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International Baccalaureate Teachers' Perspectives on Integrating Approaches to Learning Skills to Enhance Transdisciplinary Learning

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This is to certify that the doctoral study by

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Walden University
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Abstract

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MA, Walden University, 2016

BS, University of South Africa, 2012

Project Study Submitted in Partial Fulfillment

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Abstract

The International Baccalaureate (IB) curriculum recognizes approaches to learning skills (ATLS) as an integral part of the Primary Years Programme (PYP) framework. This vital element of learning is designed to be embedded in the program standards and practices of the inquiry based IB curriculum. After an evaluation visit by the IB school visit team members in 2017, a report was shared with the international primary school (IPS) study site located in Southeast Asia, which indicated that teachers were encountering challenges in consistent integration of ATLS to enhance transdisciplinary learning, which is the problem of this study. The purpose of this qualitative project study was to explore teachers' perceptions on the integration of ATLS to enhance transdisciplinary learning. The study addressed the research question of what teachers' perspectives on the inconsistent integration of ATLS at the IPS entailed. The conceptual framework that grounded this study was adapted from Gürkan's integrated design model within the IB PYP. Semi structured one on one interviews were conducted with seven purposefully selected IPS educators which included homeroom and special subject teachers who taught from pre-kindergarten to 5th grade. The key results, conclusions and findings of the study, indicated that factors such as collaboration, time, curriculum articulation and reflection were important elements for pedagogical leaders to consider while creating structures that would support teachers to integrate ATLS to enhance transdisciplinary learning. A professional development project will be developed and provided to teachers at the IPS. As a result, educators will be inspired to develop and implement ATLS which may lead to positive social change. Students are likely to use these skills across different contexts and may have more positive educational outcomes.

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Dedication

This study is dedicated to God as he continued to enable me throughout the study and even through the challenges he has continued to be "the lifter of my head." I also dedicate this study to my late dad, Mr. Peter Macharia, who instilled in me the value of lifelong learning. He made many sacrifices to ensure that my siblings and I went to schools that focused on empowering students holistically. Your hard work, Dad, was not in vain. I would also want to dedicate this study to my late nephew and friend, who achieved so much in such a short time, Dr. Kevin Muite. You inspired me to be the very best that I can be and to always be clear on my goals before embarking on a task or project by asking myself "why?" I know that you always wanted to share your knowledge and skills to uplift others, and I will continue with this vice. Rest at the feet of Jesus, my nephew and friend, until we meet again.

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Section 1: The Problem

The Local Problem

The problem that will be addressed through this study is the inconsistent

implementation of approaches to learning skills (ATLS) integration in an international

primary school (IPS) situated in Southeast Asia, which is the site of this study. The

school has about 350 students and uses the International Baccalaureate (IB) Primary

Years Programme (PYP) curriculum framework. The curriculum is implemented using an

inquiry transdisciplinary approach that aims to develop conceptual understanding.

Teachers are expected to plan lessons collaboratively and to include the five essential

elements of the IB curriculum: the ATLS, concepts, action, knowledge, and the learner

profile attributes. All five elements should be included in instruction using a

transdisciplinary approach (International Baccalaureate Organization [IBO], 2018).

There is a gap in practice at the study site; although the ATLS are required at the

International Primary School (IPS), and the school's accreditor mandated fidelity to

ensure implementation during the IB school visit in 2017, ATLS have not been integrated

consistently to enhance transdisciplinary learning. One indication of the lack of

successful and consistent implementation is that increase in transdisciplinary learning has

not been demonstrated consistently according to the guidelines of the IB curriculum

(IBO, 2018). For example, an analytical review by the pedagogical leader using

Managebac (2020)—a reporting management system the IPS preferred to document and

report student learning—revealed that some skills, such as research, social, and self-

management, were not taught consistently across the grades as specified in the

curriculum (IBO, 2018). According to conversations with the homeroom teachers during collaborative planning sessions regarding integrating ATLS in the instruction, most of the units of inquiry focus on more knowledge or content. Teachers reflected that "they were not integrating the ATLS authentically in their units of inquiry." An IB-related course called Developing Approaches to Learning Skills (2018) provides strategies on how teachers can develop transdisciplinary awareness and how to integrate the ATLS in their instruction. The vertical and horizontal articulation is important because the ATLS are incremental and should be offered consistently across the various grades. I chose this qualitative project study because the IB school must succeed in implementing ATLS and developed an understanding of transdisciplinary curriculum; doing so would result in enriched experiences for students (IBO, 2018). I believe this study and related project has the potential to help the school improve consistent implementation of ATLS.

The ATLS for transdisciplinary learning are required of the IB curriculum yet increasing transdisciplinary learning criteria are not established compared to the IB expectations as stated in the program standards and practices (PSP), a document that guides IB schools on curriculum expectations (IBO, 2018). The PYP is a transformative curriculum that offers a transdisciplinary learning approach, inquiry-based and student-centered learning with responsible action at its core, enabling students to inquire and learn between, across, and beyond traditional disciplines containing boundaries (IBO, 2018). Transdisciplinary learning relates to organizing a curriculum to offer students a learning experience that is interconnected, broad, balanced, and conceptual. According to IBO (2018), ATLS are required in all IB curricula worldwide as they ensure that students

gain the required skills to succeed in transdisciplinary learning. All teachers must foster and support these skills by ensuring they embed them in authentic learning experiences. These ATLS are grounded in metacognition and have the notion that learning how to learn is fundamental to a student's education (IBO, 2018).

Rationale

To improve the quality of IB education, there is a need to support teachers' understanding and mastery of transdisciplinary learning practices and integrate ATLS (IB, 2018). According to preliminary indications, several factors may be contributing to the lack of consistent integration of ATLS at the school. In my study, I explored the perspectives of teachers on which of these seem most significant and what supports they need that are not provided.

One possible factor identified by the IB school visit team officials in 2017 was the lack of planning at the IPS. After reviewing the curriculum planning documents, the team noted inconsistency in how the teachers develop unit planners. The IB officials interviewed teachers and identified inconsistency of understanding the purpose of the preceding year planner. The year planner is a crucial document that teachers use to collaborate, plan, and support their understanding of transdisciplinary learning. For example, the team noted "students appear engaged in learning but there appears to be a lack of consistency in the documentation and planning of knowledge and skills. This in turn impacts the levels of rigor and challenge in the IB curriculum" (IB school evaluation report of IPS, 2017). After conversations with teachers from various grades, the team also shared in the evaluation report that "the way teaching teams approach planning

concerning knowledge and skills is inconsistent" IB school evaluation report of IPS, (2017). According to the team, these inconsistencies in understanding the purpose of the preceding year planner and how teachers develop the unit planner will likely lead to disorganization in the offering of the critical elements of the IB PYP for students' transdisciplinary learning outcomes.

Another possible contributing factor to the inconsistent implementation of ATLS at the school is a lack of fully developed understanding of transdisciplinary learning among the teaching staff. According to the school evaluation report (2017), teachers' understanding of transdisciplinary learning was inconsistent across grades. Contributing to the possible lack of understanding among the teaching staff may be a lack of training or what may be ineffective training.

The director of professional studies at the IPS sent out a survey to assess teachers' IB-related pedagogy experience in the 2020–21 academic year. The teachers were expected to share information such as the amount of IB workshops that focused on transdisciplinary learning such as evidencing learning, ATLS, conferences, and webinars they had attended in the last 3 years. IB pedagogy provides transdisciplinary professional development through a tool called Job-Alike, which provides resources for teachers from other IB schools to collaborate and share best practices for transdisciplinary learning. Although all the 100 teachers who participated in the survey had attended the basic and mandatory introductory IB course called Making the Primary Year Program Happen, 60% of them indicated that attending the courses did not ground them in understanding ATLS. As such, transdisciplinary learning capabilities practices continue to be developed

at IPS. Some teachers working at the school for 7–8 years had not attended any IB courses. Possibly related to these issues is that teachers have been given stipends to support their professional development, but the training they receive may differ in content and quality (Macharia, 2021).

Another possible contributing factor to the lack of consistent implementation of ATLS at the school may be a lack of institutional memory given the turnover of teaching staff. The survey also revealed that five teachers were experienced educators and qualified IB workshop members who can support other teachers with in-house professional development; nonetheless, according to a conversation with the professional development director, such practices of support have not been established. The survey also revealed that teachers at the IPS had experience of IB-related pedagogy ranging from 1 to 10 years. Teachers are employed on a contract basis, and they may choose to transition after their 2-year contract to other locations in the world. Therefore, the school needs to constantly hire and train teachers so knowledge and skills can be retained.

Despite these preliminary indications of possible contributing causes of the lack of consistent implementation of ATLS at the school—and perhaps because of the large number of identified possible causes—the school has had difficulty determining a plan of action to address the problem. This study was conducted to explore teachers' perspectives on the inconsistent implementation of ATLS to enhance transdisciplinary learning.

Definition of Terms

Approaches to learning skills (ATLS): An integral part of an IB education. The skills complement the learner profile, knowledge, conceptual understanding, and inquiry.

ATLS are grounded in the belief that learning how to learn is fundamental to a student's education (IBO, 2017).

Inquiry-based teaching: An approach to learning in which students' curiosity and questioning anchors the learning (IBO, 2018).

International Baccalaureate (IB) Primary Years Programme (PYP): A curriculum that consists of Grades K–5 (IBO, 2019).

Program of inquiry (POI): The school's curriculum in the IB PYP school setting. The POI comprises of learning experiences, concepts, and skills that students are expected to learn.

Primary Years Programme (PYP): A curriculum framework that is inquiry-based and uses a transdisciplinary learning approach that develops conceptual understanding. The curriculum is student-centered and caters students between the ages of 3 and 12 (IBO, 2018).

Programme standards and practices (PSP): The foundational set of principles that IB schools use to ensure the IB for quality assurance and fidelity in the implementation and development of the programs (IBO, 2020).

Approaches to teaching skills (ATT): The approaches designed to provide IB teachers with the flexibility to identify and choose specific teaching strategies to employ that best reflect the school's contexts and the diverse needs of their students. ATT are applied in all IB four programs (IBO,2018).

Professional development (PD): Learning that is structured and results in change of teacher practices and improvements in students learning outcomes (Darling-Hammond et al., (2017).

Significance of the Study

The ATLS is required in the IB curriculum so that students gain the skills needed for transdisciplinary learning (IBO, 2017). The problem that was addressed through this study was the inconsistent implementation of ATLS integration in an IPS. The study findings may help to identify barriers to consistent implementation and suggest ways past them. The findings of this study may benefit different role players, such as administrative, pedagogical leaders, and teachers to develop their understanding of integrating ATLS, and their understanding of transdisciplinary learning may be enhanced by Gürkan's (2020) transdisciplinary learning model. This study may benefit other IB schools facing similar challenges. Teachers need to follow the instructional design of the organization's implementation and assessment processes to enrich and enhance students' transdisciplinary learning experiences. The findings of my study may be beneficial to pedagogical leaders as they may reflect on the structures of teachers collaborative planning meetings and consider adopting practices that will provide opportunities for teachers to receive the necessary training.

In this study, I also used Gürkan's (2020) findings to develop resources that would improve the integration of ATLS in other IB settings. In addition, the findings of the study may likely provide opportunities for teachers at the IB school to share ideas through practices such as coaching or peer mentoring of transdisciplinary practices.

These opportunities may enrich teachers' abilities to collaborate and achieve a horizontal and vertical alignment of critical elements of the IB program, such as the ATLS. Teachers are instructional leaders in their classrooms and are tasked with implementing the curriculum, and their perspectives are valuable as they provide deeper insight about the phenomenon. Finally, school administrators tasked with ensuring a school's adherence to IB philosophies are also likely to benefit from the study's findings as they determine how teachers currently experience ATLS in the IB setting.

Research Question

According to IBO (2017), teachers at the IPS are expected to integrate ATLS as part of practitioner standards. ATLS are an integral part of the IB curriculum. The skills assist students in understanding how to learn, which is fundamental to students' education (IBO, 2017). In this study, I explored teachers' perceptions of integrating ATLS to enhance transdisciplinary learning. The research question that guided this study was:

RQ: What are teachers' perspectives on the inconsistent integration of ATLS at the IPS?

Review of the Literature

Literature Search Strategy

This literature review includes an in-depth examination of recent research on teachers' perspectives on the inconsistent integration of ATLS to enhance transdisciplinary learning. The process of this review included a critical analysis and synthesis of information and identification of similarities and differences highlighted

among peer-reviewed articles. Specific search terms were used to find relevant sources regarding the focus of this study: *transdisciplinary learning, approaches to learning skills, collaboration, International Baccalaureate Primary Years Program, research skills, communication skills, self-management skills, thinking skills*, and *social skills*. The following databases were searched for literature for this review: ProQuest dissertations and theses, ERIC, Education Source Combined, and Sage Journals. IB-related websites were searched to gather different perspectives from academic researchers on transdisciplinary learning.

Conceptual Framework

A conceptual framework is a structure that grounds a study and enables a researcher to explain best the natural progression of the phenomenon being explored. By identifying a conceptual framework, a researcher can construct their worldview of the phenomenon investigated (Larsen et al., 2021). The conceptual framework of this study was adapted from Gürkan's (2020) transdisciplinary integrated curriculum design model within the IB curriculum. Gürkan (2020) indicated that teachers acquire the knowledge and skills for creating and developing a transdisciplinary inquiry program through inquiry and collaboration. Therefore, teachers must know integrated concepts in the curriculum and design teaching engagements based on the transdisciplinary teaching-based curriculum.

According to IBO (2018), there are five categories of ATLS: (a) communication; (b) thinking, both critical and analytical thinking; (c) research, (d) self-management, which aims at empowering learners to take ownership of their learning, and (e) social

skills. This project study is grounded on Gürkan's (2020) transdisciplinary design model within the IB framework. According to Gürkan's (2020), these ATLS are vital as they enable students to assess and accumulate usable knowledge, they can use daily, attain students' attention during learning and keep them motivated. ATLS also support and enhance students' sense of agency and encourage them to be active participants in the teaching and learning process.

Gürkan (2020) presented a paper on designing a transdisciplinary integrated curriculum within the framework of the IB PYP. Gürkan (2020) examined the positive and negative experiences of teachers in designing instruction that is transdisciplinary oriented. The design of the study included a holistic multiple-case approach, and data were collected using focus group interviews with approximately 50 teachers and reflective writings. Data were analyzed through content analysis. In the study, Gürkan (2020) designed a transdisciplinary integrated curriculum using a model and observed that the model provided teachers with a systematic approach that enables them to identify skills and knowledge that are the focus of the instruction. According to Gürkan (2020), the integrated curriculum design is realized through teacher collaboration. Gürkan (2020) sought to design the integrated design model because of feedback from teachers who were encountering challenges selecting practices for planning and reflecting on the teaching process that was important in transdisciplinary learning.

Gürkan's (2020) integrated design model connects with this study because I sought to identify teachers' perspectives on transdisciplinary learning and strategies. The research question in this study relates to Gürkan's (2020) study as the six-step processes I

recommend are strategies that can be used to support teachers to successfully integrate ATLS and concepts to enhance transdisciplinary learning, which is the focus of this study. Gürkan's (2020) used interviews as a method to collect data from teachers which is similar to the research design of this study. The conceptual framework of this study is presented in Figure 1.

Figure 1

Process of Integration of Approaches to Learning Skills

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┌─────────────────────────┐
│ Teachers' perspectives  │
│ of integrating the      │───┐
│ Approaches to Learning  │   │      ┌──────────────────────┐
│ Skills                  │   │      │ • Transdisciplinary  │
└─────────────────────────┘   │      │   concept selection  │       ┌──────────────┐
                              └─────▶│   phase              │       │ Enhanced     │
┌─────────────────────────┐          │ • Brainstorming or   │       │ Transdisci-  │
│ Teachers' perspectives  │          │   collaboration      │──────▶│ plinary      │
│ on the challenges in     │─────────▶│   phase              │       │ Learning     │
│ integrating the         │          │ • Inquiry item       │       └──────────────┘
│ Approaches to Learning  │          │   writing            │
│ Skills                  │          │ • Instruction        │
└─────────────────────────┘          │   planning           │
                              ┌─────▶│ • Instruction        │
┌─────────────────────────┐   │      │   assessment         │
│ Support of teachers on  │   │      │ • Instruction        │
│ integrating the         │───┘      │   design review      │
│ Approaches to Learning  │          └──────────────────────┘
│ Skills                  │
└─────────────────────────┘
```

This conceptual framework shows that for enhanced transdisciplinary learning to be achieved relies on incorporating teachers' perspectives of integrating the ATLS, teachers' perspectives to challenges in integrating the ATLS, and teacher support. The implementation of these occurs through a six-stage process: (a) transdisciplinary concept selection phase, (b) brainstorming or collaboration phase, (c) inquiry item writing,

(d) instruction planning, (e) instruction assessment, and (f) instruction design review (Gürkan, 2020). Gürkan (2020) further argued that teachers acquire the knowledge and skills for creating and developing a transdisciplinary inquiry program through inquiry and collaboration. Therefore, teachers must know concepts integrated in the curriculum and design teaching engagements based on the transdisciplinary teaching-based curriculum. Gürkan's (2020) transdisciplinary integrated curriculum design model is based on the principles of identifying themes, thinking skills, research, and inquiry-based approach, which ultimately leads to a teaching design in which skills are assessed together with the knowledge as teachers explore transdisciplinary learning and ways to incorporate ATLS in their instruction. Gürkan's (2020) transdisciplinary integrated curriculum design model connects with this study as it demonstrates the processes teachers can use to integrate ATLS in transdisciplinary learning.

The six-step processes are strategies that can be used to support teachers to successfully integrate skills and concepts to enhance transdisciplinary learning (Gürkan 2020), which is the focus of this study. The strategies can be connected to the research question seeking to explore teachers' perspectives on the inconsistent integration of ATLS at the IPS school. Gürkan's (2020) transdisciplinary integrated curriculum design model comprises a six-step process:

1.   Transdisciplinary concept selection phase: At this phase, homeroom teachers and subject teachers plan units. Collaborative learning engagements are identified and implemented. A live document should be created where teachers continually

reflect on the teaching and learning progress and make changes as the unit of inquiry progresses.

2. Brainstorming or collaboration phase: This is the stage where PYP key elements, such as the conceptual or enduring understanding, key concepts, learner profile, and ATLS, are identified and integrated into the IB curriculum lesson plans. This is a critical stage as the program design—such as learning goals and critical elements—is being clarified.

3. Inquiry item writing: At this stage, teachers determine concepts that students should inquire into. The inquiry process is the phase where students use skills to gain access to concepts or knowledge as they research and communicate with each other. Teachers need to factor in students' questions as they plan and prepare learning engagements. At this stage in the inquiry process, teachers identify the ATLS to provide holistic and balanced instruction. Another factor that teachers need to consider is maintaining students' curiosity as they prepare instruction that is developmentally appropriate.

4. Instruction planning: Teachers collaborate and create student-centered activities. The learning activities are based on a constructivist approach where students create meaning by constructing knowledge through inquiry instead of passively receiving information. Research skills are a great strategy for this, as students acquire the knowledge independently. Research skills are one of the five ATLS used to develop students' understanding.

5.   Instruction assessment: This phase involves teachers collaborating and deciding how to assess students' understanding of skills and concepts.

6.   Instruction design review: Teachers create a unit checklist used for transdisciplinary instruction lesson assessment. At this stage, an inquiry unit rubric is used for transdisciplinary unit assessment within the context of the PYP's key elements

Integrating ATLS requires various processes in transdisciplinary learning. These include the identification of learning objectives and teachers' familiarity with the transdisciplinary learning approach. Gürkan's (2020) integrated design model provides a lens on approaches that can be taken or considered by teachers and educational leaders in integrating ATLS. In this study, I sought to explore teachers' perspectives on their understanding of integrating ATLS using a transdisciplinary approach, and Gürkan's model provides a strong foundation for the research.

International Baccalaureate Curriculum

The IB consists of four programs with an international focus and structure for kindergarten to 12th grade. The programs include the PYP, the Middle Years Programme, Diploma Programme, and Career-related Programme. The IB program aims at developing students to be knowledgeable and caring inquirers who help create a better and more peaceful world. The vision can be accomplished through students' intercultural understanding and respect (IB, 2020). Each IB program connects to the other by using elements such as ATLS and the learner profile. The program is designed to develop students holistically while focusing on ATLS and learning (IBO, 2018). Included in the

curriculum standards for IB are ATLS and transdisciplinary learning. These skills are

grounded in metacognition as the IB philosophy is that learning how to learn is

fundamental to a student's education (IBO, 2018). These five categories of interrelated

skills aim to support student engagement as they become self-regulated learners who set

practical learning goals and independently pursue their aspirations.

     ATLS also support and enhance students' sense of agency; they develop the

capabilities to set a goal, reflect on an ongoing basis, and act responsibly to affect change

(IBO, 2018). According to IBO (2018), the IB curriculum is challenging and

constructivist oriented and supports and encourages students to be engaged critical

thinkers. Gürkan (2020) transdisciplinary integrated curriculum design model within the

IB PYP is used to examine transdisciplinary learning, instruction organization,

implementation, and assessment processes. A transdisciplinary integrated curriculum

design model is based on the principles of using ATLS, an inquiry-based approach, and

teaching using a design assessment (Gürkan, 2020).

     Ferguson-Patrick et al. (2018) stated that despite teachers receiving widespread

support for integrated approaches to teaching, more help is required to develop

implementation. The researchers explored challenges and opportunities in an integrated

curriculum and connect their study to 21st-century curricula and pedagogy (Ferguson-

Patrick et al., 2018). The researchers examined curriculum planning documents to have a

better understanding on why teachers find the phenomenon challenging (Ferguson-

Patrick et al., 2018). For teachers to implement transdisciplinary-based instruction, they

require professional development as a transdisciplinary approach to learning differs from

the traditional mode of planning and implementation (Ferguson-Patrick et al., 2018).

According to Ferguson-Patrick et al. (2018), young citizens require skill-based instruction

to cope with the challenges of an ever-changing world.

Medwell et al. (2017) shared similar views on the role that teacher collaboration

and planning plays in identifying and integrating them in the curriculum. Medwell et al.

(2017) conducted a study to identify the importance of the ATLS in the PYP exhibition.

PYP is an educational framework for children ages 3–12 that provides teachers an

opportunity to cater to a holistic education focusing on whole-child development through

an inquiry-driven approach (Medwell et al., 2017). Medwell et al. (2017) interviewed

teachers, parents, and students and concluded that students require ATLS such as critical

thinking and research skills. Teachers shared that they identify skills during the

collaboration planning phase and these skills are explicitly taught. The ATLS assist

students in developing personal independence, a vital attribute of learning (Medwell et

al., 2017).

On the issue of collaboration, Tallman (2019), carried out research to investigate

the experiences of teachers during instructional collaboration. The researcher used

interviews and observations to collect data and the information that Tallman (2019)

obtained was that teachers were experiencing successful, high-level collaboration when

structures have been created to enable teachers to learn from their peers. Participating

teachers believed that they had the capability to collaborate, and they used able to use

collegial learning to develop their instructional planning. Tallman (2019) concludes that

collaboration amongst teachers offered teachers the opportunities to ask questions and to

exchange ideas. The school leaders however need to create structures and to build time within the school day for teachers to collaborate.

Transdisciplinary Learning

Herro and Quigley (2016) argued that transdisciplinary teaching is an integrated approach that analyses real-life problems with an inquiry. The authors believed that skill-based instruction allows students to engage in concrete thinking. Though, Herro and Quigley (2016) are a somewhat older source at this date, I included it given its significance in this area of literature. A transdisciplinary approach eliminates borders between disciplines, and it is more flexible to teach concepts. Herro & Quigley (2016) opined that some ideas and situations are identified within the scope of multiple fields and therefore necessitate a high order evaluation. Integrating different subjects and perspectives will likely lead to a transdisciplinary approach that ultimately develops a new area of inquiry in the teaching and learning process. Gürkan (2020) conducted a multiple-case approach study that involved 50 teachers. The purpose of the study was to examine the teachers' perceptions in designing an integrated transdisciplinary-related curriculum within the framework of the IB PYP.

While developing and implementing the IB curriculum, teachers were expected to collaborate. The researcher shared that teachers' experiences and perceptions of transdisciplinary learning were significant in the practical design and implementation of transdisciplinary learning. Training such as school-based program development was also necessary as it determined how confident the teachers were in collaborating with other teachers to design instruction. Collaborative and communication skills were skills that

Gürkan (2020) identified as crucial in developing a transdisciplinary curriculum. Amaliyah et al. (2017) believe that a transdisciplinary approach helps provide a holistic learning experience in cognitive, social, emotional, and physical development. The transdisciplinary approach is formed when the teacher assists students to create connections between aspects such as authentic experiences, symbols, and humans. According to this author, a transdisciplinary approach to teaching might be achieved when teachers could collaborate and work on a shared curriculum.

According to Morris et al. (2019), leaders can identify and create structures that enable teachers to have a whole-school-wide approach to transdisciplinary learning. Morris et al. (2019) linked transdisciplinary learning to supportive leadership because leaders can provide opportunities for communication and participative decision-making amongst the teachers to create a shared vision. According to the author, educational leaders play a vital role in developing the teachers' understanding of the transdisciplinary approach to teaching and learning in critical areas such as ATLS. Amaliyah et al., (2017) opined that transdisciplinary learning assists students to engage in high order thinking skills and ultimately unpack complex concepts. Students develop various self-oriented and social skills as they collaborate with other individuals and group work activities. Smyth (2017) concurs that transdisciplinary learning uses a conceptual framework that connects theories and disciplines. According to Smyth (2017), when teachers use a transdisciplinary approach, students will likely acquire knowledge and skills from other fields to their specific subjects. A transdisciplinary model gives students the necessary platform to collaborate and develop a consensus around shared concepts.

The PYP is a transdisciplinary curriculum, which means that teachers should plan and teach skills integrated into other areas of learning such as science and the arts. Savage et al. (2018) concluded that for teachers to be successful in transdisciplinary teaching, it is vital that they have a clear understanding of the ATLS as they guide the student to inquire more profound into the concepts that are useful in daily life. Giulio et al. (2017) shared similar views and believes that for teachers to equip students with the necessary skills, they require to be successful in their learning, teachers should be competent in transdisciplinary learning. This is because transdisciplinary learning unlike the traditional way of teaching that entails recalling and memorization of information, focuses on how concepts and skills can be transferred across different subjects.

Darling-Hammond et al., (2020) supports a holistic approach to teaching and learning. Though the authors have not addressed transdisciplinary learning specifically, their notions of holistic learning are consistent with the offering of this learning approach. According to these authors, the inclusion of skills that focus on developing social-emotionality fosters students' growth mindsets, enabling students to attain academic progress, efficacy, and socially acceptable norms. These includes the ability to self-regulate, intrapersonal and interpersonal awareness. Increased sense of student agency supports the resilience and productive action. These views are shared by Grant et al., (2017) who believes that transdisciplinary learning is enhanced when an inquiry-based model of teaching is applied as teachers can plan engaging engagements where students can inquire into concepts using the ATLS unlike a framework of teaching. According to Golja et al., (2020), transdisciplinary learning enables students to use higher order

thinking and decision-making skills, and these can be applied to various context in the modern society. The author believes that educators should continually seeks to understand the tenets of transdisciplinary learning. Similar sentiments are shared by Stadler et al., (2021). The author believes that clear structures enable students to gain a better understanding of concepts. Keeping in mind that students acquire knowledge and skills at different stages due to factors such as language, learning abilities and lived experience, the author explains that teaching involves layers of knowledge, and this can be challenging in a class that is multilingual or multicultural. Transdisciplinary therefore allows students to acquire skills and knowledge instead of relying on memory. Hall et al., (2018) encourages educators to open various disciplines so that respective fields could explore how to create instruction that is skills-based to create authentic learning opportunities for the students.

Approaches to Learning Skills

According to Dickson et al., (2018), teachers in an IB-related curriculum must collaboratively plan creative learning engagements. This expectation demands that teachers are knowledgeable on the various elements of the IB PYP. They described how IB programs are grounded on inquiry-based, transdisciplinary learning, student-centered approaches that require a substantial shift in pedagogy and assessment. ATLS are vital as they can be used in a transdisciplinary approach to guide students to inquire and transfer knowledge across disciplines. Therefore, teachers must collaborate with other teachers to attain a shared understanding (Dickson et al., 2018). The ATLS used for integration are high order thinking skills as students examine various artifacts and primary sources.

These sentiments are shared by Coppersmith et al. (2017), who believe that ATLS assist students in adding essential knowledge for understanding. Inquiry is a framework that enables students to find out information without memorizing knowledge. Coppersmith et al. (2017) provided evidence of the inquiry-oriented nature of the IB PYP curriculum. The author explored how a transdisciplinary approach can integrate additional languages such as Spanish with the social studies strands. The overarching goal for transdisciplinary learning is for students to acquire and apply ATLS skills such as thinking, social, communication, self-management, and research skills.

Tarigan et al. (2019) carried out an investigation that sought to improve the ATLS practice of students in 5th grade at an IB elementary school in the Middle East. The study consisted of 48 students across various elementary grades. The research took place in three cycles, and each process consisted of planning, action, observation, and reflection. The activities of students in each cycle were observed, and the analysis of the research on students' high-level thinking skills during mathematics learning consisted of the Solo Taxonomy assessment, which had four levels of high-level thinking, namely unstructured, multi-structural, relational, and extended abstract. The research instruments used to identify the ATLS included an IB curriculum planner, student, and teacher observation sheets, and a standardized Solo Taxonomy thinking skills ability test. Other resources included observation videos of learning activities. Tarigan et al. (2019) observed an improvement in the students' high-level thinking skills after the third cycle. The researcher deduced that for students to be successful in their use of ATLS, time and ongoing practice need to be considered as it takes a long time to develop high-level

thinking skills. Students also require high motivation to acquire ATLS. Tarigan et al. (2019) reflected that it is vital for teachers to understand how to integrate ATLS in different disciplines to increase students' level of engagement. Similar ideas are shared by Mekonnen (2020) who conducted a study that explored teacher's and students' roles during instructions. The author uses the term "learning by doing" to refer to a phase of learning experiences where students are self-directed and use ATLS to acquire the concepts. The students participate in active learning and the role of the teacher is that of a facilitator as he or she guides the students by providing them with multiple learning, asking open-ended questions, and reflecting with the students about their learning journey. Mekonnen (2020) advocates for a student-centered, that is grounded on ATLS and suggests that strategies such as project-based, problem-based, and team-based learning might be a strategy that teachers and administrators could explore as they promote skills such as communication, and higher-order thinking skills. To gain a wider view of the phenomenon, I reviewed Gilstrap (2019), who shares the role of ATLS in an IB school in North America. The author shares that it is important that ATLS are explicitly taught. The difficulty that the school was facing was that the teachers were having challenges integrating the ATLS. Gilstrap (2019), who has experience as a librarian observed that teachers were focusing more on the content with less articulation on ATLS. The author therefore recommended visible thinking routines that would enable teachers to formatively assess students understanding of ATLS. The author argued that if the main goal of an IB education is to create learners that are globally minded, it is vital that students learn more than the content. According to Gilstrap (2019), these strategies

useful for formative assessment of ATL's. This is because they recognize and evaluate propositions as well as draw generalizations based on new concepts and evidence.

A common theme amongst the literature reviewed reveals that ATLS are an essential component of transdisciplinary learning. The skills assist students in accessing knowledge and applying their newly acquired knowledge across different disciplines. For transdisciplinary teaching and learning to be effective, teachers should have grounded experience in implementing it. This study seeks to explore teachers' experiences and perceptions on the integration of ATLS to enhance transdisciplinary learning at an IPS.

Summary of Literature Review

A common theme that emerged from the literature review is that transdisciplinary learning enables teachers to integrate the key elements of the international curriculum such as ATLS and concepts in their instruction. For teachers to teach successfully, they should be provided with opportunities to collaborate so that they can identify the ATLS that are important as they assist students to access the knowledge, concepts and develop metacognition. It is vital that collaborative structures are put in place so that teachers can achieve vertical and horizontal articulation across the various grades as ATLS are incremental.

Implications

This study's results have practicality for the IPS in that it will inform the pedagogical and administrative leaders of the teachers' perception on ATLS, their understanding of transdisciplinary learning and actions that can be taken to enhance the teacher's knowledge of transdisciplinary learning. Knowledge of how to integrate ATLS

using a transdisciplinary approach may help school leaders to understand and address the inconsistent implementation issues. As the teachers and pedagogical leaders become familiar with Gürkan's (2020) transdisciplinary integrated curriculum design model, they may likely use it as a strategy to plan transdisciplinary oriented learning that fits in with the requirement of the IBO (2018) curriculum. In 2017, the IB School Visit Team officials, who are tasked by the IB Organization (IBO) with evaluating the school's compliance every 5 years noted that the curriculum was not cohesive and that the ATLS were inconsistent across the grades.

Gürkan's (2020) transdisciplinary integrated curriculum design model will be key in designing the professional development. Teachers will be introduced to six phases of Gürkan's (2020) transdisciplinary integrated curriculum design model and the professional development will take about a month to provide teachers with opportunities to collaborate, implement, and share their experiences on integrating ATLS using Gürkan's (2020) transdisciplinary integrated curriculum design model.

Based on the anticipated findings of this study, professional development may be required, or a white paper advocating for differentiated structures that may likely support to provide consistent integration of ATLS to enhance the transdisciplinary learning approach. Professional learning could take different forms such as sharing of best practices during collaboration meetings, teacher-led workshops, or formal professional development that targets ATLS in an IB setting. This study may likely enable stakeholders to identify where the gaps in professional learning are, and how the concerns

can be ameliorated. Showing teachers how to integrate ATLS in their daily instruction may provide a framework for social change at IPS.

Themes gathered from the interviews may provide pedagogical and administrative leaders at the IPS with representations of the teachers' perceptions of and the supports that they may likely require. The pedagogical and administrative leaders may review their structures to accommodate the findings for example, creating more time for teachers to collaborate across the different grades. Karacabey (2020), believes that teachers have the responsibility of identifying the knowledge and skills that they require to develop their practices. However, school leaders such as principals should provide teachers with the opportunities to acquire the required training. This study may provide information on the gaps in practice in transdisciplinary learning, and how to possibly ameliorate any of the issues that may be identified. Developing teachers' understanding of transdisciplinary learning and teaching practices may likely bring a positive shift in practice and provide a framework for social change at the IPS. I will develop professional development base on what research stated should happen when teachers integrate ATLS across different disciplines to enhance transdisciplinary learning.

The professional development will include resources that teachers may engage with independently or collaboratively and teachers will be encouraged to use the resources during their collaborative meeting sessions. Content of the professional development will also be shared digitally to provide teachers with the opportunity to see what other teachers are doing in their classrooms and how ATLS are being implemented across the different grades at IPS. This practice fits in with the IB organizations belief

that curriculum development is a shared responsibility and encourages teachers to co-create learning with the students (IBO, 2018). The link for the professional resources will be made available to all teachers at the IPS School. The benefit of the resource learning resources is that teachers will not have to pay for it and there will be opportunities for teachers to add to the resources, and to reflect and with other teachers.

Summary

This qualitative project study will focus on teachers' perspectives on integrating ATLS to enhance transdisciplinary learning at an IPS. Being a practitioner that communicates and collaborates with other role players such as other Homeroom and special subject teachers is established as part of the framework for the teachers (IBO, 2018). The gap in learning that would likely be created when ATLS are not integrated successfully may likely impact the students understanding of concepts. The use of transdisciplinary approach to teaching and learning is a strategy that can develop students' understanding of ATLS as the skills will be applied across the different disciplines. One underlying theme that is highlighted amongst all the authors that I reviewed is that teachers should be conversant with how to integrate ATLS in instruction and to use the transdisciplinary approach when planning instruction.

This section presented the different views that researchers possess on transdisciplinary learning, the role that ATLS plays in IB oriented instruction. The big ideas that were highlighted is that transdisciplinary learning enables teachers to focus on skills that are transferable across different disciplines. ATLS Students support students to access knowledge as it teaches them how to learn. Gürkan's (2020) transdisciplinary

integrated curriculum design model was proposed as a tool of supporting teachers with strategies that will likely develop their transdisciplinary learning practices through collaboration during professional development. The next sections of the project study outline the method of study that will be utilized to collect data to respond to the study problem outlined in this study which is teachers' perspectives on the inconsistent integration of ATLS to enhance transdisciplinary learning.

Section 2: The Methodology

Research Design and Approach

This qualitative project study was conducted to explore teachers' perspectives on integrating ATLS at an IPS. I chose a basic qualitative method for the project study. I seek to explore teachers' insights as they will likely provide more in-depth information regarding their transdisciplinary experience. A deeper analysis of the phenomenon may create opportunities for the leaders at the IB IPS to reflect and consider creating organizational structures that will help enhance collaboration at the school.

I explored other qualitative research designs for this study, including phenomenology, narrative inquiry approach, ethnography, and basic qualitative research. Narrative inquiry, according to Merriam and Tisdell (2016), entails a researcher using storytelling to explore phenomena related to life experiences. I eliminated this option because it was not an authentic fit for my study. Phenomenology is concerned with interpreting experiences that happen within shared settings (Merriam & Tisdell, 2016) and does not focus on perceptions, which was the main focus of this study. Another consideration was ethnography design, which relies on observations of activities that happen in the field (Merriam & Tisdell, 2016). Ethnography is used to explore the culture of a community and examine patterns that emerge within a communities' cultural practices. I did not consider this option because my study was focused on perceptions.

Interviews were the best option for gathering data in this study, as they entail speaking to participants and obtaining firsthand experiences from their point of view. Wishkoski (2020) shared that a semi structured interview is a strategy for collecting data

in qualitative research. The semi structured interviewing approach enables a researcher to ask a standard set of questions and collect data from the participants using their firsthand experiences. A researcher can ask follow-up questions if an interesting insight emerges from the interviewing process. This flexibility of asking questions assists a researcher in having an in-depth conversation about a particular topic.

In an unstructured interview, questions are not predetermined, and the flow of discussion develops organically. I selected semi structured interviews for collecting data because I was looking for similar and differing experiences among participants. I knew that participants share a similar teaching experience, which includes teaching in an IB school, and developing a set of similar questions would be appropriate. Semi structured interviews provide opportunities for clarification, probing, and asking additional questions (Ryan, 2018).

According to Adhabi and Anozie (2017), interviews are an interactive process that involves questioning to gather information. The authors further clarify that interviews in qualitative research attempt to gain a deeper understanding of a phenomenon from the subject's perspective to unfold the meaning of peoples' experiences. This basic qualitative design was best suited to meet the needs of my study as it would allow me to explore teachers' varied explanations of experiences with integrating ATLS to enhance transdisciplinary learning. According to Merriam and Tisdell (2016), the basic qualitative design provides an opportunity for a comprehensive exploration of a phenomenon. With this design, a researcher uses patterns that emerge from the data to understand the

phenomenon in depth. Ultimately, new knowledge is acquired after analyzing the patterns (Creswell & Creswell, 2018; Johnson & Christensen, 2017).

Research Design and Rationale

For this basic qualitative project study, I used semi structured interviews to collect data. Interviews are appropriate when a researcher intends to explore an issue that seeks to understand a phenomenon from the interviewee's perspective. An interview can be an interactive process in which an interviewer asks questions to seek specific information (Adhabi & Anozie, 2017). Interviews are ideal for documenting participants' accounts, perceptions, experiences, or attitudes toward situations. Data derived from interviews are often used to generate patterns of events, themes, and models (Taylor et al., 2016). Qualitative research methods are likely to yield more decadent and in-depth data perspectives of participants' experiences integrating ATLS to enhance transdisciplinary learning. The interview questions were created to explore processes in teaching and learning practices and factors impeding teachers' successful integration of ATLS. The interview questions guiding the study are related to teachers' perceptions and conceptualizations of ATLS and the challenges they experience while integrating the skills to enhance transdisciplinary learning. The interview questions were open-ended and required that teachers express their views in detail about their teaching and learning experiences, school environment, and professional support. The research question that guided my study was:

RQ: What are teachers' perspectives on the inconsistent integration of ATLS at the IPS?

The data collected from interviews assisted me in identifying recurring patterns or themes related to the implementation of the ATLS curriculum at the IB IPS. Analysis of the data from the interviews may provide more understanding of the practices and assumptions that underlie the phenomenon and may assist in gaining a deeper understanding of the practical consequences and applications useful to the phenomenon. The interview questions used to collect data are in Appendix A.

Participant Selection

I interviewed seven teachers who teach in homeroom or special subject settings. The teachers engage with students from pre-kindergarten to fifth grade within the IB curriculum. I sent invites to the teachers using their private emails and requested their participation in the study. The teachers are known to me as I work with them at the IPS. All grades were represented to capture the diverse perspectives of the phenomenon; participants were sampled randomly. Inclusivity was one of the requirements of the institutional review board (IRB). The random process ensured that participants are selected fairly, and that no participant felt excluded from the opportunity to share their perspectives based on expertise, race, or any other orientation.

I intentionally ensured that I provided a safe, comfortable environment that enabled the participants to share during the data collection process (Larsen et al., 2021). Before I embarked on data collection, I obtained approval from the IRB (approval number 03-25-22-0517056). After IRB approval, I requested written informed consent from study participants. After receiving consent from the participants, I shared the interview questions with them using my Walden University email. I arranged the

interview logistics, such as time and date, and that interviews would take place via Zoom

due to COVID-19 restrictions as the school. I shared the interview questions before the

interview date so that participants would be prepared before the interview. I also placed a

hard copy of the interview questions and the focus and goals of the study in the teachers'

mailboxes in a sealed envelope (Appendix A). Participants were encouraged to

communicate to me via my Walden University email address if they had any questions

about the study.

Data Collection

      I interviewed seven participants. Their demographics are listed in Table 1. The

participants were teachers at IPS who teach between pre-kindergarten and fifth grade.

The data collection process began with recruiting participants randomly. I sought

responses from a teacher from each grade or teachers who had taught multiple grades

during their tenure at IPS. After receiving responses from eight participants, I shared the

interview questions and the purpose of the study so that participants could be well

prepared. The interviews took place virtually, and participants identified the times that

suited their schedules best.

Table 1

Demographics of Participants

Participants	Years of teaching in IB	Grade
Participant 1	8	5
Participant 2	16	3
Participant 3	5	3
Participant 4	2	2
Participant 5	2	2
Participant 6	6	Kindergarten
Participant 7	11	Pre-Kindergarten

During the data collection process, I interviewed seven participants. I stopped the interviewing process when no new information was emerging. I knew I had arrived at data saturation as no new information had emerged from the interview. All the participants identities were protected by using pseudonyms; I used Participant 1, Participant 2, etc. Creswell and Creswell (2018) asserted that an interview protocol should be established before an interview process. The interview protocol I designed included a reiteration of the purpose of the research, the duration of the interviews, and assurance of confidentiality. I also repeated the same information at the beginning of the interview session, and the participants confirmed they were comfortable with proceeding with the interview process. The interview questions were made available to the teachers once they had signed the informed consent form.

As recommended by Creswell et al. (2018), participants were informed there would be no negative repercussion should they choose to withdraw their involvement at any stage. IPS was on a hybrid schedule at the time of the interviews due to the increase of COVID-19 cases, which meant that some teachers were on distance learning, and some were on campus. Participants were given the option of having a face-to-face interview or a virtual session, and they all chose to have the session via Zoom. Participants gave consent for me to record the interviews, and each interview session was about an hour long and was recorded using two devices: a laptop and a smartphone. Using multiple devices ensured the data were secure for reference and analysis. As an interviewer, I chose a quiet and secure location to minimize distractions and provide the interviewees privacy.

In this study, I explored teachers' perspectives on integrating ATLS to enhance transdisciplinary learning. A purposeful nonrandom sampling method was used while attempting to examine an intentional sample of a specific population (Merriam & Tisdell, 2016). Researchers advise starting with a small number of participants to have an in-depth exploration of a phenomenon. A larger sample may have a reduced effect to the complexity of the experience (Creswell & Creswell, 2018). I aimed at interviewing eight to 10 participants as this would ensure a likelihood that there would be representatives from every grade. After receiving participants' consent forms, only the fourth grade was not represented. However, one of the participants had already taught fourth grade the previous year, so they could provide valuable insights based on their experience with that grade.

Interviews have an effective ability to highlight participants' insights and experiences to explore a specific phenomenon (Creswell & Creswell, 2018). I designed interview questions for this study to probe for a deeper understanding of the teachers' teaching practices. Participants were advised of their rights and received informed consent via their private email addresses. Other information participants received included the use of the research, their right to discontinue participation at any phase of the research without any repercussions, and the time commitment during their involvement in the study. Participants' responses were respected and kept confidential as the interviews took place in a secluded and safe location. IPS has about 107 teachers at the school. Only seven teachers participated, which is a small percentage, but it was not a challenge to mask the identity of the participants and responses.

The data collection protocol entails ensuring participants are identified, seeking consent to conduct the study, and then collecting and documenting the data in a recorded form (Creswell & Creswell 2018). After obtaining consent from Walden University's IRB, I sought permission from the principal of the IPS to start conducting interviews. As I conducted the interviews, ethical issues that that would bring any form of discomfort to participants were considered. I was aware of the time allocated for the interview as I did not want it to go beyond the specified time. The participants shared their appreciation for the respectful consideration of their time. No power imbalances existed as I collaborate with teachers across various grades as they design instructions that include the critical elements of the IB at the IPS. I refrained from sharing any personal views during the interview process and did not offer my opinion on the integration of ATLS to enhance

transdisciplinary learning. I ensured neutrality throughout the data collection process by acknowledging my biases and beliefs on using ATLS in integrating a transdisciplinary curriculum. I used the nine open-ended questions that I had developed to elicit participants' thoughts, reflections, and opinions. I kept notes during the interviews in case I required follow-up questions.

Data Analysis

Merriam and Tisdell (2016) advised that they analysis method for qualitative data should take happen at the same time during the data collection phase. During the data analysis process, the authors recommended an inductive process, which entail that pieces of data are gathered to develop themes (Creswell et al., 2018). According to the authors, the researcher reaches data saturation when no new information emerges from the interviews. In the case of the interview process, I reached data saturation by the sixth participant. I noticed that I had reached data saturation when I started getting similar responses. Initially, I aimed to interview eight to ten participants, but I did not see the need to continue with the interview after the seventh participant. I proceeded to examine the information to find meaning by analyzing emerging patterns of the collected data through inductive study. According to Creswell et al. (2018) the protocol for data collection includes identifying participants that would provide the researcher with data that is required to gain a deeper understanding of the phenomenon, gaining permission to begin the collection of data, gathering the data, and documenting of the data category in the form of a recording. I labelled the data according to the main idea represented in the discussions. I used NVivo12© to transcribe the information and identify common themes

or patterns after interviewing the teachers. Important aspects of qualitative research include concepts of interpretations of the information, credibility of the participants, and trustworthiness (Creswell et al., 2018). Interpretations involves summarizing the findings of the study and then comparing them to literature that is current with the aim of gaining insights from the research study. The themes that emerged from the study included curriculum alignment, collaboration, time, and reflection. For a more thorough interpretation, I compared the findings with relevant literature, and I was able to get a broader perspective of the themes from diverse authors. I also conducted a self-reflective review to minimize any personal biases. I used self-reflective questions such as what is my role in the study? To remain objective.

According to Creswell et al. (2018) information analysis involves processes such as organizing information, coding the data, identifying common themes, and developing themes by constructing descriptions. I grouped codes that had common patterns by examining an overview of the themes that I had collected from the interviews. During the second cycle of coding, the salient ideas were prioritized after analyzing the data. During the third cycle of coding, the ideas were developed. As stated above, the themes for the study were as a result of the convergence of repetitious ideas that were generated.

The interview questions I identified for this qualitative project study are connected to the research question. They sought to address the phenomenon of teachers' perceptions of integrating ATLS to enhance transdisciplinary learning, which is the focus of my study. The interview questions were carefully selected and crafted to provide a deeper understanding of teachers' perspectives, the challenges they encounter, and the

strategies likely to support them while integrating ATLS using the transdisciplinary approach. The research and interview questions align with Gürkan's (2020) transdisciplinary integrated curriculum design model within the IB curriculum, as the conceptual framework suggests a six-step process that includes possible solutions that will provide teachers with a workable framework that they could use to enhance transdisciplinary learning. The notable phases in Gürkan's (2020) integration model include the transdisciplinary concept selection phase, brainstorming or collaboration phase, inquiry item writing, instructional planning, instructional assessment, and instructional review.

The use of semi-structured interviews was justified because teachers were already familiar with the researcher. This connection was likely to make teachers feel safe as they examined and reflected on the phenomenon without feeling threatened. However, my personal biases were likely to be minimal as I did not hold a supervisory position over potential study participants. In conclusion, the research and interview questions are grounded on Gürkan's (2020) Integrated Design Model, which aims to enhance teachers' understanding of transdisciplinary learning.

Role of the Researcher

The qualitative methodology involves data presented in a descriptive way, such as through written, spoken words, or observed behavior (Taylor et al., 2016). The author believed that for qualitative researchers to understand the meaning that other people attach to their lived experiences, they must be self-aware of their world views. Due to the inductive nature of qualitative research, the researcher's role is to reflect and develop

their unique understanding of the phenomenon and identify emerging patterns or themes connected to the data collected (Taylor et al., 2016).

Exploring and reflecting on the role of a qualitative researcher is therefore essential in the study. Creswell & Creswell (2018) advises that a relationship is established between the researcher and the participants during the data collection process, albeit for a short time. This relationship can likely influence the research and the findings in some way. The researcher's role is to provide an environment conducive for participants to share their insights. In the case of my research study, this manifested as giving teachers the choice of if to be interviewed face-to-face or virtually. It also involved working around the teachers' schedules so that they would likely be able to share their insights comfortably. I acknowledged subjectivity and aimed to make the research as transparent as possible. This would be achieved by sharing the findings with the participants and IPS administrators. I have been an educator for over 27 years and have worked at the research study site for 8 years as an IB PYP teacher. My current role at IPS is that of a curriculum coordinator, which entails collaborating with teachers on an ongoing basis to support them as they develop and implement the curriculum. I have no evaluative role and there was therefore no conflict of interest during the data collection.

The choice of the qualitative study was motivated by the IB school visit evaluation team in 2017. After reviewing the curriculum planning documents, the team noted inconsistencies in how the teachers developed the unit planners. After the IB School Visit Team Officials interviewed the teachers, they shared that "students appear engaged in learning, but there appears to be a lack of consistency in the documentation

and planning of knowledge and ATLS. They recommended that teachers should use the

unit planner while designing instruction. The year planner is a crucial document as it

supports teachers in collaborating, planning, and supporting their understanding of

transdisciplinary learning. Once this recommendation is reviewed and achieved, it is

likely to increase students understanding and development of the IB program's five

critical elements, including ATLS, Learner Profile, Knowledge, Action, and Concepts.

The teachers' experiences may also likely provide me with additional information that I

require to understand the phenomenon and hence share the knowledge with other

researchers.

Table 2

Correlation Between Research Questions, Interview Questions, and Conceptual Framework

Research Question	Interview questions
RQ1: What are teachers' perspectives on the inconsistent integration of ATLS at the IPS school? Conceptual framework Gürkan's (2020) transdisciplinary integrated curriculum design model: Phase 1.2,3, 4, 5 and 6	1) How does your school support you to understand and master transdisciplinary learning practices and integrate ATLS? 2) How do you plan your units? 3) What structure (s) has been put in your school to reinforce transdisciplinary learning practices and integrate Approaches to Learning Skills? 4) What is your perspective on Approaches to Learning skills? 5) What should be done to consistently integrate the ATLS at the IPS? 6) What is your understanding of transdisciplinary learning? 7) What are some challenges that you have encountered while integrating the Approaches to Learning? 8) What has caused these challenges? 9) How could these challenges be addressed?

Data Analysis Results

The framework of this study is Gürkan's (2020) transdisciplinary integrated curriculum design model that examined the teachers' experiences integrating ATLS through an integrated model within the framework of IB-PYP. Gürkan (2020) recommends a six-step process which are strategies that can be used to support teachers to successfully integrate ATLS consistently to enhance transdisciplinary learning which is the focus of this study. The six-step process includes: Transdisciplinary concept selection phase, Brainstorming or collaboration phase, Inquiry item writing, Instruction planning, Instruction assessment, and Instruction design review. This framework if a good fit for the study as Integrating ATLS undergoes various processes in transdisciplinary learning. Gürkan's (2020) framework seeks to examine strategies that can be used to support teachers to successfully integrate skills and concepts to enhance transdisciplinary learning. The different process that Gürkan's (2020) recommends can be applied in inquiry-related teaching which is a method of learning and teaching that takes place at IPS. Gürkan's (2020) integrated design model therefore provided an insight into approaches that teachers can take or consider as they develop their understanding of integrating ATLS in their lessons.

Responses to nine questions resulted in four themes. The four themes that resulted from this data analysis are: Articulation of Curriculum, Limited Time, Collaboration, and Reflection. The interview questions aligned with certain themes. For example, Articulation of Curriculum was derived from questions one and two which probed how the school supported the participants to understand and master transdisciplinary learning

practices and integrate ATLS. The other question was how the teachers plan their units. The theme on Limited time was connected to question four and five respectfully which examined teachers' perspective on ATLS and what action should be taken to consistently integrate the ATLS at the IPS. Question seven: also provided a lens on limited time as it sought to explore some challenges that teachers have encountered while integrating the ATLS. The theme on collaboration emerged from question six and eight respectively which aimed at exploring the teachers' understanding of transdisciplinary learning, and what has caused these challenges. The theme of reflection came was prompted by question nine that invited participants to think about how the challenges could be addressed.

Theme 1: Articulation of Curriculum

The theme of Articulation of Curriculum refers to a process of making learners experience visible by ensuring that it connects with previous experiences that is offered across other grades. The connectivity of the curriculum provides articulation and is useful in improving student achievement as well as providing clear guidelines or benchmarks.

Participants were asked how the school has supported them to understand and master transdisciplinary learning practices and integrate ATLS and how the teachers plan their units which are interview question number one and two respectively. Their responses centered on structures for the teachers to meet with teachers from other grades, engagement with teachers from diverse grades, and time to periodically review, moderate, and reflect on what has been covered.

Participant 2 shared that,

If the school culture is all about learning how to learn, then I think that will
promote their use in our daily driving engagements. If it is not evident as a school
and in its culture, it will be hard because, for example, if we always focus on
meeting, what is the content area? How do we know that students are proficient
and that the ATLS are intact? It is important that teachers meet with teachers
from other grades to discuss the learning engagements with other teachers and
how the ATLS are being used consistently across the grades.

The participant proposed that school leaders at IPS should ensure that
"Articulation of Curriculum becomes a culture within the school" so that teachers could
have periodic sessions to meet and talk about learners' experiences and how the ATLS
build on. Participant 2 further remarked, "How do we ensure we meet our teaching
targets? What do we want as a school? That is what we promote". That is what we talk
about, so it is a common language that brings more cohesion"

Participant 1 reflected,

Having shared projections and horizontal and vertical discussions about how the
ATLS and other key elements of the curriculum, such as what concepts are being
covered could be enriching and sharing best practices and resources could be
beneficial to teams, we hardly know what the other teams are working on.

Participant 1 summarized the conversation by sharing that when teachers meet,
Articulation of the Curriculum is happening authentically. After analyzing the two
participants' reflections, the interviewees are hoping that there will be a review of
structures to allow opportunities for teachers to know and understand what is happening

in other grades at the IPS. The insights of Participant 1 and 2 supports the findings of Merx et al., (2018) who believed that curriculum alignment can be examined on different three levels such as at single subject structure perspective or at program level. The authors opined that the third way of aligning the curriculum is by reviewing it from the student's learning experience. This includes gathering students' data using various strategies such as assessments, reviewing students' digital portfolios, journals, and teacher reflections, and then analyzing that information to make data-driven decisions.

In the case of the IPS, the program level curriculum review would include a review of the program of inquiry which is the structure that articulates the content of what students are learning, how they will learn it, and when. The POI is a vital curriculum document as it explores the transdisciplinary themes across the IPS that connects knowledge and ATLS to enable students to develop conceptual understandings. A review of the Program of Inquiry by teachers at IPS would involve a deeper understanding of what the product or the result of the curriculum would look like after meaningful integration. The IPS uses various internal and external students' assessments such as levels of understanding, students' reflections, and Fountas and Pinnell, a literacy assessment program that assesses students' literacy development. Assessment in the IPS is viewed as an ongoing process, and every learning engagement is considered a form of assessment.

Merx et al. (2018) believed that curriculum alignment is a shared responsibility and advocates those teachers and students should be involved in the co-construction of knowledge. The author believes that when students are involved in the learning process,

they are likely to be more vested. The two categories, that is single subject and program level, are a process-based approach and curriculum alignment, according to Merx et al. (2018), requires an intentional, holistic review and the involvement of role players such as teachers across different grades, pedagogical leaders, and administrative leaders. The author recommends that structures be put in place to support curriculum alignment.

While responding to how the school has supported teachers to understand and master transdisciplinary learning practices and integrate ATLS Participant 3 shared that,

I think there is scope for us to be more mindful about which part of the transdisciplinary theme we are focusing on. When we understand the intention to have authentic units and be responsive to our students learning, I fear that that could sometimes be at the cost of the parts of the transdisciplinary learning. Often in my grade-level meetings, we ignore what the grade below and above is working on, so we should be intentional on vertical alignment and the scope that we should be focusing on.

Participant 6 believes that curriculum alignment can be achieved by "being consistent in the application of the ATLS and other elements of the IB curriculum such as Learner Profile and making sure that it is happening across the different grades." The perspective of Participant 6 identified with the findings of Hwa et al., (2020), who recommends that leaders should make provision of supportive, practical, coherent, and sustainable structures to teachers and pedagogical leaders to ensure consistency of practice that promote Curriculum Articulation. Participant 3 believed that Curriculum Articulation could be best addressed if teachers understand what other grades are

focusing on to avoid repetition of learning standards. Participant 3 clarified that "looking at the POI is not enough; a review of units is important". These sentiments were similar to Ornstein et al., (2018) who stated that curriculum articulation is a curriculum design that aims to interconnect various facets of learning experiences of standards in many ways both vertically and horizontally. The authors believe that horizontal articulation identifies the focus of the curriculum and is mainly focused on the achievement of the same outcomes, teaching strategies, teaching and learning materials, and lastly the evaluation procedures. Vertical articulation on the other hand is concerned with the way the curriculum is sequenced or the articulation and escalation of content from one grade level to another (Ornstein et al., 2018).

Participant 3 shared that a strategy achieving Curriculum Articulation would be creating release time for teachers to visit other classrooms to be familiar with what is happening in other classrooms. Participant 4 suggested that from the homeroom perspective, having opportunities to see how the specialists integrate the ATLS would enable me to see a unit through the specialist lens. This is a great idea for all levels of integration. Similar sentiments were shared by Participant 5, who reflected,

> An emphasis on what learning looks like as a whole should be explored. When teachers only focus on teaching in their grades, it becomes challenging to see the big picture, and some ATLS and key concepts may be repeated or missed.

Some important information to consider about the context at IPS is that since the breakout of COVID-19, many structures have been adopted to address the challenges of the pandemic. For example, teachers have been collaborating virtually to ensure that the

learning community is safe. Participant 5 acknowledged that the revised structures had contributed to inconsistent curriculum alignment. Participant 5 presented challenges:

Since 2020 teachers rarely meet in person and due to the fatigue of teaching online, there have been disjoint views on what is being taught across grades. New members that join the team might require professional development so that they may be able to contribute during the planning phase. If you are unsure about the IB content, it may be challenging to understand how to articulate the curriculum.

Teachers working at the IPS renew their contracts annually, so some grade levels have new teachers joining each year, likely resulting in a knowledge gap. Pritchett (2017) shared that successful transdisciplinary program require a multi-dimensional design space in their context. In other words, the best approach relies on role players' ability to adapt to the context. The authors' views connect with the IB organization's stance that it is vital to understand the uniqueness of each school and the context under which it operates (IBO, 2018). The IB organization encourages the school community, which comprises administrators, pedagogical leaders' teachers, parents, and other role players, to be aware of the context of the school, such as the environment under which it operates, the location, etc. as all these play a role on the curriculum implementation (1BO, 2018). Understanding the school context is also likely to enable teachers to explore authentic ways to attain curriculum alignment.

The six-step processes that Gürkan (2020) recommended were strategies that could likely support teachers to successfully integrate ATLS and concepts to enhance transdisciplinary learning, which is the focus of this study. The strategies can be

connected to the research question that seeks to explore teachers' perspectives on the integration of ATLS at the IPS school. Therefore, they can be used as strategies to support teachers with the curriculum alignment. Some of the participant's responses suggested strategies that connect with Gürkan's (2020) six-stage process. For example, Participant 5 shared, "Discussions across grades are important, just having horizontal and vertical discussions about how to integrate concepts would be enriching. Also, sharing best practices and resources would further assist with integrating ATLS across the different grades."

When requested to collaborate, Participant 5 added that "sharing best practices might provoke teachers to have conversations about what is happening in their classrooms as this might lead to larger conversations about what is happening across the different grades". This comment from the participant is connected to the brainstorming or collaboration phase that Gürkan (2020) recommends in his six-stage process. During this stage, key curriculum elements such as the conceptual or enduring understanding, key concepts, learner profile, and ATLS are identified and integrated into the IB curriculum lesson plans. This is a critical stage as the program design, such as learning goals and critical elements, is clarified, and articulated.

In conclusion, examining the articulation of the curriculum at different stages of its implementation can assist to identify imbalances or inconsistencies that occur. A well-articulated curriculum encompasses a defined relationship between learning goals, content, teaching, and student assessment strategies. Articulation analysis can therefore provide enriched information about the curriculum dimensions.

Theme 2: Limited Time

As mentioned in the introduction of themes from this study, the themes are interrelated and interdependent. Limited time in the context of this study refers to insufficient opportunities that are available for teachers to integrate ATLS consistently to enhance transdisciplinary learning.

According to Participants 4, 7 and 3 limited time was mentioned by most of the participants as the barrier to achieving effective collaboration due to diverse reasons during the collaborative meetings or the planning and implementation of ATLS. The various reasons shared by the participants ranged from scheduling which often conflicts the time that teachers could meet to collaborate. Participant 5 shared that "even an informal meeting is okay as teachers can still share their practices

The interview questions that were asked that resulted in the theme of limited time were questions 3 and 5 which probed: what structure (s) has been put in your school to reinforce transdisciplinary learning practices and integrate Approaches to Learning Skills? And what should be done to consistently integrate the ATLS at the IPS? Participant 7 articulated the challenges that pertain to the time they experience during the planning phase in meetings. He shared that "I think teams have to be very intentional during the planning meetings as we have limited time to collaborate and decide on the focus of the lessons." While responding to the interview question of what can be done to support teachers with integrating ATLS and transdisciplinary learning, Participant 7 acknowledged that,

The school supports teachers by having structured collaboration meetings where teachers are invited to collaborate and plan what should be taught. However, the team cannot always complete aligning ATLS and other concepts that would be most pertinent to what our students need at that time.

When probed further about how long the collaboration meetings are and how the meetings are structured? Participant 4 acknowledged that "all these are done in good faith, but I wonder if meeting structures would be examined so that they can be more impactful".

Participant 7 shared that,

The meetings take about an hour, and the teams meet with the curriculum coordinator once in an 8-day cycle. Part of the meeting includes a discussion on logistics, for example, planning for events that will be happening at the IPS, so curriculum planning time is not compromised. During the two and a half years that the school was alternating between distance and hybrid learning, significant time was spent discussing scheduling, etc. It was essential to set the teachers and students up for success. How would meetings be set up so that they could be more productive?

Participant 5 believed that,

The sharing of teaching experiences may be extended to teachers observing each other in the classrooms and sharing best practices. Teachers could also share

information they may have received during professional development during the

teachers' meeting, which will likely enrich and empower other teachers.

The sentiments of Participant 5 are related to the findings of Van Schaik et al.,

(2019), who believed that participation in research-informed and research-based meeting

approaches may provide teachers with a deeper understanding of intentional participation

in collaborative meetings. According to the authors, supportive school leadership is an

essential condition for teachers' knowledge co-construction during collaboration meetings

and structures of classroom schedules. Similar sentiments are shared by Hellmann et al.,

(2018), who believed that transdisciplinary coordination and collaboration at the

organizational, personal, and curricular level are essential elements that develop

integration and coherence.

While responding to the question "what should be done to enhance the ATLS at

the IPS consistently? Participant 4 responded that "the administrators and or pedagogical

leaders should review the priorities as many items are often on the meeting agenda. Often

the teachers want to discuss so many items on the agenda as they deem all of them as

important".

Participant 3 shared that,

Teachers are willing to improve the practices when provided with time to

collaborate and plan how to integrate the critical elements of the IB curriculum,

such as the ATLS. The missing piece is, or the challenge is, having time dedicated

to collaborating with other disciplines and other specialist teachers intentionally. So, I think we have the intention and hope, and the buy-in is there. However, structurally, the system, schedules, and events often planned in the school do not support that. More structure should be implemented for transdisciplinary learning. We could also review the structures of meetings so that we could spend more time exploring how the ATLS could look like so we can be more consistent in terms of how students will practice these skills. Teachers should have the agency to explore structures that best support their teaching needs.

Tao et al., (2017) believed that when teachers become increasingly involved in matters that directly pertain to them, they are likely to be more creative and accountable. According to the authors, teacher agency is an essential quality of teachers to make meaningful changes to their professional environment. Another advantage of embracing teacher agency is that teachers understand their students and learning environment better and are better positioned to refine and implement structures directly related to teaching and learning (Tao et al., 2017).

Chaaban & Sawalhi, 2020; Liu, Wang & Zhao (2020), provides a deeper insight towards the concept of time as the authors believed that teachers are active agents in adapting existing structures and policies when provided with an opportunity to be innovative. Teachers' capacity to decide on implementing matters related to teaching and learning is agentic and teachers should be encouraged to be flexible and explore opportunities that best address their teaching and learning needs. The study of

McLachlan, et al., (2018) portrayed curriculum as a model and a living document representing the organization. The authors believes that decisions that teachers take regarding the learning process should be carefully thought out as it manifests as the learning engagements that the teacher will present to the students. It is essential that teachers' time to plan the curriculum is carefully examined and the necessary teaching and learning adjustments made

In conclusion, from the Participants viewpoints, a review of the content that constitutes the teachers 'collaborative meetings might provide some time for teachers which is a valuable resource. Teachers enact their professional agency in diverse ways across educational contexts. Therefore, utilizing this strategy in creating structures to enable them to integrate ATLS to enhance transdisciplinary learning could be a consideration (Bao Ren & Wang, 2020; Ruan & Zheng, 2019; Tao & Gao, 2017). Margolis et al., (2017) believed that informal learning is likely to enable teachers to work together in a collaborative setup during curriculum planning. The authors further advised that teachers' beliefs influence their perceptions of the curriculum. For example, if teachers perceive that they are unfamiliar with a curriculum, their beliefs will likely influence how they engage and teach it. Van Schaik et al., (2019) who opined that three approaches exist which are likely to support teachers to co-construct knowledge during the collaboration meetings and ultimately save some time. The author refers to collaboration meetings as a teacher learning group. The first approach is practice-based; this involves teachers sharing their teaching experiences. An example of this could be for teachers to record their lessons and share them with other teachers. The collaboration

meetings may then include a brief synthesis of some new knowledge teachers would try out. The second is research-informed; teachers can prepare students' samples before the meeting. After reviewing evidence of student learning, the decisions regarding the progression of lessons would then be agreed upon based on the data analysis.

Theme 3: Collaboration

Teacher collaboration plays a vital role in allowing teachers to share their best practices and learning engagements. For this study, collaboration will be explored as the session when teachers meet to plan lessons and to examine important aspects of teaching and learning. Collaboration was a theme that was identified amongst all the participants. The participants all viewed collaboration as an opportunity for teachers to share their ideas and plan learning engagements that are meaningful to the students.

The research questions that led to the creation of the theme collaboration were question 2 which explored how teachers plan their units and question 6 which probed for participants understanding of transdisciplinary learning. Participant 1 provided some context about the set structure of teacher collaboration meetings at IPS,

> The teachers meet to collaborate once in an 8-day cycle. The 8-day cycle is a
> schedule that the IPS uses and is designed by the IPS administrators after
> reflection with the learning community and consulting with an external
> scheduling expert about two years ago.

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According to Participant 5,

The purpose of the 8-day schedule was to provide teachers and specialists with

more opportunities for students learning experiences across the different grades.

Before the 8-day schedule was adopted, the school was on a 5-day schedule, and

teachers' feedback was that they needed double blocks to implement writers' and

readers' workshop practices.

The single blocks of 45 minutes were too short for inquiry and student-led

instruction. The specialists at the IPS school were also in favor of an 8-day schedule,

allowing them to have more engagements with the students.

For example, according to Participant 5,

Specialists' teachers are now able to meet students at least twice in an 8-day

cycle, and even if their teaching blocks fall on a public holiday, there is a chance

that before the cycle ends, they would still have an opportunity to meet with the

students.

Homeroom teachers have more time with students to implement various

engagements in their homerooms. Participant 5 believes that although the 8-day schedule

may have addressed the need stated above, it has not improved collaborative

opportunities for teachers.

Participant 2 shared that

During the collaborative meetings, the pedagogical leader, also referred to as the

curriculum coordinator, is always present to support teachers' understanding

during the meeting and is available to answer any curriculum-related questions or

clarify misconceptions. The meetings look different from grade to grade, but they are generally about an hour long.

The teacher meetings take place during World Language time as this is the only time that all teachers will be available. World Language refers to additional languages that students are learning or developing, such as Mandarin, Korean, or Spanish in the higher grades.

The sharing of Participant 2 is aligned to the study of Larson et al., (2017), who opined that teacher collaboration is a strategy that supports teachers' instructional improvement. The authors believed that investing in teacher collaboration improves curriculum development and is a resourceful way for teachers to support each other professionally. Darling-Hammond et al., (2017) take a similar stance, as the author notes that effective collaborative structures provide opportunities for teachers to solve problems and learn together. Darling-Hammond et al., (2017) identified teacher collaboration as a factor that brings positive changes to the learning community. While responding to how the school supports teachers in integrating ATLS, participant 5 responded by sharing that "the school supports me by having a structured collaboration meeting where we are invited to collaborate and consider what ATLS would be most pertinent to what our students need at that time. The school also supports me by enabling me to share my perspective during meetings".

Participant 4 had a different perspective and reflected that,

If we can collaborate more, we see learning as a joint venture, not just my class or myself. The learning process will be richer because that is the idea of

transdisciplinary learning, whether it is an ATLS or a concept, an idea, or a problem. Not everyone participates, and this could be for various reasons such as that teachers may not be familiar with the key elements of the IB curriculum, or they may not feel comfortable to share in a large group setting.

From the varied viewpoints of the participants, it appears that collaboration is happening, but it is implemented differently across the grades. Participant 3 provided more insights on what is happening in her present grade level meeting, which is like what took place in a different grade that she taught last year.

Having shared projections about what the units of inquiry would be helpful to teachers as we are all at different stages in our teaching journey. Discussions about the horizontal and vertical articulation of learning should be prioritized, sharing best practices and resources. If teams focus on consistency of language and approaches to teaching, perhaps we will see positive changes in students learning. This would be useful for teachers who do not have much experience in the IB curriculum but professional development on the use of ATLS would be ideal.

Another example that Participant 3 shared about their perspective on what support is required during collaboration meetings is that "developing teachers' knowledge on the IB key elements such as the ATLS, Concepts, and Action may help all teachers to engage actively so that it can be clear what to teach." Participant 2 thoughts were more aligned with making sure that during the collaboration meeting, teachers were aware of the importance of the ATLS as this would enable teachers to visualize how to integrate them into the learning experiences.

Participant 2 shared that,

Guiding students to be lifelong learners is crucial because as educators, our goal is

not to provide students with information or content but to equip them with skills

to be independent learners. Therefore, thinking, social, communication, self-

management, and research skills are life skills and should be the focus on every

teacher curriculum-related collaboration.

As mentioned by Participants 3 and 4, teachers' IB experiences are varied, and

therefore their approach to ATLS may likely be influenced by their current

understanding. According to the Participants, there appears to be a need to consider

providing some professional development to the teachers or reviewing the IB's Approach

to Teaching (ATT). The Standards and Practices (IBO, 2020) offer a guide to teachers

working in the IB schools on ways that they would develop and implement the

curriculum.

The IB curriculum guide recommends six Approaches to Teaching (ATT)

strategies that teachers can use to design a transdisciplinary curriculum that is evident

through inquiry-based learning experiences and engagements (IBO, 2018). ATT would

help design the curriculum and create a common language for teachers to brainstorm and

collaborate on developing effective practice. As opined by Participant 3, a "focus on

consistency of language and approaches to teaching" would likely be achieved if teachers

understand transdisciplinary learning, which is explained in depth by the Approaches to

Teaching (IBO, 2020). The six ATT practices are: grounded on inquiry teaching, focus

on conceptual understanding and transdisciplinary approach, are developed in local and

global contexts, emphasizing effective engagements that include teamwork and collaboration, are designed to remove barriers to learning, and are informed by assessment. The six Approaches to Teaching underpin teaching in all IB programs. The approaches are intentionally broad, designed to provide teachers with the flexibility to choose strategies that reflect their classrooms and school contexts as the learning needs of their students. I will be expanding on these teaching approaches below.

Grounded on Inquiry Teaching

The first ATT that I will explore is inquiry-based instruction, a student-centered approach where the teacher's guide the students by asking open-ended questions, and students are expected to solve problems (IBO, 2018). Participant 1, While answering the question, "How do you plan your units?" answered that "the teachers have a planner that we use to guide us, but we have new teachers in the team, so not everyone in my team understands how to teach using inquiry. The teachers have agency on how to design their teaching plans.

Teachers who teach in an IB-related school must use an inquiry approach in their instruction. This approach is very different from traditional teaching methods. The teacher is a facilitator, and he or she supports the students by providing them with opportunities where they can ask questions, solve problems, and make meaning of the concepts that are being explored. Inquiry is a pedagogical approach of the PYP and recognizes students as active participants in their learning and as taking responsibility for that learning. Drawing from the transdisciplinary nature of the identified themes and

concepts, the inquiry approach is perceived as an authentic way of learning for students

to relate to, explore, and understand the world around them (IB, 2018).

Focus on Conceptual Understanding and Transdisciplinary Approach

The second ATT is one where teachers' focus on conceptual understanding and a

transdisciplinary approach to teaching and learning. To embed a developed understanding

of practice, teachers should focus on conceptual teaching as it develops students'

understanding of ATLS as concepts are used across various disciplines. Teachers are

expected to support students in making connections across the different subjects they are

being taught. Conceptual lessons focus on concepts instead of individual facts, and ideas

become part of a larger category (IBO, 2018). Conceptual-focused instruction teachers

may support homeroom teachers and subject teachers to collaborate meaningfully using

the transdisciplinary approach. Participant 4 shared,

> There is a need for homeroom teachers to collaborate with the specialist's teacher
>
> so that there can be a shared understanding. So, during the collaborative meetings,
>
> we look to use our language and arts to complement the unit.

While emphasizing a transdisciplinary approach to teaching, Participant 4 gave an

example of teaching Math not just as a "stand alone or taught independently" but using a

transdisciplinary approach. She gave the example of using ATLS in math which

strengthens the students' Mathematical practices. "For example, I am currently working

on a unit on patterns, and the students are exploring how the concept of patterns could be

explored in a music or social studies set-up." Gürkan's (2020) integrated design model

proposes a six-step process that includes strategies that can be used to support teachers in

integrating ATLS and concepts to enhance transdisciplinary learning successfully. The Brainstorming or collaboration phase that the author recommends is the phase where the Primary Year Program key elements such as ATLS, concepts, learner profile, and action are identified and integrated into the IB curriculum lesson plans. This strategy is likely to support teachers as they develop their understanding of the ATT is concerned with conceptual understanding and a transdisciplinary approach to teaching and learning.

Developed in Local and Global Contexts

The third ATT that IBO (2018) recommends is an approach to teaching exploring the curriculum offering from a local and global context. The IB curriculum is developed to be applied in both local and global contexts so that students can learn the different forms of communication that are required when one is connecting from a personal, local, national, or global perspective. This provides an authentic opportunity to integrate international mindedness into the instruction (IBO, 2018). Teaching developed in local and global contexts uses real-life contexts and examples. The teachers' role is to encourage students to process the new information they acquire by connecting it to their own experiences and the world (IBO, 2018). The ATLS can best support these ATT as they provide opportunities for students to research and communicate their findings to a broader community.

Participant 3 referred to ATLS, namely, thinking, social, communication, self-management, and research skills, as life skills and reckoned that they should be the "focus of every teacher curriculum-related collaboration". If teachers at the IPS focused on this ATT during their collaboration meetings, they would be developing international

mindedness, which is enhanced by students' understanding of their civic roles as global citizens (IBO, 2018). International mindedness from an IB perspective is defined as a view of the world where people believe that they are connected to the global community and, as a result, acquire a sense of responsibility towards local or global societies. People who are internationally minded appreciate and place value on people's diversity, cultures, and societies. They are intentional with learning more about others and, in so doing, achieve vices such as empathy and respect (IBO, 2018). According to IBO (2018), teaching targeted toward developing students' global or international citizenship may have a variety of intended outcomes. These may include but are not limited to increasing students' knowledge and awareness of politically, socially, and culturally oriented issues and their rights and responsibilities.

Include Teamwork and Collaboration

The fourth ATT encompasses teamwork and collaboration. According to the IB Program and Practices (2020), teachers are expected to promote effective relationships that enhance purposeful collaboration. Collaboration among teachers is likely to create a learning community that is positive and dynamic. From the responses of some participants, collaboration is taking place. However, there is an opportunity for structures to be put in place so that the content of the collaboration is more succinct. This insight was shared by Participant 7, who said that "connecting with the specialists' teachers is not just about knowing what concepts they are teaching but sharing what it might look like through their lens. I am interested in seeing and hearing how the specialists scaffold the ATLS". The participant is hoping to have a broader scope beyond the classroom.

According to the IB's Standards and Practice's teachers working in the IB school are encouraged to involve students while designing learners' engagements (IBO, 2018). Therefore, a notion exists that students could collaborate with their teachers to share and enhance specific skills. Students' and teachers' collaboration may provide opportunities for developing more effective and personalized strategies for teaching and learning (IBO, 2018).

Remove Barriers to Learning

The fifth considers barriers that may be present and likely hinder students learning. For students to access the curriculum, all barriers to learning must be identified and addressed. Therefore, teachers need to know their students and understand how they learn best. According to IBO (2018), the foundation of the IB approach to teaching and learning is for teachers to understand the learner's holistic capabilities. During the collaboration, teachers should explore how to plan instructions that all students can access and be successful. Perhaps when teachers review students' work and decide on what engagements to plan, there could be an opportunity to identify if the learning will be appropriate for all the learners or if it needs to be differentiated. Shah et al., (2020) advise that a differentiated classroom's goal is to maximize students' growth and individual success. The authors explain that an ATT which prioritizes student personalized learning may likely require that teachers are continually reflecting, collaborating, and developing processes of students' engagements and assessment (Shah et al., 2020).

Informed by Assessment

The sixth and last ATT focuses on teaching informed by students' assessments. Teachers must reflect on students' assessment data and take time to analyze the data before planning new engagements. During collaborative planning sessions, teachers should review students learning and analyze evidence of learning by looking at students' work (IBO, 2018). Ruano et al., (2021) emphasize the importance of structured collaborative sessions as these present teachers with opportunities to reflect on their teaching practices. Teachers can also make the required adjustments accordingly, which will likely improve classroom instruction. All participants acknowledged that collaboration is happening in the different grades as time is set apart for teachers to meet. However, there is limited opportunity for essential curriculum elements such as ATLS, and Learner Profile to be discussed and reviewed. Also, teachers meet during World Language times, so there is no collaboration between World-Language teachers and Homerooms throughout the year. Participant 3 shared,

> Due to the lack of collaboration between the World- Language teachers and Homerooms in my grade, I do not have knowledge of how the teachers would support me to imbed ATLS yet most of my students are Korean speakers, and I would want them to research in Korean so that they can have access to the concepts using their mother tongue.

According to Hargreaves et al., (2017), teacher collaboration mainly focuses on sharing ideas. The authors, however, suggest that having teachers together is an opportunity for teachers to concentrate on teachers' joint work, such as creating

classroom engagements, as this develops a collective sense of responsibility and ultimately improves their teaching practice. The author believes that teachers working closely to design instruction is a form of professional development. These sentiments are echoed by Participant 5, who stated that "when teachers work in small groups, they become more intentional about various aspects of learning in place. Whatever skill is identified during the planning, we could collaborate to design our lessons to enhance our practices."

Hargreaves et al., (2017) believed that for effective teacher learning to occur that leads to improved teacher instructional practices and student's learning growth, three essential features should be considered. The first is that the learning activities should be intense and sustainable, which means that structures should be carefully investigated and implemented. The second is that collaboration should be embedded in teaching practice, and third, teachers' meetings should be authentic and transdisciplinary. The author opines that it is vital that the engagements that teachers engage students in are challenging yet age appropriate so that students can use the skills productively (Hargreaves et al., 2017).

Theme 4: Reflection

The IB standards recognize the reflection as an integral part of the curriculum framework. Reflection is embedded in the foundational standards and practices of the IB inquiry-based teaching model (IBO, 2018). The IB curriculum has ten Learner Profile attributes, one of which is reflection. It states that IB students consider their learning and experiences. They can assess and understand their area(s) of strengths and limitations to support their learning and personal development (IBO, 2018). Therefore, teachers should

reflect on an ongoing basis to support students to achieve this capability. The study of Shalabi (2018) opined that; reflective practice is a significant action as it assists educators in making knowledgeable choices about learning engagements that have taken place over time.

According to Shalabi (2018) there are three types of reflection: reflection in action, reflection on action, and critical reflection. According to the author, each type of reflection provides teachers and students an opportunity to think about how to make learning more equitable and meaningful. Reflecting on the teaching experiences can also assist teachers in important scaffolding elements of the IB curriculum. The teachers can lead the reflection process as they may be more informed on the teaching targets (Shalabi,2018). I will be providing more information below on the three different types of reflection and how they are likely to assist teachers as they explore ways of integrating ATLS using a transdisciplinary approach.

Reflection in Action

According to Shalabi (2018), reflection in action refers to when one is thinking about what is currently happening, intending to make any required adjustments. When asked to explain how the units are planned, Participant 5 responded by sharing,

> We always start by reflecting on what happened. As I stated previously, we always started with what we are reflecting on this unit by reflecting on what we did last year and then having conversations about the present unit and how we could make it more meaningful. For example, the conversations about what is

relevant right now. So, we think about what is happening in our students' lives, what's relevant and authentic to them now.

Participant 6 added that "I think moving forward, it's through reflection and carefully planning what area of ATLS that the students require would enable teachers to be successful. Perhaps the teachers should look at ways to be reflective and innovation as this is one of IPS's teachers' traits".

The teacher traits that participant 6 referred to have been identified by the IPS leadership as an attempt to define personal and professional qualities that are essential for a teacher to be successful at IPS. According to Participant 6,

> The six teacher traits recognized at IPS are: globally minded- the IPS defines this as a teacher with a global perspective and an understanding of the future needs of the students as they come from diverse locations globally. Innovative- a willingness to explore educational approaches that enhance and enrich students' experiences to identify and take advantage of teaching and learning opportunities. Collaborative- the desire to create professional relationships with colleagues and creatively contribute to ensuring that teams work effectively. Professionally grounded- be not only knowledgeable but also be passionate about learning and be aware and comfortable with the IPS' mission.

It also requires that teachers are conversant with the research that supports the school pedagogical practices, such as an inquiry-based approach. Student☐centered demonstrate a commitment to the well☐being of students at the IPS and prioritize engaging with the students collectively and individually through interactive activities.

Lastly, teachers at the IPS are expected to be technologically competent, that is, to use technology successfully by integrating it meaningfully into the learning engagements.

Reflection on Action

Reflection on action refers to retrospective contemplation that teachers may undertake in their practice to uncover the skills and knowledge used in various areas of learning. It requires analyzing and interpreting the learning engagements to make progressive changes or adjustments (Shalabi, 2018). While Participant 7 shared their transdisciplinary learning experiences since they started working at the IPS 10 years ago, the Participant mentioned that "careful consideration should be adopted on how the transdisciplinary themes connect to the relevant context and concepts". The participant gave specific examples of how documenting learning and the use of consistent language across grades is likely to assist teachers in integrating ATLS consistently across different grades. According to the participant, asking reflective questions such as "how do we continue to integrate this ATLS?" and what these skills look like in the classroom all assist in likely extending the students' understanding of ATLS and might also enable teachers to enhance teachers' reflective skills and collaboration opportunities during the planning sessions.

Critical Reflection

Theobald et al. (2017) describes critical reflection as the most advanced form of instructional reflection. According to the author, critical reflection increases one's understanding to enable change. Teachers who practice critical reflection will likely develop adept questioning and designing capabilities within various teaching and learning

situations. A teacher that engages in critical reflection does not only rely on their

experience or assumptions but asks questions about situations with a view of enhancing

or enriching the teaching experience. Critical reflection may also challenge teachers to

abandon situations that may have mediocre tendencies by inquiring deeper into the

students' learning and further questioning their practices (Theobald et al., 2017).

While responding to the question of what could be done to enhance

transdisciplinary learning at the IPS, Participant 3 reflected critically,

> We need to think about what is happening in our students' lives, how relevant and
>
> authentic are the ATLS and concepts that we offer them? How could we support
>
> students to use the ATLS to impact the world? and what additional skills do they
>
> need?

Shalabi (2018) summarized the importance of reflection by sharing that reflection

is a continuous process for practitioners to participate in a cycle of self and collective

assessment. Through reflection, teachers are likely to understand that their practices can

improve students learning.

The project deliverables included a hands-on PD that catered for the needs of the

teachers in the IB-setting as per the findings that emerged from the study. The hand-outs

and resources that the teachers were provided during the training were carefully

researched and put together as a response of the findings. Teachers would continue to

reflect using various forms such as videos and visible thinking routines and the

reflections would be documented in the Learner Management System so that it would

benefit other teachers at the IPS or other teachers in an IB-related setting locally, nationally, or globally.

Summary of Data Analysis

Interviewing the participants was insightful, and I gained a new understanding based on the teachers' experiences. I was most appreciative of the participants' kind gesture in agreeing to have the interview during a period close to the preparation of the Student-Led conference. The school had been using a hybrid model due to the increase of Covid-19 infections among teachers and students, so I was aware that teachers were fatigued. This was not evidenced during the interview process, and all participants were eager to share their insights. At the end of the interviewing process, some patterns of information were identified, and after coding, I identified four themes that I have expanded on in the previous section. The findings of the data analysis provided a valuable lens into this study's research question: what are teachers' perspectives on the inconsistent integration of ATLS at the IPS school?

Each of the themes was supported by Gürkan's (2020) six-step integration process, which recommends strategies that can be used to support teachers in successfully integrating skills and concepts to enhance transdisciplinary Learning, which is the focus of this study. The participants sharing were acknowledged and used alongside authors that have written about the themes identified. The themes were supported and acknowledged the recommendations that the research participants shared. Understanding each participant's sharing provided me with the opportunity to explore the context of the IPS educational setting. Based on the information provided by the seven participants, the

inconsistencies in integrating ATLS using a transdisciplinary approach to learning have been likely caused by various factors such as scheduling, teaching experience of the teachers, the limited time provided for teachers to collaborate and brainstorm with other teachers on the core offering of the IB curriculum and precisely how to integrate the critical elements of the IB curriculum such as ATLS. Other factors that come to play are are Covid- related as teachers were unable to meet physically to plan or to share ideas meaningfully as they were working online. Having virtual meetings and teaching online seemed to have been significant "screen time" for the last two years. The themes, as I stated previously, are interconnected and interdependent. For example, due to scheduling, collaboration may be affected by the time set for the meeting. Once structures are put in place to support teachers to have more meaningful engagements, such as vertical and horizontal articulation across the different grades, there is a likelihood that curriculum alignment might be achieved. It is noteworthy to state that most of the mentioned factors seem to be beyond the teacher's scope of practice and influence.

An example is that teachers are not in charge of the scheduling as this is the senior administrator's responsibility and may also not have the mandate to change or extend the structure of the meetings. Darling-Hammond et al., (2017) task leaders with the responsibility of ensuring that teachers understand what should be taught and that they are supported by setting up structures that enable teachers to design and implement the curriculum. The author shares those supporting teachers may come in different forms, such as professional development or leaders having a clear vision and sharing the same with the teachers. Without systems to ensure that teachers' professional needs are being

identified and met, teaching and learning will likely remain fragmented (Darling-Hammond et al., 2017).

Current literature supported the findings of this study and it adhered to research guidelines described by Creswell and Creswell (2018) and the standards that Walden University requires. This study will provide information valuable to educational leaders and teachers to reflect and adjust to improve the implementation of ATLS using a transdisciplinary approach. Compliance with Walden's data collection policy assisted me in providing the participants with confidentiality and reasonable protection.

Table 3

Interview Themes, Frequency of Participants' Responses

Identified themes	Number of times referenced
Theme 1: Articulation of curriculum	22
Common language	7
Consistent across grades	15
Different grades	18
Theme 2: Limited time	25
No time	13
Meetings	21
Common time	22
Intentional	9
Theme 3: Reflection	21
Learner profile	7
Teamwork	12
Theme 4: Collaboration	28
Learning engagements	11
Support	22
Students learning	16

Note. There was one male participant and six female participants.

Section 3: The Project

Introduction

ATLS is a critical element in the IB curriculum and should be integrated into instruction using a transdisciplinary approach. Transdisciplinary learning transcends subjects, and students learn using the inquiry approach, which is a way of teaching in which students' interests and questions are the center of transdisciplinary learning. This approach to learning emphasizes the importance of making connections among disciplines and engaging students in learning about global content beyond the scope of a single subject (IBO, 2017). This study was conducted to explore teachers' perspectives on integrating ATLS to enhance transdisciplinary learning. The literature review identified multiple factors that may influence the integration of ATLS in an IB setting based on the information provided by the participants.

In Section 3, I share the PD project to demonstrate the research findings and provide strategies that may support teachers successfully integrating ATLS using a transdisciplinary approach at the IPS. A detailed description of how the PD will support teachers to develop further their understanding of how to integrate ATLS to enhance transdisciplinary learning will be provided. As one of the participants proposed, the PD will include the overview, goals, teaching and learning resources, and strategies teachers may use, such as instructional coaching and in-house PD. The PD is designed to take place in phases to allow teachers to reflect and apply their newly learned skills and knowledge.

The first phase of the PD will include the goals and success criteria. Ahmed

(2018) indicated that providing success criteria is a guide and reminder of the final

product or results. Creating a success criterion provides broader guidelines on what is

appropriate to enhance and guide teachers' understanding (Ahmed, 2018). The second

phase will include strategies to explore different ways to enable teachers to share and

receive information related to the integration of ATLS using a transdisciplinary approach.

The third phase will allow teachers to reflect using the three different types of reflections

mentioned in the data analysis section: (a) reflection in action, (b) reflection on action,

and (c) critical reflection (Shalabi, 2018). Each type of reflection provides teachers and

students an opportunity to think about how to make learning more equitable and

meaningful (Shalabi, 2018). The PD content will be derived from the themes generated

by research participants' interviews. After the PD, attendees will have an opportunity to

collaborate, share, ask questions, and contribute to the resources shared during the PD,

which might enhance further teacher collaboration at IPS. Any further potential action

steps will be added as a proposed strategic plan for IPS so teachers can reflect on them on

an ongoing basis. The strategic plan will be shared with the teachers and administrative

and pedagogical leaders at IPS.

Finally, Section 3 includes implications for social change at IPS. The results of

this study may not be generalized to other IB settings because all schools are unique in

their cultural, geographical, and economic context. The outcomes, however, may

contribute to the broader research regarding factors that contribute to teachers'

perceptions in integrating ATLS to enhance transdisciplinary learning in IB settings.

Rationale

The purpose of the study was to explore teachers' perspectives on integrating ATLS to enhance transdisciplinary learning. Successful integration of ATLS would likely allow students to use ATLS across different subjects, which may increase students' learning experiences. Johnson (2017) defined dissemination as a planned process that considers the targeted audience, the settings in which research findings will be received, and, where appropriate, finding ways for a researcher to communicate and interact with broader audiences to facilitate research uptake in areas of practice and decision making. In other words, the dissemination of research findings is a carefully planned and thoughtful process that considers the target audiences and communicates with those audiences, so the research is impactful to the phenomenon being explored.

There are many ways of disseminating qualitative data. Examples include program evaluations designed to assess the effectiveness of educational programs and practices (Masehela & Mabika, 2017; Webber et al., 2019). This study was conducted to explore subjective reactions and opinions that varied depending on participants' experiences. I had no aim of evaluating the existing program at IPS; therefore, program evaluation was not ideal for this study.

Another strategy of disseminating data I considered was the use of a white paper. This tool mainly provides details about organization culture, functions, background, and needs (Adkins, 2019). A white paper aims to understand the phenomenon being explored, which ultimately provides the recipients an opportunity to address the problem or make an informed decision (Adkins, 2019). Because the research study was a qualitative design

that captured teachers' thoughts and opinions and was not focused on a cerebrally focused impact related to policy implementation changes, I did not opt for a white paper as a dissemination tool of the research study.

The third option I explored was to offer PD training. Darling-Hammond et al. (2017) defined PD as professional learning that is structured and brings about positive change to teachers' understanding and practices. The ultimate goal is improvement in student learning outcomes. Professional learning is a product of job-embedded activities that increase teachers' knowledge and offer opportunities to change their instructional practice using strategies that support and enhance student learning (Darling-Hammond et al., 2017). Therefore, formal PD represents a subset of the range of teaching and learning experiences acquired in professional learning (Hammond et al., 2017). The same sentiments are echoed by Canaran et al. (2020), who indicated that PD disseminates information to participants keen to acquire new knowledge. PD also encourages participants to reflect and make changes. Considering that this research study was conducted to explore ways teachers could integrate ATLS to enhance transdisciplinary learning, PD training was the most appropriate and authentic way to present the findings. PD would allow teachers to collaborate, gain new insights, learn from each other, and reflect during the sessions. Teachers may also find a way to express their perceptions that were not ideal with the other formats that I had previously mentioned (Canaran & Mirici, 2020).

The findings address factors that emerged from the study, which may impact teachers' integration of ATLS to enhance transdisciplinary learning in an IB setting. PD

is an ideal format to disseminate research findings to different stakeholders, such as administrators, pedagogical leaders, and teachers. Throughout the PD, I will discuss appropriate resources and encourage teachers to contribute to the resources to honor teacher agency. The PD discussions and reflections will be guided by the themes generated from analysis of the data gathered from the interviews. I will facilitate the discussions on perspectives and how they are likely to influence the integration of ATLS to enhance transdisciplinary learning.

Review of the Literature

To support my study, I conducted a review of scholarly journal articles found through the Walden University Library, ERIC, and other educational databases such as published Dissertations. Search terms included skills development, teacher agency, PD, best practices for PD, teacher training models, skills development, hands-on PD formats, factors that influence PD, and the learning community.

Professional Development and Conceptual Framework

Transdisciplinary learning enables teachers and students to teach and learn beyond boundaries of disciplines and to move towards the co-creation and of knowledge and skills. This way of learning occurs because of interactions and identification of concepts that take place across academic disciplines (McGregor, 2017). According to the author, transdisciplinary learning is characterized by four features: it is related to contemporary social issues and problems, it explores what stakeholders are affected by the challenges, aims at connecting with the stakeholders, integrates and transcends

different disciplinary structures, and lastly, it calls for a deep search of knowledge that is cohesive and coherent.

Rigolot (2020) while exploring the meaning of transdisciplinarity considers it inseparable from personal life. The author shares that transdisciplinary learning extends far beyond what is taught in the classroom or covered in the curriculum as it has the potential to integrate all disciplines yet achieve a desirable outcome. Rigolot (2020) believed that ATLS that is often used for integration includes critical thinking and research as students examine various artifacts and the use of primary sources. ATLS according to the author assists students to add important knowledge for understanding and inquiry using an inquiry framework that enables students to find out information without memorizing knowledge. Lim et al., (2018) explored the inquiry-oriented nature of the IB curriculum and examined how a transdisciplinary approach can be used to integrate additional languages such as Spanish with the social studies strands. Through interviewing teachers at an elementary school and observing students during instruction, they concluded that transdisciplinary approach to teaching was more open and inviting as students were able to use the same skills in various learning set-ups.

In addition, Kromydas (2017) indicated that the transdisciplinary approach to teaching encompasses many other valuable teaching strategies such as action research which is an inquiry-based approach to teaching where learning focuses on solving complex, real-world problems. Similar sentiments are shared by Souto-Manning et al., (2019) who provided a a meta-analysis of young children's learning using a transdisciplinary approach in different disciplines. The author shared that

transdisciplinary learning supports the conceptualization of concepts for young students and provides opportunities to eliminate learning barriers that may likely exist amongst students. According to Savage et al., (2018), the overarching goal is for students to acquire, and apply transdisciplinary skills such as thinking, social, communication skills, self-management skills and research skills to their learning.

The PYP is a transdisciplinary curriculum and is designed in a way that teachers plan and teach skills that are integrated into other areas of learning such as science and the arts. The authors believed that for teachers to be successful in transdisciplinary teaching, it is important that they have a clear understanding of the ATLS and ultimately how to integrate the skills to enhance transdisciplinary learning as they guide the student to inquire deeper into the concepts that are being taught. Tarigan et al., (2019) reflected that for students to be successful in their use of ATLS using a transdisciplinary approach, factors such as time factor needs to be considered as it takes a long time to develop high-level thinking skills, students require high motivation to think, and apply skills using a transdisciplinary setting. The author further also believed that teachers should be adequately trained so that they can support the students to transfer the skills meaningfully.

A common theme that has consistently been echoed by the authors is that transdisciplinary learning approach enables students to use ATLS such as research, communication, social, self-management and thinking skills across different subjects and this practice allows students to demonstrate their knowledge using different skills transdisciplinary learning can also be used to solve problems that are not necessarily

connected to classroom instruction. Transdisciplinary learning enables students to develop and use ATLS to access knowledge. As it is a comprehensive framework that seeks to extend students' learning experience beyond combining disciplinary approaches that exist to create new overarching syntheses.

Regarding PD, Mumhure et al. (2020), found that when teachers are engaged in hands - on projects that are initiated to solve a problem, they are likely to acquire specific knowledge or skills from multiple academic disciplines, for example, collaboration or effective problem-solving strategies. Mumhure et al. (2020), investigated teacher professional models with the intention of finding a model that is sustainable. According to the author, traditional teacher professional development at schools has been characterized by a once-off workshop that is facilitated by experts do not provide long-term benefits to teachers as no opportunities are provided to mentor the teachers after the training. A once off- model of teacher development is usually not aligned to the classroom realities of teaching-learning needs.

Educational leaders should therefore assist teachers by setting apart time to collaboratively reflect on their teaching development needs. For professional development to be sustainable at school, leaders should involve teachers in the processes so that teachers are not recipients but collaborators in the planning. The researcher recommends school-based professional development models where teachers take ownership of their learning as they have organized and led by the teachers the onsite. Anđić et al. (2017) believed that successful if teachers should not rely on the skills and

knowledge that they received while attending higher institutions as new developments in teaching and learning may have emerged. Teachers should therefore receive ongoing professional development throughout their teaching journey. The researchers believed that effective professional development can only take place with the support of leadership that it should be creative and responsive.

The authors advocated for leadership that understands the importance of innovation and renovation in matters pertaining to administrative and educational work. Educational leaders should motivate teachers by offering them incentives so that they can continue to pursue professional development. The creative leader according to the authors, thinks about the overall educational process based on the elements and components. The learning environment should be encouraging and allows the teachers to explore their creativity and passions in order to achieve their full potential (Anđić et al., 2017).

According to Hamre et al., (2017), designing and implementing transdisciplinary professional development could bring significant change in teaching and learning, yet it not an easy process. According to the authors, effective professional development should target articulated evidence-based teaching practices that enhance behavioral change amongst teachers and students. One strategy of ensuring that transdisciplinary professional development is meaningful to the teachers is for leaders to observe teachers in their practices, offer feedback, and have reflection sessions. Explicit observations can be used to validate the appropriate professional development. The authors believed that

teacher training should have a consistent framework that teachers could model in the absence of the expert or mentor. The professional development that is being offered should have detailed descriptions of how the information is likely to enhance the teacher's understanding (Hamre et al., 2017). Antinluoma et al., (2018), cited collegiality and collaboration as enablers to the development of PD and professional learning communities. The authors emphasized the importance of leaders establishing a culture of continuous learning, and collaboration that takes place between the teachers and leaders at the school.

Positive school culture is conducive to professional satisfaction, staff morale, and creates an enabling environment for students to maximize their learning, and fosters collegiality and collaboration (Antinluoma et al., 2018). The IBO (2018) backed the insights of Antinluoma et al., (2018) as it stance is that learning is a shared responsibility, and that the purpose of PD is to create opportunities for teachers to acquire new knowledge and skills that impact students learning positively. Dickson et al., (2018) provides further information on the stance of IB on teacher training. According to the authors, the IB curriculum uses a transdisciplinary inquiry student-centred approach which is different from the traditional method of teachers where teachers are the main facilitators. In an inquiry approach, the teachers support students to access knowledge using ATLS and open-ended questions. Teachers therefore require ongoing PD so that they are aware of the offering of the IB curriculum and to offer increased student engagement (Dickson et al., 2018).

Ray (2017) explores coaching as a training strategy to improve teacher practices through reflective metacognition. Ray (2017) noted that reflective and collaborative leadership can foster teacher growth skills. The coaching approach by educational and pedagogical leaders assists teachers to be meta-cognitive, reflective transdisciplinary practitioners. Ray (2017) believed that school leaders should be tasked with supporting teachers to achieve the school's mission and ultimately increased student achievement. The author believed that coaching by their leaders would lead to improved trust, collegiality, and shared decision making. The role of leaders in supporting PD is also highlighted by Morris et al. (2019), who believed that leaders have the capacity to reflect and identify how best to focus on a whole-school approach to transdisciplinary learning and encourage more involvement between departments. Morris et al. (2019), linked professional growth to supportive leadership, due to opportunities that leaders can provide for communication and participative decision-making amongst the teachers with the goal of creating a shared vision. Morris et al., (2019) concludes that leaders play a vital role in developing a positive professional development culture by creating opportunities for teachers to be part of decision making and fostering professional growth. New approaches for instructional interventions require teacher training on the process that encourages exploration (Morris et al., 2019).

According to Postholm (2018), school leadership can play a role of creating a learning environment at their schools that is inherently transdisciplinary. School leaders can also allocate resources to support teachers 'learning, as additional learning materials are likely to enhance the implementation of learning engagements and ideas. The author

advised that professional learning is not limited to one strategy and can often take place in formal settings. In professional development programs, research groups could be set aside for teaching, as well as mentoring programs (Postholm, 2018). Karacabey (2021), advised that teacher professional development includes learning opportunities that enable teachers to navigate the changes that are necessary for teaching and learning which ultimately increases teacher's capabilities. The author believed that it is a teacher's responsibility to identify the knowledge and skills that they require to develop their practices. However, school leaders such as principals should also provide teachers with the opportunities and resources to acquire the required training. The author's views are similar with Hauge (2019) who reckoned that PD at schools should be a collaboration and collective initiative amongst the role players in the learning community as the common goal is to provide students with an enriched learning experiences that have a positive outcome.

The common message that was derived from various authors on PD was that PD should be an ongoing engagement at schools and teachers should have a voice in deciding which PD will have greater impacts on students learning. PD takes different forms, and the school leaders have a significant role to play in ensuring that teachers receive the appropriate training. Principals can support teachers by providing opportunities, time, and resources. The conceptual framework that grounds this study was adapted from Gürkan, (2020) transdisciplinary Integrated Curriculum Design Model within the International Baccalaureate Primary Years Program. Transdisciplinary Integrated Curriculum Design Model that the author proposes seeks to offer some strategies that would support teachers

to integrate ATLS. Gürkan (2020) recommends a six-step processes which are strategies that can be used to support teachers to successfully integrate skills and concepts to enhance transdisciplinary learning, which is the focus of this study. These strategies can be connected to the research question that seeks to explore teachers 'perspectives on the inconsistent integration of ATLS at the IPS school.

The six processes can be included in the PD that I intend to offer as they are connected to some themes that were emerged from the interviews. For example, one of the processes that Gürkan (2020), recommends is the brainstorming or collaboration phase. During this stage key elements of PYP program such as the conceptual or enduring understanding, key concepts, learner profile, and ATLS are identified and integrated into the IB curriculum lesson plans. According to the author this is a critical stage as the program design, such as learning goals and critical elements, are being clarified. In the PD, this will include strategies that teachers at IPS could consider using as they engage during collaborative sessions.

I explored teachers' perceptions in integrating ATLS to enhance transdisciplinary learning and identified PD as the most appropriate method to disseminate the findings of the research with teachers, pedagogical leaders, and administrators, at IPS. Gürkan, (2020) transdisciplinary integrated curriculum design model will be a useful tool that teachers would use to explore how to integrate ATLS using a transdisciplinary approach. The six-step process will act as a guide to the teachers as they explore and reflect throughout the PD. Zimmerman et al., (2017) shares that the learning process is fluid, and

it involves continuous review as interaction with knowledge is processed using application.

Professional Development Need Assessment

Hauge (2019) shared that professional development is a collective process amongst teachers and it is best accomplished through cooperation amongst teachers and other stakeholders in the learning community. Social interactions and the learning environment are decisive for teachers' professional development. professional development should therefore be presented as consulting processes of learning that ultimately leads to an increase of teachers' greater expertise. For a culture of learning to be established, it is vital that an alignment of factors such as school structures, values, and relationships exist. Culture refers to the diverse ways that people act and the beliefs that they are connected to. An open culture at schools enables teachers to engage in constructive dialogues, collaborate, and learn from their colleagues.

According to Bozkuş and Bayrak (2019), the first step of designing PD is Identification and awareness of needs. The author shares that awareness occurs on two levels and begins by identifying a problem from a macro to a systemic organizational level. The learning environment includes the organization's structure, resources, and culture. Therefore, the PD training should inform the school administrators and teachers of possible pathways to enhance the integration of ATLS using a transdisciplinary approach. It is essential to understand and acknowledge the uniqueness of each institution's context. While planning the PD, the facilitator should assess the teachers' needs and any strategic plan (Adkins, 2019; Sullivan, 2017). The authors believe that

when the educational leaders or the relevant stakeholders of an institution become aware of problems or needs, they are likely to request PD among the teachers to learn new knowledge and skills. In the case of this study, I was familiar with the needs of the teachers after I received this data from the interviews, which were the themes that emerged from the study.

The second level of PD preparation is when the individual needs of teachers are identified using observations, interviews, self-reflection, and assessments (Darling-Hammond et al., 2017). The author shares teachers learning needs should be considered when trainers design learning engagements and this should be included in the PD goals. The goals of the PD should be clearly outlined and shared with attendees before the training. Another way of capturing the impact of the PD could be by reflections at the end of the PD. The facilitator can create objectives of concepts that teachers are already familiar with and obtain objectives (Uslu, 2017). I will share the study's objectives using platforms such as Padlet and Google Classroom.

Professional Development Designs

Professional training should be personalized, and materials carefully selected. The trainer should use training materials or resources that are relevant to the participants (Jacob et al., 2019). According to the author, PD should include a variety of designs that cater to the participants' learning needs. When this requirement is met, it is likely to enhance and enrich skills and produce positive change (Jacob et al., 2019; Kimbrel, 2018; Mohr & Shelton, 2017).

According to Darling-Hammond et al., (2017), PD in teaching and learning has two primary purposes: introduction of new knowledge and skills, and for teachers to reflect on the new language that is offered during training, relearn, and enhance existing knowledge or skills. The author identified seven widely shared features that underpin PD, and these are: PD should be content-focused, should incorporate opportunities for active learning, and take into consideration adult learning theory which is also referred to as andragogy. The author also shares that PD should support collaboration and be embedded within the job context. It should use models that demonstrate effective practices (Darling-Hammond et al., 2017). The author also shares that PD should provide opportunities for coaching, expert support, feedback, and reflection. Lastly, it should have a sustained duration. I will be explaining the PD designs in more detail below.

Content Focused

Darling-Hammond et al., (2017) believe that professional learning that focuses on the content that teachers are likely to impact student achievement. Content-focused PD generally includes discipline-specific subjects such as mathematics, art, social studies, or literacy. Job-embedded PD should take place on-site so teachers can try out the new knowledge acquired within the school environment. PD delivered externally should be carefully examined so that it meets the needs of the teachers. The author advises that it is good practice to get the teacher's input as this will cater to coherent and authentic content for teachers, as opposed to having PD with differing priorities (Darling-Hammond et al., 2017). These sentiments are shared by Koonce et al. (2019), who believed that the three components for effective PD includes: intentional focus on student-directed learning, a

precise assessment tool to measure learning, and lastly that PD should be centered on teachers and practice and not teachers and not program centered, training.

Active Learning Utilizing Adult Learning Theory

According to Darling-Hammond et al. (2017), PD experiences should be designed to address the teachers' learning styles. According to the author, teachers'', pre-existing knowledge and experience should be recognized and utilized during PD sessions. Teachers should also be provided with opportunities to choose their learning opportunities based on their interests and professional goals. Each PD opportunity should incorporate engaging experiences so teachers can make connections to the new knowledge. In other words, teachers can learn by doing. The author advises that active learning includes moving away from lecture-type PD, where participants listen with no chance of applying their knowledge. The use of artifacts and interactive activities are strategies facilitators can use during PD to engage teachers during contextualized professional learning. Active learning also incorporates collaboration, modelling, coaching, providing feedback, and reflection. These strategies are examples of Opportunities for teachers to make sense of new concepts by analyzing, trying out, and applying new strategies (Darling-Hammond et al., 2017).

Support Collaboration

According to Darling-Hammond et al., (2017), collaboration should be a structured teaching opportunity that leaders should strive to have in the school community. A collaborative teaching community endeavors to create PD opportunities within their collaborative sessions. The author shares that collaboration is an essential

element in the teaching and learning community as this is where the exchange of ideas and skills are transferred. Collaboration can take many forms, such as one-on-one, small-group interactions, or the whole school collaboration where teachers review an area of focus, for example, review of curriculum and assessment. Other professionals beyond the school could also offer PD.

Use Models and Modeling of Effective Practice

The utilization of models of effective practice is an essential feature of promoting teacher learning and supporting student achievement Darling-Hammond et al., (2017). The author opines that curricular and instructional model assist teachers in acquiring a vision of practice on which to ground their professional learning and growth. The various types of modelling that can support teachers to delve deeper into their learning include recorded videos or written cases of teaching, demonstration of lessons by an expert, sample units of inquiry or lesson plans, and observations of peers to acquire the best practices, reviewing of curriculum materials including which may include sample assessments and student learning samples.

Provide Coaching and Expert Support

Darling-Hammond et al., (2017), believes that PD should offer coaching and expert support opportunities. Coaching and expert support entails sharing expertise about content and best practices and should be focused directly on the professional needs of each teacher. The coach or expert should guide teachers' learning based on the context of their practice. They could fulfill this critical role by employing different types of professional learning strategies as outlined in the above sections, such as modeling

grounded instructional practices, supporting reflective discussions, or facilitating the collaborative analysis of students' work. The coaches may also share expertise related to content and evidence-based practices (Darling-Hammond et al., (2017).

Opportunities for Feedback and Reflection

Effective PD should allow teachers to reflect and receive some form of feedback. Time should be intentionally built in for teachers to think about the process of learning and make any changes to their practice. Feedback and reflection enable teachers to progress towards their goals gradually and should be possibly employed during mentoring and coaching sessions but should not be limited to these times (Darling-Hammond et al., (2017). The author notes that feedback and reflection are essential elements of adult learning theory and impact teachers' practices as they provide built-in structures for teachers to think about and adjust their practices and reflection (Darling-Hammond et al., 2017). Lastly, the author concludes by sharing that feedback and reflection are distinct and separate practices but are connected. They support teachers move thoughtfully towards their professional goals or knowledge that many have learned about or seen demonstrated during PD.

Sustained Duration

Facilitators should ensure that during the PD, sufficient time is provided for teachers to implement the concepts or new knowledge acquired (Darling-Hammond et al., 2017). The author notes that providing PD that exhibits the characteristics above will likely result in a meaningful transfer of knowledge and application. If time is not factored into the training, the framework is likely to be fragmented, which may impact how the

curriculum is implemented. Although no research has been conducted to determine a clear threshold for the duration of effective PD models, meaningful professional learning cannot be achieved in brief once-off workshops but requires collaboration, development, and implementation opportunities. Offering multiple opportunities for teachers to participate in active learning may have a greater chance of bringing about transformational teaching practices and student learning (Darling-Hammond et al., 2017). Implementing PD may determine its reception and success (Bozkuş & Bayrak, 2019; Uslu, 2017).

Project Description

The project deliverable is a PD entitled Teachers Perspectives in Integrating ATLS to Enhance Transdisciplinary Learning. An invitation to disseminate findings will be sent out to various stakeholders such as teachers, educational administrators, and pedagogical leaders. It will provide the stakeholders with an opportunity to have an in-depth review at the research's purpose and process and a summary of participants' recommendations. The conclusion of the PD will be a tentative reflection on the recommendations (Appendix C). The PD is designed to be three days with 8-hour training each day and will take a synchronous and asynchronous format. The sessions will commence at 8:00am with light snacks and beverages formal training will start at 8:30am. Participants will have 20 minutes break and an hour's lunch. The PD will conclude with a daily reflection, either face-to-face or in digital format, and end at 4 pm. The facilitator will use an inquiry- styles approach during the PD as this will likely be a familiar strategy of instruction as IPS uses an inquiry approach framework. This means

that teachers will be provided with some questions to investigate based on the four themes that were identified in the study. Appendix C describes the schedule and the learning engagements that will be used during the training process.

Providing training goals daily will ensure the intentional focus of sharing the dissemination of the research findings. As the PD facilitator and moderator, I will ensure that the objectives of the PD are addressed. The main objective of the PD will be to share the research findings generated by the interview data. The themes are Articulation of curriculum, Limited-time, Collaboration, and Reflection. The PD will provide participants with a comprehensive description of the problem, process that the study has taken, and the final findings of the research (Appendix C). Day 1 goals will include a review of the research journey, a discussion of ATLS and transdisciplinary learning, and a review of Gürkan's (2020) integrated design model, which is the conceptual framework that grounds this study. Day 1's goals will also align the research with the IB curriculum mission and offer some insights on the literature review that supports the study. Day 2 will examine two themes: Collaboration and Curriculum Articulation. The final goal for Day 3 is to inquire into the last theme which is Reflection and then provide more time for teams to collaborate across different grade levels and for teachers to come up with some actionable items based on the PD's discussion of the topics derived from themes generated during the interviews (Appendix C). This will be followed by a whole team reflection that will take place digitally to be documented on Google Classroom and shared with the stakeholders.

I will use several collaborative strategies to ensure that teams learn from each other during the PD. Participants will be in small groups, and there will be a teacher from each grade, from Pre- Kindergarten to 5th grade, to ensure that all grade level insights are captured. I will use Visible Thinking routines to encourage active engagement. According to Gholam (2017), visual thinking routines are principles that are based on several theories and teaching approaches. The visible thinking routines promote critical thinking skills, encourage collaboration, model sharing of ideas from different viewpoints, and above all, provide participants with strategies to process and present their thinking by making learning visible.

Some of the strategies that I will use are KWL which stands for; know, want to know, and learned. I will use "Peel the Fruit" thinking routine to develop the participant's knowledge of the four research themes. Lastly, for reflection, I will use the "Compass points", which use the abbreviation of the four compass points to guide participants' reflection. For example, the East provokes participants to think about what they are excited about. The South checks for the stance, strategy, or perspective. The North is what they would want to know, and the West identifies any worries or concerns that the teachers and administrators at the IPS may have.

Zoom will be a digital platform that I will provide for the groups to join for individuals who prefer to participate digitally. The host will provide break-out rooms so that teachers can participate in the collaboration. As a facilitator, I will prepare handouts in a digital version of the peer-reviewed authors and some IB-related documentation. Any technical support required will be provided by the Technology integrator at IPS. I will

demonstrate collaboration by requesting the teachers to be contributors to the share resources section. Wi-Fi will be provided to the participants at no cost.

Possible challenges or barriers that may relate to PD implementation are that teachers may not be receptive to the PD due to the time that it may take. The PD will occur during the PD-allocated days by the IPS, which is added to the school calendar. The PD will be at no cost to the teachers, and the teachers will own the resources as they have contributed during the process. The resources will be shared in a PD hub for easy access and likely reflected upon during the successive collaboration meetings at IPS.

<div align="center">**Project Evaluation Plan**</div>

The goal of the PD that I have prepared is to disseminate the study's findings, which are teachers' perceptions of integrating ATLS to enhance transdisciplinary learning. According to Merchie et al., (2018), evaluating a project is an opportunity to reflect on achieving goals and objectives. The authors also believe that through reflections, the facilitator can examine the effectiveness of the tenets of the phenomenon. Reflections will be used to assess the PD, and success criteria will be available to guide the participants (Appendix C). I will prepare to guide the participants in each reflection session (Appendix C). The reflection will demonstrate the PD's efficacy.

I will provide a "Parking Lot" section throughout the PD where teachers can ask questions, and these will be reviewed at the end of the day as well as at the beginning of each session to ensure that all questions have been attended to. This strategy will ensure that teachers who may not be comfortable asking questions in large group settings are accommodated. Teachers will also have an opportunity to provide feedback on the

training such as how the PD was presented and any other information that would benefit the integration of ATLS at IPS. It is vital to share the findings of the training with the stakeholders as this may be beneficial in their strategic plans (Bozkuş & Bayrak, 2019; Uslu, 2017).

Project Implications

The PD will be an opportunity to present the research findings. It will likely provide more insights to the stakeholders at the IPS, namely, educational administrators, pedagogical leaders, and teachers. Their perspectives, ideas, and concerns about the integration of ATLS to enhance transdisciplinary learning at IPS. Within the local level, the participants will understand the various factors within the IPS context. This will likely assist them in strategizing more meaningful ways of ensuring that the ATLS are integrated meaningfully. Teachers after the PD may gain skills and knowledge that might support their collaborative capabilities during meetings. The enlightenment about ATLS perceptions may encourage teachers to be proactive in establishing a more collaborative meeting and administrators with a new perspective on reviewing the structures at the IPS to increase teacher collaboration and reflection.

From a global perspective, the study may equip educational leaders with strategies to create structures that enable teachers to integrate ATLS using a transdisciplinary approach. For example, Gürkan's (2020) integrated design model may be used by other educational administrators of IB schools to support the integration of ATLS. Through this study I will use the knowledge that I have acquired during the research process to lead teacher workshops and empower other teachers in various part of the world either face to

face or virtually to provide teachers with a hands-on PD that supports their knowledge of

how to integrate ATLS consistently using a transdisciplinary approach.

Section 4: Reflections and Conclusions

Project Strengths and Limitations

The project deliverable provides various opportunities and pathways. The most notable is that teachers will collaborate with other teachers from different grades within the IPS. Participants in this study identified lack of collaboration as one of the limitations for teachers' integration of ATLS to enhance transdisciplinary learning. The first strength of the project is that during the PD, teachers have sufficient time to share ideas and resources with the hope that this practice will extend beyond the PD. Darling-Hammond et al. (2017) found that when teachers collaborate, they can create communities that bring about positive change in teaching and learning practices. Furthermore, the change may extend to entire grade levels, divisions, schools and/or districts.

Another strength is that during the PD, participants have an opportunity to examine the literature review and evidence on the themes identified during data collection: curriculum articulation, limited time, collaboration, and reflection. This may widen teachers' and administrators' scope of perspectives and knowledge. Gürkan's (2020) integrated design model is presented to teachers during PD and a hands-on experience allows them to investigate how it could support their integration of ATLS using a transdisciplinary approach within the IPS context. These experiences provide teachers with the benefit of not only learning about the tenets of the integrated model but exploring its relevance in a collaborative environment. The relevancy of the knowledge to meet the teachers' need to successfully integrate ATLS to enhance transdisciplinary learning is provided in the resources during the PD. The resources shared during the

training are centralized in a Google Classroom that serves as an information hub. Teachers can use the resources during collaborative planning meetings.

Another strength of the project is that the PD supports the framework of instruction that IPS uses, which is inquiry based. This approach was chosen to encourage greater engagement among participants and to ensure teachers are taking charge of the learning. According to IBO (2018), teacher agency is achieved when they co-construct concepts and skills and when they engage in learning that challenges them to consider different perspectives. In an inquiry-based approach, teachers are guided using inquiry questions as they develop their understanding of how curriculum articulation can be achieved and ultimately the successful integration of ATLS at IPS. According to Subba et al. (2019), inquiry-based learning is a method of teaching and learning in which open-ended questions are asked, and participants are encouraged to explore various possibilities. This approach helps participants conceptualize the subject and solve problems. The PD was created in response to the research question that guided this study: What are teachers' perspectives on the inconsistent integration of ATLS at the IPS?

The first limitation of the project is that the data collection process did not explore the perspectives of all IPS teachers. Each teacher may have varied feelings about the ATLS or their understanding of transdisciplinary learning. The level of academic support that teachers require may vary according to their experiences while working at IPS. Another foreseeable limitation is that the PD is not differentiated to cater the immediate needs of teachers. Experienced and novice teachers are grouped together; this could be a strength because experienced teachers could support novice teachers, but it could also be

limiting as the information shared may not be equally beneficial to the academic growth of all participants. According to Lindner et al. (2019), differentiated instruction is a form of pedagogical practice grounded on inclusive education, which acknowledges that diversity exists among individuals and learning should include this diversity. This includes adjusting instruction accordingly to ensure participants receive maximum learning opportunities and to make the content available to all participants (Lindner et al., 2019).

Another foreseeable limitation was that the PD is facilitated using English. Some participants are non-English speakers and may have encountered barriers to learning due to their limited English language proficiency. All the peer-reviewed articles provided were also in English, and they contained scholarly level of comprehension that may have hindered some teachers' understanding and participation. The learning engagements and reflections also require a significant level of English understanding and fluency. I considered offering interpretation for the PD, but this would prolong the time allocation. Kalinowski et al. (2019) stated that language skills necessary for success in a formal setting often differ from language used in everyday or informal contexts. Therefore, during a PD environment, when participants are exploring concepts or analyzing texts that have academic language, strategies such as translation or translanguaging should be used to support participants' understanding (Kalinowski et al., 2019).

Finally, the time required for the PD to be completed in 2 and a half days requires consideration of the impact on daily engagements at IPS. School administrators had previously set up a hybrid/distance learning schedule for about 2 years due to COVID-19

restrictions but had recently returned to on-campus learning. The PD would take place in person and some adjustments to the schedule would need to be explored. COVID-19-related fatigue could be experienced, and some teachers may not buy in to having PD at such a time. For faculty at IPS lacking enthusiasm, mandated training may increase their level of discomfort and reduce cooperation.

Recommendations for Alternative Approaches

I explored various alternatives for this study's results. One option was to invite teachers at the IPS to provide teacher-led workshops based on the themes identified during data analysis. Postholm (2018) found that teachers can learn through informal interactions that take place during peer teaching, reflective conversations, collaborative planning, and mentoring that happens among colleagues. Teacher-led workshops have an added benefit that they are job-embedded, take the context of the organization into consideration, and are likely to be sustained over time (Postholm, 2018).

Teacher-led workshops do not focus on isolated activities but rather acknowledge human resources at the workplace and perceive learning as a dynamic and ongoing interactive process among teachers (Postholm, 2018). The benefit of considering this option would have been that teachers are likely to learn from each other, and this may increase their collaborative tendencies. However, one compelling deterrent was that identifying teachers to lead the workshops would have been challenging as it requires additional time to curate the resources. Also, teachers may feel pressured to offer workshops in areas they lack training and may bring about a negative morale or lack of buy in from participants.

A second option in examining the problem of teachers' perspectives in integrating ATLS to enhance transdisciplinary learning was having entire school on-campus discussions about ATLS strategies, such as student data, worksheets, recorded videos, teacher reflections, or scenarios that describe their lived experience on the phenomenon. The discussions could then be used to generate possible ideas or strategies on how teachers can integrate ATLS successfully. Bergmark et al. (2018) stated that teachers can use an appreciative inquiry strategy to identify successes and opportunities for growth. Appreciative inquiry offers a positive way for teachers to explore and discover possibilities that would assist teams to work toward a shared vision (Bergmark et al., 2018). Appreciative inquiry is based on the principles of identifying positive dialogue and collaboration. This experience could include reflective conversations that eventually could lead to the acquisition of valuable experiences for IPS teachers and administrators (Bergmark et al., 2018). Nonetheless, for this pathway to be successful, teachers would need to be familiar with the unit planners for various grades, which may not be the case based on the findings in this study.

Another approach I considered was to involve the IPS administrators, such as the principal and assistant principal, through observation of teacher instruction. According to IBO (2018), the principal is a leader who helps facilitate learning. The administrators could request teachers share their teaching plans so that the unit goals could be identified beforehand. I did not choose this approach because the principal is a supervisor, and the class visit could have been perceived as evaluative due to the power imbalances.

Scholarship, Project Development and Evaluation, and Leadership and Change

This project helped me develop as a scholar and researcher and to understand diverse perspectives that teachers have on the integration of ATLS to enhance transdisciplinary learning. While researching various perspectives and approaches, I was able to develop a deeper understanding of factors—such as limited time, articulation of curriculum, reflection and collaboration—that affect students' transdisciplinary learning experiences. For example, before the study, I viewed reflection in a generalist way, but the literature review helped me to understand there are different lenses of reflection, such as reflection on action, reflection in action, and critical reflection.

The reflective practices are aimed at helping teachers be aware and intentional in creating enriched learning experiences that have a positive influence on student growth. I now have a well-defined and firmer appreciation of teacher collaboration and its impact on teachers' PD. This project also helped me to better understand the uniqueness of teachers' learning journeys and their varied teaching approaches and pedagogical awareness. I also was able to reflect on the complexity of schools as organizations and the context under which they operate and function. As a researcher, my understanding of inquiring into different concepts evolved throughout the study, and during the literature reviews, I realized a construct can be defined in many ways and there is no simple answer.

Designing this project was exciting yet challenging. I wanted to design PD that was interactive and that would benefit teachers beyond the 2 and a half days of training. My aim was to get teachers to examine their current ATLS and transdisciplinary related

approach and to reflect on what changes or adjustments are needed. My vision was that using Gürkan's (2020) model, teachers would have a tool to guide them to enhance the integration of ATLS. The ideas, resources, and reflections created throughout the PD would allow me to advocate for change as I would share it with other teachers or administrators in an IB setting. This may ultimately support scholarly work on the importance of ATLS and transdisciplinary learning.

The timing of the training may not have been ideal because teachers had just returned from distance learning and were experiencing COVID-19-related fatigue. However, using the IB (2018) learner profile of being a risk taker, I planned for the PD with the administrator's permission. As one administrator shared: there "is no perfect time" to learn, and teachers are lifelong learners. Before designing this project, I was aware that IPS uses an inquiry approach to teaching and learning; just as students value activities that are interactive and authentic, the same applies to teachers. As a facilitator, I focused on thinking creatively about how to make the PD enriching yet fun for participants.

As a researcher, I gleaned more insight into how teachers collaborate and the role that reflection plays in curriculum development. Throughout the process of collecting data, I became increasingly aware that teachers are constantly reflecting on their instruction and practices and aim at offering students the best learning experiences. It became evident over time that not only do teachers need to collaborate, but they also enjoy collaborating with teachers from various grades on their lesson ideas, sharing resources and thought processes on successes and productive struggles during the

teaching process. For this reason, the PD needed to provide significant time for teachers to collaborate. I extended the collaboration opportunities beyond the PD by creating an information hub where teachers can share resources and perhaps collaborate.

This study affirmed my journey as a researcher. During my course work, I was unaware of the direction I would take for my project, but I had been exposed to researching and had to share my insights with colleagues and collaborate on group projects. The research skills I acquired during course work were developed continually from when I had to identify a research topic, develop a prospectus, and progress all the way to the final study. This is a life skill I will continue to hone as I develop my scholarly work. I chose my project based on my firm belief that skills are what one needs to change habits, and I believe that when students are aware of the ATLS, they will be able to access knowledge and create meaning of their learning to support them in the ever-changing world. I gathered articles for this project and emailed authors to get a deeper understanding of the phenomena; this was an insightful and enjoyable process.

Lastly, I made the choice to embark on this doctoral process because I am passionate about different facets of teaching and learning and wanted to be a changemaker in my profession and globally. With the age of technology, connectivity has become less complex, and it is possible to be collaborating with other scholars in diverse locations in the world. I consider myself privileged and I intend to use this noble opportunity to support teachers and administrators by sharing resources that can support them to continue developing professionally and hopefully offer a curriculum that is transdisciplinary and one that provides students with skills to navigate in the fast-

changing world. The curriculum in my country Kenya has also undergone an overhaul

and has shifted towards a competency- based curriculum. I would therefore hope to

support the policy makers to develop the newly implemented curriculum further by

offering teacher training. Through my research and PD, I have created a learning

platform that the school can continually develop. I am open to being part of the

pedagogical leadership that continually reflects and offers PD opportunities to support

and extend teachers understanding of ATLS integration and transdisciplinary learning.

Reflection on Importance of the Work

As an educator, this study helped me clarify the importance of ATLS and the role

that transdisciplinary learning plays in the IB curriculum. I was able to carefully examine

the connection of concepts across different subjects and grades. Listening to teachers'

perspectives during the interviewing process provided me with an opportunity to be

reflective of my own perspectives on ATLS and transdisciplinary learning practices in

general and the impact that they have on students. I became increasingly aware of factors

that may hinder the successful integration of ATLS at the IPS. Teacher collaboration and

the use of reflective practices can support teachers to develop strategies how to structure

teacher meetings so that they are able to offer instruction that is transdisciplinary.

Implications, Applications, and Directions for Future Research

This project has implications for future research and social change because both

teachers at IPS and the IB view ATLS as beneficial as it is an important element of the IB

curriculum (IBO,2018). For Homeroom and other subject teachers, using

transdisciplinary practices will improve how they connect concepts across disciplines.

For example, when teachers have a grounded understanding of ATLS, they will use these skills within their subject as well as in other authentic areas such as during community projects such as service and action which are experiences where students and the learning community can connect and engage in matters that are related to local, national, or global communities. The ATLS when used constructively can also be used by families to develop students' awareness of the Sustainable Development Goals so that students can seek to address issues and be changemakers in their respective communities. The Sustainable Development Goals (SDGs), are also referred to as the Global Goals, were initiatives that were adopted in 2015 by the United Nations and act as a universal call for people around the world to action to end poverty, advocate for education and gender equity, protect the planet, and to work towards ensuring that by 2030 people around the world would experience enjoy peace and prosperity which will likely bring about social change to local, national or global communities.

As the recommendations suggest, teachers will have various strategies to collaborate and reflect with other teachers. Teachers will use Gürkan's (2020) Integrated Design Model as their blueprint while structuring meetings that are focusing on curriculum planning. Teachers will continue to grow professionally through this collaborative experience by adding to their understanding of the benefits of a transdisciplinary approach, and this will likely have a positive influence on students understanding of ATLS. The teachers understanding and appreciation for reflection will hopefully enable them to adopt reflective practices such as asking open ended questions that provoke critical thinking where changes or adjustments are needed.

As IPS is an IB school, the Curriculum Coordinator who was part of the PD would be instrumental with supporting new hires and returning teachers in the development and implementation of the curriculum. Taking in mind that collaboration and reflective practices are important in the IB's curriculum offering, these could be areas that the curriculum coordinator would horn in as they are connected to the two other themes: curriculum articulation and limited time. Future researchers may want to expand the study to include more IB settings or to offer the study a comparative aspect that is other IB schools experiences with enhancing ATLS using a transdisciplinary approach. Researchers could also distribute the survey to gather teacher perspectives from a wider population. Another recommendation is to study the impact of ATLS on students' achievement using an inter disciplinary and transdisciplinary approach This type of study would show the effect of transdisciplinary practices on ATLS.

Conclusion

Teachers collaborate and reflect on their instructional experiences and make collaborative decisions on an ongoing basis. Sharing of ideas and best practices assist teachers to learn from each other. The purpose for this project was to explore teachers' perspectives in integrating ATLS to enhance transdisciplinary learning. I sought to find out what challenges the teachers were facing, the structures that had been put in place and support that the teachers required to integrate ATLS successfully at the IPS. I confirmed that the factors that were highlighted after the interview namely: collaboration, articulation of curriculum, limited time and reflection were all interrelated and that they are all important factors that need to be addressed for successful integration of ATLS to

take place. Teachers need time and space to collaborate and reflect in ways that make

sense to them as this is likely to help them to be more effective educators. It is therefore

vital that administrators of IPS review the structure and perhaps policies to support this

need.

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Appendix A: Interview Guide

Date:
Time:
Interview Code #:
Location of Interview:

Parts of the Interview	Interview Questions
Introduction	Hi, my name is Nancy Macharia, and I am a doctoral candidate at Walden University. I appreciate the time that you have taken for this interview. The qualitative project study is on teachers' perspectives on integrating the Approaches to Learning Skills curriculum to enhance transdisciplinary learning approach. I would like to emphasize a few items: Your participation is voluntary. Should you decide to discontinue the study, you can do so at any time. Any data that has been gathered from you should you withdraw will be deleted and not be used in the qualitative project study Should I ask you a question that you do not feel comfortable to respond to, you could state so, and I will stop the interview at any time The one-on-one interview will be voice recorded and be approximately an hour. long. I will also be taking notes. Once the interview is completed, I will share the transcript of the audio tape as well as well as the anecdotal notes with you so that you can listen and look at them, make any reviews or any corrections to make sure that I have captured your insights. Should this study be published, and, in a publication, your name will not be used. Do you have any questions? Are you ready to begin?
Teacher Demographic Question	How long have you been working at the International Primary School?
Question 1:	How does your school support you to understand and master transdisciplinary learning practices and integrate ATLS?
Question 2:	How do you plan your units?
Question 3:	What structure (s) has been put in your school to reinforce transdisciplinary learning practices and integrate Approaches to Learning Skills?
Question 4:	What is your perspective on Approaches to Learning skills?

Question 5:	What should be done to consistently enhance the ATLS at the IPS?
Question 6:	What is your understanding of transdisciplinary learning?
Question 7	What are some challenges that you have encountered while integrating the Approaches to Learning?
Question 8:	What has caused these challenges?
Question 9:	How could these challenges be addressed?
Closing and appreciation	Thank you for your responses and for taking the time to meet with me This concludes the interview. If you should have any further questions, please feel free to contact me at XXXXXXXXXXXXX or at XXXXX macharia@XXXXXX.XXX Enjoy the rest of your day!

Appendix B: Informed Consent Form

My name is Nancy Macharia. I am a teacher at an international school in Southeast Asia. I am a doctoral candidate at Walden University under the guidance of Dr. Judith Tanner. I am preparing to conduct research for my project study and would like to extend an invitation to you to support me by taking part in my study.

The qualitative project study is concerned with exploring teacher perspectives on integrating ATLS in instruction to enhance transdisciplinary learning. The invitation has been extended to you as (a) you are a homeroom teacher and you collaborate with other teachers to plan units that are transdisciplinary oriented, (b) you are specialists at the International Baccalaureate school, and you collaborate with the Homeroom teachers to integrate ATLS. This form is referred to as *"informed consent"* and it is aimed at enabling you to understand the scope of the qualitative project study before deciding whether to be involved.

Background Information:

The purpose of this study is to explore teacher perspectives on the integration of ATLS at an International Baccalaureate Primary School. This study plans to examine the teachers' experience with transdisciplinary learning and to explore teachers' perspectives on how ATLS are likely to enrich students learning.

Procedures:

If you agree to be in this study, you will be requested to:

Participate in a one-on-one interview session about your experience with Transdisciplinary learning and the integration of ATLS. The one-on-one interview will be approximately 40 minutes long.

Here are some sample questions:

- What is your perspective on Approaches to Learning skills?

- What is your understanding of transdisciplinary learning?

- How does collaboration within your division or grade look like?

- What are some challenges that you have encountered while integrating the Approaches to Learning?

- What has caused these challenges?

- What support do you require in order to be successful in integrating Approaches to Learning Skills in your teaching?

Voluntary Nature of the Study:

Participation in the qualitative project study is voluntary. You have the liberty to accept or turn down the invitation. There is no repercussion should you decide to be in the study now and later decide to withdraw. Your involvement in this study will be confidential. For the purpose of the research, I will use pseudonyms and you will be identified as Participant 1, Participant 2 etc. No grade will be mentioned on the study or the subject. I will be the only individual that will have access to the recording of the interview. The audio of the interview will be destroyed after the interview has been transcribed, to ensure confidentially. No publications or reports that can identify you or your contribution as being a part of this research study will be published.

Risks and Benefits of Being in the Study:

Taking part in one-on-one interviews involves some benefits and risks. The risks include discomforts that are likely to be encountered in daily life, which include the discomfort of having to take some time out of your busy day. The benefit is that by taking part in this study, you are offering your insights that may likely provide a deeper understanding of how transdisciplinary learning enables students to inquire into diverse concepts using the ATLS. Payment: Your participation in this project study is voluntary

Privacy:

Reports derived out of this study will not be shared and the identity of individual participants will remain confidential. Other details such as the location of the school will remain confidential. Data will be kept secure in a locked file and will be preserved for a period of at least 5 years, as required by the university. Any paper documents that contain sensitive information will be shredded and discarded.

Contacts and Questions:

Should you have any questions please email me at XXXXX. XXXXXXXX @ waldenu.edu Should you want to talk privately about your rights as a participant, you can call the Research Participant Advocate at my university at 612-312-1210. Walden University's approval number for this study is IRB will enter approval number here and it expires on IRB will enter the expiration date.

The researcher will give you a copy of this form to keep. Please keep this consent form for your records.

Obtaining Your Consent

Should you require more information regarding the project study please let the researcher

know. Please indicate your consent by signing below.

Printed Name of Participant	
Date of consent	
Participant's Signature	
Researcher's Signature	

Appendix C: The Project

Professional Development

Teachers Perception in integrating ATLS to Enhance Transdisciplinary Learning Nancy Macharia

PURPOSE

The **purpose** of study is to explore teacher perspectives on the ATLS at an International Primary School

Significance of study

❏ Benefit different role- players such as administrative, pedagogical leaders, and teachers to develop their understanding of integrating ATLS and their understanding of transdisciplinary learning may be enhanced by Gürkan's (2020)

❏ Benefit other IB schools that may be facing similar challenges.

Teachers Perspectives in Integrating ATLS to Enhance Transdisciplinary Learning

Identified themes

- Curriculum Articulation
- Collaboration
- Limited Time
- Reflection

Professional development goals
* To share with the stakeholders of IPS: administrators, teachers, and pedagogical leaders the findings of the study on Teachers Perspectives on Integrating ATLS to enhance transdisciplinary learning
*To engage the stakeholder on a collaborative reflection and developing resources that will support teachers to implement ATLS

Day 1 goals:

Day 1 goals:
- Brief overview of the research study: Approaches to Learning Skills to integrate ATLS to enhance transdisciplinary learning
- Introduction and review of the first 2 themes identified in the research study
- Introduce conceptual framework: Gürkan's (2020) integrated design model

- 8:00-8:30- light breakfast and social interactions
- 8:30- 9:30- First session: Introduction of study topic and some context about ATLS
- 9:30- 10:00- Snack and brain break
- 10:00-11:30- Introduction to conceptual framework
- 11:30- 12:00- reflection using post it notes
- 12:00-13:00- lunch break
- 13:00- 14:30- Introduction to theme #1 curriculum articulation- group collaboration
- 14:30- 15:30- reading handouts and adding resources in the Learner Management system (Google Classroom
- 15:30-16:00- group reflection

Activities of Time: Day 1

8:00- 8:30 AM-

8:30am- 9:30am

Read article in small groups and then share main highlights.
International Baccalaureate Organization. (2017). The Learner. *From Principles into Practice*, 51.

* Participants will answer the following questions after reading:document digitally using Jamboard
* What are the main offering of the IB Curriculum . Focus on ATLS?
* How can they be integrated in the units

 9:30am - 10:00am- Break

10:00am- 12:00pm

Read article (Conceptual Framework)

* Gurkan, B. (2021). Transdisciplinary integrated curriculum: An analysis of teacher
        experiences through a design model within the framework of IB-PYP. *Participatory*   * * **Educational   Research*, *8* (1), 176-199.
https://doi.org/10.17275/per.21.10.8.1

*How could we use Gurkan's (2020) Integrated Model to integrate ATLS AT IPS?

  12:00 pm - 13:00 pm Lunch

Continuation of Day 1

13:00 pm - 14:30 pm

*:Read article in groups and highlight the big takeaways:Curriculum Articulation
Theme 1:

*Wijngaards-de Meij, L., & Merx, S. (2018). Improving curriculum alignment and achieving learning goals by making the curriculum visible. *International Journal for Academic Development*, *23*(3), 219-231.
https://doi.org/10.1080/1360144x.2018.1462187

Group discussion after reading

After reading participants will answer the following questions:

* What are the main tenets of curriculum articulation/ development?

* How might this information benefit the current situation at IPS?

14:30pm - 15:30pm: Adding resources to the Learner Management (Hub)

15:30- 16:00- Reflection and Questions and Answer

Participants Handouts: Day 1

Gurkan, B. (2021). Transdisciplinary integrated curriculum: An analysis of teacher experiences through a design model within the framework of IB-PYP. *Participatory Educational Research, 8* (1), 176-199. https://doi.org/10.17275/per.21.10.8.1

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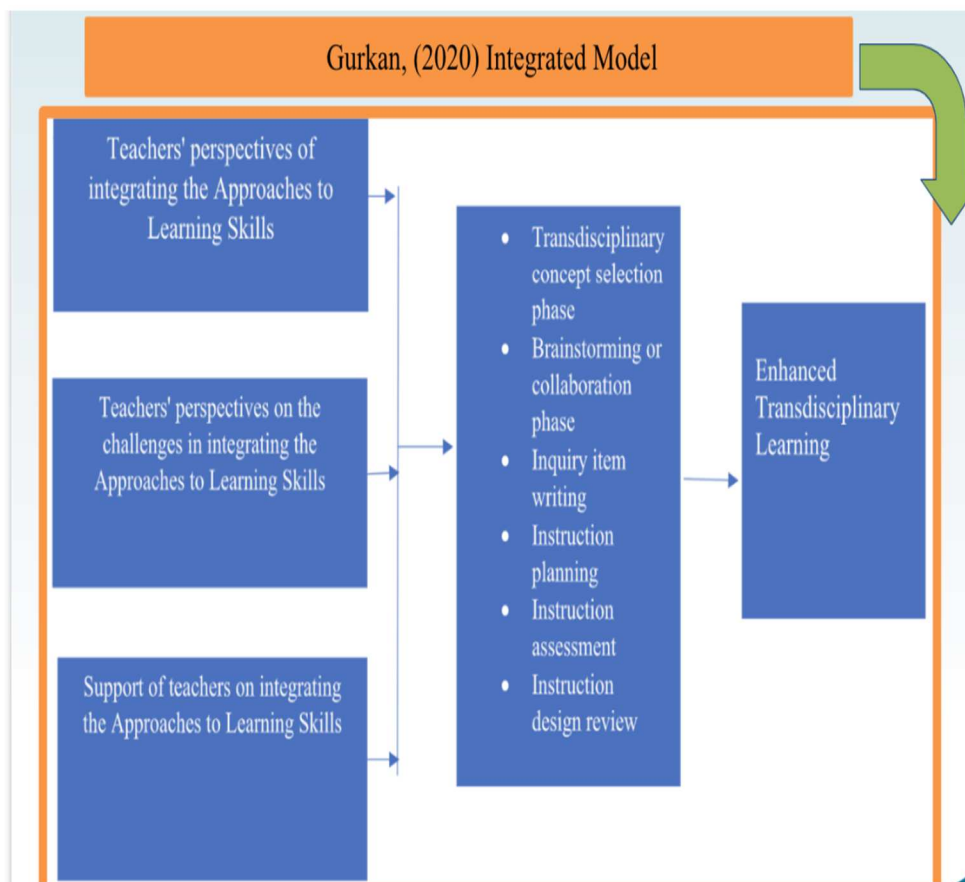International Baccaulearette Organization. (2019). Teaching and Learning 2019. *International Journal of Learning and Teaching, 11*(1).

Van Schaik, P., Volman, M., Admiraal, W., & Schenke, W. (2019). Approaches to Co- Construction of knowledge in teacher learning groups. *Teaching and Teacher Education, 84*, 30-43. https://doi.org/10.1016/j.tate.2019.04.019

5 Key Elements in the IB Curriculum

❑ Concepts
❑ Knowledge
❑ **Approaches to Learning** Skills
❑ Learner Profile
❑ Action

Gurkan, (2020) Integrated Model

Teachers' perspectives of integrating the Approaches to Learning Skills

Teachers' perspectives on the challenges in integrating the Approaches to Learning Skills

Support of teachers on integrating the Approaches to Learning Skills

- Transdisciplinary concept selection phase
- Brainstorming or collaboration phase
- Inquiry item writing
- Instruction planning
- Instruction assessment
- Instruction design review

Enhanced Transdisciplinary Learning

Group Reflection strategy
Theme: Curriculum Articulation/ Conceptual framework

Know	Would Want to Know	Learned

Summary of Literature Review

Teachers will work in cooperative groups to add information to this slide after reading the literature review articles.

After reading each article the groups will add their main takeaways (puzzle reading)

Theme- Curriculum Articulation:Main ideas

Wijngaards-de Meij, L., & Merx, S. (2018).

- Curriculum can be reviewed from a single subject structure perspective.
- The second level could focus on content and the structure at the program level.
- The third level of aligning the curriculum is by reviewing it from the student's learning experience. This includes gathering students' data using various strategies such as assessments, reviewing students' digital portfolios, journals, and teacher reflections, and then analyzing that information to make data-driven decisions
- Curriculum alignment is a shared responsibility and advocates that teachers and students should be involved in the co-construction of knowledge.

Participants Handouts: Day 2

* Gurkan, B. (2021). Transdisciplinary integrated curriculum: An analysis of teacher experiences through a design model within the framework of IB-PYP. *Participatory Educational Research, 8* (1), 176-199. https://doi.org/10.17275/per.21.10.8.1

* Wishkoski, R. (2020). Semi-structured interviews: A team-based approach to design, implementation, and analysis. In L.A. Fullington, B.K. West, & F. Albarillo (Eds.), Reflections on Practitioner Research: A Practical Guide for Information Professionals (pp. 89-104). Chicago: Association of College & Research Librarie

* Tao, J., & Gao, X. (2017). Teacher agency and identity commitment in curricular reform. *Teaching and Teacher Education*, 355. https://doi.org/10.1016/j.tate.2017.01.010

Shah, H. A., Osman, S., Nur, I., & Umar, H. (2020). 154 An audit of audit teaching. *Abstracts*. https://doi.org/10.1136/leader-2020-fmlm.154

Activities of Time: Day 2

8:30am- 9:30am

*Respond to any questions that may have been asked

* Participants to share their takeaway from the 1st day briefly

*Reviews Gurkan, (2021) Integrated Model- How can it support ATLS integration

9:30- 10:00 am: snacks

10:00- 11:00
Read article on Collaboration **(Theme 2)**

Darling-Hammond, L., Hyler, M. E., Gardner, M. (2017). Effective Teacher Professional Development. Palo

Alto, CA: Learning Policy Institute.*Teacher Education*, 355. https://doi.org/10.1016/j.tate.2017.01.010

Van Schaik, P., Volman, M., Admiraal, W., & Schenke, W. (2019). Approaches to Co-   Construction of

knowledge in teacher learning groups. *Teaching and Teacher*   *Education, 84*, 30-43.

https://doi.org/10.1016/j.tate.2019.04.019

*

Continuation of Day 2

Van Schaik, P., Volman, M., Admiraal, W., & Schenke, W. (2019). Approaches to Co-

Construction of knowledge in teacher learning groups. *Teaching and Teacher*

Education, 84, 30-43. https://doi.org/10.1016/j.tate.2019.04.019

11:00- 11:30: Reflection on Post-it notes/ Padlet
* What are the key tenets of collaboration?
* How could teachers improve collaboration at IPS
* What adjustments/ changes are likely to happen?
11:30- 12:00- Reflection

12:00- 13:00- Lunch

13:00- 14:30- **Theme Limited time (Theme 3)**

14:30- 15:30 - Action plans shared and uploaded to the Learner Management System

15:30- 16:00- Final reflection for the day and question and answer time

**Theme - Collaboration: Main Ideas**
Darling-Hammond et al., (2017)

- Teacher collaboration is a strategy that supports teachers' instructional improvement
- Investing in teacher collaboration improves curriculum development and is a resourceful way for teachers to support each other professionally
- Effective collaborative structures provide opportunities for teachers to solve problems and learn together
- Teacher collaboration as a factor that brings positive changes to the learning community.
- Different way that teachers can collaborate: shared planners, reflecting together, shared resources, shared goals

Day 2 Reflection on Post it notes/ Jamboard

Digital Reflection on Padlet

Join using link: https://padlet.com/nmacharia/9e5cx2qxoqtznrfc
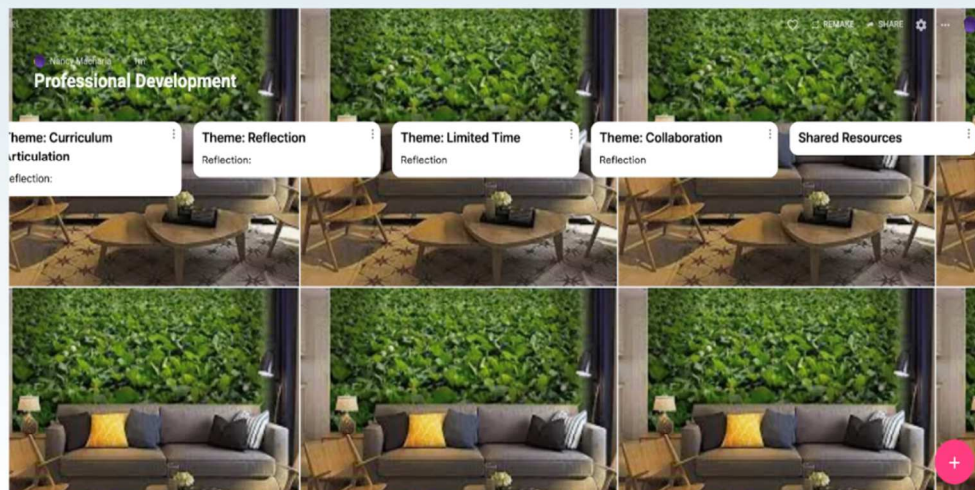
Join using QR Code:

Questions and resources (Parking Lot)

Please add your questions and resources here

Activities Day 3

8:30 am- 9:00am - Question and Answer and recap from last session

9:00am- 10:30am : Theme 4- Reflection

Literature review: What are some authors stance on reflection? What is IB's stance?
What are the key tenets of reflection

International Baccalaureate Organization. (2019). Teaching and Learning 2019. *International Journal of Learning and*

   Teaching, 11(1).

Shalabi, M., Almuqati., Ashwaq., & Sameem, M. (2018). Reflective Teaching as a Practical Approach

10:30 am - 10:45- snacks

10:45 am - 11:45 am

Reflect on adjustments or changes that teachers and administrators could consider making

11:45- 12:30: Teams to come up with action plans upload plans to Learner Management System (Google Classroom)

Thank Participants for their engagement and time

Theme: Reflection: Main ideas
Shalabi et al., (2018)

- Reflective practice is significant as it assists educators in making knowledgeable choices about learning engagements that have taken place over time

- There are three types of reflection; reflection in action, reflection on action, and critical reflection

- Each type of reflection provides teachers and students an opportunity to think about how to make learning more equitable and meaningful.
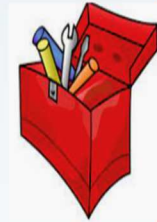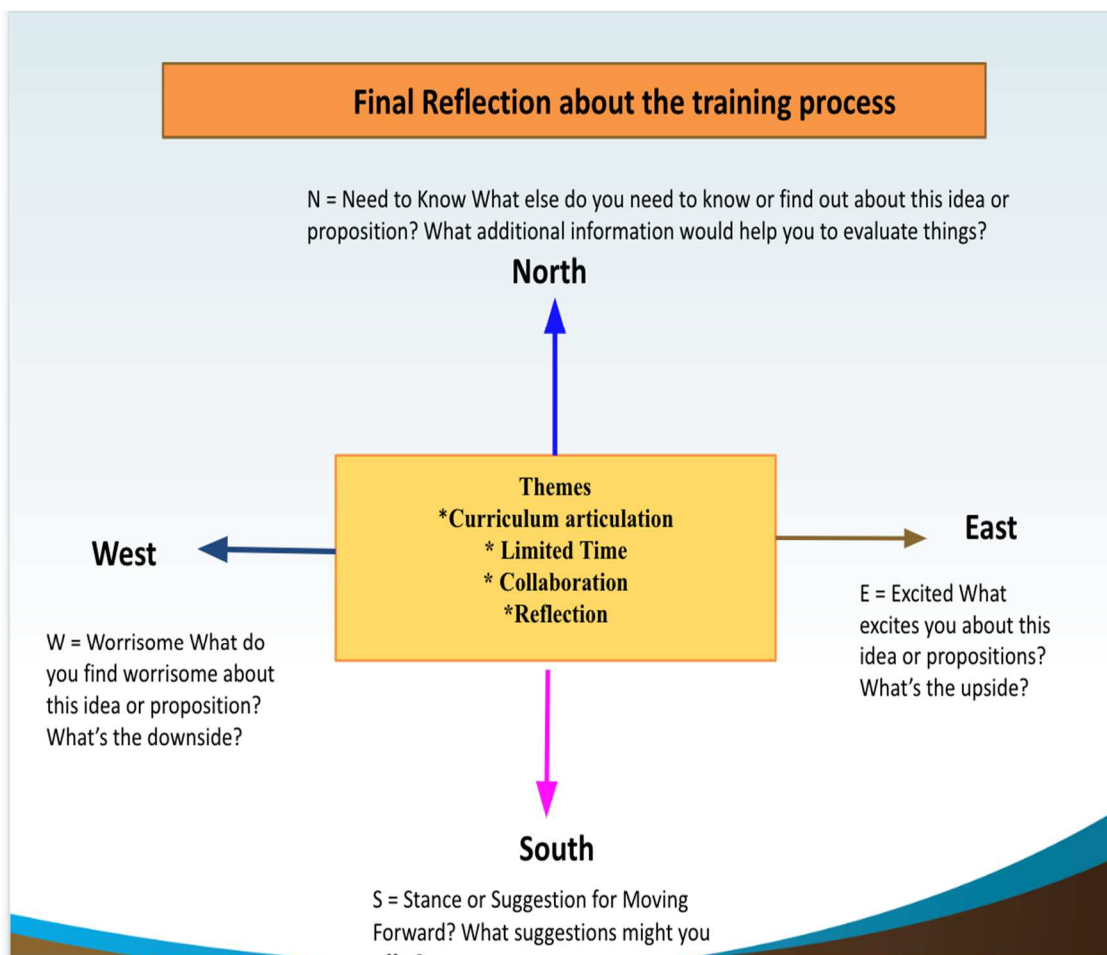
Day 2 Group reflection
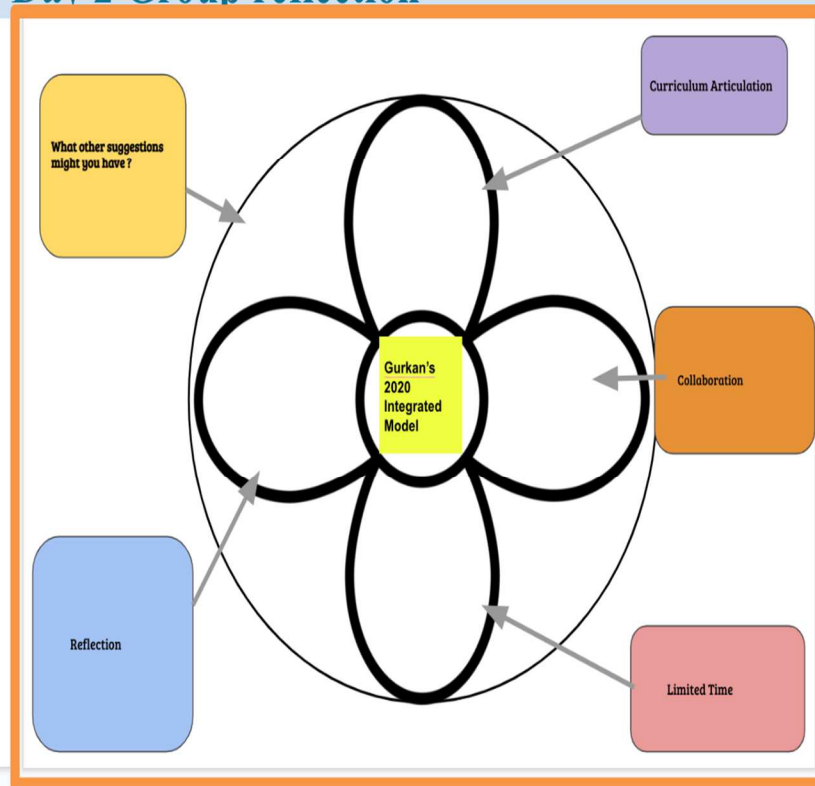
Participants will work in groups as they delve into each theme. The idea is for participants to be more familiar with Gürkan's (2020) Integrated Model and to examine how it could be used to support teachers' integration of ATLS at IPS.

Questions and resources (Parking Lot)

Please add your questions and resources here

Final Reflection about the training process

N = Need to Know What else do you need to know or find out about this idea or proposition? What additional information would help you to evaluate things?

North

West

W = Worrisome What do you find worrisome about this idea or proposition? What's the downside?

Themes
*Curriculum articulation
* Limited Time
* Collaboration
*Reflection

East

E = Excited What excites you about this idea or propositions? What's the upside?

South

S = Stance or Suggestion for Moving Forward? What suggestions might you

This information will assist the facilitator on what to focus on during the coaching

process or if any follow up PD is required

References

Gurkan, B. (2020). Transdisciplinary integrated curriculum: An analysis of teacher experiences through a design model within the framework of IB-PYP. *Participatory Educational Research*, *8* (1), 176-199. https://doi.org/10.17275/per.21.10.8.1

International Baccalaureate Organization. (2017). The Learner. *From Principles into Practice*, 51.

International Baccalaureate Organization. (2019). Teaching and Learning 2019. *International Journal of Learning and Teaching*, *11*(1).

Tao, J., & Gao, X. (2017). Teacher agency and identity commitment in curricular reform. *Teaching and Teacher Education*, 355. https://doi.org/10.1016/j.tate.2017.01.010

Shah, H. A., Osman, S., Nur, I., & Umar, H. (2020). 154 An audit of audit teaching. *Abstracts*. https://doi.org/10.1136/leader-2020-fmlm.154

Shalabi, M., Almuqati., Ashwaq., & Sameem, M. (2018). Reflective Teaching as a Practical Approach

Wishkoski, R. (2020). Semi-structured interviews: A team-based approach to design, implementation, and analysis. In L.A. Fullington, B.K. West, & F. Albarillo (Eds.), Reflections on Practitioner Research: A Practical Guide for Information Professionals (pp. 89-104). Chicago: Association of College & Research Librarie

Expectations After the Training

Teachers at IPS will be notified during the training that there will be a follow up after the PD to ensure that they use the newly acquired knowledge and skills to enhance the ATLS using a transdisciplinary approach. I will use a differentiated instruction approach as I guide the teachers after the PD. Coubergs et al., (2017) shares that teacher's growth is guided by factors such as ethical compass, responsiveness to understanding the concepts and differentiated approach therefore provides teachers opportunities to progress at their pace.

I will explore different strategies of supporting teachers after the PD. According to Cravens et al., (2017) it is important to have a follow up after training so that teachers may implement the concept in a timely manner. The author shares that teachers' can support each other by recording their lessons and sharing it with each other during collaboration meetings. More experienced teachers would also act as mentors to the novice teachers (Cravens et al., 2017). This includes having reflection sessions to provide more feedback and support where necessary. I intend to use the following follow up strategies after the PD:

Coaching

 The role of the coach may be performed by someone who possess skills or knowledge that are required to fulfil a certain task Kraft et al., (2018). According to the authors, there are different types of coaching that the instructional expert can work with teachers. This includes (a) individualized coaching: which are sessions that are carried out on a one-on-one basis. I may opt for this type of coaching based on the teaching needs of the teacher and I will identify what type of coaching to take based on the teachers' reflections after the training. The next type of coaching that I may consider is (b) intensive: this is when the coach and teachers interact on an ongoing basis for example, every couple of weeks. The time according to the authors should ideally be set by the coaches as it gives them a sense of ownership in their teaching journey. Another coaching strategy that I may consider could be (c) sustained: which is support that teacher receive in coaching for an extended period. I may also opt to visit classrooms and either model a lesson on integrating ATLS or observe teachers as they implement the skills which is referred to by

Kraft et al., (2018) as context specific coaching. I will continually update the Learner

Management System (Google Classroom) that I used during the training with new

resources such as videos and other relevant resources.