

THE PEDAGOGICAL PHILOSOPHY OF BACHELARD

Lucie Roger

Introduction

Gaston Bachelard (1884-1962), a scientist and philosopher, initially taught high school physics and chemistry before becoming professor of philosophy at the University of Dijon. During this period, he studied the philosophy of science and the epistemology of scientific knowledge. In 1940, he took up the Chair in the History and Philosophy of the Sciences at the Sorbonne, a position he would hold up until 1955. He had a disconcerting pedagogy. He would begin with “dense and tightly woven epistemological reflection on mathematical physics and quantum mechanics processes in his morning course before moving on to discuss dizzying variations on the imagination of air.”¹ Bachelard also presented his unique and surprising pedagogy in his writings, which mirrored his teaching. Although the pedagogical contributions of his works are relatively little known, Bachelard primarily described himself as a teacher of philosophy; he believed that education was the “fundamental theme of his thought”.²³ His pedagogy is a reflecting one. It’s a pedagogy of thinking, a pedagogy looking after itself; “pedagogical philosophy.”²⁴ The challenge of this pedagogical philosophy is the transforming of the learner’s mind through the Bachelardian model of the “New Scientific Spirit,” a thinking model inviting a continuing questing of knowledge in the learning process.⁵

The pedagogical philosophy of Bachelard

Before presenting the Bachelardian philosophy of education through five principles, we will rely on the definition given by Nicholas Burbulus of challenges of the philosophy of education:

to reflect critically on the institutional contexts and customs that implicitly define and direct much of what we do — to ask how they affect the problems we choose, the styles of reasoning we adopt, our vocabulary, and our discursive practices. Philosophy is something

¹ Jean, George. *Bachelard, l'enfance et la pédagogie*. (Paris: Éditions de scrabée, 1983), 11

² Bachelard, Gaston. *Le rationalisme appliqué*. (Paris: Presses universitaires de France, 1949), 12.

³ Fabre, Michel. *Gaston Bachelard: La formation de l'homme moderne*. (Paris: Hachette, 2001), 7.

⁴ Jean. Bachelard, *l'enfance et la pédagogie*.

⁵ Bachelard, Gaston. *Le nouvel esprit scientifique*. Paris: Presses universitaire de France), 1934.

that we do, and we are always doing it in a particular way that is not a given; it might be otherwise.⁶

The Bachelardian thought that forms the basis of his pedagogical philosophy tries to respond to these challenges. The writings of Gaston Bachelard are above all focused on the formation of man;⁷ his research on knowledge and learning looks at the formation of the mind and thought. This viewpoint is complementary to psychological approaches that emphasize the construction of internal structures in the brain during the learning process. Bachelardian philosophy has five principles:

1. Learners in educational contexts

In his writings, Bachelard considers the human learner to undergo a process of self-transformation.⁸ One must consider all learning, regardless of its nature, as being able to contribute to transforming the mind and to influencing the learner's self-image. For Bachelard, a technical learning creates disenchantment insofar as it constructs an objective representation of the world that is devoid of humanity. Poetry is a way to inhabit the world.⁹ There is thus a continuum, a vertical column between science and poetry. This verticalness between science and poetry is key to understanding the definition of culture that Bachelard suggests in his writings.

2. The cultural dimension can be understood from a philosophical perspective

The Bachelardian idea of culture is that the cultivation of one's mind is like the cultivation of one's garden; it requires care and development. The scientific culture discussed in the work of Bachelard is aimed at the fulfilment of the mind and at its ability to reflect. It's this ability that the Bachelardian pedagogical philosophy tries to develop in the model of the "New Scientific Spirit". A genuine, cultivated teacher is therefore not someone who knows everything and holds a great sum of knowledge, but rather a teacher who thinks, who reflects, who guides others in their reflection, and who is able to sustain a permanent state of learning. A Bachelardian teacher, then, maintains the verticalness between science and poetry. According to Bachelard, this is achieved through three relationships: the relationship to the self, the relationship to others, and the relationship to the world. We focus on the first relationship here.

⁶ Burbules, Nicholas C. and Kathleen Knight Abowitz *A Situated Philosophy of Education*. Philosophy of Education, 273.

⁷ Fabre. *Gaston Bachelard : La formation de l'homme moderne*.

⁸ Gil, Didier. *Bachelard et la culture scientifique*. (Paris: PUF, 1993).

⁹ Bachelard, Gaston. *La flamme d'une chandelle*. (Paris: PUF, 1961).

3. Cultural relationships are dialectical in nature

Having a relationship to the self means entering into a relationship with one's own knowledge. Like the gardener, the learner has to cultivate his own garden, his own mind. This is the first required relationship to develop the "New Scientific Spirit". Accordingly, black-and-white ideas and ready-made answers must be rejected. This relationship to knowledge plays out through a questioning of all the dimensions of professional, theoretical, practical and empirical knowledge. It also requires questioning the historicity of the construction of this knowledge and its place in the context of cultural practices. A relationship to the self entails being aware of the self, being aware one is observing one's own thought, and being aware one is examining one's own evolution and one's own transformation.

4. Critical thinking must be developed

The New Scientific Spirit put forward by Bachelard appears to be a carefully developed, easily implemented, and critically-grounded model of critical thinking. Bachelard's philosophical definition of a critical mind is "the methodological attitude of a subject who does not accept any assertion without testing out its value; who holds a proposition to be true only if it has been established based on rational and rigorous procedures."¹⁰ Bachelard offers up a framework of rational and rigorous procedures to assess the value of knowledge: Any new knowledge to be acquired must evolve through different levels of philosophy. There are six different levels permitting deepening of knowledge, the details of which are beyond the scope of this paper. However, transcending different levels requires overcoming obstacles that prevent the mind developing knowledge, "epistemological obstacles." To do so, reflections are required that go beyond mere analyses and strive to support the development of learners' minds by engaging them in philosophical interpretations.

5. Temporal reconstructions of learning involve the question of rhythm

Actual situations exist and do constitute the basic material for knowledge analysis. However, we cannot physically see the construction of learning take place; we can only observe its effects. These observed results are produced by a temporal reconstruction of knowledge. An instant clearly arises when a "eureka moment" has occurred, and even if it is impossible to observe it in real time, we can create favourable conditions so it will take place, and moreover so it will take place consistent with the model of critical thinking that is the New Scientific Spirit. This Bachelardian eureka is the "complex and fertile moment" when the learner, alone at the "table of existence, before a blank page and in the candlelight, constructs his knowledge" (our translation). It is important to understand the metaphor here. The table of existence constitutes the entirety of the subject's experience, all prior life situations; the blank page represents the reconstruction that needs to be done by the subject; and the light, the subject's conscience. This instant engages the learner in a moment of anagogical imagination,

¹⁰ Bachelard, G. *Le nouvel esprit scientifique*.

a conscious daydream that leads to deconstructing one's existing images in order to be able to transform them, to create new images, and to contribute to a new organization of ideas. This conscious daydream creates specific images that exist but do not require a context. These complex and fertile moments must not take place only once during school. Rather, they instants must alternate in a rhythm in the learner. The real question of alternation in education has to do with the ability of offered programs to prompt the anagogical daydreaming needed for the development of critical thinking.

Conclusion

The contribution of Bachelardian's pedagogical philosophy to teaching is the idea of focussing not just on knowledge, but also on the contribution of the construction of knowledge in the development of the mind of students. The New Scientific Spirit offers a model for conceptualizing critical thinking. With this model the construction of knowledge supersedes the identification of skills in terms of educational priority.

Biography

Lucie Roger is associate researcher at Université du Québec à Montréal. Her research focuses on professional learning. In her doctoral thesis, she is interested in the contribution of the work of Gaston Bachelard for the teacher training.

Her email address is Roger.Lucie@UQAM.ca.