thank you for taking the time to meet with me today. Today I would like to talk to you about your perceptions of Professional Development. Specifically, what types of PD are useful in developing a community of inquiry.

The interview should take around 45 minutes. I will be recording the session so I don't miss any of your comments. I am also using AI to transcribe the interview, which I will then revise for errors. All responses will be kept confidential. This means that only I will have access to the recording. Only I and my supervisor will have access to the transcript. As I mentioned before, this is a pilot interview, which means the responses won't be used in the analysis, but rather help me review and reflect on my interview questions.

Are there any questions about what I have just explained? Are you willing to participate in this interview? Is it ok if I start recording? **START RECORDING**

INTERVIEW

1. Can you describe the duration and highlights of your teaching qualifications?
2. Can you briefly describe your teaching experience including how many years in total and in what types of schools have you worked focusing on characteristics such as public/private, size, age group, role, methodology? *She didn't mention her current setting, so asked about that as a follow-up.*
3. From all your teaching experience, let's focus on inquiry-based learning. Can you tell me about your experience working in IBL settings? *Skipped as it was answered in Q2.*
4. What about IBL appeals to you as a teacher?
5. Can you think of one or two examples that portray your implementation of IBL in the classroom?
6. What personal attributes do you think a teacher who values IBL needs to have/develop?
7. What would you classify as Professional Development?

8. What types of professional development have you participated in throughout your teaching career? List all the types you can recall, describing their main characteristics. *Follow up for more details on one of the PD instances. Was that face-to-face or was it online as well? How long was it?*

9. What PD has empowered you in your journey through IBL? *Clarified as it was slightly repetitive from a previous answer. You talked about the online assessment workshop, but you also mentioned that to you professional development can be anything. So, this can be a broader question if there's anything else that comes to mind.*

10. Can you think of one or two examples that illustrate the impact of PD on your teaching practice? *Clarified as it was slightly repetitive from a previous answer. You mentioned how the assessment workshop has changed the way that you guide the students through assessing and setting goals. Is there anything else that comes to mind?*

11. How do you personally evaluate the effectiveness of PD?

12. Think about the schools where you've worked that foster IBL.
    a. Have your daily interactions with colleagues/leadership team helped you develop professionally? If so, in what ways? *Clarified, you've talked about this, but if you want to dig a bit deeper.*
    b. What aspects of these schools promote or hinder a culture of inquiry amongst its teachers? *You've talked a lot about the collaborative side and how that helps promote a culture of inquiry amongst teachers. Are there other aspects of a school that can either promote or hinder this culture of inquiry?*

13. What form of PD would you like to partake in more often?

14. Using the inquiry cycle, how would you describe your development as a teacher, particularly in regards to IBL?
    a. What role has PD had in your journey?

CLOSING

Is there anything more you would like to add?
Do you have any questions for me?
Thank you so much for your time.

Appendix F - Interview Questions

Reviewed Interview Questions

Research Key Questions:
- What are the characteristics of teachers who value <mark>inquiry-based learning</mark>?
  - What evidence do teachers present in defining themselves as teachers who value <mark>inquiry-based learning</mark>?
- What <mark>professional development</mark> is more effective in developing a community of inquiry?
  - What are the key elements and characteristics of effective <mark>professional development</mark>?
  - What evidence is there that teachers are <mark>empowered</mark> in their roles by <mark>professional development</mark>?

INTRODUCTION

I want to thank you for taking the time to meet with me today. Today I would like to talk to you about your perceptions of Professional Development. Specifically, what types of PD are useful in developing a community of inquiry.

The interview should take around 45 minutes. I will be recording the session so I don't miss any of your comments. I am also using AI to transcribe the interview, which I will then revise for errors.
All responses will be kept confidential. This means that only I will have access to the recording and the transcript. I will show you a copy of the transcript and you will have a week to review you and decide against participating in the study. Excerpts from the interview may be used in my research, but your name will not be attached to them.

Are there any questions about what I have just explained? Are you willing to participate in this interview? Is it ok if I start recording? **START RECORDING**

INTERVIEW

Background Information
1. As background information, can you briefly describe the highlights of your teaching qualifications and experience (including your current setting)?

Inquiry-Based Learning
2. From all your teaching experience, let's focus on inquiry-based learning. (Recap on teaching experience in IBL settings if necessary). What about IBL appeals to you as a teacher?

3. Can you think of one or two examples that portray your implementation of IBL in the classroom?
4. What personal attributes do you think a teacher who values IBL needs to have/develop?
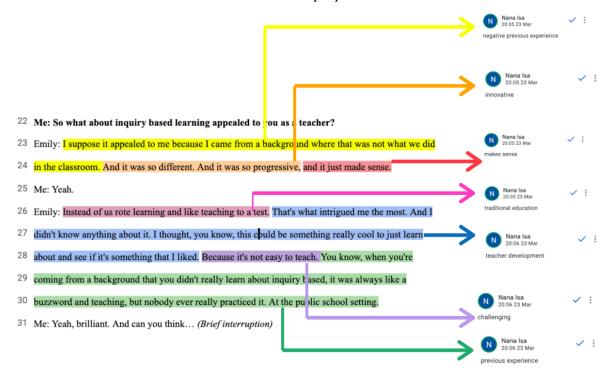
Professional Development

5. What would you classify as Professional Development?
6. What types of professional development have you participated in throughout your teaching career? List all the types you can recall, describing their main characteristics.
   a. What PD has empowered you in your journey through IBL?
7. Can you think of one or two examples that illustrate the impact of PD on your teaching practice?
8. How do you personally evaluate the effectiveness of PD?
   a. Are characteristics such as the time of the year, length, number of participants, methodology, venue, that you think can make PD more or less effective?
9. Think about the schools where you've worked that foster IBL.
   a. Have your daily interactions with colleagues/leadership team helped you develop professionally? If so, in what ways?
   a. What aspects of these schools promote or hinder a culture of inquiry amongst its teachers?
10. What reasons do you have not to participate in PD?
11. Using the inquiry cycle, how would you describe your development as a teacher, particularly in regards to IBL?
    a. What role has PD had in your journey?
    b. If you think about where you started as a teacher, and where you are now. What situations/people have empowered you to become the teacher you are now?
12. What type of PD would you like to engage in next and why?

CLOSING

Is there anything more you would like to add?
Do you have any questions for me?
Thank you so much for your time.

Appendix G - Sample Coding

Transcripts were coded in Google Docs, using the comments function. Phrases have been colour-coded and arrows added for visual purposes.

The codes from all the transcripts were classified into four categories, organised in a table. The numbers correspond to the interviews where the code can be found.

Inquiry Based Learning		IBL Teacher Characteristics		IBL Professional Development		Community of Inquiry	
Authentic	2	Balancing act	2	Accessibility - distance - language - cost - personal - cover	5-2-2-3-3-4-2-3-5-5-5-5-5-	Advice	3
Assessment	5-5-	Classroom	3-3-	Agency	7-4-5-6-7-7-	Agency	4-4-6-4-6-
Best way	5-6	Creative	1-5-5-5-6-6-7-	Apply	4-5-6-7-1-	Bounce ideas	3
Challenging	1-7-1-5-	Curious	7	Appreciative	3	Collaboration	4-4-5-5-
Change	4	Deconstructing	5	Authentic	2-2-2-2-2-	Community	2
Collaboration	7-3	Flexibility	2-2-3-4-5-5-6-7-6-	Better teachers	1	Contradictory approaches	2
Connections	4-3-4-4-4-4-6-	Good listener	2	Best practice	3	Debrief PD	5
Creative	5-5	Hands on	5	Beyond the formal PD	2	Fair distribution of resources	5
Constructivism	5	Hard working	5-5-	Blank canvas	1-3-4-	Families	4
Curiosity	7	Innovative	5	Challenge - timetables - school size	4-4	Flexibility	4-5-
Differentiation	5	Inquiry cycle	2	Co-construct	2	Freedom	6-6-
Early years	6	Knowledgeable	1-1	Collaboration - with colleagues - planning	1-3-3-5-5-3-5-7-1-2-2-3-3-6-6-6-6-6-6-1-1-1-4-	Good relationship	6
Enjoyment	5	Learner Profile	3-3-3-4-4-6-7-7-6-5-6-6-6-6-6-	Connections	4	IB support	2