

THE HIDDEN ORIGINS OF KNOWLEDGE

QUESTIONING OUR BELIEFS AND KNOWLEDGE SO AS TO PROVIDE A MORE “GENUINE” EDUCATION*



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Any knowledge (and consciousness) that cannot conceive of individuality and subjectivity, that cannot include the observer in its observation, invalidates thinking about any problems, particularly ethical problems. It may be effective for mastering material objects, controlling energy and manipulating the living. But it has become myopic for grasping human realities and it has become a threat to the future of humanity.

Edgar Morin¹

What worldview is reflected by college curricula, which are currently developed in accordance with the competency approach? How do faculty members' values affect the didactic and pedagogical choices they make? Does their grasp of their relationship with knowledge not guarantee a consistent approach to instruction? According to some, awareness can prevent the unconscious transmission of a vision of knowledge that, if not made explicit, will inevitably have considerable repercussions on student learning.

Reflecting on relationships with knowledge can help all educators provide ethical, authentic and inspiring instruction. As a coach with the PERFORMA Didactics Working Group (GT-DID), I will propose a number of questions that may assist college teachers wishing to reflect on their relationships with subject-based, professional, didactic and pedagogical knowledge as regards their individual fields of expertise. My goal is to give readers an opportunity to view teaching as being open to constructing reality in a world in constant flux, not as an action aimed at transmitting a given truth.

EPISTEMOLOGICAL PREMISES

To reflect on our relationships with knowledge is to enter the domain of epistemology. In education, it means to examine the “processes of the (co)construction of individual knowledge” (Gagnon, 2015). However, certain terms used in epistemology have many different meanings. The first challenge for anyone who is interested in this discipline is to define these terms.

Indeed, for example, *areas of knowledge, knowledge, beliefs and academic subjects* have several definitions. To clarify all these concepts, I have chosen to draw on the works of Perrenoud (1996), Désautels and Larochelle (1998), Doudin, Pons, Martin and Lafortune (2003) as well as more recent works by Simmoneaux (2011) and Gagnon (2010 and 2015). In the course of my readings, a number of premises have emerged which I wish to present here since they have guided all the reflection I will outline in this article.

EVERY ESTABLISHED AREA OF KNOWLEDGE AND EVERY ACADEMIC SUBJECT HAVE AN ORIGIN

According to the social constructivist perspective, all knowledge is determined by the relationships with knowledge maintained by those who have developed it, and it is marked by the context in which it originated:

“all cognition, all learning, is, from the outset, part of a context, and we cannot dissociate knowledge thus produced from the activities through which they were developed” (Désautels and Larochelle, 1998, p. 3) [translation].

In fact, scientific research, notably, conveys “values,” such as universality, predictability and applicability (Simmoneaux, 2011, p. 3) [translation]. Like knowledge, all academic subjects are historical, collective constructs that evolve over the course of time. Perrenoud notes that:

“[e]very generation of teachers is confronted with partially or radically new discourse, with innovations and with cyclical returns to old themes” (1996, p. 8-9) [translation].

Thus, areas of knowledge and academic subjects reflect values that we can attribute to individuals as well as to the contexts associated with the origin and the evolution of these same subjects and areas of knowledge.

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¹ Taken from *La méthode*, Paris, Seuil, 2004, vol. 6: Éthique, p. 65 [translation].



THERE ARE DIFFERENT TYPES OF RELATIONSHIPS WITH AREAS OF KNOWLEDGE THAT PRODUCE BELIEFS AND KNOWLEDGE

Gagnon (2015) distinguishes between five types of relationships with areas of knowledge, including epistemic relationships that depend on the truth value attributed to areas of knowledge and that produce beliefs and knowledge. Moreover, a discourse based on beliefs will be rather emotional and dogmatic, whereas a discourse based on knowledge will be cognitive and much more relative (Doudin et al., 2003, p. 13). To differentiate between these two types of discourse, we can attempt to determine the truth value attributed to areas of knowledge, using comparison criteria. Doudin and his colleagues propose seven criteria (2003, p. 14), which they group together in a table entitled “Nature of beliefs and knowledge” (see table 1). The authors explain and illustrate each of the criteria using a dialogue between two teachers, one expressing beliefs and the other, knowledge.

TABLE 1 NATURE OF BELIEFS AND KNOWLEDGE*

BELIEFS Dogmatic relationship with knowledge	KNOWLEDGE Relative relationship with knowledge
Certainty	Uncertainty
Irrefutability	Refutability
A-temporal	Temporal
Conservation	Change
A-logical	Logical
Generality	Specificity
Universality	Individuality

* Taken from Doudin et al. (2003, p. 14).

A TEACHER’S INSTRUCTIONAL PRACTICES FLOW FROM HIS OR HER RELATIONSHIPS WITH AREAS OF KNOWLEDGE AND CONTRIBUTE TO HOW STUDENTS DEVELOP THEIR RELATIONSHIPS TO AREAS OF KNOWLEDGE

Every teacher has relationships with subject-based, professional, didactic and pedagogical knowledge, of which he or she may or may not be conscious. Such predispositions will at least partially determine the relationships with knowledge that his or her students will develop. Indeed, students formulate “representations [...] of the nature and social cognitivist scope of the subject taught as well as [of ...] the value of their own knowledge” (Désautels and Larochelle, 1998, p. 1) [translation].

The stance that teachers adopt will orient, in part, such representations. For example, students will be influenced by the vision of learning that a teacher explicitly or implicitly embodies, whether or not it is supported by recognized sources. They will also be influenced by the relationship this teacher has with the subject-based and professional knowledge which he or she has undertaken to teach.

TEACHERS’ RELATIONSHIPS WITH AREAS OF KNOWLEDGE

According to Doudin and his colleagues, rather than being based on a scientific discourse, the understanding that most teachers have of teaching and learning is rooted in “practical knowledge of their actions and consequently, very similar to a status of *belief*” (2003, p. 11) [translation]. Furthermore, for teachers, knowledge and belief are confounded (Doudin et al., 2003, p. 11): the relationship between knowledge and belief is dialectical and circular, i.e., they influence each other in a continuous cycle. Moreover, teachers’ beliefs originate with their personal experience, itself linked to the way in which they learned. Thus, it may be that teachers are out of touch with recent research in education. How then, “can the vicious cycle of reproducing traditional academic epistemology be broken,” to quote Désautels and Larochelle (1998, p. 1) [translation]?

Apparently, it is difficult, if not impossible, to change certain beliefs: we cannot “replace one result (belief) with another (knowledge)” [translation], because by proceeding in this way, we might neglect the “cause,” i.e., “the processes determining the emergence of beliefs and knowledge” (Doudin et al., 2003, p. 18) [translation]. Without this essential stage, beliefs would filter all the new information that an individual might acquire and would prevent such information from becoming real knowledge. That is what occurs in certain training contexts: practices validated by research are presented to teachers, but teachers do not apply them. Even though teachers find such practices truly interesting, instead, they reproduce what they experienced when they were students. To foster real questioning of beliefs, it would be better to act on the processes, by supporting teachers in training and by encouraging them to undertake reflection about their own relationships with areas of knowledge, and about the needs and values that their beliefs have fulfilled in their own personal history. I myself have observed the effectiveness of such an approach in the training offered to teachers. Indeed, for teachers, this approach acts on relationships with subject-based and professional knowledge as well as with relationships with pedagogical and didactic knowledge. Consequently, we can assert that questioning the



source of our knowledge allows us to discover our epistemological stance as well as our epistemic stance (Gagnon, 2015) and to adopt means of managing the tensions between beliefs and knowledge.

AN EXAMPLE: WHEN A BELIEF TURNS INTO KNOWLEDGE...

To illustrate my position, I would like to suggest an example. All teachers, pedagogical advisors and trainers have an idea of what good pedagogical strategy is. Consider the relationship that a teacher or a teacher-trainer might have with a method that is a current focus of attention, i.e., problem-based learning (PBL). Let us imagine an individual in the process of asserting, in light of his or her own experience as a student having successfully completed his or her university studies thanks to this strategy, that problem-based learning is very effective. If this individual were to draw universal conclusions from his or her own experience by stating, among other things, that PBL is the best strategy a teacher could adopt, regardless of the courses he or she teaches, then this individual would be displaying a *belief*, by virtue of the *emotional* and *dogmatic* aspects of his or her position. Conversely, if the individual were to consider, from the outset, the limits of his or her experience and of the resulting point of view (explaining that he or she is referring to a specific environment: university), then the individual would be more closely approaching *knowledge*: his or her position would be more cognitive than emotional and it would be *relative*, that is to say, associated with a specific context.

To return to the first tendency: a teacher or a trainer who tends toward belief. According to the research of Doudin and his colleagues, which I have already cited, this belief, even if it seems firmly rooted, may change into knowledge over the medium term. Such would be the case if the teacher or the trainer were to consult a few theoretical works concerning PBL, if he or she were to consider the possibilities and the limits of this strategy in terms of the subjects he or she wishes to teach and if he or she were to refer, in the end, to an author's theory to then assert that PBL is the best option for conveying certain types of knowledge, or fostering certain kinds of learning, e.g., it is used to "define a problem," to "develop mastery of the steps required in scientific research work," and to "ensure in-depth learning of significant concepts" (Archambault, 2000, p. 91) [translation]. If this teacher or trainer admitted that his or her reflection might further evolve depending on his or her reading and experience, he or she would be expressing a relationship with knowledge that is increasingly relative, and less dogmatic, because he or she is opening up to confirming or refuting his or her viewpoint, a stance that corresponds to one of the seven criteria that I mentioned above: *change*.²

ESSENTIAL QUESTIONS FOR ANALYZING OUR RELATIONSHIPS WITH KNOWLEDGE

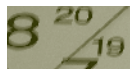
To assist teachers who wish to question their relationships with knowledge and to analyze their epistemological stance, I wish to propose a number of avenues for reflection. The questions below are formulated in the first person so that individual readers can ask them directly. These questions can be used to undertake individual reflection or at a team meeting aiming at analyzing the views that are demonstrated in a department, a program or a group of teachers.

Every teacher has relationships with subject-based, professional, didactic and pedagogical knowledge, whether or not he or she is aware of them. Such predispositions will determine [...] the relationships with knowledge that his or her students will develop.

The first set of questions deals with the relationships a teacher has with the subject-based and professional knowledge associated with his or her primary field of expertise; the second, with relationships with the areas of knowledge he or she must teach according to the program of study in which he or she works; and third, with the relationships he or she has with pedagogical and didactic knowledge. Moreover, the questions below can be linked to the frame of reference for didactic questioning of PERFORMA, which is presented in several articles presented in *Pédagogie collégiale*.³ For example, we could associate the first and third sets of questions with "access point 1," that this model involves, since it concerns the teacher's relationships with subject-based and professional knowledge specific to his or her fields of expertise (subject, previous profession, teaching profession). We could also link the second set of questions listed below to "access point 2," that we see in the same model, since it concerns the relationships the teacher has with the knowledge to be taught.

² As I previously noted, this criterion conflicts with *conservation*. Readers can consult the work of Doudin and his colleagues to learn more about such conflict (Doudin et al., 2003, p.16).

³ One representation of this frame of reference is included in the articles "Apprendre de ses expériences professionnelles grâce à une démarche de résolution de problèmes" (Prud'homme, 2015, pp. 40-41) and "Choisir des contenus reconnus et pertinents: un geste professionnel didactique majeur" (Bizier, 2008, p. 15) as well as in *L'impératif didactique au cœur de l'enseignement collégial* (Bizier, 2014).



QUESTIONS I CAN ASK TO DISCOVER MY RELATIONSHIPS WITH SUBJECT-BASED AND PROFESSIONAL KNOWLEDGE

What is my vision of my profession and the subjects I teach? What values are associated with it?

- Which domain (specialization) I am associated with? What values does it reflect?
- What is my personal development with respect to my subject? For example, what path did I take when I was a student?
- What social and familial factors have influenced me? What impact have they had on orienting the path I have taken in terms of my subject and my profession? How did these factors influence each other?
- What is my professional plan? What are my epistemological or ideological values and positions?

What do I know about the history of my subject (main stages, crises, old and current issues)?

- What partially or radically new discourse did my generation develop in terms of my subject, which is in fact a historical construct?
- In what way is my generation revisiting old themes?
- What new challenges are the specialists of my discipline or my profession confronted with today?

Is there a difference between the university or scientific discipline in which I was trained and the organization of the subject that I teach at college? What are the consequences of this gap on my teaching and on the choices I make to structure the content of my courses?

- Am I inclined to reproduce university models, or, in contrast, do I have the opportunity to take part in constructing knowledge in my subject by preparing courses that do not have a university-level equivalent?
- Is my subject marginal, insofar as it does not have a university equivalent? Is it both compulsory for college education and marginal? If this is the case, what impact does this have on my relationship with my subject? Is my relationship more realistic or idealistic? Is it more relative, or dogmatic? In what way can questioning didactic practice help me to remain realistic and balanced with regard to my subject?

How would I describe my comfort level with respect to the content of my courses? What is the scope of my comfort level? In what way does it influence the importance I attribute to a given aspect of the subject I teach, with respect to other aspects?

- What cognitive conflicts (between two areas of knowledge or between two beliefs, old or new) have I myself experienced, in the recent or distant past, with respect to certain elements of the content of my courses?
- What methods can I adopt to manage the tensions and overcome the conflicts or contradictions that may exist between my beliefs and the knowledge I have?

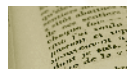
QUESTIONS I CAN ASK TO DISCOVER MY RELATIONSHIPS WITH KNOWLEDGE AS DESCRIBED IN MINISTERIAL STANDARDS, FRAMEWORKS AND OTHER OFFICIAL DOCUMENTS ASSOCIATED WITH THE PROGRAM OF STUDIES IN WHICH I WORK

What elements deemed worthy of being taught are found in ministerial standards, frameworks and other official documents associated with the program of study in which I work?

- Does the vision of my teaching subject as indicated in the documents associated with this program reflect a degree of didactic and pedagogical cohesion?
- What subject-based or professional attitudes should be taught in this program? What values do they reflect?

What consideration does this program give to the history of the subjects or of my profession?

- In this program, what consideration is given to the way in which subjects have developed over time, the issues that have marked them, the way in which they have evolved, and so on (Vergnaud, 1999)?



What connections can be made between my field of specialization and other disciplines to combat “disciplinary insularities” and to establish “nomadic meaning” (Simard, 2003, p. 15)?

- Essential to reinforcing students’ critical thinking (Gagnon, 2010), is interdisciplinarity also necessary for developing the competency associated with the course I give?
- In what way do the courses I give contribute to the development of reflective thinking for students?

Do other teachers share my interpretation of the documents associated with the program in which I teach?

- Does the content of my course seem to be consistent with the way in which my colleagues interpret the program documents, for example, the frameworks? If not, how can this divergence be explained?
- On regards to these same documents, and the consensus and compromises established in my departmental team or my program team, what latitude do I have for encouraging the development of competencies in my courses?

QUESTIONS I CAN ASK TO DISCOVER MY RELATIONSHIPS WITH PEDAGOGICAL AND DIDACTIC KNOWLEDGE

What is my vision of teaching and learning?

- What is my perception of the learning process?
- What is my vision of the pedagogical relationship that I establish with students?
- What values do I believe are priorities in regards to education?

What is my perception of the competency-based approach?

- What have I learned about the competency-based approach in the training sessions I have attended, through my experiences, and so on?
- What other curricular approaches⁴ do I know about (for example, the objective-based approach)?
- Quelles approches curriculaires ai-je connues comme étudiant?

What teaching and learning strategies did I appreciate as a student?

- In what way could my personal history explain my pedagogical preferences?
- To what extent am I familiar with the various pedagogical strategies (in light of my training, my experience, and so on)?

Is my way of teaching consistent with the vision of the subject or the profession that I wish to convey?

- What consideration do I give to the development of autonomy, reflective thinking and judgment?
- What is my perception of the usefulness of error in the field of teaching⁵? What connections can I make between my way of perceiving error and the values associated with my subject or my profession?
- What consideration do I give to interactions among the students in my courses?

In short, are my practices consistent with my vision of teaching and learning and my values?

⁴ Ways of developing a curriculum, i.e., a program of study.

⁵ The report by Manon Brière included in the same issue of *Pédagogie collégiale* (29-1) addresses this fundamental question.



THE BENEFITS OF QUESTIONING OUR RELATIONSHIPS WITH KNOWLEDGE

Benefits for teachers

Questioning their beliefs and knowledge enables teachers to have more *relative*, i.e., *not absolute* relationships with areas of knowledge and to recognize the limits of the latter: teachers will understand that the value of such knowledge depends on its relationships with something else, for example, with a specific context. Such a stance presupposes that teachers will be open to other possible relationships. Their knowledge base will thus develop more fully than their belief base.

By distinguishing between their beliefs and their knowledge, and by recognizing their “hidden beliefs” (Doudin et al., 2003, p. 9), attitudes, opinions and judgments, teachers can also become aware of potential contradictions affecting their beliefs and knowledge, their discourse, their actions, and thereby *overcome* them. For example, teachers who convey a conception of their field that they inherited from their own education, without allowing it to evolve in contact with the professional environments in which they work, may encounter uncomfortable tensions. However, they may be able to dissipate tensions through questioning and the awareness that emerges from such an exploration.

In short, to engage in such questioning and meet all the challenges that such action presupposes is to open the door to new knowledge, to broaden our horizons and to develop in professional terms.

Moreover, describing their vision of knowledge, that is, their epistemological stance, will enable teachers to communicate and establish a relationship of trust with the people they address because they will be in a position to put their cards on the table and to explain their values and their beliefs. More importantly, explaining their stance would allow them to teach in an ethical way: being aware of their ways of seeing and of other possible viewpoints, teachers would be vigilant; they would make sure not to penalize students who have not adopted the same epistemological or epistemic stance, or who do not conceive of *truth* in the same way.

Benefits for students

Like teachers, students can develop their reflective thinking. Teachers who become aware of their relationships with their areas of knowledge also afford themselves the opportunity of

encouraging the emergence of awareness in their students. Enriched by their experience, teachers who are aware of their epistemological stance can help students to open up to new learning or to see the world from a new point of view. According to Doudin and his colleagues, “[a] relative relationship with knowledge also seems to encourage students to develop reflective thinking” (2003, p. 19) [translation]. This implies that we can *think about our thinking* and other people’s thinking in a *critical, reasoned, creative and social* way.

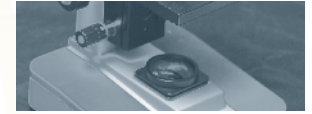
Benefits for teaching teams

Having relative relationships with knowledge also enables teachers to establish more effective and constructive communication and discussion during departmental or program committee meetings. Indeed, favouring such relationships would assume that we demonstrate greater openness to other points of view. Furthermore, if everyone’s epistemological stance is clearly explained, it will be easier to discuss and make decisions in teams, for example, with regard to the content of various courses or when developing or assessing programs of study.

CONCLUSION

I have attempted to highlight the benefits that, for college teachers, emerge from questioning their relationships with knowledge to understand their epistemological and epistemic stances. I have also observed that such questioning can benefit students: students will also have an opportunity to examine their learning process through such an approach.

In short, to engage in such questioning and meet all the challenges that such action presupposes is to open the door to new knowledge, to broaden our horizons and to develop in professional terms. Obviously, adopting such a stance might also involve a change in terms of identity for anyone taking part in this process, especially if this person’s values are modified as a result. Such a change is necessarily destabilizing. Thus, it can be difficult for a teacher to accept the emergence of such a change: isn’t a teacher professionally responsible for *knowing*? But doesn’t the fact of *knowing* also imply recognizing the *limits* of one’s knowledge? In any event, in the absence of epistemological questioning, teachers will be cut off from the areas of knowledge that they must teach, and this distance, this “myopia,” to borrow the word that Edgar Morin so aptly uses, puts teachers at greater risk: that of teaching what they do not believe they are teaching or of not teaching what they nevertheless believe to be essential. ●



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Teachers who wish to learn about epistemology will benefit by reading the work by Verhaeghe, Wolfs, Simon and Compère (2004), which provides ample examples from a pedagogical perspective. It suggests enlightening answers to questions about the origin of scientific knowledge, the role of observation and interpretation in scientific knowledge, the concept of scientific fact, the concepts of model and theory, and so on. In the second part of this book, the authors also suggest types of pedagogical activities appropriate for teaching the natural sciences and the social sciences.

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