

*Inspecting the Impact of the International
Baccalaureate (IB) Educator's Certificate on Pre-
Service Teacher Development Using Actor
Network Theory*

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Abstract: The International Baccalaureate (IB) is one of the fastest-growing education systems globally, resulting in increased demand for trained and qualified IB teachers. This demand has resulted in initial teacher education programs offering IB Educator Certificates (IBEC) in partnership with IB to both pre-service and in-service teachers. This study explores the impact of the IBEC on pre-service teacher development through discussions of global competencies. Two groups of participants, one who completed IBEC and one who did not, are compared. Data were collected in group interviews immediately following practicum and were explored using Actor Network Theory. Initial teacher education programs were considered complex networks with various human and non-human actants contributing to teacher development and identity. This study concludes that IBEC does impact pre-service teacher development and offers suggestions for initial teacher education programs offering external certifications, such as IBEC, to pre-service teachers.

Résumé : Le Baccalauréat International (IB) est l'un des systèmes éducatifs connaissant la croissance la plus rapide au monde, ce qui entraîne une demande accrue d'enseignants de l'IB formés et qualifiés. Cette demande a donné lieu à des programmes de formation initiale des enseignants proposant des certificats d'éducateur de l'IB (IBEC), en partenariat avec l'IB, aux enseignants en formation initiale et continue. Cette étude explore

l'impact de l'IBEC sur le développement des enseignants en formation initiale à travers des discussions sur les compétences globales. Deux groupes de participants, l'un ayant terminé l'IBEC et l'autre non, sont comparés. Les données ont été recueillies lors d'entretiens de groupe immédiatement après le stage et ont été explorées à l'aide de la théorie de l'acteur-réseau. Les programmes de formation initiale des enseignants ont été considérés comme des réseaux complexes avec divers acteurs humains et non humains contribuant au développement et à l'identité des enseignants. Cette étude conclut que l'IBEC a un impact sur le développement des enseignants en formation initiale et propose des suggestions pour les programmes de formation initiale des enseignants offrant des certifications externes, telles que l'IBEC, aux enseignants en formation initiale.

Introduction

International Baccalaureate (IB) is a global system of education found in over 160 countries and is currently experiencing a period of rapid expansion, having grown by over 30% between 2020 and 2024 (International Baccalaureate [IB], 2025a). IB is found in both public and independent schools and operates a continuum of education from the earliest learners in the Primary Years Programme (PYP) to the oldest secondary school learners in the Diploma Programme (DP) or Career Programme (CP; IB, 2019). IB schools follow standardized curricula worldwide in the DP, and students worldwide write the same exams simultaneously, which are externally assessed by IB and not classroom teachers. With the younger learners of the IB continuum, schools follow a common curriculum framework, and all programmes of the IB continuum follow shared foundational pillars and philosophical underpinnings, including specific prescribed approaches to teaching and learning; a broad, balanced, conceptual curriculum; a focus on international mindedness; and the IB Learner Profile, which is a collection of ten aspirational attributes for all learners (IB, 2019).

The rapid growth of IB schools globally and the specific terminology and approaches required to teach IB programmes resulted in a demand for more trained and qualified IB teachers. One pathway to prepare IB teachers is the IB Educator Certificates (IBEC) which are qualifications sanctioned by the IB but offered by

partner universities globally (IB, 2025b). IBEC students study the history, philosophy, and pedagogy of the IB and, in many cases, complete practicum placements in IB schools.

This study explores pre-service teachers' experiences in IB and non-IB practicum contexts through group interviews immediately following practicum. One group of participants completed IBEC course requirements and practicum (8 or 16 weeks) in IB schools in addition to their Bachelor of Education (B.Ed) coursework. In contrast, the other group completed all B.Ed coursework and practicum without completing the IBEC. Both groups completed practica for the same length of time and followed the guidelines set out by the initial teacher education program. Participants volunteered to take part in group interviews immediately following practicum to capture authentic experiences of pre-service teachers during practicum placements and to begin to answer the question, **does external certification, specifically the IBEC, impact pre-service teacher development?**

This paper will explore this question using Actor Network Theory (ANT; Latour & Woolgar, 1986) by considering initial teacher education programs as a network with various human and non-human actors working on the system. The study also explores the research question through the lens of the New Brunswick Global Competencies (NBGC; Early Education and Childhood Development [EECD], 2019), a framework common to all participants. The analysis will explore transcripts of group discussions using the NBGC and the corresponding attributes of the IB Learner Profile as a codebook first to consider the frequency of competencies discussed and then to explore *how* the competencies were discussed and why using ANT. Differences in examples provided for the specific competency of sustainability and global citizenship are used to highlight differences between the two groups. We will begin by providing background and context on the NBGC, the IB Learner Profile, and ANT before exploring the pre-service teachers' experiences operating in the complex network of initial teacher education.

NB Global Competencies (NBGC) and the IB Learner Profile (IBLP)
Early Education and Childhood Development (EECD) in the province of New Brunswick (NB), Canada, introduced the NB Global Competencies (NBGC) to all provincial curricula in 2019 (EECD, 2019). These six overarching concepts replaced the NB Essential Graduation Outcomes and represent the broad goals of

the NB education system. The NBGC include: innovation, creativity, and entrepreneurship; self-awareness and self-management; sustainability and global citizenship; communication; collaboration; and critical thinking and problem solving (EECD, 2019). Each competency is defined by EECD generally, and then specific attributes of each competency are provided. While initial data analysis in this paper explored the frequency of all the NBGC and the correlating attributes of the IB Learner Profile, this paper goes on to specifically focus on the global citizenship and sustainability competency, so some additional context for this specific competency will be provided (for complete definitions of all NBGC and attributes see Appendix A). While there are many definitions of global citizenship, this study will proceed with the EECD definition of “global citizenship and Sustainability,” which is,

Sustainability and global citizenship involves reflecting on and appreciating diverse worldviews and understanding and addressing social, ecological, and economic issues that are crucial to living in a contemporary, interdependent, and sustainable world. It also includes the acquisition of knowledge, dispositions, and skills required to be an engaged citizen with an appreciation for the diversity of people perspectives” (EECD, 2019, p.1).

While this definition is broad and examines two different concepts (sustainability and global citizenship), EECD goes on to offer more specific descriptions of the competency, including specific behaviours of learners in classrooms like “learners understand the interconnectedness of social, ecological, and economic forces, and how they affect individuals, societies, and countries”; “learners recognize discrimination and promote principles of equity, human rights, and democratic participation”; and “learners understand Indigenous worldviews, traditions, values, customs, and knowledge” (EECD, 2019, p.1; Appendix A).

IB has a similar set of aspirational attributes, called the IB Learner Profile (IBLP; Appendix B), which are characteristics all IB learners should have upon completion of the program and are intended to be the IB mission statement in action, directly related to the IB vision of the nature and purpose of education (IB, 2019; Bullock, 2011). The IB Learner Profile was developed first as the IB

student profile in the PYP but was later adopted continuum-wide and is a common thread between all IB programmes (Wells, 2011). The IBLP is prominently featured in all IB documentation, including curriculum, policy statements, and websites, and on display in classrooms and schools. Many of the attributes of the IBLP align directly with the NBGC, for example, communicators (IB) and communication (NBGC).

While the NBGC are specific to the Province of New Brunswick in Canada, the development of overarching curricular ideas like global competence are occurring across Canada, and the world, including with multinational organizations like the Organization for Economic Co-operation and Development (OECD). So, while the specific context of this study is unique to NB, the lessons learned may apply in other contexts as the curriculum moves from content-specific outcomes to more broad ideas like global competence. While neither IB nor EECD assesses the level to which students achieve the NBGC or IB Learner Profile, the OECD now tests for global competence as part of the PISA assessment (Tarc, 2021).

In the context of this study each group of participants (IB and non-IB) received the same instruction on the NBGC through their B.Ed course work, including direct instruction and application by creating lesson plans specifically addressing one or more NBGC. The IB group received additional instruction throughout their IBEC coursework and were tasked with comparing the NBGC to other global education frameworks, including the IBLP (IB, 2019) and the OECD Global Competency Framework (OECD, 2018).

Actor Network Theory

Actor Network Theory (ANT) was first proposed by Woolgar and Latour (1986) based on anthropological research in a natural science laboratory. ANT is a post-humanist sociological method which attempts to counter the modernist tendency to create a dichotomy of human and non-human divisions for which research typically falls (De Freitas & Sinclair, 2014). Latour instead proposed a method by which actants, or sources of action, work on networks. An actant as a source of action can be either human or non-human. Actants have efficacy and sufficient coherence to make a difference, produce effects, and alter the course of events (Bennett, 2010). Latour described networks as being formed by assembles and points of passage through which all assemblages pass (Law, 1992; Fenwick & Edwards, 2010). This idea stemmed from Latour's observations from time spent in a science lab studying the work of

scientists. Following two years of ethnographic observations, Latour concluded that material objects are often forgotten during the process of publishing scientific work, and the impacts of these objects are excluded from the findings. The lasting impact of scientific work is the theories, ideas, or reasoning that omit non-human actants' impacts. Latour observed that material settings are essential for developing theories and ideas and that scientific discoveries are socially constructed (Latour and Woolgar, 1986). This led to the development of ANT, initially applied in areas such as sociology and economics but later adapted by Feenweek & Edwards (2010) for use in educational studies. ANT has also influenced other methodologies such as autoethnography, feminist, narrative, arts-based, and more (Fenwick & Edwards, 2010).

The methodological flexibility of ANT allows for the analysis of IB pre-service teachers as IB is a non-human actor that significantly influences teaching and learning in IB classrooms and schools. In the context of this work, we argue IB and IBEC have an impact on pre-service teacher development. We follow the lead of Resnik (2015), who explored IB as a global network through ANT with many assemblages, including schools, teachers, political leaders, curriculum, assessments and more, by expanding to instead consider initial teacher education as a network with IB and IBEC being a non-human actants working within the network.

Data Collection and Analysis

Data were collected primarily through group interviews immediately following the completion of practicum in IB and non-IB schools. Participation was voluntary, and while the researchers were familiar to the participants, having previously taught B.Ed. courses, including as co-instructors for the IBEC courses, all IBEC course work and practica had been completed before group interviews and thus the researchers no longer had influence over outcomes in these areas. All B.Ed students at the study site were invited to participate in the research project, and many indicated that the positive relationship with the researchers was a reason for volunteering to participate.

Data collection took place over two days, one for the students who completed their practicum in IB schools and one for those who completed their practicum in non-IB schools only. Two groups of approximately eight students each were formed on both days (two groups, two days, four groups total) and discussed the following prompt,

All students are encouraged to discuss key features/moments from their practicum. Topics might include memorable events, notable pedagogies, stories of their connection to the students/teachers/ school, planning challenges, collaborative opportunities, attention to Global Competencies and international mindedness, or perhaps even epiphanies experienced during their practica.

Following the reading and display of the prompt, groups were encouraged to discuss their practicum in relation to the NBGC while the researchers silently observed and recorded field notes. Sessions were also video recorded and later transcribed.

Videos of all four group interviews were transcribed and deductively coded using the NBGC (Appendix A) as the codebook (Crabtree & Miller, 1992). Codes were applied when the *presence* of a competency was mentioned and not the *absence* of the competency. Before coding, the data attributes of the IBLP were mapped onto the NBGC. While there is no perfect overlap between definitions given in the NBGC and the IBLP, the decision to create the codebook was made to allow for comparisons between the IB and non-IB participants who may be discussing similar ideas using different vocabulary.

The groups were analyzed separately first to see the frequency of competencies discussed by each group (Table 1). Upon initial analysis of the frequency of competencies discussed, the top cumulative competency (sustainability and global citizenship) was further analyzed using thematic analysis (Braun & Clarke, 2006) to identify themes for both groups for direct comparison. Following the thematic analysis, two themes were identified, one for each group, in relation to the *sustainability and global citizenship* competency. Those themes are: *people* represent global citizenship (non-IB Group), and *events* represent global citizenship (IB group). The remainder of this paper will explore the two groups comparatively using ideas from ANT.

Discussion

The initial analysis included comparisons of the frequency of each global competency being discussed by the two groups of participants. The IB group discussed each global competency at least once, while the non-IB group discussed only four global

competencies. Each group had the same top two competencies discussed, with the order switched for each group's top competency (Table 1). While much could be said about the examples of each competency mentioned or the absence of specific competencies, the remainder of this paper will explore the top competency based on cumulative frequency, *sustainability and global citizenship*.

Table 1: Frequency of global competencies discussed by each group.

Competency	IB	non-IB	Total
Sustainability and Global Citizenship	12	16	28
Collaboration	14	11	25
Innovation, Creativity, and Entrepreneurship	8	4	12
Communication	5	0	5
Self-Awareness & Self-Management	4	1	5
Critical Thinking & Problem Solving	1	0	1

So, while comparing the frequency and number of global competencies discussed during the group interviews provides initial insight into differences among participants of this study, the remainder of this paper will focus on the *sustainability and global citizenship* competency to highlight the differences between the two groups being studied. This competency was cumulatively the most discussed for both groups, the highest for the non-IB group, and the second highest in the IB group.

When considering all identified examples of the global citizenship and sustainability competency provided during the

group interviews, differences in *how* each group viewed this competency emerged, with the major difference being the type of example the different groups of participants provided. When providing examples of global citizenship, the non-IB group discussed specific *people* (students) in their classes compared to the non-IB group, which referenced *events*, including lessons, ceremonies, or school-wide initiatives. For example, a participant from the non-IB group shared a story about a student joining their class, saying, “during the last two weeks of my placement, I had a little boy that moved from Nigeria, and he joined our class and was like the smartest 5-year-old I’ve ever seen in my life” another participant from the non-IB group said “...a kid from Brazil and the two from Germany were excelling above everybody else” and a third said “there was one child from India and then there were I think 2 Indigenous students”. While still speaking generally, in each of these three examples, the participants imagined specific students, from specific places outside of Canada, as a representation of global citizenship, or in other words, were using individuals from outside of Canada to provide evidence of this competency in their classroom. In relation to EECD’s definition of global citizenship, participants noted an appreciation for diverse world views and, in general, discussed students entering their classrooms from outside of Canada as positive, particularly concerning their perceived academic ability.

Reference to specific students by the non-IB group as examples of evidence of the global competency in the classroom is in direct contrast to the IB group, which exclusively mentioned events, lessons, or ceremonies as examples of global citizenship in schools. For example, one participant described a series of lessons on fast fashion when they said, “and so I put up a big world map on the board, and I got them to bring in clothes and track where they came from and where they went”. A second participant from the IB group commented on a school-wide initiative saying, “they [the school] have international night where they have students and even their family members come in, prepare food, wear like cultural clothes, have these little presentation boards, like do performances, and it is so cool and so fun” and a third added, “every week there was this, an assembly on Tuesday mornings, but it was often whatever religious or cultural holiday was going on, the kids would go up and present.” In these examples, the participants who completed their practicum in IB schools highlight community events or lessons as examples of the global competency in action without specific

reference to the individual students (or community members) participating in these events.

While there may be many possible explanations as to the differences observed by this group of participants and their choice of examples when sharing stories from practica, the argument presented in this work is that IB as an organization is a non-human actor impacting how pre-service teachers internalize and ultimately discuss, and recognize, ideas of global citizenship. As this study was conducted during practicum in an initial teacher education program, we extend this argument to say IB and IBEC impact pre-service teacher development by influencing how pre-service teachers recognize ideas of global citizenship specifically and the NBGC in general. While Resnik (2015) has previously established IB as a global network with various non-human actors operating on, and in, the network, including curricular and institutional assemblages, we expand this argument to view initial teacher education programs as networks with various human (pre-service teachers, students, practicing teachers, administrators, professors, parents, and others) and non-human (curriculum, initial teacher education program structure, and the IB among others) assemblages acting on, and in, the system. In the case of this study, the presence or absence of the IBEC was the difference between the two networks being studied. Thus, we argue that the IBEC is a non-human actant contributing to the observed differences between the two groups.

Initial teacher education programs are complex networks with various actants working on the network. Pre-service teachers are important human actors in this network, along with the students they teach, the assigned mentor teacher in schools, students in their classes, parents of students, school administrators, instructors in their initial teacher education programs, and more. Within this network are also collections of non-human actors like the provincial or state curricula, school policies, physical spaces of classrooms and schools, government policies, initial teacher education program requirements, and more. In the context of this study, the networks for one group of participants also include the IB organization as a non-human actor.

The IB and IBEC assemblage in initial teacher education is multifaceted, with various factors working on the network. IB has a prescriptive curriculum and recommended teaching and learning methods. In the case of the DP, a high-stakes assessment strategy is set by IB and not individual classroom teachers (IB, 2019). IB

teachers are required to undergo specific pedagogical training, either in workshops offered by IB or by IBEC partner universities, contributing not only to teachers' understanding of the organization itself but also to their specific identity as a teachers. Teacher identity encompasses individual agency, emotion, sense making and context (Beauchamp & Thomas, 2009), with the IB providing the context in the case of this study. Bunnell, Fertig, and James (2020) explore the idea of teacher identity, specifically experienced teachers beginning to teach IB, by examining the institutionalization of these teachers because of teaching IB. These authors note the many non-human factors contributing to the institutionalization of IB teachers, including a robust authorization process, strong organizational branding, and other IB-specific artifacts like the IBLP and mission statement (Bunnell et al., 2020). While Bunnell et al. (2020) explored the impact of the IB on practicing teacher identity and concluded a change in their identity and, thus, the institutionalization of experienced teachers, they also noted a generally positive overall feeling towards the IB by the participants in their study. We extend this argument to say that the IB, as a non-human actant, impacts pre-service teacher identity in much the same way as for experienced teachers and ultimately contributes to the institutionalization of beginning teachers. As the participants in this study are all beginning teachers, this institutionalization also impacts their development as teachers as it occurs at a key moment in their path to becoming certified teachers. The institutionalization of pre-service teachers in an IB context is not surprising, given the IB's efforts to create a standardized curriculum, framework, and philosophy across the globe. While the development of teacher identity is idiosyncratic and impacted by many different factors (Edwards & Edwards, 2017) we argue IB is a non-human actant that impacts teacher development at an important stage in the participant's teaching career. Law (1992) uses ANT to explain institutionalization writing,

This, then, is the core of the actor-network approach: a concern with how actors and organizations mobilize, juxtapose and hold together the bits and pieces out of which they are composed; how they are sometimes able to prevent those bits and pieces from following their own inclinations and making off; and how they manage, as a result, to conceal for a time the process of translation itself and so turn a network from a heterogeneous set

of bits and pieces each with its own inclinations, into something that passes as a punctuated actor (Law, 1992, p. 386).

We argue that in the network of initial teacher education, an actant such as the IBEC and IB does significant work and, in general, takes a heterogenous set of bits and pieces, notably teachers, and attempts to turn them into a “punctuated actor” following a standardized set of procedures, policies, and ultimately teaching and learning that is uniform across the globe. Not surprisingly, these efforts to standardize and heterogenize are observed through the pre-service teachers’ responses in this study as the participants discussed ideas of global citizenship. The introduction of an external, non-human actor (IB and IBEC) with specific requirements, language, and pedagogies at a time when the participants were both learning to be teachers and learning to be IB teachers explains the differences observed between the two groups in this study.

Implications and Recommendations

Given the observed differences in how students from two distinct groups, IB and non-IB pre-service teachers, operate in the network of initial teacher education and discuss ideas of global citizenship and the NBGC in general, we wish to highlight the implication that non-human actants like external certifications, such as an IBEC, impact pre-service teacher development and identity. While all pre-service teachers enter initial teacher education programs with prior experiences and expectations, and all encounter B.Ed coursework and practicum in their own unique way, the addition of external certifications shapes the way beginning teachers discuss situations from their own classrooms and thus their development as teachers. While we do not view this as a negative, we suggest initial teacher educators offering external certification opportunities in initial teacher education programs make their students aware of the possible impacts on the non-human actants working within their network. We suggest regular and ongoing reflection to help pre-service teachers document, interpret, and monitor these changes throughout their initial teacher education program and induction into the teaching profession. Critical reflection is known to positively impact pre-service teacher development by allowing pre-service teachers to challenge traditional modes of practice and is known to help teachers grow toward greater effectiveness as

teachers (Shandomo, 2010). Given the impact of non-human actants ability to work on the network of initial teacher education, we propose that these non-human factors be explicitly identified and considered when asking students to critically reflect on their development as a teacher.

While this study reports on the top competency only based on the frequency of these ideas discussed in group interviews, this still highlights how these two groups discuss and interpret their practicum experiences differently. Other competencies could be explored in a similar way to highlight other differences or similarities between the groups. We also choose to work with the definition of sustainability and global citizenship as outlined by EECD in the province of NB. Yet, we acknowledge that many other global citizenship definitions and interpretations exist. We also recognize that many others have explored and problematized the concept of global citizenship. While this study concluded that the IB as a non-human actor impacts pre-service teachers' development with specific reference to global citizenship and sustainability, it does not explore whether this is a good thing (or not). Future studies could examine this question and explore how the IB achieves its aim of "mak[ing] the world a better place through intercultural understanding and respect" (IB, 2019), as stated in the IB mission statement with direct consideration to ideas of global citizenship. Finally, the categorization and definition of global citizenship and sustainability as written by EECD, is broad and connects two distinct concepts that should be explored in greater depth and separately. Of note in this study is that no participants discussed sustainability specifically, all discussed examples of global citizenship. The absence of ideas of sustainability in the examples provided by pre-service teachers is concerning, and work with future groups of IB and non-IB pre-service teachers exploring their understanding of, and engagement with, sustainability issues is needed. Clarifying and separating definitions of global citizenship and sustainability may be the first step in making these ideas more explicit in classroom contexts.

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Appendix A: Completed descriptions of the New Brunswick Global Competencies (EECD, 2019).

Critical Thinking and Problem-Solving

Critical thinking and problem-solving involves addressing complex issues and problems by acquiring, processing, analyzing, and interpreting information to make informed judgments and decisions. The capacity to engage in cognitive processes to understand and resolve problems includes the willingness to achieve one's potential as a constructive and reflective citizen. Learning is deepened when situated in meaningful, real-world experiences.

- Learners engage in an inquiry process to solve problems, as well as acquire, process, interpret, synthesize, and critically analyze information to make informed decisions.

- Learners select strategies, resources, and tools to support their learning, thinking, and problem-solving and evaluate the effectiveness of their choices.
- Learners see patterns, make connections, and transfer their learning from one situation to another, including real-world applications.
- Learners analyze the functions and interconnections of social, ecological, and economic systems.
- Learners construct, relate and apply knowledge to all domains of life, such as school, home, work, friends, and community.
- Learners solve complex problems by taking concrete steps to design and manage solutions. Learners formulate and express questions to further their understanding, thinking, and problem-solving.

Innovation, Creativity and Entrepreneurship

Innovation, creativity, and entrepreneurship involves the ability to turn ideas into action to meet the needs of a community. The capacity to enhance concepts, ideas, or products to contribute new-to-the-world solutions to complex social, ecological, and economic problems involves leadership, taking risks, independent thinking, soliciting and incorporating feedback, and experimenting with new strategies, techniques, or perspectives through inquiry research. Entrepreneurial mindsets and skills focus on building and scaling an idea sustainably.

- Learners display curiosity, identify opportunities for improvement and learning, and believe in their ability to improve while viewing errors as part of the improvement process.
- Learners formulate and express insightful questions and opinions to generate novel ideas.
- Learners turn ideas into value for others by enhancing ideas or products to provide new-to-the-world or improved solutions to complex social, ecological, and economic problems or to meet a need in a community.
- Learners take risks in their thinking and creating; they discover through inquiry research, hypothesizing, and experimenting with new strategies or techniques.
- Learners seek and make use of feedback to clarify their understanding, ideas, and products.
- Learners enhance concepts, ideas, or products through a creative process.

Self-Awareness and Self-Management

Involves becoming self-aware and self-managing of one's identity, efficacy, and belief in themselves as a learner. The ability to identify opportunities, set goals, establish and monitor plans while adapting to change and adverse conditions. The capacity to self-regulate, manage one's holistic well-being, self-assess, and advocate for support in an ever-changing world. Learners who are self-aware and self-manage effectively are better situated to be lifelong learners, personally fulfilled, and a contributing citizen.

- Learners have self-efficacy, see themselves as learners, and believe that they can make life better for themselves and others.
- Learners develop a positive identity, sense of self, and purpose from their personal and cultural qualities.
- Learners develop and identify personal, educational, and career goals, opportunities, and pathways; they monitor their progress; and, they persevere to overcome challenges.
- Learners adapt to change and are resilient in adverse situations.
- Learners are aware of, manage, and express their emotions, thoughts, and actions in order to understand themselves and others.
- Learners manage their holistic well-being (e.g., mental, physical, and spiritual). Learners accurately self-assess their current level of understanding or proficiency and advocate for support based on their strengths, needs, and how they learn best.
- Learners manage their time, environment, and attention, including their focus, concentration, and engagement.

Sustainability and Global Citizenship

Sustainability and global citizenship involves reflecting on and appreciating diverse worldviews and understanding and addressing social, ecological, and economic issues that are crucial to living in a contemporary, interdependent, and sustainable world. It also includes the acquisition of knowledge, dispositions, and skills required to be an engaged citizen with an appreciation for the diversity of people perspectives.

- Learners understand the interconnectedness of social, ecological, and economic forces, and how they affect individuals, societies, and countries.
- Learners recognize discrimination and promote principles of equity, human rights, and democratic participation.
- Learners understand Indigenous worldviews, traditions, values, customs, and knowledge.
- Learners learn from and with diverse people, develop cross-cultural understanding, and understand the forces that affect individuals and societies.
- Learners take actions and make responsible decisions that support social settings, natural environments, and quality of life for all, now and in the future.
- Learners contribute to society and to the culture of local, national, global, and virtual communities in a responsible, inclusive, accountable, sustainable, and ethical manner.
- Learners participate in networks in a safe and socially responsible manner.

Communication

Communication involves receiving and expressing meaning in different contexts and with different audiences and purposes. Effective communication increasingly involves understanding both local and global perspectives, societal

and cultural contexts, and adapting and changing using a variety of media, responsibly, safely, and with regard to one's digital identity.

- Learners express themselves using the appropriate communication tools for the intended audience and create a positive digital identity.
- Learners communicate effectively in French and/or English and/or Mi'kmaq or Wolastoqey through a variety of media and in a variety of contexts.
- Learners gain knowledge about a variety of languages beyond their first and additional languages; they recognize the strong connection between language and ways of knowing the world.
- Learners ask effective questions to create a shared communication culture, attend to understand all points of view, express their own opinions, and advocate for ideas.

Collaboration

Collaboration involves the interplay of the cognitive (including thinking and reasoning), interpersonal, and intrapersonal competencies necessary to participate effectively and ethically in teams. Ever increasing versatility and depth of skill are applied across diverse situations, roles, groups, and perspectives to co-construct knowledge, meaning, and content, and learn from and with others in physical and virtual environments. The ability to foster social well-being and inclusivity for oneself and others to establish positive and respectful relationships.

- Learners participate in teams by establishing positive and respectful relationships, developing trust, and acting interdependently and with integrity.
- Learners learn from and contribute to the learning of others by co-constructing knowledge, meaning, and content.
- Learners assume various roles on the team, respect a diversity of perspectives, and address disagreements and manage conflict in a sensitive and constructive manner.
- Learners network with a variety of communities/groups and appropriately use an array of technology to work with others.
- Learners foster social well-being, inclusivity, and belonging for themselves and others. Learners create and maintain positive relationships with diverse group of people.
- Learners demonstrate empathy for others in a variety of contexts.

Appendix B: Complete descriptions of the IB Learner Profile Attributes (IB, 2019).

IB Learner Profile:

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

As IB learners we strive to be:

- **Inquirers:** We nurture our curiosity, developing skills for inquiry and research. We know how to learn independently and with others. We learn with enthusiasm and sustain our love of learning throughout life.
- **Knowledgeable:** We develop and use conceptual understanding, exploring knowledge across a range of disciplines. We engage with issues and ideas that have local and global significance.
- **Thinkers:** We use critical and creative thinking skills to analyse and take responsible action on complex problems. We exercise initiative in making reasoned, ethical decisions.
- **Communicators:** We express ourselves confidently and creatively in more than one language and in many ways. We collaborate effectively, listening carefully to the perspectives of other individuals and groups.
- **Principled:** We act with integrity and honesty, with a strong sense of fairness and justice, and with respect for the dignity and rights of people everywhere. We take responsibility for our actions and their consequences.
- **Open-Minded:** We critically appreciate our own cultures and personal histories, as well as the values and traditions of others. We seek and evaluate a range of points of view, and we are willing to grow from the experience.
- **Caring:** We show empathy, compassion and respect. We have a commitment to service, and we act to make a positive difference in the lives of others and in the world around us.
- **Risk-Takers:** We approach uncertainty with forethought and determination; we work independently and cooperatively to explore new ideas and innovative strategies. We are resourceful and resilient in the face of challenges and change.
- **Balanced:** We understand the importance of balancing different aspects of our lives—intellectual, physical, and emotional—to achieve well-being for ourselves and others. We recognize our interdependence with other people and with the world in which we live.
- **Reflective:** We thoughtfully consider the world and our own ideas and experience. We work to understand our strengths and weaknesses in order to support our learning and personal development.

The IB learner profile represents 10 attributes valued by IB World Schools. We believe these attributes, and others like them, can help individuals and groups become responsible members of local, national and global communities.

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