

This is the peer-reviewed version of the article

Slavica, M. (2002). The relevance of curriculum research: The evaluation of curriculum-making processes. *Comparing Curriculum - Making Processes*, 231–241.



This work is licensed under the [Creative Commons Attribution 4.0 International \(CC BY 4.0\) licence](https://creativecommons.org/licenses/by/4.0/)

**Slavica Maksić**

## **The relevance of curriculum research: the evaluation of curriculum-making processes**

Today, education is a critical factor, a necessary support to any country's progress. Professionals in education are confronted with the problem of how to enable the younger generations to have a successful career and a rewarding life. Education has to meet the economy's demand for skilled workers and keep pace with the expansion of knowledge and the acquiring of new skills. The school curriculum has to react to dramatic social changes (internationalisation, globalisation), as well as to the enormous growth of an information-oriented society and to the rapid development of science and technology in the world (Central Council for Education, 1996). Moreover, there is an urgent demand for flexibility, originality and innovation coming from the business world. Consequently, school has to make room for the creativity of students and teachers as much as possible (Maksić 1999).

In the era of global interdependence, Europe is going to become one social and work-producing entity. Educational reforms in European countries have multiple objectives: the acquisition of basic knowledge, the development of critical thinking and the ability to resolve conflicts, the inclusion of European heritage in the school curriculum and making the school responsible for the curriculum. The mainstream of changes in school curricula in moving towards an increasing number of European languages, history, culture and tradition, introducing new subjects with refer to new technologies and searching for, collecting and disseminating information, and developing interdisciplinary issues that cover several subjects or the whole curriculum (social behaviour and civic education, health education, environment protection and religious education). There is also a tendency to organise curricula into broad subject areas instead of separated subjects such as languages, sciences, art and social sciences (Maksimović, 1999).

Educational reform in Western Europe (Ivanović, 1997) have the task of reducing the elevated degree of independence of schools making decisions about the school curriculum. Eastern Europe has exactly opposite need: freedom from intense government influence on education. In general, educational reforms seek to strike a balance between the central role of government institutions in development the national curriculum and the responsible participation of other relevant institutions and individuals. Educational reforms have to provide school

curriculum with an international dimension, simultaneously with national, state and local values, in order to support the development of its most skilled citizens. The next priority is to define minimum national standards for school curricula, but also to leave school curriculum open to innovation. Finally, there must be some mechanism of control of how effective the educational system is and the quality of its results.

The underlying justification for curriculum research is that it can evaluate curriculum-making processes. Key components of the program to be evaluated are student characteristics, teacher selection, teacher training, curriculum development, instruction, management and evaluation (Jackson, 1992). Each society has to know that kind of professionals and citizens it would like to develop/ shape and regularly assess how well the curriculum is serving the national interest. Curriculum research determines how satisfactory curriculum program and educational institutions are functioning, in terms of meeting the demands posed by society, policy makers, teaching personal, students and their parents. Continual evaluation of the educational processes is a necessary condition for the success of any educational reform.

Curriculum evaluation research is dealing with program effects and educational processes and can be designed as summative or formative, product or process, using quantitative or qualitative evaluation. Summative, product and quantitative evaluation studies are dominant and developed to particular problems: Is the program good or not (in the framework of applied educational theory)? Do students learn what the program intended to teach them? What are students' products and performance in the field of learning? Evaluation studies which tried to evaluate the whole program were limited because of inadequate methodology and low impact on school practice, through comparative evaluation of different educational models raises the questions of what consists of.

The typical research design contains measurement of students' progress towards goals, or more precisely students' accomplishments: students' performance assessments, tested achievement, mastery of specific lesson materials, teachers' observations of students' work, rating of student behaviour and production. A majority of evaluation research studies deal with short-term effects. Cognitive objectives are more likely to be tested than non-cognitive ones, as well as objectives that measure lower-order competencies as opposed to higher-order ones. Paradoxically, the main trust of education is focused on its long-term effects: not only cognitive but also non-cognitive objectives, and the development of more higher-order than lower order skills. Development of complex thinking processes, the way students organize and use information, the acquisition of independence, self-directed learning, general educational growth, post-high school educational experiences, high school courses and career plans are some of the key variables for curriculum evaluation studies.

Without doubt, the evaluation is a more complex process than the answer to the question „Is a program good or not “. It has to be made operational through questions such as „What is one program good for “, „Is this program better than others “, and „How can this program be improved “. Evaluation of an educational program should consist of initial assessment and be continued by monitoring the implementation of performance of students, teachers and the entire school. The evaluation has to start with a precisely defined purpose. The crucial question is who is doing the evaluation and for what purposes he or she will use its results. The desired outcomes of the program are often not well defined. In present research studies the ambiguity of outcomes is followed by the lack of reliable and valid instruments. Even if the researcher knows what s/he is looking for, s/he doesn't use the appropriate tools and measurements.

A useful evaluation must address the causal questions of means ends to educators. Wang and Walberg (1983) propose an integrative, causal-modelling approach to program evaluation that is built on theory and research from academic disciplines, from educational research findings, from the experience of practitioners and program developers and from various research methodologies (quasi-experiments, correlational analyses and case studies). The ALEM (Adaptive Learning Environment Model) is an illustration of an integrative, causal-modelling approach. The ALEM is an educational program designed with the overall goal of ensuring that most students experience learning success regular school settings/ Two lines of supporting research were conducted: empirical studies related to program design and program evaluation studies of implementation and outcomes. The data set included the degree of program implementation, classroom processes, and student outcomes.

The aspect of a particular program that should be considered in an evaluation study are the following, according to Callahan (1991): Are resources adequate for implementation of this program? Do staff development activities result in changes in instructional practice? What would the students do differently after participation in the instruction to be provided? What would the students say, think, do differently if the program were a success? How are the teaching behaviours going to differ if the staff development program has the expected impact? How will teachers' lesson plans differ? What questions will parents be able to answer about the program if the program evaluators' communication has been adequate? Is this program better than other programs or is it meeting the highest criteria set in the field? Can we compare this program to other programs or to a set standard (criteria)? How can we make recommendations which can be implemented without reflecting on personal?

Callahan (1983, 1991) suggested that evaluators use a scale for rating the degree to which content, process, product and the learning environment are adapted to meet the needs of the

students. Only qualitative studies provide us with information on other intervening factors which influence program success and explain how the program interact with them. To ensure believable evidence of program impact, Callahan suggested asking subjects enrolled about the criteria. Pešić (1987) recommended action research as a method of program evaluation that provides an opportunity for formative, process and qualitative evaluative studies. Action research is good for the exploration of actual school practices and different forms of evaluation could be used. The „research-action-research “design slows us to introduce intervention and know its effect, giving us the possibility of improving educational techniques.

Almost all education in Yugoslavia is state-controlled, with centralised stipulation of school curricula. There are national curricula for primary and secondary school (Đurić, 1997). The state and private schools use the same curriculum. Primary education of eight years is compulsory for children from seven to 15. The curriculum for primary schools includes compulsory and optional subjects, their schedule by grades, weekly and annual number of lessons and other types of educational process information. The curriculum defines the contents of each subject, teaching aims and objectives, as well as instructions regarding how to achieve them. Secondary education is carried out in comprehensive schools, vocational schools and art schools. The curriculum includes compulsory and optional types of training and educational work, subjects, the content of the curriculum, the ways it is to be realised and the way examinations are given. The compulsory types of work are: instruction additional work, remedial work, practice and applied activities, preparatory and socially beneficial work, the elective subjects and different types of extra-mural activities.

Evaluative research studies have been done on various aspects of program effectiveness. Several researches reported in the early '80s found that curriculum objectives and aims were not completed in the case of many students (School programs and contemporary educational need, 1984). Subsequent studies of the effects of primary and secondary school curriculum confirmed the negative results. Primary school students did not acquire enough not relevant knowledge at the end of their primary schooling, when they had to start their secondary schooling (Havelka et al., 1990). More recent studies found that students graduating from secondary school did not have sufficient general knowledge for the successful continuation of their studies through the university entrance exam. Those graduates who went on to factory work and other jobs often did not possess sufficient knowledge for successful professional work (Mazić, 1992). The latest research studies on student achievement show the same negative trends as the previous did. An analysis of elementary school science teaching programs showed that the concepts were not hierarchically distributed within the system. The majority of students did not master basic concepts in physics and chemistry (Milanović-Nahod & Šaranović-Božanović, 1996). The analysis of achievement in mother tongue and mathematics teaching in elementary school

revealed that student achievement scores were around the arithmetic mean. Item analysis showed that the level of acquisition of certain concepts was extremely low. An achievement test in mathematics produced even poorer results (Šaranović-Božanović & Milanović-Nahod, 1996).

Analyses of psychological and didactic bases of the primary school curriculum found small changes introduced by reform from 1959 to 1990. These were corrections of subject and unit numbers (Makević, 1996). A survey of primary school teacher attitudes toward the curriculum revealed that the majority of teachers in Serbia and Montenegro deemed the primary school curriculum was able to achieve its main goal – providing modern education to students - only partially (Đorđević & Radovanović, 1998). Teachers express interest in the introduction of new subjects, such as information science and civic education, and for new content in existing subjects (e. g. interpersonal relations, ecology). There was no agreement on the integration of subjects, because teachers are not willing to accept changes in their own education: no interest in two-stream teacher education.

A team of educational experts summarised characteristics of Yugoslav schools in the following way: curricular for primary and secondary schools are authorised by the Republic' Ministry of Education, teachers are in charge of curriculum implementation, and students are responsible for assimilating knowledge. There are no causal relationships between curriculum materials, educational standards, finance, program implementation and evaluation. Though are school inspectors, educational standards exist only in theory, because there are no adequate sanctions for those who do not fulfil them. Textbooks are published by a few state publishing houses. There is no systematic in-service training for teachers, only some occasional seminars (Vilotijević & Đorđević, 1998). The scope of global problems in the educational system ranges from the separation of republics and the establishment of new states and the subsequent formation of their own educational systems, overcrowded schools with refugee students in Serbia and Montenegro, to decreasing living and scholastic standards and the present lack of regular education in some areas of Kosovo and Metohija.

The most important question in the curriculum-making process, as well as its realisation, is how to meet the needs and capacities of the individual student. The regular school curriculum is geared to students with average ability, average levels of physical, social and emotional development, and an average amount of relevant pre-knowledge. All these @average@ dimensions make curriculum development a very difficult task for school authorities and practitioners. Unavoidably, some children are frustrated and others are bored at school. It seems that attempt to adjust curricular to students' varying educational needs and abilities have not solved the problem. For example, a review of the research reveals that even special provision for the gifted, such as extra-curricula activities, display a tendency to respond to average abilities,

interests, and talents of enrolled students, from the very beginning of the course or very soon thereafter (Maksić, 1998).

There is an illustration of school differentiation. A team of researchers made a plan to change primary school in Yugoslavia, recommended three categories of school subjects: compulsory, optional and voluntary (Vilotijević & Đorđević, 1998). Compulsory subjects are for all students and have to cover 70-75% of teaching time. 20% of instruction time is spent on subjects that are optional and not fixed in advance. The rest of content and time is devoted to voluntary subjects (5-10% of teaching content). In other words, some authority decides 85% of program contents, the local community 10% and the school the remaining 5%. There are three curricula: A, B and C, with A level the most complex and C the simplest. A, B and C curricula are compatible: if A level is the complete program, then B level would be two thirds of program A, and program C might represent half of program A.

In the same plan, primary schooling is divided into three cycles: the first cycle consists of 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> grades; the second of the 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> grades, and the third cycle comprises 7<sup>th</sup> and 8<sup>th</sup> grades. The first cycle has a single program for all students, with some possibilities for individualisation of learning. The second cycle has the same compulsory subjects for all students, but differentiated on three levels (A, B, C). The third cycle has all the options from the previous two plus possibility of choosing optional and voluntary subjects. Another way of introducing differentiation in the second and the third cycles is to create classes for integrated instruction areas (science and mathematics, social sciences and languages, etc.). In that case, there is no need to supplementary and other forms of educational work existing in the current curriculum, the proposed subject programs focus on basic facts and concepts, principles and laws of the discipline. The curriculum should be applied experimentally in some schools, and after adequate evaluation recommended for broader application.

In general, it is necessary to differentiate between curriculum contents and teaching. Curriculum-making processes inherit the idea that curriculum contents, organisation of teaching and methods of instruction, all have to be adapted to the developmental capacities of the students. Piaget, Bruner and Bloom believed that the movement of child from one developmental stage to the next is a process that necessarily precedes learning, so that some developmental schemes enable learning only on an appropriate level. The turning point in curriculum-making processes is the idea of the leading role of learning. Vygotsky claimed that teaching/ learning is an intrinsically necessary and universal moment of child development (Vygotsky, 1996). His follower Davidov (1995) succeeded in developing scientific concepts, elements of science-theoretical thinking, surprisingly early in school children in Russian schools, through the process of specially organised teaching - developmental teaching. Šaranović-Božanović (1984) confirmed

the possibility of modelling the knowledge acquisition process by applying Galperin's theory of successive formation of mental activities in her experiments with pupils who were failing at school in Serbia.

Curriculum-making is a very responsible and complex process of putting in the concrete goals of a particular society and keeping up with the state of art in domains concerning what children have to know. In many countries, educational goals are ideals towards which the state administration direct its society. Incontestably, how responsible institutions tailor school curriculum at local, state and national levels will determine how effectively a nation's resources are employed. The second problem for the curriculum is how to cope with the growth of knowledge. If the world is changing continually and ever more rapidly, then the programs that contain information about the world have to change also. It means that curriculum cannot be made once and for all. But a curriculum has to have some stability for its regular implementation. That could be provided by stressing the structure of the discipline, basic concepts, its laws and principles, rather than specific information.

Curriculum evaluation requires continuous assessment of the extent to which students carry out tasks or acquire knowledge and skills. Nowadays, there are development of power of mind and advanced levels of product development. The best way to ensure reliable evidence that certain educational outcomes are achieved is to conduct curriculum research. Curriculum-making processes should be evaluated through curriculum research. It is not necessary to carry out research at every school, with the entire school population. On the contrary, surveys and experimental studies are strongly recommended in a few schools and experimental schools, whenever any changes are introduced into the curriculum. However, curriculum evaluation needs to become more helpful than stressful in order to have a chance of become an integral part of the curriculum-making processes.

Students have to succeed at school, to master school tasks and to enjoy learning as a basic function of being a human being. Children are learning not only to know how, but to express themselves and to realise their full potential. A curriculum is transmitted to students by teachers and their teaching. Curriculum contents and learning will be more valuable if they are not only suited to match child's mental schemes but proactive, provoking the individual development of a particular child. There is evidence that developmental teaching provides an opportunity for better learning and deeper understanding than other methods. Briefly, an optimal school curriculum should be open to innovation, promising in implementation and accessible to evaluation.



## References

- Callahan, C.M. (1983). Issues in evaluating programs for the gifted. *Gifted Child Quarterly*, 27, 3-7.
- Callahan, C.M. (1991). *Issues in evaluating programs for the gifted*. 9<sup>th</sup> World Conference on Gifted and Talented Children. The Hague, The Netherlands.
- Central Council for Education (1996). *The model for Japanese education in the perspective of the 21<sup>st</sup> century*. Tokyo: Ministry of Education, Science, Sport and Culture.
- Davidov, V.V. (1995). On interpretations of developmental teaching. In S. Krnjajić (Ed.), *Saznavanje i nastava* (9-36). Beograd: Institut za pedagoška istraživanja.
- Đorđević, B. & Radovanović, I. (1998). Teachers opinions on current primary school curriculum. In M. Vilotijević & B. Đorđević (eds.), *Naša osnovna škola budućnosti* (367-402). Beograd: Zajednica učiteljskih fakulteta Srbije.
- Đurić, Z. (ed.) (1996). *Development of education in the FR Yugoslavia 1994-1995*. The report for the 45th session of the International Conference on Education UNESCO-BIE. Belgrade: The Ministry of Education of the Republic of Serbia.
- Havelka, N., et al. (1990). *Efekti osnovnog obrazovanja, Obrazovna i razvojna postignuća učenika na kraju osnovnog školovanja*. Beograd: Institut za psihologiju.
- Ivanović, S. (ed.) (1997). *Strategije razvoja i reforme obrazovanja u svetu*. Beograd: Ministarstvo obrazovanja Srbije.
- Jackson, W. (ed.) (1992). *Handbook of research on curriculum*. New York: Macmillan.
- Makević, S. (1996). *Pegoško-didaktičke osnove nastavnih planova i programa za osnovnu školu* /Doctoral thesis/. Beograd: Univerzitet u Beogradu, Filozofski fakultet.
- Maksić, S. (1998). *Darovito dete u školi*. Beograd: Institut za pedagoška istraživanja.
- Maksić, S. (1999). Kreativnost između teorije i školske prakse. *Zbornik Instituta za pedagoška istraživanja*, 31, 9-28.
- Maksimović, I. (1999). Obavezno obrazovanje u Evropi. *Nastava i vaspitanje*, 48, 487-498.
- Mazić, S. (1992). *Curriculum research in Serbia*. European educational research workshop on Research into Secondary School Curricula, Valletta (Malta), 6-9. October.
- Milanović-Nahod, S., & Šaranović-Božanović, N. (1996). *Assessment of knowledge in sciences in elementary school student*. 4<sup>th</sup> European Conference on Psychological Assessment, Lisbon (Portugal).

- Pešić, M. (1987). *Vrednovanje predškolskih nastavnih programa*. Beograd: Zavod za udžbenike i nastavna sredstva.
- Šaranović, N. (1984). *Uzroci i modeli prevencije školskog neuspeha*. Beograd: Prosveta.
- Šaranović-Božanović, N., & Milanović-Nahod, S. (1996). *Assessment of knowledge in mother tongue and mathematics teaching in elementary school student*. 4<sup>th</sup> European Conference on Psychological Assessment, Lisbon (Portugal).
- Školski programi i savremene potrebe u obrazovanju* (1984). Beograd: Institut za pedagoška istraživanja.
- Vigotski, L. S. (1996). *Dečija psihologija*. Beograd: Zavod za udžbenike i nastavna sredstva.
- Vilotijević, M., & Đorđević, B. (1998). *Naša osnovna škola budućnosti*. Beograd: Zajednica učiteljskih fakulteta Srbije.
- Wang, M.C., & Walberg, H.J. (1983). Evaluating educational programs: An integrative, causal-modeling approach. *Educational Evaluation and Policy Analysis*, 5, 347-366.