A proposal for the integration of gender issues into the International Baccalaureate's Theory of Knowledge course

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Gracias, querido Jaime, por todo tu tiempo, apoyo y cariño.

A Mamá, Gabi y Miguelito: gracias por siempre estar.

ABSTRACT

The present Master's Thesis in Education explores the integration of gender issues in the International Baccalaureate's Theory of Knowledge. The subject encourages students to think critically about other subjects they are studying by exploring what constitutes knowledge in different fields of study and by gaining an understanding of the ways in which knowledge is gained. The reader might wonder, why should a course on critical thinking cover gender issues? A growing body of feminist research in recent decades has shown that knowledge is gendered and often androcentric (Harding, 1986; Keller, 1984). A class on epistemology and critical thinking that does not recognize one of the most prominent limitations to knowledge would lose relevance and risk not being pro-democratic.

To answer the research question – can gender issues be integrated into the International Baccalaureate's Theory of Knowledge? –, this dissertation analyzes resources for the course published by the International Baccalaureate and various publishing houses by using feminist writings on science and epistemology. The analysis shows that gender issues receive some treatment by publishing houses and limited treatment by the International Baccalaureate. As a result, suggestions are put forward to aid teachers in integrating gender issues into their classes. Given that the International Baccalaureate is being taught in an increasing number of elite schools worldwide that are shaping tomorrow's leaders, this dissertation ends by inviting researchers to examine whether the International Baccalaureate as a whole is promoting gender equality.

Key words: Theory of Knowledge, International Baccalaureate, gender issues, epistemology, education

ABSTRACT EN ESPAÑOL

El presente Trabajo de Fin de Máster en Educación explora la integración de cuestiones de género en la asignatura del Bachillerato Internacional titulada Teoría del Conocimiento. La asignatura alienta al alumnado a evaluar críticamente el conocimiento aprendido en otras asignaturas mediante la exploración de qué constituye el conocimiento en diferentes campos de estudio y cómo el mismo es adquirido. Uno podría preguntarse, ¿por qué debería un curso sobre pensamiento crítico cubrir cuestiones de género? Un creciente corpus de investigación feminista en las últimas décadas ha demostrado que el conocimiento está ligado al género y que, a menudo, es androcéntrico (Harding, 1986; Keller, 1984). Una asignatura sobre epistemología y pensamiento crítico que no reconozca una de las limitaciones más destacadas del conocimiento perdería relevancia y correría el riesgo de no ser prodemocrática.

Para responder la pregunta de investigación – ¿pueden integrarse las cuestiones de género en la asignatura de Teoría del Conocimiento del Bachillerato Internacional? – esta disertación analiza los materiales para la asignatura publicados por el Bachillerato Internacional y varias editoriales vis a vis teorías feministas sobre ciencia y epistemología. Dicho análisis muestra que los temas de género reciben un tratamiento limitado por parte de las editoriales y que apenas son tratados por el Bachillerato Internacional. En vista de dichos resultados se presentan sugerencias para ayudar a los docentes a integrar las cuestiones de género en sus clases. Dado que el Bachillerato Internacional se enseña en un número cada vez mayor de escuelas de élite en todo el mundo y que las mismas forman a los líderes del mañana, la disertación finaliza invitando a investigadores a examinar si el Bachillerato Internacional promueve la igualdad de género.

Palabras clave: Teoría del Conocimiento, Bachillerato Internacional, cuestiones de género, epistemología, educación

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Introduction

As the leading organization in primary and secondary school education, whose curriculum is being taught in over 5000 schools in 150 countries, the International Baccalaureate Organization has big shoes to fill. The organization seeks to "instill in our students the knowledge that will make them better learners and better people" (International Baccalaureate Organization, 2018). The organization's educational programs are renowned for being academically rigorous and for having a more student-centered approach to teaching than most national programs. The organization also prides itself on teaching students how to "think critically and independently, and how to inquire with care and logic" (International Baccalaureate Organization, 2018). The International Baccalaureate might well be the standard setting organism in high-quality K-12 education. And yet, in an interview with Huffington Post in 2015, the first-ever female Director General of the organization, Siva Kumari, stated that much remains to be done to achieve gender equality in education. "We believe our educational programmes can help to close the gender gap. For example, we do extensive analysis to evaluate whether our exams bias children of one gender over another. But what is left to be done is still vast", explained Kumari (Rubin, 2015).

Over the past few years I have had the opportunity to get acquainted with the International Baccalaureate in a number of different capacities. First, as a teacher of one of the subjects taught in the Diploma Programme – one of the four programs offered by the organization and the one that, if completed successfully, grants students a secondary school degree accepted by most universities throughout the world. As a Master's student at Universidad de Navarra, over the past year I have also had the opportunity to pursue the "IB Certificate in Teaching and Learning", which provides detailed introduction on the main characteristics of the Diploma Programme and its approach to teaching and learning. During the course of this year I have also had the opportunity to intern in two international schools that offer the International Baccalaureate's Diploma Programme. My exposure to the organization and its practices has reinforced my belief that it has many strengths, that it represents a good educational practice in K-12 schooling and that many more schools throughout the world would benefit from adopting it. The organization's emphasis on skills

development and critical thinking as well as its value-driven approach to education are commendable.

During my two years teaching the International Baccalaureate curriculum in Argentina I also had the chance to become better acquainted with Theory of Knowledge, the only subject in the Diploma Programme that is mandatory for all students. As suggested by its title, the subject explores the question "How do you know?". This driving question is accompanied by many others, such as: what is knowledge? How do you know that you know something? What constitutes evidence in a specific field of study? Can we learn new things through emotion? According to International Baccalaureate Organization, "[t]he theory of knowledge course encourages students to think about the nature of knowledge, to reflect on the process of learning in all the subjects they study as part of their Diploma Programme course, and to make connections across them" (International Baccalaureate Organization, 2013, p. 3). The course is therefore designed to help students build their knowledge more thoughtfully and effectively, be it as academics or as members of society (Dombrowski, Mackenzie & Clarke, 2010, p. 10).

By the International Baccalaureate's own admission, Theory of Knowledge is a curious subject. According to Dombrowski, Mackenzie and Clarke, "[i]t is curious in the sense that it questions and wonders, reflects and connects, in a spirit of inquiry. It is also curious in the other sense of the word—it is a little odd, a little unlike the other subjects in the Diploma Programme" (Dombrowski, Mackenzie & Clarke, 2010, p. 10). According to Dombrowski, Mackenzie and Clarke, the subject has brought much confusion to the International Baccalaureate community. The authors do not explain why, but it is possible that its title might have something to do with it: unlike its name would suggest, it is not strictly a course on epistemology – i.e. the branch of philosophy that deals with the theory of knowledge, or how knowledge is produced and what constitutes justified belief (Steup, 2005). The course also seems to be curious since it is not taught in schools that do not offer the International Baccalaureate, it is not content-based and in fact can be taught by any teacher regardless of their educational background. Finally, Theory of Knowledge also seems to be curious since it is a subject on critical thinking that does not mention the possibility that, like our society, our theories of knowledge might also be gendered.

Research question

The present Master's Thesis in Education explores the integration of gender issues in the International Baccalaureate's subject entitled Theory of Knowledge. More specifically, this dissertation seeks to answer the following research question: *can gender issues be integrated into the International Baccalaureate's Theory of Knowledge?*

Aim of the study

This dissertation aims to be as pragmatic as possible. First of all, it aims to explore whether there is a connection between gender issues and theory of knowledge. If such connection exists, this dissertation will propose ways for teachers to integrate gender issues into Theory of Knowledge classes. If gender issues can indeed be integrated into the International Baccalaureate's Theory of Knowledge, this dissertation will present arguments as to why gender issues should be integrated into the course.

Relevance

If Theory of Knowledge and gender are connected, then integrating gender issues into the subject would help students understand the connections between knowledge production, knowledge sharing and knowledge acquisition and current social issues. This could make the subject more up-to-date and socially relevant. Since Theory of Knowledge is the only mandatory subject in the Diploma Programme, integrating gender issues would be a way of ensuring that all students gain some understanding of how gender issues affect their lives. This goes hand in hand with the aim of the International Baccalaureate, which "aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect" (International Baccalaureate Organization, 2013, p. v). A world where gender inequality remains unchallenged is clearly not a better and more peaceful world.

State of the art

At the moment there exist no academic dissertations or academic research on the International Baccalaureate's Theory of Knowledge course from a gender perspective. In fact, no research seems to have been published on the International Baccalaureate from a gender perspective at all. Given the state of the art on this research topic, the present dissertation seeks to address a gap in understanding. This is an element that the research – and perhaps even the International Baccalaureate Organization – has so far failed to consider.

Outline of this thesis

The present introduction has sought to present the issue at hand and explain how this Master's Thesis aims to tackle it. It has also tried to show why incorporating gender issues into the International Baccalaureate's Theory of Knowledge would be advantageous to students and the organization.

The upcoming chapter, chapter 1, introduces in more detail the International Baccalaureate and its Theory of Knowledge course. It provides an overview of the Diploma Programme and explains how Theory of Knowledge relates to the rest of its subjects. It also introduces the main aspects of the International Baccalaureate's Theory of Knowledge course, namely: knowledge, knowledge issues, knowledge questions, areas of knowledge and ways of knowing. The assessment of the course is described briefly to help inform the didactic proposal in a later chapter. Chapter 1 concludes with a brief comparison between the International Baccalaureate's Theory of Knowledge course and the branch of philosophy known as epistemology or theory of knowledge[1].

Chapter 2 explores if there is a connection between gender issues and the International Baccalaureate's Theory of Knowledge. To that end, the chapter references the works of renowned feminist philosophers over the past four decades who have been writing

[1] Note that when referring to the subject imparted by the International Baccalaureate, this dissertation will use upper-case, while when referring to epistemology or theory of knowledge as a field of study it will use lower-case.

on epistemology. The chapter revolves around the key criticisms on epistemology put forth by feminist philosophers.

Chapter 3 reviews the present coverage of gender issues on the International Baccalaureate's Theory of Knowledge. To that end, the chapter reviews the official documents published by the International Baccalaureate Organization, such as the subject guide and a recent curriculum review, as well as course companions published specifically for the course by various publishing houses.

Chapter 4 puts forward a proposal for integrating gender issues into the International Baccalaureate's Theory of Knowledge course. This is done by integrating what I believe to be some of the strongest arguments of feminist philosophers writing on epistemology into the framework of the course.

The following and concluding chapter provides a brief summary of the claims of this dissertation, its main findings and contributions. It ends by suggesting possible avenues of research that might be of interest to academics and to the International Baccalaureate Organization.

Chapter 1: The International Baccalaureate's Theory of Knowledge course

In order to answer the research question of this Master's Thesis – can gender issues be integrated into the International Baccalaureate's Theory of Knowledge? – the present chapter seeks to gain a better understanding of what the course is all about. The chapter begins by contextualizing the subject in the Diploma Programme. It then moves on to describe its aim and its syllabus. The chapter ends by drawing a distinction between the International Baccalaureate's Theory of Knowledge course and the branch of philosophy known as theory of knowledge or epistemology.

The Diploma Programme

The Diploma Programme is the International Baccalaureate's pre-university course designed for students 16 to 19 years of age. According to the organization, the two-year-long programme "aims to encourage students to be knowledgeable and inquiring, but also caring and compassionate" (International Baccalaureate Organization, 2013, p. 2). This aim shows the importance that the organization gives to values. Like the rest of the programmes of the International Baccalaureate – namely the Primary Years Programme, the Middle Years Programme and the Career-related Programme – the Diploma Programme is value-driven and designed around a humanistic vision, as shown in the figure below describing the profile of the type of learners the organization aims to develop.

IB learner profile

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

IB learners strive to be:

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

Figure 1: International Baccalaureate Learner Profile (International Baccalaureate Organization, 2013)

Among the qualities that the organization aims to promote in its learners, open-mindedness seems to hold a special place. According to a report published by the organization, developing intercultural understanding and open-mindedness and learning how to respect and evaluate different points of views are highly important in the Diploma Programme (International

Baccalaureate Organization, 2013, p. 2). A report prepared for the International Baccalaureate Organization states that "[t]he lessons in intellectual humility and the capacity to take alternative views seriously often lie behind comments by staff members of universities about the special maturity of its students" (Dombrowski, Mackenzie & Clarke, 2010, p. 11). Having an open mind to explore alternative views is therefore essential in the Diploma Programme.

The Diploma Programme gives students a choice of subjects they can study. Students are required to take one subject in each of six academic areas, namely: language acquisition, studies in language and literature, individuals and societies, mathematics, the arts, and sciences. The specific subjects students take in each of these areas depend on their individual interests and what subjects are being offered at their schools.

The Diploma Programme also requires students to take a set of so-called "core" elements. The core is composed of three elements: Creativity, Activity, Service (formerly known as Creativity, Action, Service); the Extended Essay; and Theory of Knowledge. The organization describes these elements as follows:

> The theory of knowledge course encourages students to think about the nature of knowledge, to reflect on the process of learning in all the subjects they study as part of their Diploma Programme course, and to make connections across them. The extended essay, a substantial piece of writing of up to 4,000 words, enables students to investigate a topic of special interest that they have chosen themselves. It also encourages them to develop the skills of independent research that will be expected at university. Creativity, action, service (CAS) involves students in experiential learning through a range of artistic, sporting, physical and service activities. (International Baccalaureate Organization, 2013, p. 3)

The core elements of the Diploma Programme are thus different in nature and serve various purposes. Out of the three, the only one that has a loosely prescribed set of topics is Theory of Knowledge, since students are meant to design their Creativity, Activity and Service projects and research a topic of their interest for their Extended Essays. What the three core elements do have in common is that they encourage students to explore issues of global significance and intend to make a difference in students' lives. According to the International Baccalaureate,

> [the core] should provide opportunities for students to think about their own values and actions, to understand their place in the world, and to shape their identity. This might include, for example, providing opportunities in TOK for students to have

> conversations with others from different backgrounds and with different viewpoints, thereby challenging their own values. (International Baccalaureate Organization, 2013, p. 5)

Much like the Learner Profile, the elements of the core are designed to help students evaluate their values, actions and attitudes, understand their place in the world and shape their identity to be open-minded and caring.

Aims and characteristics of the Theory of Knowledge course

Having introduced the Diploma Programme, its aims and its components, let us now move on to introducing in more detail the aims and characteristics of the Theory of Knowledge course.

The guide to Theory of Knowledge states that, in general terms, the course aims to encourage students to think about the question "how do you know?" in a variety of contexts, as well as to develop a fascination for knowledge (International Baccalaureate Organization, 2013, p. 14). The guide also puts forth a number of so-called specific aims, which are to:

1. make connections between a critical approach to the construction of knowledge, the academic disciplines and the wider world
2. develop an awareness of how individuals and communities construct knowledge and how this is critically examined
3. develop an interest in the diversity and richness of cultural perspectives and an awareness of personal and ideological assumptions
4. critically reflect on their own beliefs and assumptions, leading to more thoughtful, responsible and purposeful lives
5. understand that knowledge brings responsibility which leads to commitment and action. (International Baccalaureate Organization, 2013, p. 14)

According to these aims, the course seeks to develop an understanding of how knowledge is constructed in the different subjects that students are studying – an aim that goes hand in hand with epistemology. The course also has other aims not unlike those traditionally pursued in epistemology, such as creating an understanding of student's personal values, beliefs and ideological assumptions. Furthermore, the course has a very practical and social aim, which is to help students lead more thoughtful, responsible and purposeful lives. According to Dombrowski, Mackenzie and Clarke, the International Baccalaureate's Theory of Knowledge course aims to develop student's awareness of their own thinking as well as of the thinking of others (2010, p. 11). They also hold that the course places great emphasis on critical

thinking: "[s]tudents in [Theory of Knowledge] should be learning to critique arguments from different perspectives and to apply the same critical standards to the arguments they make themselves" (p. 12). The aims of the course are therefore multifold and demanding.

Given the aims of the course, it might come as no surprise that the specific topics that are covered in the course depend on the students and the teacher. The official guide to the course therefore suggests a design but leaves much freedom to individual teachers to adapt it as needed.

It is important to point out that the International Baccalaureate's Theory of Knowledge course is not supposed to be a course on epistemology (Sanchez Gomez, 2016). As pointed out by the organization,

> [Theory of Knowledge] is not intended to be a course in philosophy. While there might be a certain degree of overlap in the terms that are used, the questions that are asked, or the tools that are applied to answer these questions, the approach is really quite different. It is not a course of abstract analysis of concepts. [Theory of Knowledge] is designed to apply a set of conceptual tools to concrete situations encountered in the student's Diploma Programme subjects and in the wider world outside school. The course should therefore not be devoted to a technical philosophical investigation into the nature of knowledge. (International Baccalaureate Organization, 2013, p. 16)

Because the subject is not intended to be a course on philosophy it cannot, as a result, be a course on the branch of philosophy that deals with the exploration of knowledge, known as theory of knowledge or epistemology. This is, of course, very confusing.

The *Stanford Encyclopedia of Philosophy* defines epistemology as the study of knowledge and justified belief (Steup, 2005). According to the encyclopedia,

> As the study of knowledge, epistemology is concerned with the following questions: What are the necessary and sufficient conditions of knowledge? What are its sources? What is its structure, and what are its limits? As the study of justified belief, epistemology aims to answer questions such as: How we are [*sic*] to understand the concept of justification? What makes justified beliefs justified? Is justification internal or external to one's own mind?. (Steup, 2005)

It would appear that the International Baccalaureate's Theory of Knowledge course covers exactly what this definition is speaking about: the conditions of knowledge, it sources, its limitations and its justification. This is not exactly the case, however. International Baccalaureate students are exploring these questions, but they are not studying them with the same rigor as a philosophy student would. They are also not studying how epistemology

evolved through time, or what different philosophers said. For all intended purposes, the International Baccalaureate's Theory of Knowledge subject seems to be a simplified course on epistemology combined with a course on critical thinking.

The "knowledge" in Theory of Knowledge

Much to my surprise, the guide to the Theory of Knowledge course does not provide a definition of knowledge, stating that this has been debated by philosophers for over 2,000 years without much consensus (International Baccalaureate Organization, 2013, p. 15). Furthermore, the guide states that since the course is not intended to be a course in philosophy it should also not devote itself to a philosophical investigation into the nature of knowledge (ibid). The organization seems to have less interest in students exploring what knowledge is and more interest in having them explore who creates knowledge.

According to the guide, knowledge can be the product of an individual – which it calls personal knowledge – or a group of people working together or separated through time and space – which it calls shared knowledge (International Baccalaureate Organization, 2013, p. 17). Shared knowledge is structured, systematic and independent from the contributions of any one individual. Examples of shared knowledge are the subjects studied in the Diploma Programme, such as physics or economics. While there might be areas of knowledge that are shared by all of us, such as mathematics, the guide mentions that there might be other areas of knowledge that we can only access when we belong to a certain group, such as a certain culture, a religious group, etc. (p. 18).

Unlike shared knowledge, personal knowledge depends on the experience of an individual, their interests and their personal perspective. Personal knowledge includes the abilities, skills and talents of a person, which is why it is sometimes referred to as procedural knowledge (International Baccalaureate Organization, 2013, p. 18). Because of the procedural nature of personal knowledge, it can often be harder to communicate than shared knowledge (p. 19). The guide states that it is important for a Theory of Knowledge course to deal with both personal and shared knowledge, since the first requires the individual to inspect their personal views and beliefs, while the latter acknowledges that individuals are part of a web of individuals interconnected through social relationships (p. 19).

Ways of knowing

While the guide does not speak much about what knowledge is, it does pay much more attention to how it is that we come to know. The course identifies eight ways of knowing: language, sense perception, emotion, reason, imagination, faith, intuition, and memory (International Baccalaureate Organization, 2013, p. 8). They are described as follows:

> On the one hand they are the tools that answer the question "how do we know?" and on the other hand they help us answer the question "how do I know?". For example, we can analyse the role of imagination in the construction of shared knowledge in terms of scientific discovery, but we can also discuss imagination in the context of personal knowledge and understanding. (International Baccalaureate Organization, 2013, p. 23)

By helping to answer the questions "how do we know?" and "how do I know?", language, sense perception, emotion, reason, imagination, faith, intuition, and memory make possible both personal and shared knowledge.

The International Baccalaureate Organization invites students and teachers to explore differences among the different ways of knowing. To that end, the guide provides examples of questions that may be asked for each way of knowing, as seen in the extracts below.

> Language: How does language shape knowledge? Does the importance of language in an area of knowledge ground it in a particular culture? How are metaphors used in the construction of knowledge? […]
>
> Emotion: Are emotions universal? Can/should we control our emotions? Are emotions the enemy of, or necessary for, good reasoning? Are emotions always linked to belief? […]
>
> Reason: What is the difference between reason and logic? How reliable is inductive reasoning? Are we predictably irrational? […]
>
> Memory: Can we know things which are beyond our personal present experience? Is eyewitness testimony a reliable source of evidence? Can our beliefs contaminate our memory? […] (International Baccalaureate Organization, 2013, pp. 23-26)

While for the sake of brevity the above extracts leave out several ways of knowing, by providing examples of the sort of questions the course explores they should still prove useful in painting a clearer picture of the type of inquiry that characterizes the course.

Areas of knowledge

The Theory of Knowledge course identifies eight areas of knowledge or "specific branches of knowledge, each of which can be seen to have a distinct nature and different methods of gaining knowledge" (International Baccalaureate Organization, 2013, p. 8). These areas of knowledge are: mathematics, the natural sciences, the human sciences, the arts, history, ethics, religious knowledge systems, and indigenous knowledge systems. Exploring different areas of knowledge gives students an opportunity to understand how they come to know in the different subjects they study in the Diploma Programme and what constitutes knowledge in each of them. As a result, the exploration of the different areas of knowledge represents the bulk of the Theory of Knowledge course.

To gain a better understanding of the different areas of knowledge, the International Baccalaureate Organization has created a so-called knowledge framework that can be used to analyze each area of knowledge in more detail. The framework includes five components: scope, motivation and applications of the area of knowledge; specific terminology and concepts of the area of knowledge; methods it uses to produce knowledge; key historical developments of the area of knowledge; and interaction with personal knowledge (International Baccalaureate Organization, 2013, p. 28). Each component has a list of characteristics and questions that can be raised to gain a better understanding of the area of knowledge.

Figure 2 provides an example of a knowledge framework for human sciences that shows some of the specific questions and issues that can be brought up to stimulate discussion, inquiry and reflection.

Areas of knowledge

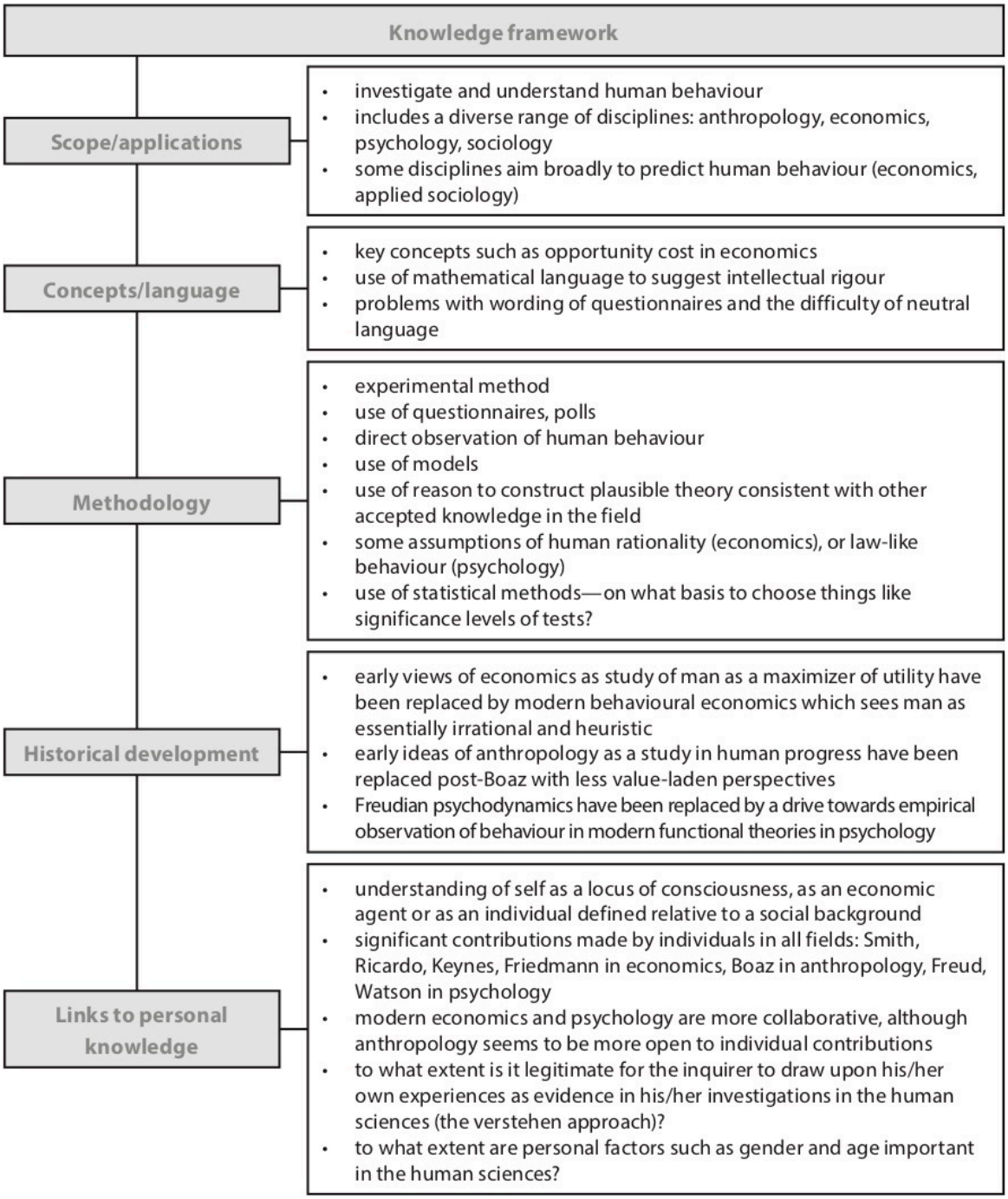

Figure 2: Knowledge framework for the human sciences (International Baccalaureate Organization, 2013, p. 38)

Concluding remarks

The present chapter has contextualized the Theory of Knowledge course within the Diploma Programme, described the course's aims and given an overview of its syllabus. The chapter has aimed to show that the course is not a course in epistemology, as it tries to be less theoretical and more practical. Specifically, the International Baccalaureate's course tries to encourage students to think critically about the knowledge they are acquiring in some of the areas of knowledge they are studying as part of the Diploma Programme and to explore their personal beliefs and values as well as those of their society.

Given that the International Baccalaureate's Theory of Knowledge course is not a course on epistemology, the following chapter will not explore whether there is a place for gender issues in traditional epistemology. Instead, chapter 2 will explore whether gender affects knowledge, the ways of knowing and areas of knowledge as defined by the International Baccalaureate. Given that "TOK is a course about critical thinking and inquiring into the process of knowing", chapter 2 will also explore whether gender issues are relevant to a course on critical thinking (International Baccalaureate Organization, 2013, p. 8).

Chapter 2: On the epistemic salience of gender

Since the 1980s, feminist philosophers have been studying how gender does and ought to influence knowledge, knowers and the processes of inquiry and justification (Bart, 1998). Their work identifies how "dominant conceptions and practices of knowledge attribution, acquisition, and justification systematically disadvantage women and other subordinated groups, and strives to reform these conceptions and practices so that they serve the interests of these groups" (Anderson, 2011). The study of epistemology by feminist philosophers is therefore an attempt to show that the production, acquisition and justification of knowledge have a social and political impact on society – through disadvantaging women and other subordinated groups while benefitting others. By showing that ethical and political values have an important effect on epistemic practices and interpretations of evidence, feminist philosophers also attempt to improve scholarship on epistemology.

The present chapter will explore the ways in which gender affects knowledge, our practices of inquiry and justification, and science. This will be done by using the works on epistemology and science of renowned feminist philosophers. Given that the literature on this topic is vast, this chapter will not present an overview of the literature or incorporate all its main contributors. It will only incorporate aspects of feminist literature on epistemology or science that seem sensible and that are relevant to the International Baccalaureate's approach to theorizing about knowledge.

Situated knowers, situated knowledge

The central concept for feminist epistemologists is that of situated knowers, originally put forth by Donna Haraway (Anderson, 2011; Anker, 1997; Haraway, 1988). Writing for the *Stanford Encyclopedia of Philosophy*, Elizabeth Anderson explains that knowers are "situated in particular relations to what is known and to other knowers. What is known, and the way that it is known, thereby reflects the situation or perspective of the knower" (Anderson, 2011). Unlike for mainstream epistemologists, where knowers are abstract and universalizable, for feminist epistemologists knowers are particular and concrete (Janack,

2004). Since subjects know things from their own situation and perspective, the knowledge they have is therefore also situated.

While feminist philosophers do not agree on many aspects of epistemology, they do seem to agree on knowledge being situated in various ways. The following represent a few relevant examples of how situatedness affects knowledge.

- Embodiment: depending on where a person stands, his or her perspective and experience of a certain object will vary.
- First-person vs. third-person knowledge: how we know our mental or bodily state differs from how we know a third person's mental or bodily state, which we can only infer by external symptoms, imagination or by receiving their testimony.
- Emotions, attitudes, interests, and values: people tend to represent objects in different ways according to how they feel about them, their interests and their personal values. While a printed novel may be described by an avid reader as a little source of wonder, an environmentalist may describe it as a burden on our environment.
- Relations to other inquirers: a knower may stand in a different epistemic situation than the person it is relating to (a student, an informant, etc.). The knower's situation in relation to the other inquirer affects their access to information and whether they can convey their beliefs to others. (Anderson, 2011)

The above are examples of ways in which a person's situation what and how the person knows. According to the *Stanford Encyclopedia of Philosophy*,

> [t]hese kinds of situatedness affect knowledge in several ways. They influence knowers' access to information and the terms in which they represent what they know. They bear on the form of their knowledge (articulate/implicit, formal/informal, by acquaintance or description, and so forth). They affect their attitudes toward their beliefs (certainty/doubt, dogmatic/open to revision), their standards of justification (relative weights they give to different epistemic values such as predictive power and consilience, amount, sources, and kinds of evidence they require before they accept a claim, etc.), and the authority with which they lay claim to their beliefs and can offer them to others. Finally, they affect knowers' assessment of which claims are significant or important. (Anderson, 2011)

A knower's situation – such as their emotions, attitudes, relations to others, embodiment, etc. – therefore affects their access to information, the form of their knowledge, their attitudes towards beliefs, their standards of justification, the authority with which they make claims based on their beliefs and share them with other people, and their assessment of which claims are important.

Feminist philosophers are particularly interested in how gender situates the subject. They claim that gender situates the individual through:

- Gender roles: the social roles each gender "ought" to perform, such as childrearing for women or holding political office for men.
- Gender norms: what is considered appropriate behavior for each gender.
- Gender traits: psychological traits valued in each gender.
- Gender identity: how others identify a person, such as a man, a woman, both or neither.
- Gender symbolism: conventional associations of inanimate objects or animals with particular genders, such as pears with women or garages with men (Anderson, 2011).

Feminist philosophers argue that what people know can be influenced by their own gender, the gender of other people or by ideas of gender.

Since gender roles, norms, traits, identity and symbolism affect what people know or think they know, knowledge is gendered in a number of ways. This is the case, for example, with the knowledge gained of others in gendered relationships, as seen below.

> Gender norms differentially structure the social spaces to which men and women are admitted, as well as the presentation of self to others. As performative theories of gender stress, men manifest their male identity, and women their female identity, differently alone than in mixed company, and differently in these settings than in gender-segregated contexts. Male and female inquirers therefore have access to different information about others. Male and female ethnographers may be admitted to different social spaces. Even when admitted to the same social spaces, their presence has different effects on those being observed, because they do not stand in the same social relationships to their subjects. Physical objects do not behave differently depending on whether a man or a woman is observing them. But human beings do behave differently according to their beliefs about the gender of who is observing them. (Anderson, 2011)

Because women and men behave differently in gender-segregated contexts than in mixed contexts, research based on personal contact between a researcher and a research subject can be influenced by gendered relationships. This particularly impacts ethnography research, survey research, clinical research and human experimentation (ibid).

Another example of gendered knowledge is gendered first-personal knowledge *de se*. It is one thing to understand something – such as what sexual harassment is – and another to understand that it applies to you. "Many women who are able to see that women in general are disadvantaged have difficulty recognizing themselves as sharing women's predicament", explains Anderson (2011). First-personal knowledge *de se* seems to be different for men and women, since men are not faced with a men's predicament and therefore do not struggle with that gendered aspect of first-personal knowledge *de se.*

Skills also appear to be gendered. They can be labelled as feminine or masculine since women or men are often required to use them to perform their gender roles successfully. These skills can be the nurturing of small children, for example, which requires a particular knowledge that is labelled feminine, or the ability to lift the morale of soldiers, which is typically labelled masculine. While both genders can learn skills associated with the other gender, "[t]o the extent that the skill is perceived by the agent as the proper province of the 'other' gender, he or she may have a difficult time seeing himself or herself perform it confidently and fluidly, and this inability to self-identify with the task can impair performance" (Anderson, 2011). Performing a skill that is typically associated with the other gender can come at a cost to one's self confidence and to how well the task is performed (Anderson, 2011).

Background beliefs and worldviews can be gendered, too*.* Given women's and men's different knowledge *de se*, skills and personal knowledge of others, they tend to represent the world in different terms. Differences in knowledge *de se,* skills and personal knowledge of others create a set of different beliefs and worldviews against which women and men interpret their experiences, resulting in different types of information becoming salient to them as well as different interpretations of the same events. Once again, Anderson gives a good example:

> A man might read a woman's demure smile as a coy come-on, where another woman may interpret it as her polite and defensive reaction to unwanted attention from him.

> Such differences can spring from differential access to phenomenological knowledge. The male and female observers imaginatively project themselves into her situation, inferring her feelings from the feelings they think underlie her body language. Because men's and women's phenomenologies of embodiment are different—most men are not in the habit of smiling as a defense against unwanted attention from women—the man may narcissistically imagine the smile as relaxed and spontaneous, whereas the woman may suspect it is forced. (Anderson, 2011)

Because women and men experience their embodiment differently, this can result in a different understanding of even very simple occurrences. According to Catharine MacKinnon, this raises important questions: are there epistemic obstacles to men realizing when they are sexually harassing or raping a woman? If legal institutions solely follow a typically masculine perspective, is it possible for them to realize that a man has sexually harassed or raped a woman? (Anderson, 2011).

Since both knowers and knowledge are situated, a knower's claims to knowledge might be affected by several factors that he or she is not aware of. "Discussions of the 'situatedness' of knowers suggest that the claims of every knower reflect a particular perspective shaped by social, cultural, political, and personal factors and that the perspective of each knower contains blind spots, tacit presuppositions, and prejudgments of which the individual is unaware" (Hawkesworth, 1989, p. 554). Since knowers might be unaware of the social, cultural, political and personal factors affecting their knowledge, it would seem that their claims about the world are at least partially subjective.

Feminist philosophers argue that understanding knowledge as situated has an advantage. Situated knowledge allows us to consider how the social situation of knowers (including their gender) is relevant to knowledge, while allowing us to raise a number of questions that are not framed in mainstream epistemology.

> How are the knowledge claims generated by gendered perspectives related to one another? Can men take up a gynocentric perspective, and women, an androcentric perspective? Or are there epistemological barriers to such perspective crossing? Are certain perspectives epistemically privileged? Is there any way to construct a more objective perspective out of differently gendered perspectives? What is the relation of an objective perspective, if one is possible, to gendered perspectives? What would be the point of achieving such a perspective? Would the achievement of such an objective perspective make possible or desirable the elimination of gendered perspectives? (Anderson, 2011)

While feminist philosophers do not rule out the possibility or desirability of objective knowledge, by arguing that knowledge is situated they do raise new and pertinent questions about objectivity, such as whether certain perspectives can be epistemically privileged or whether it is possible to construct a more objective perspective by considering differently gendered perspectives.

Critiques of science

Feminist critiques of epistemology can be traced back to feminist critiques of science, which began in the 1970s and grew in the 1980s when philosophers joined the debate (Richardson, 2010). Since then, feminists have written a great deal about science and have presented radically different views on it – from strong ambivalence to enthusiasm (Wylie, Potter & Bauchspies, 2010). According to Harvard University scholar Sarah S. Richardson, feminist critiques of sciences revolve around three issues.

> Feminist philosophers of science have worked to advance the status of women in the science professions, to critique and correct sexist science, and to critically evaluate our models of scientific reason and practice in light of the findings of gender studies of science. In doing so, they raise novel philosophical issues and extend the reach of philosophy of science to realms outside of philosophy and the academy. (Richardson, 2010, p. 337)

The present section will briefly go over the three feminist critiques of science: that it excludes women from scientific inquiry; that it is sexist; and that its methods are flawed.

On the exclusion of women

One of the issues that came up during the 1970s was that there were very few female scientists. Studies during that decade showed that this exclusion was not new and that it could be traced back all the way to the rise of professionalism in the nineteenth century (Richardson, 2010). By the 1970s, however, the exclusion of women from science was symptomatic of another issue.

> In the 1970s, science was not only an institution that appeared hostile to women in its professional ranks and deeply implicated and entrenched in a history of providing ideologically-motivated support to sexist theories of gender difference. It was, more

> broadly, a generative locus of threats to the legitimacy of feminist work in the academy. (Richardson, 2010, p. 341)

In other words, the legitimacy of women conducting feminist research in science during the 1970s was questioned not only because of their sex but also because of their field of interest, considered "inferior" since it was "only pertinent to women" and not to the whole scientific community (ibid).

During the following decade, feminists realized that discussing the exclusion of women in science did not account for other types of oppression, such as exclusion based on race, class or sexuality. Discussing women's exclusion from science also essentialized women's experiences, as if all women were in the same situation (Richardson, 2010). While since then the approach to studying women in science has become more intersectional, the status of women in the science professions is still an issue and continues to be one of the prominent strains of study in feminist scientific research (ibid).

On science being sexist

According to feminist scholars writing over the past four decades, science is sexist for numerous reasons. Among these is that science has been used to justify gender norms.

> Science has helped to construct and enforce dominant human conceptions of sex differences and gender norms. For example, biomedical claims are frequently used as a justification for maintaining women's traditional domestic and child bearing roles. In the nineteenth and early twentieth centuries, scientists and others deployed a biological and medical conception of womanhood as defined by reproductive organs and imperatives in arguments against the education of women, women's suffrage, and the competency of women in the professions. (Richardson, 2010, p. 348)

According to Richardson, the claims used to keep women doing housework, to prevent them from being educated, to deny them the right to vote and to undermine their professional competencies have been created by science. In short, science has been used to reinforce conceptions of sex and gender differences and to oppress women.

Feminists have examined scientific research that lead to sexist claims to see whether they were justified. A common example is the belief that men outperform women in spatial visualization. An popular experiment used to investigate this claim is the rod and frame test (Intemann, 2011, p. 114). During the experiment, a woman (the subject of the experiment) is

in a dark room in front of a luminescent frame intersected by a lighted rod. The experimenter in the room (a man) tilts the frame and the subject has to tell him to adjust the rod so that it is vertical to the room. Anne Fausto-Sterling, who researched this common experiment, argued that scientists failed to realize that female subjects might have felt uncomfortable being left alone in a dark room with a man. Furthermore, given that women are often less assertive than men, they might also hesitate to ask the experimenter to make tiny adjustments to the rod. These two factors could impact the results of the experiment and raise questions as to the validity of its conclusion (ibid).

Differences in spatial abilities might therefore be the result of socialization differences for men and women, and not the result of biological differences. In a review of a dozen studies on differences in spatial abilities between women and men conducted over the past thirty years, David Reilly and David Neumann found that "masculine gender roles contribute to the development of spatial ability" (Reilly & Neumann, 2013).

Science is not only sexist because it creates sexist "evidence", it is also sexist because scientists sometimes base science on sexist premises. This was the case when in 1902 scientists discovered that there were two types of sperm, one of which carried an extra X chromosome. At the time the going theory was that male-determining sperm was responsible for carrying hereditary material and activating development, so, without inspecting the female-determining sperm, scientist assumed that the male sperm carried the extra weight of the X chromosome. Three years later an empirical study showed that scientists were wrong and that the extra X chromosome was in fact carried by the female-determining sperm. In other words, scientists made a sexist assumption that led to faulty science and that slowed down scientific progress (Richardson, 2010, p. 355).

Alessandra Tanesini explains that the effects of bad – sexist – science have a self-confirming effect. In her words:

> Even if there is little or no difference in ability between men and women, a belief that it exists and is biological will lead parents and educators away from encouraging girls to do better. Consider the case of mathematical ability which has been persistently linked to spatial visualization. If it is commonly believed that girls are not mathematically gifted, they are unlikely to be encouraged to do well, and to develop self-confidence in their abilities. As a result, girls will consistently underachieve. Therefore, belief in the natural inferiority of women breeds poor performance in girls.

> The quality of this performance will be taken to confirm the theory which produced the results it presumed to explain. (Tanesini, 1999, p. 75)

By creating experiments that have an element of sexism, scientists can spread information that might be inaccurate or misleading. This, in turn, has a self-confirming effect: when this (mis)information reaches the general public, it affects people's expectations of women, which in turn affects girls' performance in school subjects involving visual-spatial thinking and seems to "confirm" the results of bad science.

Scientists can also be influenced by cultural and gender biases into pursuing some lines of research instead of others (Bart, 1998). This is the case with research on differences between men and women in linguistic abilities, spatial abilities or mathematics – i.e. research on differences in cognitive abilities in general –, which sought to find differences between the sexes (and that so far has been inconclusive) (Schmitz & Höppner, 2014). This research would not have taken place in the absence of sexist beliefs, which means that sexism influences scientists' research questions.

Science can also be sexist when scientists ignore relevant information, fail to notice it, or have no access to it. Tanesini explains that scientists ignored relevant evidence when they conducted a study on the effect of aspirin on heart attacks and did not include any women on the study, leading to an incomplete and sexist study (which could have detrimental consequences on women's health). Scientists failed to notice evidence when they studied the behavior of apes and did not pay attention to what female apes were doing – another sign of sexism that results in sexist science. In an anthropological study conducted only by men, researchers had no access to female menstruation huts used in some cultures and, as a result, were led to believe that natives had very long periods instead of realizing that women were staying in longer to avoid everyday chores! (Tanesini, 1999, p. 67)

Over the last forty years, feminist scientists, philosophers, historians and science scholars have documented many case studies in which science has been affected by gender biases and sexism. Some of the research involved biology and has analyzed gender conceptions in sexual selection theory; sexism in theories of the evolution of human culture, language, and cognition that portray men as man-the-hunter; and ideology in theories of gender differences in behavior and hormones. Other research has explored fields such as medicine, physics, engineering, archeology and the social sciences (Richardson, 2010, p. 347).

This research, often in the form of case studies, has shown the great extent to which science is affected by gender and sexism.

On the scientific method

Given that science – both good and bad science – seems to be permeated by gender bias and sexism, feminists have questioned the validity of the scientific method as well as its ability to ensure objectivity. As per Alison Wylie, Elizabeth Potter and Wenda K. Bauchspies,

> [e]ven epistemically conservative critiques expose a depth and pervasiveness of gender bias in our best science as well as in manifestly bad science (Harding 1986, 19, 102-105), calling into question the neutrality of the conceptual frameworks within which scientists work and, by extension, the capacity of standard research methodologies to ensure the objectivity of the scientific understanding informed by them. (Wylie, Potter & Bauchspies, 2010)

If science is permeated by gender biases, it cannot be value-free as scientists claim it to be. This claim is one of the aspects of the scientific method that feminists criticize.

According to them, the process of producing scientific theories involves appealing to certain values that are extra-scientific.

> Nelson (1990), Longino (1990) and Harding (1986, 1991, 1998) argue that such values are always operating in evaluations of evidence, justification, and theory-construction and that trying to develop an epistemology for science that would make it less prone to gender bias requires the recognition of the ways in which values enter the process of scientific reasoning. (Janack, 2004)

As scientific enquiry and knowledge production cannot take place without appealing to values, feminist theorists argue that to make these theories less prone to being gender biased, it is important for scientists to acknowledge what values they are appealing to. To feminists good science is not value-free science, but science that can critically evaluate the values and assumptions that operate in the formulation of scientific problems and the construction of scientific theories (Janack, 2004).

Given that the production of knowledge in not value-free, feminists claim that holding good feminist values – such as being non-sexist and non-racist – benefits rather than hinders science (Tanesini 1999, p. 68). In a community that does not hold feminist values, feminists can provide a different angle of vision, help discover unjustified assumptions that scientists

were not aware they had and formulate new hypothesis (p. 75). Feminist scholars are therefore not only challenging the neutral, value-free conception of science, they are also trying to "build models for a more democratic, feminist, or emancipatory science" (Richardson, 2010, p. 342).

Concluding remarks

The present chapter sought to explore ways in which gender affects our conception of knowledge, our practices of inquiry and justification and the different areas of knowledge. The first part of the chapter dealt with out conception of knowers, which feminists believe are particular and situated in space, time, culture, race, gender, etc. Since knowers are situated, the knowledge they gain is also situated. Feminist philosophers have also argued that knowledge is gendered, since prescribed gender roles, ideas of gender, someone's gender identity, and embodiment affect what one can know. This has important consequences on research practices. The second part of the chapter dealt with feminist critiques of science, which in the western world is considered the most reputable way of getting information about the world. These critiques have shown that women have limited access to the production of knowledge, and that scientific knowledge is gendered and often sexist. Women's scientific interests are often marginalized and denigrated, too. Finally, we have seen that scientific authority has been used to justify sexist claims. In short, the chapter has shown the many ways in which gender affects how we know and what we know, both as individuals and as members of communities.

How does the claim of this dissertation shape up thus far? As the reader might recall, Theory of Knowledge is the subject within the International Baccalaureate that most encourages critical thinking. Feminist philosophers writing on epistemology argue that by not considering the effect of gender on knowledge, epistemology is flawed (Bart, 1998). Incorporating feminist critiques on epistemology and science is one way of encouraging students to think critically about theory of knowledge. Last but not least, a class on epistemology and critical thinking that does not recognize the political issues surrounding knowledge production would lose relevance and risk not being pro-democratic.

Chapter 3: Current coverage of gender issues in the course

Does the International Baccalaureate's Theory of Knowledge course deal with gender issues? The present chapter seeks to explore precisely that question. To that end, the chapter presents an analysis of twelve primary sources. Half of these are official documents published by the International Baccalaureate on Theory of Knowledge – namely the guide to the subject, teacher support materials, a report and a recent curriculum review. The other half are the latest course companions for the International Baccalaureate's Theory of Knowledge, which were published by Cambridge, Hodder, Oxford and Pearson. A full list of the primary sources can be found in the section on references.

Materials were analyzed using qualitative content analysis (Bryman, 2012). In order to apply this method, a number of key words were selected from feminist theory on epistemology and science. These keywords are: gender; sex; women; woman; men; man; female; male; feminine; masculine; feminist; situated; sexist; and value-laden. Materials were inspected by searching for these keywords, collecting relevant quotes and analyzing the extent to which they cover gender issues. The results of this analysis are presented thematically and based on the framework of the Theory of Knowledge course, so that the reader can see which aspects of the course incorporate gender issues and which do not.

Knowledge

While the official documents published by the International Baccalaureate Organization do not mention any of the key words listed above in relation to what is knowledge or to its characteristics, the course companions published by the various editing houses do. The Cambridge handbook refers to Pigeonalians' belief that males are superior to females, which males use to treat women as "livestock", and raises questions as to the validity of their knowledge (Heydorn & Jesudason, 2013, p. 6). The validity of racist and sexist beliefs is questioned by the other Cambridge handbook, too (van de Lagemaat, 2014, p. 16). The Oxford handbook raises questions as to how a person's sex, ethnicity or attractiveness might affect how others interpret their reliability as a source of information and discusses confirmation bias (Dombrowski, Rotenberg & Beck, 2013, pp. 219-220).

The Oxford handbook written by the same authors also raises questions on the access to knowledge through education in different parts of the world. “To what extent is education in your own part of the world available to all children, as their right? To what age? Is the kind of education or its quality affected by a child’s gender, class, or family’s economic position? What social factors seem to you to affect education in your society?” (Dombrowski, Rotenberg & Beck, 2013, p. 31) While most of these questions are only relevant to children, the last question can be used to open the discussion to access to education for adults, people of different ethnicities, women, etc.

Personal knowledge

The International Baccalaureate documents and several of the course companions explain that gender and sex have an impact on personal knowledge. Some explain that personal knowledge is affected by membership in groups, such as an ethnic, cultural, gender, religious, political or philosophical group (Bastian, Kitching & Sims, 2014, p. 381; International Baccalaureate Organization, 2013, p. 19; Santrampurwala, Lekanides, Rothwell, Rutherford & Trudgon, 2013, p. 35). Others pose questions on whether a person’s gender affects how they see the world and their expectations of what knowledge they should gain through education (Dombrowski, Rotenberg & Beck, 2013, p. 24). The Cambridge handbook also questions if there might be any issues with the knowledge we can have of people of a different gender (van de Lagemaat, 2014, p. 30)

Shared knowledge

The International Baccalaureate’s guide to Theory of Knowledge asks if it is possible for knowledge to transgress the boundaries of a group – be it an ethnic, national, age, gender, religious, interest, class or political group (International Baccalaureate Organization, 2013, p. 18). For example, is it is possible for men to gain knowledge produced by women about women?

Link between shared knowledge and personal knowledge

The Pearson course companion goes on to explain that shared knowledge produces social structures that influence further access to shared knowledge. As an example, the handbook cites lower literacy rates among women, which prevents them from having access to shared knowledge and reduces their autonomy (Bastian, Kitching & Sims, 2014, p. 379). According to Bastian, Kitching and Sims,

> we can use the methods of [Theory of Knowledge] to construct a critique of precisely those customs and traditions that produce social structures that marginalize one group rather than another. This has a profound impact on personal knowledge. We might take for granted the structures of society in which we are embedded. We might even view them with a sentimental or nostalgic attachment, or with a fondness borne out of familiarity. But these very structures might create imbalance in access to shared knowledge, and skew the playing field one way or the other. French philosopher Michel Foucault remarked that when confronted with a system of knowledge, we must ask in whose interest it is constructed and whom it marginalizes?" (2014, p. 379)

The segment published by Pearson explains how seemingly harmless shared knowledge can create unequal access to knowledge among different groups of people, creating groups that are benefitted and others that are marginalized. According to Bastian, Kitching and Sims, Theory of Knowledge can provide students with the tools to critique the customs and traditions that cause some groups to be marginalized.

Authority

The Cambridge handbook brings up the issue of authority worship – in other words, not questioning knowledge merely because it comes from a figure of authority (van de Lagemaat, 2014, p. 16). Among the examples given to illustrate that authority might be wrong, Cambridge uses the belief held for hundreds of years that women were inferior to men. In a later section on the importance of questioning cultural tradition, van de Lagemaat once again gives a gender-related example: if cultural tradition had not been questioned in Britain, British women would still be excluded from political power (ibid, p. 57).

Ways of knowing

While the documents analyzed did not deal with the eight ways of knowing listed in the Theory of Knowledge course, they did mention three: sense perception, language and intuition. The sections on emotion, reason, imagination, faith and memory in the documents published by the International Baccalaureate Organization and the four publishing houses do not mention any gender issues.

Sense perception

In their discussion about sense perception, authors Dombrowski, Rotenberg & Beck warn students about the tendency to perceive what we expect to perceive, known as confirmation bias. According to them confirmation bias

> works in two reciprocal ways: we notice what supports our expectations, and we do not notice what counters them. This latter form is particularly dangerous in matters of prejudice – about "aggressive immigrants", about "overemotional women" and so on. In everyday life, people can be influenced by their own prejudices such racism, sexism, homophobia, and classism. In research, too, confirmation bias exerts its influence: even when scientists are trying to keep open minds and observe neutrally, they can be influenced to see what the current theory leads them to expect. (Dombrowski, Rotenberg & Beck, 2013, p. 93)

This extract of the Oxford companion to Theory of Knowledge covers the effect of racism, sexism, homophobia and classism on sense perception, and how confirmation bias leads people to perceive whatever they believe already. Confirmation bias affects scientists, too: even though scientists try to observe neutrally, their bias can lead them to see what a prevailing theory says they should see.

Language

Before moving on to how the sources deal with language as a way of knowing, it is worth noting that all the course companions published by the editing houses use gender-neutral language. This is also the case for International Baccalaureate documents, with only a few exceptions (International Baccalaureate Organization, 2013, pp. 35, 38, 42).

The analysis of the documents published by the International Baccalaureate Organization showed that they not deal with whether gender affects language, but that the handbooks published by Oxford and Cambridge do. The Oxford companion interviews a Finnish student who talks about the use of gender-neutral language in Finland. The student is quoted saying it is not confusing to have a gender-neutral word for people instead of using "he" or "she" (Dombrowski, Rotenberg & Beck, 2013, p. 146). The same Oxford handbook discusses the effect of classifications on people's lives. "Classifications of gender and race are particularly socially potent, since the way they are imposed and interpreted involves social power. What we claim that we know about categories of people affects their destinies", it explains (p. 214). Given that classifications such as gender and race affect history, Dombrowski, Rotenberg and Beck encourage students to think about who a classification was invented by, for what purpose and for whose benefit (ibid).

The Cambridge handbook, on the other hand, tackles the issue of labels and stereotypes. One of the exercises asks students to choose labels and stereotypes for women and men in their culture. The options given are: emotional, reckless, active, aggressive, sensitive, tough, affectionate and cautious (van de Lagemaat, 2014, p. 98). Another exercise asks what stereotypes, if any, students think exist around the following groups: Americans, feminists, environmental activists, Islamic fundamentalists, lawyers, Buddhists, scientists and computer hackers (van de Lagemaat, 2014, p. 97). A third exercise asks students what the appropriate title for the husband of a female president of the United States should be (van de Lagemaat, 2014, p. 87). By proposing these simple exercises, the publishing house helps students become aware of their own prejudices.

Intuition

The Oxford handbook also discusses the intuition that the world is a fair place – known as the just-world fallacy – and how it can sometimes lead people to think that the victims of misfortune deserved it. To illustrate this, it uses the case of women who were raped.

> Has a woman been raped? She must have been doing something that provoked the attack! Despite all information about actual circumstances of rapes (the rapist is usually someone familiar to the victim, and what the victim was wearing is irrelevant), this message continues to be common – with the blame and shame often assigned to the woman. (Dombrowski, Rotenberg & Beck, 2013, p. 201)

The Oxford handbook bring to the table a very important example, which unfortunately affects lots of people and above all women.

The Pearson course companion brings up a common stereotype associated with intuition, which is that only women are intuitive. According to cognitive psychologist Gary Klein, about 90% of the decisions taken by all people, not only women, are snap judgements based on intuition (Bastian, Kitching & Sims, 2014, p. 44). By including this gender issue, the Pearson course companion informs students of a common sexist stereotype so that they do not fall prey to it.

Areas of knowledge

Neither the International Baccalaureate Organization nor publishing houses discuss gender issues in all areas of knowledge. Out of the eight areas of knowledge, only ethics, human sciences, history, the arts and indigenous knowledge systems are discussed. There are no relevant inclusions of gender issues in mathematics, the natural sciences or religious knowledge systems, as shown below.

Ethics

While the documents published by the International Baccalaureate Organization do not mention any gendered aspects of ethics, those published by Cambridge, Oxford and Pearson do. The Cambridge handbook mentions popular conceptions in the past that homosexual relationships were immoral, stating that some people hold them to be immoral still (Heydorn & Jesudason, 2013, p. 90). The Oxford handbook introduces applied ethics as dealing with topics such as “biomedical ethics, environmental ethics, organizational ethics, business ethics, and sexual ethics” (Dombrowski, Rotenberg & Beck, 2013, p. 261). The Pearson handbook introduces the work of Carol Gilligan, a renown feminist philosopher who wrote about the ethics of care. According to Gilligan, women tend to follow a different path of moral thinking than men. As stated in the handbook, “her way of looking at morality claims that women tend towards an outlook that emphasizes tending to the needs of others, not to abstract principles of right and wrong” (Bastian, Kitching & Sims, 2014, p. 301). The authors go on to say that “[n]ot surprisingly, her views about gender differences in moral reasoning have not gained

widespread acceptance within or outside the academy, except in the medical field" (ibid). Unfortunately, the authors do no explain why this is unsurprising and leave a bold statement unjustified.

History

The Hodder course companion discusses the development of history and introduces a theory put forth by Sheila Rowbotham which argues that historical values drive the development of historical knowledge (Sprague, 2017, p. 35). According to the author of the course companion,

> Rowbotham's work highlights the fact that until the midtwentieth century, professional history was really a story about powerful white men and their behaviour and activity. Rowbotham rightly queried what was 'missing' from the established 'histories' and clearly stressed the link between current social values and the sort of histories that are written: it was because the feminist movement was gaining traction during the 1960s and 70s that Rowbotham's history was written and these are movements and events squarely grounded in an historical analysis of culture. (Sprague, 2017, p. 35)

Sprague's quote highlights how feminist thought has affected the development of History as an academic field and that this development is permeated by social values. Since Rowbotham wrote at a time when the feminist movement was gaining traction, she was able to incorporate feminist values into her work and show that history is racist and gendered, since it is mostly about white men.

The Oxford handbook also highlights that historians are influenced by theories. "Will they treat forms of social relations, such as barter and trade or gender relations, as historically grounded in a time and place, or will they treat them as universal?", ask Dombrowski, Rotenberg and Beck (2013, p. 289). With this question, the authors of the Oxford course companion show that historians are not fully neutral since they are influenced by theories. Among other things, these theories affect how they interpret gender relations.

Human sciences

Gender issues in the human sciences are integrated into four out of the twelve primary sources. "[T]o what extent are personal factors such as gender and age important in the human sciences?", asks the guide to the subject (International Baccalaureate Organization,

2013, p. 38). One of the Oxford companions brings up issues surrounding gender roles and parenting (Santrampurwala, Lekanides, Rothwell, Rutherford & Trudgon, 2013, p. 71). The Pearson companion brings up another issue surrounding gender commonly studied in the human sciences, which is the fact that women are, on average, paid less than men (Bastian, Kitching & Sims, 2014, p. 146). The other Oxford companion explains that anthropologists are affected by theories too (Dombrowski, Rotenberg & Beck, 2013, p. 305). In their words: "[t]he anthropologist enters a culture with a theoretical framework for focusing observation on particular features of a society, giving attention to features of a culture such as kinship structure, gender relations, power relations, symbolism, social change, or exchange", explain Dombrowski, Rotenberg and Beck (ibid).

The arts

Several sources mention gender issues of epistemic relevance in the arts. The Cambridge course companion brings up the possible connection between cultural or gender bias and artistic choices (Heydorn & Jesudason, 2013, p. 81). The Oxford course companion explains that the artist's job is to explore and share as many stories as possible, which they can do with the help of "attentive, informed and adventurous theory" (Dombrowski, Rotenberg & Beck, 2013, p. 233). Among these theories the handbook lists feminist theory, psychoanalytical theory, new-historicist theory, queer theory, post-colonial theory and Marxist theory, claiming that all of them have altered the way we experience the world. Finally, the Pearson course companion asks students to list ten famous artists, to count how many of them are women and to explain the meaning of their results (Bastian, Kitching & Sims, 2014, p. 246). A few pages later it says that according to feminists, the fine arts are dominated by men and that the less reputable crafts are dominated by women (Bastian, Kitching & Sims, 2014, p. 256).

Indigenous knowledge systems

Oxford also discuss gender issues in indigenous knowledge systems. One of its handbooks mentions the effect of traditional values and perceptions of gender roles on women and men in most societies and how innovation and change can prove advantageous to the people in

these systems (Santrampurwala, Lekanides, Rothwell, Rutherford & Trudgon, 2013, p. 71). The other handbook discusses conceptions of ownership of knowledge in indigenous knowledge systems, which is also gendered (Dombrowski, Rotenberg & Beck, 2013, pp. 386-287).

Assessment

While the International Baccalaureate Organization does not mention gender often in its official documents on the course, one of the criteria to assess students' performance in the course is whether they can incorporate a different perspective into their arguments, such as that of people from a different gender. As the official guide to the course frames it: "[d]oes the student show an awareness of his or her own perspective as a knower in relation to other perspectives, such as those that may arise, for example, from academic and philosophical traditions, culture or position in society (gender, age, and so on)?" (International Baccalaureate Organization, 2013, p. 61) A similar question is posed by several publishing houses, with Oxford phrasing it in exactly the same terms (Dombrowski, Rotenberg & Beck, 2013, p. 429). The Pearson handbook asks: "Is there an alternative way of looking at things with respect to gender, life experience, culture, socio-economic class, education, or geography? How sensitive are your arguments to these other perspectives?" (Bastian, Kitching & Sims, 2014, p. 39) Discussing the essay, the Cambridge companion poses the following question: "How might your response to an essay title be affected by your upbringing, age, social status, profession, gender, culture, historical era or intellectual background?" (Heydorn & Jesudason, 2013, p. 132) The questions posed by the International Baccalaureate, Oxford, Pearson and Cambridge point to the importance of gender in shaping people's perspective and situating them in a social context.

Concluding remarks

This chapter aimed to find out if gender issues are included in the International Baccalaureate's documents on Theory of Knowledge as well as in the latest course companions published for the course. The analysis of twelve primary sources has revealed that the International Baccalaureate covers gender issues in very few circumstances, namely

when discussing personal perspectives and personal knowledge, shared knowledge and the human sciences. However, the course assesses students on whether they are able to analyze issues from different perspectives, among which it lists the perspective of people of different genders. This seems to imply that the International Baccalaureate Organization deems it relatively important that students are able to realize how gender impacts people's perspective. As a side note, the analysis of its official documents showed that they were mostly, but not always, written in gender-neutral language.

Among the publishing houses that have released course companions for the International Baccalaureate's Theory of Knowledge – namely Cambridge, Hodder, Oxford and Pearson –, the ones with the most references to gender issues were those published by Cambridge and Oxford. These course companions included references to gender issues in their analysis of knowledge, various ways of knowing and areas of knowledge. Taken together, publishing houses brought up issues around: the validity of sexist knowledge; women's and girls' access to knowledge; the effect of gender on personal perspectives; the possibility of knowledge transgressing gender groups; the marginalization of certain groups as a result of shared knowledge; issues of authority worship; sexist confirmation biases; gender-neutral language; sexist labels and stereotypes; the just-world fallacy; stereotypes on intuition; the ethics of care; gendered accounts of history; value-laden history; value-laden anthropology; sexist education; the wage gap; the male-dominated fine arts; and gendered conceptions of ownership. Publishing houses were also successful at using gender-neutral language. Furthermore, some of them included some intersectional approaches and mentioned some of the effect of age, ethnicity, social class, etc. on knowledge acquisition (Dombrowski, Rotenberg & Beck, 2013).

Chapter 4: Proposal for integrating gender issues

The previous chapter has shown how the International Baccalaureate and publishing houses integrate gender issues into Theory of Knowledge. In view of these findings, the present chapter proposes further ways of integrating gender issues into the course. This is done by adapting some of the arguments of feminist philosophers writing on science and epistemology into activities that are accessible to students aged 16 to 19 years old. The chapter will also cover some of the ways of knowing and areas of knowledge that have not yet been covered by the International Baccalaureate or publishing houses.

Knowledge

A lively introduction to the idea that knowledge can be sexist can be found in Soraya Chemaly's TEDx talk, entitled "The Credibility Gap: How Sexism Shapes Human Knowledge" (Chemaly, 2015). Chemaly, an award-winning writer and media critic, goes through an array of ways in which knowledge is sexist and brings them down to personal, practical examples. The talk discusses implicit biases in education, both at home and at school, which lead parents and educators to have different expectations of boys and girls and to talk to them in different tones. These initial differences set a pattern for future behavior, explains Chemaly. She also discusses how religion – synagogues, mosques and churches alike – encourages boys to participate as clerics and gives them authority, while simultaneously teaching girls to be quiet. Sexism is also present in language, explains Chemaly. "Words like mankind erase women", while other words like actor and actress reinforce the idea that man is at the center (ibid). Sexist knowledge also arises from all-male leadership, which is not diverse enough to capture the needs of all people. To conclude her talk, Chemaly makes a few recommendations on how to bridge the credibility gap between men, esteemed to be sources of knowledge and authorities, and women, socialized to be nurturers and pleasers (ibid).

Given that this video introduces the idea that knowledge can be sexist and argues that this begins at home and in school, this TEDx Talk could be used as a starter in a lesson that discusses feminist conceptions of knowledge. The video could be followed by a discussion on what sexism is, how one can know when knowledge is sexist, and how to realize if parents

and teachers are producing sexist knowledge. By bringing down an epistemic issue to students' lives, this topic can help students become more critical of their surroundings, create awareness on sexism, and show students that the Theory of Knowledge course is significant to their lives.

Situated knowledge

A central concept for feminist philosophers is that of situated knowledge, defined by Oxford as "[t]he idea that all forms of knowledge reflect the particular conditions in which they are produced, and at some level reflect the social identities and social locations of knowledge producers" (Oxford Reference, 2018). Introducing the concept of situated knowledge into a Theory of Knowledge lesson can therefore be a way of discussing notions of objectivity, subjectivity and value-neutrality. The Swedish Secretariat for Gender Research has a short but comprehensive entry on situated knowledge that, with the support of teachers, could be accessible to students (Swedish Secretariat for Gender Research, 2016)[2]. After reading it, students could work in small groups of 2-3 people (preferably boys and girls together) to build a mind map showing what situated knowledge is, how it differs from traditional notions of knowledge and what its advantages and disadvantages are. Once they have discussed the mind maps in a plenary, students could act out an example of situated knowledge and an example of non-situated knowledge from one of the subjects they are studying, from a news article or from their personal lives. The article published by the Swedish Secretariat for Gender Research provides an illustration that could be used for inspiration.

> For example, knowledge about oppressive social structures and relations becomes more trustworthy if it is produced from the perspective of the oppressed people's position and experiences. One current example is discrimination and oppression based on preconceptions about certain races, such as afrophobia […]. When people who have personal experience of this are asked about it, new knowledge about the oppressive structures emerges, knowledge that Whites do not have access to […]. (Swedish Secretariat for Gender Research, 2016)

The example above discusses knowledge on oppressive social structures produced by people that are discriminated by them. By having personal experience about this discrimination, the

[2] The entry has been included in the Annexes of this Master's Thesis for the reader's convenience

knowledge they produce is not only new but also more valid than the knowledge that could be produced by a person that is not discriminated by oppressive social structures. While this may seem logical, it does contradict traditional epistemological conceptions that hold that good science and therefore knowledge should be objective. All in all, a lesson on situated knowledge would be valuable to students as it would present an alternative view of knowledge that holds that knowledge is not only valuable when it is objective.

Authority

The idea that women are not socialized to be authorities and are often not considered authorities was briefly mentioned in the TEDx Talk by Soraya Chemaly. Since it is a very interesting concept, teachers may wish to spend a lesson discussing the theory on power and the ethics of knowing put forth by feminist philosopher Miranda Fricker.

According to Fricker, in addition to social and political injustices, women are exposed to epistemic injustices – i.e. being denied the right to be knowers (Fricker, 2007). Fricker holds that there are two types of epistemic injustices: testimonial injustice and hermeneutical injustice.

> Testimonial injustice occurs when prejudice causes a hearer to give a deflated level of credibility to a speaker's word; hermeneutical injustice occurs at a prior stage, when a gap in collective interpretive resources puts someone at an unfair disadvantage when it comes to making sense of their social experiences. An example of the first might be that the police do not believe you because you are black; an example of the second might be that you suffer sexual harassment in a culture that still lacks that critical concept. (Fricker, 2007, p. 1)

A testimonial injustice arises when a person's authority as a knower is undermined because of prejudice. Prejudice can take many forms: it can be based on sex, gender, race, ethnicity, ability, looks, country of nationality, religious beliefs, accent, etc. A hermeneutical injustice, on the other hand, happens when a person has an unfair disadvantage at making sense of their social experiences because society does not yet have an interpretation for it. By discussing testimonial injustices, students should become more aware of how biases affect testimonies and therefore who is regarded as an authority. By learning about hermeneutical injustices, students should realize that language and knowledge are essential to making the world a fairer place.

In order to introduce Fricker's theory of epistemic injustices, teachers may wish to lead in with an article that shows how women's voices are often undermined. One such article could be "Speaking While Female", published in *The New York Times* by Sheryl Sandberg, Chief Operating Officer of Facebook, and Adam Grant, Professor at the Wharton School at the University of Pennsylvania and the author of "Give and Take" (Sandberg & Grant, 2015). The article, included in the annexes to this dissertation, discusses how difficult it is for women to speak in professional settings, which focus more on who says something than on the quality of what is being said. Teachers could ask students whether they think that this happens in schools, too. All in all, the article by Sandberg and Grant provides a reliable, short introduction to a generalized problem and could be used as a real-life situation on which to base the lesson on epistemic injustice.

Another option to introduce the issue of epistemic injustice and to discuss our gender bias in establishing what constitutes epistemic authority would be to introduce an experiment on gender bias in publication quality perception (Knobloch-Westerwick, Glynn & Huge, 2013). The experiment had 243 communications scholars rate the abstracts of scientific publications, approximately half of which had been written by women and half by men. When the publications were presented to communications scholars, however, the author associations had been rotated, so that the abstracts written by men appeared to have been written by women and vice versa. The study found that the abstracts that had supposedly been written by men were consistently rated higher than those that had supposedly been written by women. This pattern in rating was consistent among both male and female communications scholars. According to the authors of the study, "[p]ublications from male authors were associated with greater scientific quality, in particular if the topic was male-typed" (ibid). The results of the study strikingly show the extent to which our gender bias can affect our conception of quality and epistemic authority.

Ways of knowing

The present section will cover two ways of knowing that were not fully covered by the International Baccalaureate or by publishing houses and that are often associated with "women's ways of knowing": intuition and emotion.

Intuition

While Oxford and Pearson briefly discuss two gender-related types of intuition (the stereotype that only women are intuitive and the intuition that the world is a fair place), teachers might wish to delve a little further into some of the gender issues surrounding intuition.

To that end, once students understand that prejudices and biases affect our conception of authority, teachers may wish to explore how prejudices and biases work and have students challenge their own prejudices and biases. *The New York Times' Learning Network* has great resources on this. Teachers could dedicate a lesson to implicit biases, which are thought processes that happen without people knowing and that may pass judgements that people may not agree with. Since these processes are not conscious, they represent a type of intuition. *The New York Times'* video entitled "Peanut Butter, Jelly and Racism" could be used as a lesson starter for this lesson, since it introduces implicit biases and discusses some of the issues around them (Reshamwala, n/d-b). The two-minute-long video can be followed by a conversation on the following questions, which were adapted from the questions used by *The New York Times* film club (Gonchar, 2017):

- What moments of the video stood out for you? Why?
- Was there anything surprising in the video? Was there anything that challenged what you know — or thought you knew?
- What messages, emotions or ideas will you take away from this film? Why?
- What questions do you still have?

The conversation could be followed by a three-minute video also by *The New York Times*, entitled "Check our Bias to Wreck our Bias", which among other things introduces the Harvard Implicit Association Test (Reshamwala, n/d-a). The Implicit Association Test tries to educate the public on implicit biases and to collect data on the internet (Project Implicit, 2018a). The tests offered cover biases on sexuality, weapons, race, native Americans, Arab-Muslims, weight, gender and science, skin tone, age, Asians, religion, disability, gender and career, and presidents (Project Implicit, 2018b). Students could therefore choose to take the test that they find most interesting, or teachers could limit students' options to only a few of the tests. Each test takes only about 10 minutes, so students could take one or two tests in a lesson.

This activity could be followed by a class discussion on the results of the tests and the interpretation of the test results provided by Project Implicit.

Emotion

While humanity as a whole is making great strides towards achieving gender equality, our conceptions of masculinity are still not conducive to achieving it. Among other things, this is the case because masculinity still does not encourage men to be emotional, with anger being the only seemingly acceptable emotion for men (Reiner, 2016). This has epistemic consequences, as men are discouraged to use emotion as a way of knowing what they want, what they like and dislike, how they feel about themselves, etc.

The New York Times' Learning Network offers a lesson plan to explore current conceptions of masculinity and emotionality (Schulten, 2016). The lesson plan begins by asking students the following: "Are the lives of men and boys limited because society teaches them they can't show any strong emotion but anger? Do 'bro codes' that govern how boys act keep them from being their true selves?" (ibid) A third question, perhaps better suited to a Theory of Knowledge class, would be: are gender roles preventing men from connecting to their emotions and knowing their true selves? To answer these questions, students are asked to read an article entitled "Teaching Men to be Emotionally Honest" (Reiner, 2016). After reading the article, students should write answer the questions posed by the *Learning Network* below, which they can either post on the newspaper's blog or hand in to their teacher if they would rather their answers stayed private.

- Do societal norms about gender behavior limit the emotional lives of men and boys? Do you think we "socialize the vulnerability" and sensitivity out of them as they grow up? If so, how have you seen this happen?
- Is there a "bro code" of male etiquette in your school or community? How would you describe it?
- Do you agree with experts quoted in this article who say, "Boys' underperformance in school has more to do with society's norms about masculinity than with anatomy, hormones or brain structure"? Do you see school activities like music, art, drama and foreign languages as somehow "unmasculine"?
- This professor's course explores what he calls a "hallmark of the masculine psyche": the shame over feeling any sadness, despair or strong emotion other than anger, let alone expressing it and the resulting alienation. Many young

men, just like this student, compose artful, convincing masks, but deep down they aren't who they pretend to be. Does that sound familiar to you? If you are male, do you agree that the only strong emotion that is socially O.K. for you is anger? If you are female, have you witnessed this? Do you agree that limiting this range of emotions contributes to loneliness and isolation?

- Would you take a course like this one, or any other "men's studies" course? Do you think they can help teach boys and men to break free of gender stereotypes about expressing a range of emotions?
- The last few paragraphs of the article describe an experiment that a male and a female ran in which they each pretended to cry in a public place. How do you think you would have reacted if you had passed these students? Why? (Schulten, 2016)

This activity would encourage students to think about the challenges of being male and therefore discuss an aspect of gender relations that is frequently left unspoken. The lesson would also encourage reflection, which is essential in a Theory of Knowledge course, while addressing gender issues in the use of emotion as a way of knowing.

Areas of knowledge

Neither the International Baccalaureate nor the publishing houses that have recently published companions to the Theory of Knowledge course discuss gender issues in mathematics, the natural sciences or religious knowledge systems. The present section will propose lesson topics and activities to integrate gender issues into two of these three areas of knowledge.

Natural sciences

As discussed in chapter 2, over the past decades feminist scientists have critiqued science mainly for three reasons: because it excluded women from scientific inquiry, because it was sexist, and because its methods were flawed. These criticisms have several epistemic consequences. If women are excluded from scientific inquiry, it is likely that science and scientific knowledge will not consider the specific needs of women. If science is sexist, it helps reinforce sexism and create social inequality. If the scientific method is flawed because it is gender-biased and not value-neutral, the knowledge it produces may not be valid. Given that feminist criticisms of science are epistemically significant, teachers may wish to include them into their Theory of Knowledge lessons.

An interesting article published in *National Geographic* could serve to introduce the exclusion of women from science in general and discuss how that might affect what we learn from research (Giudice, 2015).

> So what difference does it make when there is a lack of women in science? For one, it means women might not get the quality of health care that men receive.
>
> It's now widely acknowledged that countless women with heart disease have been misdiagnosed in emergency rooms and sent home, possibly to die from heart attacks, because for decades what we know now wasn't known: that they can exhibit different symptoms from men for cardiovascular disease. Women also have suffered disproportionately more side effects from various medications, from statins to sleep aids, because the recommended doses were based on clinical trials that focused largely on average-size men. (Giudice, 2015)

For generations, explains Giudice, women have been excluded from clinical trials as a result of a procedural bias – sex was simply not a variable considered in scientific studies. The model for scientific research had historically been an average-sized man, following the standard reference figure in *Gray's Anatomy*, a medical textbook published in the 1850s. As a result of this omission, what we have learned from research has been incomplete and inaccurate – and it has caused women to receive worse health care than men.

The student-accessible article by *National Geographic* also discusses how the researchers' gender might affect the results of studies, too.

> A study by McGill University in Montreal last spring generated a lot of hoopla about the role of gender in research, but from a different perspective.
>
> The study found that rats and mice being tested for pain response apparently were afraid of male researchers; it had something to do with how the men smelled. The rodents were so stressed by the male researchers—or even female researchers wearing shirts the men had slept in—that they became desensitized to pain, thus throwing off the test results and raising questions about previous studies in which lab animals were handled by male researchers. (Giudice, 2015)

The study conducted at McGill University thus shows that the exclusion of women from science might also have impacted the result of studies in unexpected ways. The study also raises questions as to the reliability of the scientific method, which does not seem to include a systematic way of preventing these gender biases that impact scientific results and knowledge production.

After reading and discussing the *National Geographic* article, teachers could ask students to research other examples of scientific research affected by gender bias. This could be done either individually or in small groups of 2-4 students. Students would have to find a reliable source of information and create a poster showing: the scientific field in which the research was conducted (such as biology, physics, medicine, genetics, etc.), how the research was conducted, what the research showed, why the research is gender-biased, when the research was shown to be gender-biased, whether the results of the research have had practical consequences, and how the gender bias that led to false information could have been avoided. Given that the effect of gender biases does not only affect the natural sciences but science in general, students could also conduct this research on other sciences, such as mathematics, anthropology, economics, etc. Once students finish the posters they would present their findings to their classmates. At the end of the lesson students could vote on the most promising suggestion to avoid gender bias in the scientific method.

Religious knowledge systems

The *Stanford Encyclopedia of Philosophy* also has an interesting entry on feminist philosophy of religion (Frankenberry, 2018). Among other topics, the article discusses some of the implications of feminist standpoint epistemology for religious knowledge systems and raises a number of questions that are relevant to Theory of Knowledge lessons.

> What has the status of knowledge in various religious traditions? What gets valorized as worth knowing? What are the criteria evoked? Who has the authority to establish religious meaning? Is religious meaning something distinct from or independent of ordinary linguistic meanings of words? Who is the presumed subject of religious belief? How does the social position of the subject affect the content of religious belief? What is the impact upon religious life of the subject's sexed body? What do we learn by examining the relations between power, on the one hand, and what counts as evidence, foundations, modes of discourse, forms of apprehension and transmission, on the other? In view of the intimate connection of power/knowledge, how do we handle the inevitable occlusion that attends all knowledge production? What particular processes constitute the normative cultural subject as masculine in its philosophical and religious dimensions? (Frankenberry, 2018)

These questions bring up several issues in religious knowledge systems, such as what constitutes knowledge in different religious traditions, what is considered worth knowing, what constitutes epistemological authority, what constitutes meaning, who is considered a

knower, how the social position of the knower affects their beliefs, how a person's sexed body affects their religious life, how power affects evidence, discourse, apprehension and transmission, and how religious knowledge systems turn the masculine cultural subject into the norm. Any of these questions could be used as a driving question for a lesson, in which students could conduct research on different religious traditions, compare their findings and come up with further knowledge questions. Coming up with knowledge questions is a difficult endeavor for both students and teachers. Having an opportunity to device knowledge questions with the help of teachers would prepare students for their presentations, which need to be based on knowledge questions devised by students.

Concluding remarks

The present chapter has sought to complement the materials analyzed in chapter 3 by showing further ways in which teachers can include gender issues into their Theory of Knowledge lessons. With one exception, suggestions were built around topics that were not covered in the inspected materials by the International Baccalaureate and publishing houses. Some of the suggestions are based on materials found in reputable teaching websites, while others were created for the purpose of this dissertation. These suggestions, together with those provided by publishing houses and to a small extent by the International Baccalaureate, show that gender issues can indeed be included into Theory of Knowledge lessons.

Conclusion

Can gender issues be integrated into the International Baccalaureate's Theory of Knowledge? This dissertation claims that they can – and that they should be.

At the moment, gender issues are only partially integrated. The analysis of six course companions conducted as part of this dissertation has revealed that gender issues are incorporated by all publishing houses, albeit to different degrees. The Oxford course companion published by Dombrowski, Rotenberg and Beck (2012) mentions them the most, followed by Cambridge's van de Lagemaat (2014), while the course companions published by Hodder (2017) and Pearson (2014) only mention them in a few instances. The analysis of the six documents by the International Baccalaureate – including the official guide to the subject – only revealed four mentions of gender issues.

Why does this matter? Because gender issues are epistemically relevant. Feminist philosophers since the 1970s have shown that gender and knowledge are highly interconnected. Gender affects our interpretation of events, our assessment of what claims are important, what information we have access to, what skills or practical knowledge we are supposed to have, our relations to other inquirers, how research subjects behave during experiments, what research is conducted, our standards of justification, and the authority given to a knower. If a course that theorizes about knowledge does not cover an element of such epistemic relevance, the course could be argued to be deficient. Furthermore, integrating gender issues could result in more nuanced discussions and better learning.

Integrating gender issues into Theory of Knowledge also matters because it allows teachers to introduce a critical branch of epistemology, and critical thinking is the main skill the course aims to develop. The salience of gender issues in epistemology is mostly discussed by feminist philosophers, who proposed that knowledge is situated – in other words, that it comes from particular and concrete knowers in specific social situations. To feminist philosophers the subjectivity created by this situatedness is not necessarily bad, as it can create new knowledge that is socially and politically relevant. Feminists also argue that science, the most reputable source of knowledge in western society, is plagued by values and gender biases. Feminist critiques therefore question the objectivity of science and the

scientific method and would encourage students to think critically about epistemology – making a subject about critical thinking and epistemology come full circle.

Incorporating gender issues into Theory of Knowledge also matters because gender issues are relevant to students' lives. Since the moral conscience is developed during adolescence (Izco Montoya, 2007, p. 97), students are especially likely to care about matters of social justice – such as men being considered epistemically superior to women even though there is no evidence to back it up. Creating awareness of these issues during adolescence should arouse democratic sentiments in students and foster the values held by the International Baccalaureate Organization.

Because gender is epistemically salient, relevant to students' lives and conducive to thinking critically about epistemology, this dissertation argues that the International Baccalaureate Organization should update the guide to Theory of Knowledge in order to integrate gender issues. While some of the publishing houses have done a good job at incorporating some epistemically relevant gender issues, others still have a long way to go. Given that teachers are not aware of which guides incorporate gender issues and which mostly do not, the integration of gender issues into the subject's guide would make it more likely for teachers to cover them, at least minimally, and would speak to the importance of democratic values to the organization. It would also be an opportunity to ensure that the guide always uses gender-neutral language, which is not currently the case. Updating the guide would not be an unusual practice, since the organization updated it in the past to reflect the distinction between personal and shared knowledge (International Baccalaureate Organization, 2017).

Although incorporating gender issues into Theory of Knowledge would improve students' understanding of how we know and encourage critical thinking, it does not exhaust the possibilities for promoting gender equality through the International Baccalaureate. We must also investigate the relevance of gender issues in other aspects of the Diploma Programme, the Career-Related Programme, the Middle Years Programme and the Primary Years Programme to determine whether the organization is promoting gender equality. The International Baccalaureate Organization is educating elite classes throughout the world, which are likely to become tomorrow's leaders. An analysis of the various International Baccalaureate curricula from a gender perspective will not only ensure that the organization

is furthering social justice but it will also highlight the organization's ongoing efforts to create a better world.

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Annexes

Situated knowledge

Word *Situated knowledge* relates to a criticism of the idea of researchers as neutral observers of reality. The expression was coined in an analysis of how the establishing of modern science from the 1500s and onwards was part of the creation of a new form of masculinity: the scientist, who was assumed to be free from social and biological ties that could interfere with the ability to remain unbiased in the study of reality. In feminist theory, the assumed ability to act as a neutral observer, to be able to see everything from nowhere without being seen, is called God's trick. The seeing is always bodied; that is, you have to have a body to be able to see, and that body has a gender, a variation of functionality and an ethnicity, to name some of the many factors that shape a person's experience and understanding of the world.

There is a relationship between knowledge production and power structures such as gender, class, ethnicity, functionality and sexuality (see also heteronormativity). The knowledge of one's social position, formed by the prevailing power structures, is a prerequisite for knowledge about society and human beings. There are no neutral positions that can give privileged persons the right of interpretation when it comes to other people's experiences.

The concept of situated knowledge brings attention to the fact that our possibility to gain knowledge about reality is limited by what it is to be human. Researchers can never be completely neutral. However, their objectivity can be strengthened by making them – as well as their social and cultural understandings – visible in the research process. Interpretations of reality are always incomplete, and researchers take responsibility for making the knowledge more trustworthy by acknowledging this limitation.

Since knowledge is produced in a specific social context, certain experiences, which vary with the topic, are particularly valuable in the generation process. It can be the ability to ask the right questions or see which experiences and perspectives are made invisible. For example, knowledge about oppressive social structures and relations becomes more trustworthy if it is produced from the perspective of the oppressed people's position and experiences. One current example is discrimination and oppression based on preconceptions about certain races, such as afrophobia

(see also racialisation). When people who have personal experience of this are asked about it, new knowledge about the oppressive structures emerges, knowledge that Whites do not have access to (see also whiteness). This is called *standpoint epistemology*. Another example can be found in the field of history, where feminist researchers since 1960s have brought attention to the observation that only men's experiences have been addressed and that the research therefore can only be considered to concern men's history. Thus, it has been important to conduct complementary research.

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Feminist theory, Theory of science

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Note. Reprinted from Swedish Secretariat for Gender Research, 2016

The New York Times

WOMEN AT WORK

By Sheryl Sandberg and Adam Grant

Jan. 12, 2015

YEARS ago, while producing the hit TV series “The Shield,” Glen Mazzara noticed that two young female writers were quiet during story meetings. He pulled them aside and encouraged them to speak up more.

Watch what happens when we do, they replied.

Almost every time they started to speak, they were interrupted or shot down before finishing their pitch. When one had a good idea, a male writer would jump in and run with it before she could complete her thought.

Sadly, their experience is not unusual.

We’ve both seen it happen again and again. When a woman speaks in a professional setting, she walks a tightrope. Either she’s barely heard or she’s judged as too aggressive. When a man says virtually the same thing, heads nod in appreciation for his fine idea. As a result, women often decide that saying less is more.

Some new studies support our observations. A study by a Yale psychologist, Victoria L. Brescoll, found that male senators with more power (as measured by tenure, leadership positions and track record of legislation passed) spoke more on the Senate floor than their junior colleagues. But for female senators, power was not linked to significantly more speaking time.

Obviously, businesses need to find ways to interrupt this gender bias. Just as orchestras that use blind auditions increase the number of women who are selected, organizations can increase women’s contributions by adopting practices that focus less on the speaker and more on the idea. For example, in innovation tournaments, employees submit suggestions and solutions to problems anonymously. Experts evaluate the proposals, give feedback to all participants and then implement the best plans.

SINCE most work cannot be done anonymously, leaders must also take steps to encourage women to speak and be heard. At “The Shield,” Mr. Mazzara, the show runner, found a clever way to change the dynamics that were holding those two female employees back. He

announced to the writers that he was instituting a no-interruption rule while anyone — male or female — was pitching. It worked, and he later observed that it made the entire team more effective.

The long-term solution to the double bind of speaking while female is to increase the number of women in leadership roles. (As we noted in our previous article, research shows that when it comes to leadership skills, although men are more confident, women are more competent.) As more women enter the upper echelons of organizations, people become more accustomed to women's contributing and leading. Professor Burris and his colleagues studied a credit union where women made up 74 percent of supervisors and 84 percent of front-line employees. Sure enough, when women spoke up there, they were more likely to be heard than men. When President Obama held his last news conference of 2014, he called on eight reporters — all women. It made headlines worldwide. Had a politician given only men a chance to ask questions, it would not have been news; it would have been a regular day.

As 2015 starts, we wonder what would happen if we all held Obama-style meetings, offering women the floor whenever possible. Doing this for even a day or two might be a powerful bias interrupter, demonstrating to our teams and colleagues that speaking while female is still quite difficult. We're going to try it to see what we learn. We hope you will, too — and then share your experiences with us all on Facebook or in the comments section.

This is the second of four essays in a series on women at work.

Note. Reprinted from Sandberg & Grant, 2015

The New York Times

NOTEBOOK

By Andrew Reiner

April 4, 2016

Last semester, a student in the masculinity course I teach showed a video clip she had found online of a toddler getting what appeared to be his first vaccinations. Off camera, we hear his father's voice. "I'll hold your hand, O.K.?" Then, as his son becomes increasingly agitated: "Don't cry!… Aw, big boy! High five, high five! Say you're a man: 'I'm a man!' " The video ends with the whimpering toddler screwing up his face in anger and pounding his chest. "I'm a man!" he barks through tears and gritted teeth.

The home video was right on point, illustrating the takeaway for the course: how boys are taught, sometimes with the best of intentions, to mutate their emotional suffering into anger. More immediately, it captured, in profound concision, the earliest stirrings of a male identity at war with itself.

This is no small thing. As students discover in this course, an Honors College seminar called "Real Men Smile: The Changing Face of Masculinity," what boys seem to need is the very thing they fear. Yet when they are immunized against this deeper emotional honesty, the results have far-reaching, often devastating consequences.

Despite the emergence of the metrosexual and an increase in stay-at-home dads, tough-guy stereotypes die hard. As men continue to fall behind women in college, while outpacing them four to one in the suicide rate, some colleges are waking up to the fact that men may need to be *taught* to think beyond their own stereotypes.

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The course "Real Men Smile," which examines how the perceptions of masculinity have and haven't changed since the 18th century, grew out of a provocative lecture by Michael Kimmel, the seminal researcher and author in the growing field of masculine studies.

Dr. Kimmel came to my campus, Towson University, in 2011 to discuss the "Bro Code" of collegiate male etiquette. In his talk, he deconstructed the survival kit of many middle-class, white male students: online pornography, binge drinking, a brotherhood in which respect is proportional to the disrespect heaped onto young women during hookups, and finally, the most ubiquitous affirmation of their tenuous power, video games.

As Dr. Kimmel masterfully deflected an outpouring of protests, the atmosphere grew palpably tense. A young man wearing fraternity letters stood up. “What you don’t get right is that girls are into hooking up as much as we are; they come on to us, too,” he said. Dr. Kimmel shook his head, which left the student clearly rattled.

His voice quavering, the young man stammered something unexpected from a frat brother, about how women can be as insensitive and hurtful as guys. He sounded like a victim himself. But afterward, when I asked him if he had reached out to any of his guy friends for advice or solace, he stared at me, incredulous, his irises two small blue islands amid a sea of sclera. “Nah, I’ve got this,” he said.

Ben Wiseman for The New York Times

I wanted the course to explore this hallmark of the masculine psyche — the shame over feeling any sadness, despair or strong emotion other than anger, let alone expressing it and the resulting alienation. Many young men, just like this student, compose artful, convincing masks, but deep down they aren’t who they pretend to be.

Research shows what early childhood teachers have always known: that from infancy through age 4 or 5, boys are more emotive than girls. One study out of Harvard Medical School and Boston Children’s Hospital in 1999 found that 6-month-old boys were more likely to show “facial expressions of anger, to fuss, to gesture to be picked up” and “tended to cry more than girls.”

But wouldn’t encouraging men to embrace the full range of their humanity benefit women? Why do we continue to limit the emotional lives of males when it serves no one? This question is the rhetorical blueprint I pose to students before they begin what I call the “Real Man” experiment.

In this assignment, students engage strangers to explore, firsthand, the socialized norms of masculinity and to determine whether these norms encourage a healthy, sustainable identity.

The findings result in some compelling presentations. One student interviewed her male and female friends about their hookups and acted out an amalgam of their experiences through the eyes of a male and a female character; another explored the pall of silence and anxiety that hangs over campus men’s rooms; two students gleaned children’s gender

perceptions in a toy store. One of the most revealing projects was a PowerPoint by a student who had videotaped himself and then a female friend pretending to cry in the crowded foyer of the university library, gauging the starkly different reactions of passers-by.

“Why do you think a few young women stopped to see if your female friend was O.K.,” I asked him, “but no one did the same thing for you?”

He crossed his arms, his laser pointer pushing against his bicep like a syringe, and paused. Even at this point in the semester, the students, some of whom had studied gender issues before, seemed blind to their own ingrained assumptions. So his response raised many eyebrows. “It’s like we’re scared,” he said, “that the natural order of things will completely collapse.”

Note. Reprinted from Reiner, 2016