

The Transformation and Complexity of the Curriculum

The curriculum as a product and/or a process?

Vilmos Vass

Abstract

The paper focuses on the transformation and complexity of the curriculum and analyses the vertical and horizontal transformation of the curriculum. The vertical transformation of the curriculum introduces the major curricular philosophies and ideologies. The horizontal transformation compares the product- and process-based approach of the curriculum. On the basis of the analysis of the vertical and horizontal transformation of curriculum, the paper draws conclusions raising some dilemmas and possible solution.

Key words: curriculum; curriculum theory; transformation; complexity; product-based approach; process-based approach

Subject-Affiliation in New CEEOL: Social Sciences – Education – School education

“Curriculum theory, then, is a field of scholarly inquiry within the broad academic field of education that endeavors to understand curriculum as educational experience.”
(William F. Pinar)

1. Introduction

I remember the first curriculum I developed. It was in the early eighties. I went to my head of department and borrowed her document in order to copy it. I shortly checked the main parts of the curriculum: aims, time allocation, content, objectives, teaching methods, tools and assessment. It was a comfortable, fast and short process with formal legitimation. I started to teach under the umbrella of this signed and stamped curriculum. Frankly, after this procedure I forgot my document and put it into my drawer. One day, an inspector visited my class. She observed my lesson and checked my curriculum. I never forgot her question: Why did my curriculum not have any coherency with the lesson? My (brave) answer was: I do not teach the curriculum, I focus on my pupils. Ten years later, I became a curriculum expert, so I studied the scientific background of my subconscious answer.

In fact, the concept of the curriculum is used with several definitions, but the

general meaning equates with a syllabus, which contains the knowledge-content and the list of the subjects to be taught. (Kelly, 1999) This paper focuses on the broader meaning of the curriculum avoiding the trap of this simplified, narrowing definition. *This is the first level of the simplification of the curriculum.* An important point to note is that curriculum planning is not a simple technical listing or bureaucratic activity, it is a conscious developmental process, where the key element is the transformation of – on the one hand – aims, objectives, knowledge and skills. On the other hand, it is the transformation of the learning and the teaching process. As Kelly claims: “curriculum planning is not merely what knowledge our curriculum should be concerned to transmit, but how that knowledge relates to other aspects of curriculum planning”. (Kelly, 1999, 25) The differentiation between the narrow and the broad definition of the curriculum is only one side of the coin. The other side is to emphasize the dilemma between the traditional meaning of the curriculum as a noun and the reconceptualising view of the curriculum as a verb. As Pinar points out: “We have reconceived the curriculum; it is no longer only a noun. It is also a verb: *currere*.” (Pinar, 2012, 29)

Basically, touching the above-mentioned important points, Ornstein and Hunkins specify five basic definitions of the curriculum: (1) “as a plan for achieving goals”, (2) “as the learner’s experiences”, (3) “as a field of study”, (4) “as a subject matter” and (5) “as content in terms of grade levels”. (Ornstein and Hunkins, 2018, 26-27) On the basis of these definitions, a key question has been raised: *Is the curriculum a product and/or a process?* Traditionally, the basic meaning of the curriculum equates with a product: the national core curriculum, national standards, curriculum framework, local curriculum, lesson plans etc. This is *product-based approach of the curriculum* has resulted in simplification, especially at the level of declared curriculum. In this case, the main components of the curriculum are aims, objectives and knowledge/content. My point is that *this is the second level of the simplification of the curriculum.* Understanding the *process-based approach of the curriculum* needs looking at our scientific topic via transformative and complex lenses related to the broader meaning of the curriculum. One final point needs to be made: This paper prefers the broader concept of the curriculum and raises the following questions:

- How can transformation and complexity change the vision of the curriculum from theory to practice?
- What are the differences between the product-based and the process-based approach to the curriculum?

In order to answer these thought-provoking questions, our aims are:

- To introduce the vertical and horizontal transformations of the curriculum proving the complexity of the concept.
- To compare the product-based and the process-based approach of the curriculum analysing the main trends and dilemmas of curriculum development.

In summary, one purpose of this paper is to provide readers with a colourful perspective on these questions based on a comprehensive understanding of curricular approaches over the last hundred years. Another purpose of this paper is

to give readers reflective opportunities on their own curricular vision, conception and practice.

2. The transformation and complexity of the curriculum

2.1. The vertical transformation of the curriculum

The vertical transformation of the curriculum, *from the first perspective*, is based on some philosophical foundations of education and the curriculum. Our decision-making process of curriculum development is based on philosophy. In fact, this is a central guide and criterion of beliefs, values and vision of education as well as the curriculum, especially about knowledge, learning, teaching and assessment. Goodlad states: “philosophy is the beginning point in curriculum decision making and the basis for all subsequent decision”. (Ornstein and Hunkins, 2018, 47) Ornstein and Hunkins determine four major philosophies of the curriculum, namely idealism, realism, pragmatism and existentialism. They state that the “first two philosophies are traditional; the last two are contemporary”. (Ornstein and Hunkins, 2018, 49) Plato formulated idealism, Aristotle related to realism. These two traditional philosophies have a value-oriented vision, where the values are absolute and eternal, but in realism values are based on nature’s law. Idealistic and realistic philosophy-based curricula are hierarchical, they emphasise subject-matter and knowledge, and separate content areas. Abstract thinking is the highest form of the cognitive process; teachers are moral and spiritual leaders. The differences between these two traditional philosophies have different visions of learning, education, knowledge and hierarchy of subjects. As Ornstein and Hunkins point out: “To idealists, learning is a primarily intellectual process that involves recalling and working with ideas; education is properly concerned with conceptual matters.” (Ornstein and Hunkins, 2018, 49) Idealists prefer the classics or liberal arts, philosophy, theology and mathematics. Realism stresses logical and abstract thinking, exercising the mind, curricular knowledge is based on sensation and abstraction. Hierarchical subjects with separate content prefer humanistic and scientific subjects. The unchanging world is a key concept from the point of these two traditional philosophies, which determines the vision of the curriculum.

In contrast with traditional philosophies, pragmatism and existentialism are based on change and process. From the point of pragmatism, reality focuses on the interaction of the individual with the changing social environment. From the point of existentialism, reality is absolutely subjective. Accordingly, the concept of knowledge and the basic values of pragmatism emphasise the usage of a scientific method under the set of situational values. Not surprisingly, pragmatic learning is based on scientific explanations under the umbrella of the changing environment stressing problem solving and critical thinking competences and activities. There is no permanent knowledge or subject in the curriculum. How? is more important than What? In details, planning teaching and learning methods play a fundamental role in the curriculum. The vision is curriculum for thinking, which emphasizes critical thinking, Problem-Based Learning and pupils’ questioning. It requires interdisciplinary knowledge in order to understand processes and connections among

the integrated fields. From the existentialist point of view, knowledge and values are based on personal choice. As Ornstein and Hunkins point out: “Existentialists advocate that students should be free to choose how and what they study.” (Ornstein and Hunkins, 2018, 50) It resulted in responsible, conscious decision-making and the process of creative self-expression. (Ornstein and Hunkins, 2018) However, there are some significant differences between the first two traditional philosophies and the last two types of the curriculum. In particular, idealism and realism have resulted in a rigid, knowledge and subject based curriculum. On the contrary, pragmatism and existentialism prefer a flexible competence-based, personalized curriculum.

The vertical transformation of the curriculum, *from the second perspective*, is based on curricular ideologies: (i) Scholar Academic, (ii) Social Efficiency, (iii) Learner Centred and (iv) Social Reconstruction Ideologies. Basically, these categories are “practical ideological viewpoints” avoiding the trap of theorization. These ideologies have four different visions and types of knowledge of “what school curriculum should look like”. No doubt, that “these four ideologies can influence people’s ways of thinking about the curriculum”. (Schiro, 2013, 2) The Scholar Academic Ideology emphasizes academic disciplines, which are based on accumulated knowledge for centuries. A important point to note is that this vision of knowledge: “over the centuries our culture has accumulated important knowledge” has determined curricular content, concepts, teaching methods and assessment. As Schiro explains: “Teachers should be mini-scholars who have a deep understanding of their discipline and can clearly and accurately present it to children.” (Schiro, 2013, 4) It is not surprising that the priority of education from the point of this ideology is the extension of their disciplines via the process of transmission at two different levels: knowledge and the way of thinking. Social Efficiency Ideology is based on the needs of society and workplaces. Accordingly, skills play an important role in the curriculum. The expected outcome of this curriculum is social productivity. From the perspective of teaching, Schiro stresses: “Instruction is guided by clearly defined behavioural objectives, and learners may require a lot of practice to gain and maintain mastery of skills.” (Schiro, 2013, 5) It is evident that the focus of the curriculum has changed from knowledge to skills. Consequently, the concept of learning is based on “the relationships between cause and effect, action and reaction and stimulus and response”. Learner Centred Ideology has a different vision of learning and the learner. In brief, in spite of stressing academic, social or economic needs, this curriculum emphasizes the affective dimension of learning, namely attitudes, enjoyment, success and flow aiming the balance between “intellectual, social, emotional, and physical attributes”. Basically, Learner Centred Ideology prefers the broader meaning of learning, which means harmony among cognitive, affective and psychomotor dimensions. In addition, the narrow meaning of learning stresses the role of concentration and memory in the learning process. The curriculum reflects on the interaction between the learner and the environment, thus it results in the construction of meaning. As Schiro summarises: “Learner Centred curricula are thus thought of as contents, environments, or units of work in which students can make meaning for themselves by interacting with

other students, teachers, ideas, and things.” (Schiro, 2013, 6) Social Reconstruction Ideology focuses on social problems, for instance “racial, gender, social and economic inequalities”. In fact, the social dimension is the foundation stone of the curriculum determining knowledge, skills, the teaching and the learning process, and last, but not least, assessment. More broadly, “education is the social process, through which society is reconstructed”. (Schiro, 2013, 6) Cultural factors play an important role in knowledge, skills and attitudes.

2.2. The horizontal transformation of the curriculum

After the vertical transformation of the curriculum, equal attention should be paid to horizontal transformation. Turning back to the question in the introduction, the horizontal transformation of the curriculum focuses on the differences between the *product-based and the process-based approach* to the curriculum. Theoretical and conceptual discussions on these two approaches were going on for a century. Under the umbrella of the second part of the scientific-industrial revolution, in the early years of the 20th century, professional, scientific-based curriculum development plays an important role in education. In particular, Franklin Bobbitt conceptualized the algorithm of “the science of curriculum making”. “Education,” Bobbitt writes, “is primarily for adult life, not for child life. Its fundamental responsibility is to prepare for the fifty years of adulthood, not for the twenty years of childhood and youth.” (Bobbitt, 1924, 8) No doubt, Bobbitt was “one of the earliest proponents”, the early pioneer who fostered meaningful, operationalized curriculum. His followers were Ralph Tyler and Benjamin Bloom. Turning back to Bobbitt’s vision of the curriculum, it is based on – on the one hand – algorithmized educational objectives, – on the other hand – the expected outcome of successful adults.

For instance, his famous book: *How to Make a Curriculum* contained 160 educational objectives. Admittedly, Bobbitt introduced “the kind of precise, scientific methods that had begun to yield dividends in other spheres of human activity and especially in industry” into educational practice (Kelly, 1999, 58) This rational notion of the curriculum is based on the scientific construction of knowledge and skills of successful adults. But this phenomenon is only one side of the coin. The other side, in the context of operationalized educational objectives, is the testing of pupils’ performance. In this sense, the above-mentioned science of curriculum planning is based on the industrial model, which is the foundation stone of standardization. This vision of the curriculum, “the objective approach to curriculum design” fits in very well indeed with Ralph Tyler’s instructional and curricular foundations. In Tyler’s curriculum rationale, he raised four questions:

- “What educational purposes should the school seek to attain?
- What educational experiences can be provided which are likely to attain these purposes?
- How can these educational experiences be organized?
- How can we determine whether these purposes are being attained?” (Tyler, 1949, 1)

These four basic questions are concerned with the purposes, the content, the

organization and the evaluation of the curriculum. (Tyler, 1949; Kelly, 1999) In parallel, Benjamin Bloom divides objectives into three domains (cognitive, affective and psychomotor) and six categories (Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation). This classification, known as Bloom's taxonomy, influenced the notion of the curriculum and the curriculum planning process as well.

Knowledge "involves the recall of specifics and universals, the recall of methods and processes, or the recall of a pattern, structure, or setting."

Comprehension "refers to a type of understanding or apprehension such that the individual knows what is being communicated and can make use of the material or idea being communicated without necessarily relating it to other material or seeing its fullest implications."

Application refers to the "use of abstractions in particular and concrete situations."

Analysis represents the "breakdown of a communication into its constituent elements or parts such that the relative hierarchy of ideas is made clear and/or the relations between ideas expressed are made explicit."

Synthesis involves the "putting together of elements and parts so as to form a whole."¹

A group of cognitive psychologists, curriculum theorists and instructional researchers, and testing and assessment specialists published a revision of Bloom's Taxonomy in 2001. This revised taxonomy draws attention away from the somewhat static notion of "educational objectives" (in Bloom's original title) and points to a more dynamic conception of classification.

The authors of the revised taxonomy underscore this dynamism, using verbs to label their categories and subcategories (rather than the nouns of the original taxonomy). These "action words" describe the cognitive processes by which thinkers encounter and work with knowledge: Remember (recognizing, recalling); Understand (interpreting, exemplifying, classifying, summarizing, inferring, comparing, explaining); Apply (executing, implementing); Analyse (differentiating, organizing, attributing); Evaluate (checking, critiquing); Create (generating, planning, producing). In the revised taxonomy, knowledge is at the basis of these six cognitive processes, but its authors created a separate taxonomy of the types of knowledge used in cognition: Factual Knowledge (knowledge of terminology, knowledge of specific details and elements); Conceptual Knowledge (knowledge of classifications and categories, knowledge of principles and generalizations, knowledge of theories, models, and structures); Procedural Knowledge (knowledge of subject-specific skills and algorithms, knowledge of subject-specific techniques and methods, knowledge of criteria for determining when to use appropriate procedures); Metacognitive Knowledge (strategic knowledge, knowledge about cognitive tasks, including appropriate contextual and conditional knowledge, self-know-

¹ Evaluation engenders "judgments about the value of material and methods for given purposes." (the appendix of *Taxonomy of Educational Objectives (Handbook One, 201-207)* <https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/>)

ledge)² As Kelly stated: “This approach to curriculum planning, however, requires more careful analysis than most teachers were able to give it, and it is to that kind of examination that we must proceed.” (Kelly, 1999, 59)

In fact, there are some similarities among the above mentioned milestones (Bobbitt, Tyler, Bloom) and the centre of these visions of the curriculum is a reproduction of adult life and education as a scientific activity. In this sense, this approach is the adoption of the industrial model of education. (Tyler, 1949) Kelly states: “The important thing to recognize, therefore, is that the notion of behaviour modification is essential to this model of curriculum planning.” (Kelly, 1999, 60) Popham calls this notification *product*, which is the consequence of learner behaviour. Basically, this is the fundamental stone of the product-based approach to curriculum. Otherwise, behaviour modification results in “intended learning outcomes”, which is based on behaviourist psychological theory and “passive model of humans”. “In fact, most of its theoretical components have been psychologists rather than educationists or teachers.” (Kelly, 1999, 61)

On the contrary, the process-based approach to the curriculum emphasizes the “active model of the individual”. (Kelly, 1999) Indeed, this is a learner-centred vision of the curriculum, where the developmental process has focused on practical educational factors, autonomy and human development. Thus, the curriculum stresses competences: critical thinking and problem solving, cooperation, communication and creativity. (Jacobs, 2010)

Conclusion

It can be seen from both the vertical and the horizontal transformation of the curriculum that the curriculum is a complex concept, and curriculum development has some overlapping phenomena. The product-based approach to the curriculum prefers traditional philosophies (idealism and realism) and Scholar Academic and Social Efficiency Ideology are concerned with the linear concept of learning. The process-based approach to the curriculum is based on progressive curricular philosophies (pragmatism, existentialism) and Learner Centred and Social Reconstruction Ideology. In fact, there are a lot of combinations and different types of relationships between the product- and process-based approach. The curricular picture is colourful, but product-based approach, because of the step-by-step linear, operationalized planning process, does not fit the pupils’ interests and needs related to their multiple, complex and unique personalities. In fact, real learning is developmental rather than linear. On the basis of the vertical and horizontal transformation of the curriculum, it is clear that balancing the product- and process-based approach, knowledge and competences, cognitive, affective and psychomotor domains is an important task for curriculum development in order to promote flexibility, autonomy and complex personality.

2 Anderson, L.W., Krathwohl, D.R., Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., Wittrock, M.C. (2001). *A Taxonomy for Learning, Teaching, and Assessing: A revision of Bloom’s Taxonomy of Educational Objectives*. New York: Pearson, Allyn & Bacon. <https://s3.amazonaws.com/vu-wp0/wp-content/uploads/sites/59/2010/06/12092513/BloomsTaxonomy-mary-forehand.pdf>

References

- Anderson, L.W., Krathwohl, D.R., Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., Wittrock, M.C. (2001): *A Taxonomy for Learning, Teaching, and Assessing: A revision of Bloom's Taxonomy of Educational Objectives*. New York: Pearson, Allyn & Bacon. <https://s3.amazonaws.com/vu-wp0/wp-content/uploads/sites/59/2010/06/12092513/BloomsTaxonomy-mary-forehand.pdf>
- Bloom, B.S. (Ed.). Engelhart, M.D., Furst, E.J., Hill, W.H., Krathwohl, D.R. (1956): *Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain*. New York: David McKay Co Inc.
- Bobbitt J. F. (1924): *Review: Franklin Bobbitt and the "Science" of Curriculum Making*. Reviewed Work: *How to Make a Curriculum* by Franklin Bobbitt Review by: Elliot W. Eisner. *The School Review* Vol. 75, No. 1, Seventy-fifth Anniversary Issue (Spring, 1967). 29–47. p.
- Bobbitt J. F. (1918): *The Curriculum*. USA: Houghton Mifflin.
- Jacobs, H. H. (ed.) (2010): *Curriculum 21. Essential Education for a Changing World*. Virginia: ASCD, Alexandria.
- Kelly, A. V. (1999): *The Curriculum. Theory and Practice*. London: A SAGE Publication Company.
- Ornstein, A. C. and Hunkins, F. P. (2018): *Curriculum: Foundations, Principles, and Issues*. Edinburgh Gate, Harlow: Pearson Education Limited.
- Pinar, W. F. (2012): *What is Curriculum Theory?* New York and London: Routledge, Taylor & Francis.
- Schiro, M. S. (2013): *Curriculum Theory. Conflicting Visions and Enduring Concerns*. London: A SAGE Publication Company.
- Tyler, R.W. (1949): *Basic Principles of Curriculum and Instruction*. Chicago: Chicago University Press.