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Thinking in action: the project methodology

Dewey ordered chairs and tables for the activities of the experimental school founded by him in Chicago. The vendor replied, "You asked us for furniture for the children to work, what we have is furniture for them to listen" (BURKE; GROSVENOR, 2008, p. 69). This episode shows that learning by doing was a completely strange concept at the end of the 19th century. It also shows that from the beginning of his activities as an educator, Dewey associated action and thought. The idea of "children working" marks a methodological turn that would include, among its unfolding, project-based leaning.

Black Mountain College is a radical example of education, which moves away from the school-auditorium model; an institution that associated Dewey's ideas with educational proposals from the Bauhaus movement. There, there was no traditional academic education, everything was done around hands-on activities. Action preceded any and all intellectual production. Or rather, all intellectual production was born from action. In a passage in which he associates Black Mountain College with Dewey's ideas, Adamson (2007, p. 88) observes:

> As Dewey had argued in 1937, the teaching of craft knowledge cannot be put into words because it is the work of the artist/designer, and no one can teach them how to do it. If were possible to tell them what to do, their work would be mechanical, not creative, and nothing original.

Dewey proposed an education that did not separate doing from knowing. He always emphasized that learning happens in action. His ideas were largely based on a reading about education in the craft workshops of old corporations (ADAMSON,

2007). Reflections on learning to work led Dewey to propose a school education in which action played a central role. Project-based learning is tributary of this broader conception of education.

The central focus of this review is William Heard Kilpatrick's *The project method* (2010), a landmark in education, giving directions to what came to be known as project method. But the centuries-old history of this method has seen many developments. Therefore, before considering Kilpatrick's text, I thought appropriate to present other works: *Project-Based Learning* (BENDER, 2014), an example of a current work on the subject; and *Introduction to the Study of the New School* (LOURENÇO FILHO, 1930), to show how one of the pioneers of the New School in Brazil presents project-based learning.

Education for the 21st century

Bender (2014) presents his work as a proposal for 21st century education. It is not a modest proposal. He regards his book as a guide for an education that identifies with the demands of the new times.

The author integrates to his proposal methodological solutions used with varying degrees of success in education, instrumenting a model of project method that can include, among others, WebQuests and microlearning. Based on experiences developed in several schools, he elaborates a prescriptive framework with the following phases of development: anchor, driving question, tasks, access to information, and elaboration of artifacts. Anchor is a starting point, almost always imagined by the teacher, which seeks to relate students' interests to areas of knowledge or problems that may merit investigation; driving question is an inquiry, usually proposed by the students, that directs the investigative process; tasks are investigative phases involving students, individually or in groups; access to information is defined as a condition involving instruments and means; artifacts are products that offer concrete answers to the driving questions.

Bender argues that the project method is based on the interests of the students. For this reason, participants are often very motivated. This contrasts with traditional approaches to teaching, often uninspiring. For the author, an essential feature of projects is authenticity. Students will not study to learn abstractions that are distant from their reality. They will study to get answers to problems from everyday life. One of the examples mentioned is a project in which students study a private forest reserve to determine the number of trees that can be cut for commercial purposes, without detriment to the environment and according to some management conditions determined by the owners. In this case, students study science, history, geography, mathematics in a meaningful context. They learn from a project inspired by real issues, not from the need to find answers to abstractions.

One of the characteristics of the work under review is the author's insistence that his version of the project methodology integrates new information and communication

technologies very effectively. In examples given in the book, there are descriptions of how students can investigate the information needed to develop the projects in which they are engaged. Bender does not consider that the use of new technologies is determined only by the number of sources, but also by the need for students to learn to deal with means important to the job market.

Bender does not present justifications for the methodology under analysis from the psychology of learning and the pragmatist ideology, like Lourenço Filho and Kilpatrick do.

What can be observed continually in Bender's book is the description of artifacts that are nothing more than texts formatted for publication in cyberspace. The author justifies this form of final result using the idea of authenticity. This choice greatly reduces the chances of arriving at results closer to what happens outside school walls. But it seems that the author tries to reconcile the idea of projects with the way schools function, with schedules, with spaces organized as auditoriums etc.

Another aspect of this work that should be criticized is the instrumental view of the internet. The author suggests that the use of electronic media is essential for a 21st century education, but does not present arguments capable of justifying his claims with solid theories of learning. He even reduces proposals based on constructivist understandings of education, like WebQuests, to exclusively instrumental uses. Bender sees them only as a way to organize proposals for students to seek answers to questions in web sources. And in that sense, he completely ignores the foundations of the WebQuest model, as defined by its creator, Bernie Dodge (DODGE, 1995). This makes me suspicious that the author also uses other methodological references, added to the projects model that he proposes, ignoring its fundamentals.

The project methodology as seen by one of the pioneers of the New School in Brazil

In Brazil, one of the most expressive systematizations of project-based learning is the one by Lourenço Filho (1930). He elaborates his ideas not only from the works of Dewey, Kilpatrick, and other New School authors, but also based on experiments he had been conducting at the Rio Branco School since 1926.

Lourenço Filho shows that the project method is based on a psychology that is opposed to intellectualism. He demonstrates that the project method emphasizes action. In addition, he states that it is focused on the socializing role of school. He assumes that thought does not function in a vacuum, nor is it capable of a purely formal construction of knowledge. It reflects the needs that humanity has in the physical and social environment. This thought, always interested, springs from problematic situations. Thought and action cannot separate. The author believes that thinking is a reduced form of acting with symbols, mainly with language.

Lourenço Filho's theoretical formulations are very close to what Dewey proposes. The Brazilian educator formulates a project method that, besides accentuating

the need for purposeful actions, is attentive to the school's commitments as a socializing agent.

Lourenço Filho reminds us that we do not act only in the physical environment. We act in society. Using current language, we can say that the Brazilian educator saw in the projects the opportunity to negotiate meanings among peers, not only to cooperatively elaborate knowledge, but also to construct understandings for life in society.

Here, it is convenient to make an observation to clarify the understanding that Lourenço Filho and the original formulators of project-based learning had of action. They did not understand that action is necessarily a sign, and that students are engaged in meaningful learning. They always insisted on action with purpose; or, to use a language of our times, insisted on an intentional or intentioned doing. The project method, as Lourenço Filho thought after Dewey, should not be confused with activism.

The Brazilian author proposes a definition of project that should be recorded. He starts by criticizing the idea, predominant in school, that it is necessary to elaborate a knowledge of concepts and principles that, once structured, can be applied. This explanation calls forth more recent criticisms to the idea that scholastic knowledge is a general elaboration that can be applied to concrete cases in processes of transference of learning. In projects, the path is the opposite. We begin with concrete challenges that require elaborations capable of explaining and solving them. To clarify this, four points indicated by Lourenço Filho (1930) should be mentioned:

1. Project aims at the elaboration of a thinking applied to realities.
2. We seek information to solve problems, not to store knowledge.
3. Learning must happen in a natural environment.
4. The problem precedes principles.

The author offers several examples of projects, developed at the Rio Branco School. In all of them there is evidence of student interest, participation, change in the role of teachers, and involvement of parents and the whole school community in the process.

Faithful to the ideals of the New School, Lourenço Filho understands that projects need to come from the students' choices, not from teachers. It is the responsibility of the latter to provide support so that the former can engage in activities necessary for the fulfillment of the purposes of their action.

The original proposal of the project method

Kilpatrick (2010) systematizes the concept of projects, suggesting a path capable of integrating three axes: the idea that action is fundamental in the elaboration of thinking, the achievement of scientific knowledge about learning, and the presence of essential elements for the elaboration of ethics necessary for life in society. This

path is determined by purposeful action. Therefore, activity alone is not enough, it must result in an objective (intentionally) sought by the subject.

The author uses a simple case to clarify the concept of project. He suggests one considers a girl who has just made a dress. If she made it with purpose, if she planned it, and if she made it herself, we have a project. What the girl did happened in a social environment in which the dress is a work that has meaning recognized by others. In giving this and other examples, Kilpatrick emphasizes that action happens socially, it is not just a physical doing, or an intellectual realization detached from the social environment in which it occurs. In this sense, he follows Dewey's proposal that the school has a socializing role.

It should be noted that Kilpatrick imagines that completing projects requires freedom. He follows, once again, Dewey's ideas, understanding that education, to use Paulo Freire's expression, is a practice of freedom. Slaves or servants do not have enough purposes to carry out projects. They act guided by other people's purposes. Projects developed in a consequential manner, with a clear search for purpose, are, besides an efficient method of learning, experiences that favor democratic education. It should be noted that the practice of democracy is not in the subjects, but in the teaching method. Authoritative methods are not democratic practices. A democratic education is not defined by its content, but by the ways in which learners engage in the elaboration of knowledge. Here, the idea is that the most important aspect of learning is the engagement of students to achieve a purpose chosen by them.

The proposed method reproduces the processes of knowledge used in daily life in the school environment. One of the hallmarks of project-based learning is authenticity. The problems that act as starting points for projects are the same as those that need to be solved out of school. The American educator believed that school does not prepare for life. It is a dimension of life. The school here and now is not a preparation for an after. It is life lived as it is.

The project methodology embodies scientific principles established by the psychology of learning. At the time, this psychology privileged experimental approaches, guided by a behavioralist view that explained the elaboration of knowledge from the connections between stimuli and responses. This psychology has a certain proximity to the pragmatist philosophy, since it emphasizes action as an important component in the elaboration of thought. Although nowadays behaviorism is an outdated psychology, the association between project-based learning and the understanding that learning involves action and requires responses of the organism to problems that arise from its relationship with the environment, is congruent with learning conceptions that highlight action as a fundamental learning component.

Pragmatism suggests ways of overcoming the mind/body dualism that prevails in hegemonic explanations of thought and action. Mark Johnson (2007) proposes an interpretation that articulates this philosophical proposal with the current psycholo-

gical readings of thought elaboration, emphasizing that the demands of doing are at the root of the elaboration of meanings:

> Meaning derives from the nature of our bodies and the patterns of interaction we have with the environment; it thus gains form through our values, interests, and purposes as active agents. As Dewey insisted – and cognitive science confirms – thought is never totally divorced from the feeling, value, and aesthetics of our bodily experience (JOHNSON, 2007, p. 103).

Educators that work with projects in their schools need to seek articulations with current psychological approaches that emphasize action as the driving force of knowledge. In this direction, for example, it is worth examining possible bridges between project method and the Activity Theory, developed by Leontiev from the Vygostky's ideas.

Returning to Kilpatrick's text. After establishing bridges between the project method and the psychology of learning, the author revisits the issue of purpose. To do so, he uses an example. He suggests thinking of two boys making a kite, one guided by purpose, another by some form of imposition. The result of the work may be equivalent. But the processes will be completely different. In the first case, the boy not only achieved the desired end, but also enriched his repertoire of knowledge to solve future problems. In the second case, the other boy got the expected result, but experienced a process that cannot be generalized. In commenting on the unfolding of this hypothetical case and relating it to systematic education, Kilpatrick notes that the first boy views school activities with joy, the latter sees them with displeasure.

The project method is not just an efficient approach for the field of school learning. It is a path that identifies with vital needs. Besides the immediate results it guarantees, there is a significant gain in the students' intellectual development. But it is not only in the intellectual field that project-based learning is the best educational path. An essential dimension of the project method is its effect in terms of moral education. Purposeful action requires working with others and the pursuit of a socially negotiated welfare. Instead of a disembodied morality, participating in projects ensures the construction of values from action and agreements (and disagreements) in search of a common good. Project-based learning suggests that ethics is constructed based on actions determined by needs that arise in the environment and that require subjects to make choices that are congruent with intentional purposes.

Kilpatrick (2010) proposes the following typology of projects, dividing them into four purposes:

1. To realize some idea or plan externally, in a tangible work (make a piece of furniture, build a car).

2. To enjoy an aesthetic experience (listening to a symphony, enjoying a painting).

3. To solve an intellectual challenge (why São Paulo grew more than Rio de Janeiro in the 20th century).

4. To ensure mastery of certain knowledge or ability (use two-word verbs in English).

There is a tendency to emphasize type 4 because of its proximity to traditional schoolwork. A tendency, by the way, that appears with much evidence in the work of Bender (2014). Type 3 is also attractive to teachers as it resembles intellectual challenges present in many traditional schoolwork. Type 2 is a big challenge; Kilpatrick says it is not easy to make a suggestion as to how to develop it. Finally, type 1 is quite attractive and with clearer steps of planning.

Kilpatrick's work forms a method that stems from the principles of learning by doing. It systematizes what Dewey had been practicing since 1896. Moreover, it is still a proposal that can make education a process in which acting and thinking are not disassociated.

The danger of domestication

To enter schools, many ideas end up being domesticated, losing some of their most expressive marks. This is what seems to be happening with the project method. In the version presented by Bender (2014), it loses its socializing accent, its traits geared towards a democratic education, its appeal in terms of ethical training, and is seen only as a very efficient teaching option, attuned to the demands of the market.

We saw in Lourenço Filho and Kilpatrick a proposal for project method that values intentional action, citizen training and intellectual development and does not separate acting and thinking. In the work of these two pioneers, the project method is more complete and is not understood only as an efficient way to prepare students for the market. It is a proposal that considers the fundamental reasons that lead humanity to act and think in an articulated manner, seeking integral answers to challenges that are worth facing. Therefore, it is necessary to always return to the pioneers to avoid that the project method be domesticated.

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