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# The model for evaluating the influence of student participation on school quality

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### Abstract

In this article, special attention is given to student participation as a factor that differentiates schools from one another as regards school quality. The purpose of this paper is to present the results of research on the impact of student participation on the quality of schoolwork. The aim of the research was to develop and verify a model for evaluating the influence of student par-

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ticipation on school quality. In order to achieve the research objectives, it was necessary to determine which school activities the students are most often involved in and the criteria of quality in those schools in which the impact of student participation is the greatest.

To design the model, we used the computer programme DEXi. For the purpose of the so-called "what-if" analysis, we used the programme Vredana. Both tools are available for free at http://lopes1.fov.uni-mb.si.

**Key words:** school quality, student participation, evaluation model, evaluation of student participation.

# Introduction

One of the main concerns of most schools is how to improve their quality. To be able to answer this question, we have to define quality and we have to establish how to measure it. The aim of our research was to develop and verify a model for evaluating the influence of student participation on school quality (Part 2). In order to do so, we conducted a survey (Kovač, 2008) in May 2007; the survey included eight secondary schools in Slovenia. The sample schools were chosen according to the number of students (school size), the number of different educational programs, the types of educational programs (grammar school, technical and vocational education), and their location (urban or suburban environment). We needed as much information as possible about the views of different users (head teachers, teachers and students) about specific aspects of quality in every school. Therefore, we prepared a questionnaire for head teachers and teachers (Part 3). The head teachers and the teachers gave us professional feedback about the criteria of school quality and about the students' impact on them, which enabled us to design a model for the assessment of quality, which is based on the gathered knowledge.

In Part 4, we present an example of practical application of the model. Using special questionnaires, the teachers and the students assessed their school according to the criteria in the model. The teachers were asked to assess the objective criteria of quality (such as school resources and equipment, learning content, student results), school organisation and management, and interpersonal relations. The students responded to questions about class organisation and management, interpersonal relations, and collaboration within the school and with the broader community. The results of the evaluation show what a school can do to improve school quality.

Parts 5 and 6 present research findings and conclusion.

## Part 1: Theoretical framework

The class is the basic school unit. The educational process is carried out in the class, in part as prescribed by the national curriculum and mostly as a hidden curriculum (Apple, 1992). Student participation links student activities in the classroom to those in the school field. Student participation is a part of school culture, which differs between different schools (Resman, 2005).

The term "participation" has different meanings in different areas. Participation in school opens up new possibilities for the quality of schoolwork. Participation is a principle, a method, a process, a means of people management and collaboration, which increases the quality of schoolwork; this is true for teacher, student and parent participation (Resman, 2005).

Different types of student participation manifest themselves differently in specific schools. Kolhberg's so-called just or ethical community (the definition is available online at http://en.wikipedia.org/wiki/Just\_community) is often mentioned as a moral dimension of student participation (Kohlberg, 1980). In addition to the moral dimension, student participation also has a political and a professional dimension (Resman, 2005), the latter, too, make a significant impact on personality development and the quality of schoolwork.

Student participation should be studied in a broad framework that encompasses several different aspects. Student participation means making decisions, or contributing to the process of making decisions, about life and work and it means involvement in the planning, realisation and evaluation of schoolwork; student participation encompasses everything that the students are involved in and everything that concerns them.

All this supports the view that the quality of schoolwork or the efficiency of the educational process depends on the level of inclusion, cooperation and participation of everyone involved.

There is no consensus about what makes a school a "good school". In practice, the definition of school quality depends on who defines it (head teachers, teachers, students, parents, employers) and which particular dimension of quality they prefer or favour. However, the majority of theoretical and professional discussions can be summed up in the following definition (Kovač, 2008): "A good school knows how to motivate students to participate actively in the curriculum and achieve good educational results, as well as embrace skills and values for life. It is very important to know how to measure such quality."

Education is an individual benefit as well as a public good (Aspin, 1994). The prime purpose of schools is to create knowledge and understanding in all dimensi-

ons of the students' individual development. How to measure, evaluate and compare their success in achieving this, in order to get a relevant image of school quality, is a challenge for the majority of schools and also for some government agencies.

### Factors included in the assessment of the quality of schoolwork

To assess what constitutes quality and what not, certain criteria (also known as factors parameters or indicators) are required. They can be divided into two groups (Kovač, 2008):

1. "Hard" or formal (objective, systemic) factors of quality: These are the factors already used in pedagogical practice for a more or less transparent assessment of quality on the systemic level, but they are not used for in-depth assessment (hidden curriculum). They are used to evaluate the students' learning results, progress or dropouts, graduate results, behaviour, the achieved goals of the formal curriculum and the quality of resources or equipment.

2. "Soft" or informal (subjective) factors of quality: These are the factors that are the subject of many discussions, but they are difficult to appraise. They are used to assess the students' acquired life experiences, new learning and teaching methods, interpersonal relationships at school, integration of school and community, school management culture, school climate and school culture.

A more detailed identification of the factors of quality in relation to different theoretical definitions of quality and the conditions for quality is presented in Table 1 (compare to Aspin, 1994, 173–175).

The left column of the table presents theoretical definitions of quality. To facilitate the development of this quality, certain conditions must be provided in the school (the middle column of the table). To assess the quality of provided conditions, criteria for measuring them are required. They can be derived from the presented factors in the right column of the table. Factors of quality make it possible to identify the presence or absence of particular types of quality; they indicate to what level the conditions for the quality of schoolwork are provided; they are a measure of school quality.

Today more than ever before, schools are expected to guide students systematically and permanently towards achieving high levels of knowledge and skills for life (Davies and Ellison, 1997; Caldwell, 2005; Wintersteiner, 2003; Giancola and Hutchison, 2005; Morrison, 1998; and Glasser, 1998). Contemporary forms of school management incorporate those elements that encourage the development of active student participation. If we consider only the objective factors, student participation does not have an impact that would significantly contribute to the quality of schoolwork (see Table 1, right column). The impact of student participation on schoolwork

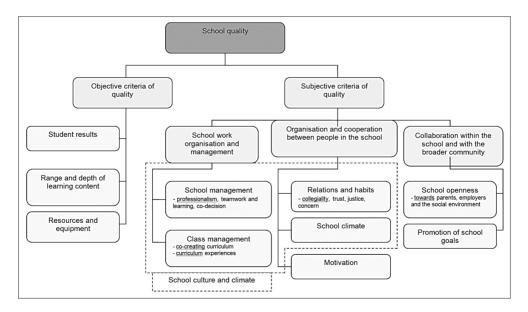
Definitions of quality (What is quality?)	Conditions for quality (Provision of conditions)	Factors (indicators) of quality (Measuring quality)
<ul> <li>Quality as effectiveness and efficiency</li> <li>Quality as added value</li> <li>Quality as qualitative knowledge</li> </ul>	<b>OBJECTIVE (hard) conditions</b> Material-financial Human resources conditions Normative	<ul> <li>OBJECTIVE (hard) factors</li> <li>Student results</li> <li>Range and depth of learning content</li> <li>Range and quality of resources and equipment (suitability of employees and classrooms, scope of financial resources)</li> </ul>
<ul> <li>Quality as achieving school goals and school values</li> <li>Quality as excellence, selectivity, justice, legality, social equality</li> <li>Quality as professional work environment</li> <li>Quality as satisfying needs, requests and expectations</li> <li>Quality as sersonal happiness and student development</li> <li>Quality as school management culture</li> <li>Quality as a learning organization</li> <li>Quality as a ctive student participation</li> </ul>	<ul> <li>SUBJECTIVE (soft) conditions</li> <li>Organisation and schoolwork management <ul> <li>management for quality</li> </ul> </li> <li>Organisation and mutual cooperation</li> </ul>	<ul> <li>SUBJECTIVE (soft) factors</li> <li>Quality management (supervision, evaluation, organisation, management style)</li> <li>Planning and implementing the curriculum (teaching, learning and evaluation methods; participation)</li> <li>Acquired experiences in the curriculum (knowledge and skills, attitude towards school rules and school values)</li> <li>School climate and school culture (culture of relationships and habits)</li> <li>Democracy and autonomy of the school, the teachers and the students</li> <li>Motivation</li> </ul>
	<ul> <li>Cooperation with the community</li> </ul>	<ul> <li>Openness of the school</li> <li>Promotion of school goals in the community</li> </ul>

Table 1: Factors of the quality of schoolwork

depends on the opportunities to participate that are offered to the students by the school, for example, through the style of management, the so-called participative management, with school and classroom teamwork, mutual cooperation, school climate, democratic regulation, respect for the autonomy, a stimulating work environment, and through connections with the local community (Aspin, 1994). A school developing such opportunities, that is, the subjective quality factors, has a greater chance of developing high school quality.

# Part 2: A model for evaluating the influence of student participation on school quality

To evaluate the influence of student participation on the quality of schoolwork, we created a model (a prototype) using theoretical and practical knowledge, as we explained in Part 1. The model consists of the objective and the subjective criteria that are organised in a hierarchical tree (see Figure 1). We determined the influence or importance of individual criteria in the model hypothetically.



#### Figure 1: Criteria Tree for evaluating the quality of schoolwork (compare to Table 1)

The model was designed using the computer programme DEXi (Jereb, Bohanec and Rajkovič, 2003). As confirmed by many theorists (such as Adelman, 1992; Ben-

kovič et al., 1998; Pivec and Rajkovič, 1998; Rajkovič, 1999; Rajkovič and Bohanec, 1991; Muha, Rajkovič and Florjančič, 1999), the DEXi programme has proven to be an appropriate tool, in theory and in practice, for evaluating and measuring schoolwork. The programme was developed by the Faculty of Organizational Sciences in Kranj (Slovenia) and the Jožef Štefan Institute in Ljubljana (Slovenia) and can be downloaded for free and used by anyone (http://lopes1.fov.uni-mb.si).

A school is evaluated on the basis of individual criteria. The total value of a school is computed by aggregating partial values. The aggregation criteria and the procedure are regarded as a knowledge base (Pivec and Rajkovič, 1999) consisting of the criteria tree, the measurement scales and descriptions of the school.

A five-point Likert scale is usually used for measuring the criteria, depending on how precise the assessment should be. The scale domain consists of semantic values in order to preserve the semantic idea about measuring, comparing and explaining the particular criteria.

Different factors of quality influence the quality of schoolwork differently. Given that our main aim was to evaluate the impact of student participation on the quality of schoolwork, the influence of the subjective criteria on the quality was determined with regard to the intensity of student participation.

## Part 3: Research (Evaluation of the model)

The validity of the model was tested with a survey of head teachers and teachers in eight secondary schools in Slovenia. The sample schools were chosen according to the number of students (school size), the number of different educational programs, the types of educational programs (grammar school, technical and vocational education), and their location (urban or suburban environment). Therefore, we prepared a questionnaire for the head teachers and the teachers. We asked them to define the impact of student participation according to particular criteria by determining the importance of each criterion in the model (in percent).

For example, one of the questions read: "Please, specify the impact of the subordinate criteria in the parent criterion so that the total value amounts to 100."

Parent criterion: Class management (see Figure 1)		Value	
Subordinate criteria:	1. Opportunities offered to the students		
	2. How the students use these opportunities		
Total value 100			

And so on for all the criteria in the model.

We received completed questionnaires from eight head teachers and 62 teachers. The head teachers and the teachers gave us professional feedback about the criteria of school quality and about the students' impact on them, which enabled us to finalise the model which is thus based on the gathered knowledge.

Given our theoretical findings, we assume that the objective factors are an existential condition for schoolwork and a precondition for developing all other types of quality, including student participation, but the influence of student participation on objective quality is minimal. The criteria for evaluating the subjective factors of quality are structured with regard to the identified forms of student participation (Part 1). The majority of subjective factors have been identified as school culture and school climate, which include school management, class management, the culture of relationships and habits, and collaboration within the school and with the broader community. The motivation of the head teacher, the teachers and the students is a condition for participation at every level of schoolwork.

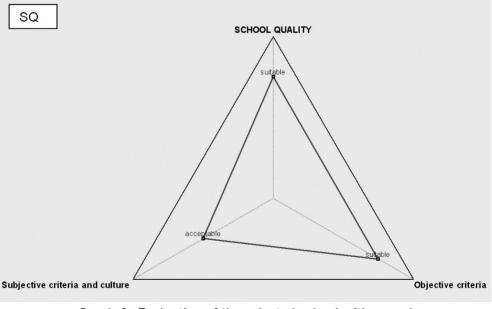
The interviewed head teachers and teachers are convinced that the impact of student participation is the greatest in relation to the following subjective criteria: class management, relationships and habits, and collaboration within the school and with the broader community. Therefore, these criteria should be attributed the greatest importance in the model.

# Part 4: An example of practical application of the model

In this section, we present an evaluation of a selected school using the designed model and our analysis of results.

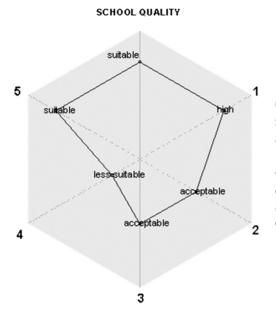
The students and the teachers from the selected school received questionnaires, in which they evaluated the criteria of quality in their school. The questions were designed in such a way that they included only the elementary criteria of the model. The values gathered with the questionnaires were statistically processed and were then fed into the programme DEXi. The parent criteria in the model are automatically assessed according to the decision rules in the programme DEXi. However, the result of evaluation can be analysed from different aspects, namely, with regard to the values of the objective and the subjective criteria of quality, with regard to the influence of student participation and, therefore, with regard to those subjective criteria of quality whose values are most dependent on the influence of the students. Such subjective criteria are class management, the culture of relationships and habits, collaboration within the school and with the broader community, and motivation. To explain how and where student participation should be increased to improve school quality the so-called "what-if" analysis in the programme Vredana was used.

The selected school has proven to have "suitable" objective and "acceptable" subjective criteria; therefore, with respect to the decision rules in the model, the quality of school was assessed as "suitable" (Graph 1). The meaning of a particular value was defined according to the measurement scales. For example, "acceptable" subjective criteria mean that the criterion of "school culture and climate" is "acceptable" or better, the criterion of "collaboration within the school and with the broader community" is "acceptable" or better, and the criterion of "motivation" is "medium" or better. The measurement scales consisted of the following values: "very low", "low", "medium", "high", and "very high" for the criterion of "motivation", and "not suitable", "less suitable", "acceptable", "suitable", and "very suitable" for other criteria.



Graph 1: Evaluation of the selected school with regard to objective and subjective criteria

Since we were more interested in the subjective than in the objective criteria, we extended our research to the criteria that are most influenced by student participation (in the opinion of the interviewed head teachers and teachers): class management, the culture of relationships and habits, collaboration within the school and with the broader community, motivation, and school management (Graph 2).



# Graph 2: The quality of the selected school with regard to the objective and more subjective criteria

Legend: 1 = motivation, 2 = collaboration within the school and with the broader community, 3 = culture of relationships and habits, 4 = class management, 5 =objective criteria

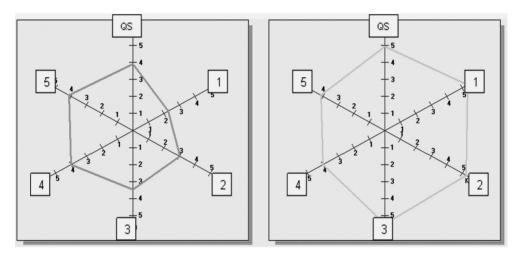
### Analysis of results

What can a school do to improve its quality? What can the students do?

It is difficult to improve objective conditions in a short period of time since this is related to investments in the school premises and equipment, to the legislation (the formal curriculum) and to the employment of teachers. In addition to this, the motivation of the teachers and the students does not occur instantly and it cannot be improved over a very short period of time. A school can make quick changes in those areas in which it operates autonomously and in which cooperation between people is important. These areas are class management, the culture of relationships and habits, and collaboration within the school and with the broader community.

With the so-called "what-if" analysis in the programme Vredana (Šet et al., 2001), we tried to show that it was possible to improve school quality by improving the values of the mentioned criteria. The criteria of "class management", "the culture of relationships and habits", and "collaboration within the school and with the broader community" were given the maximum value, whereas the values of the objective criteria and "motivation" remained fixed (Graph 3). What would happen to school quality if the values of the mentioned criteria were improved (if student participation increased)? The result is presented in Graph 3.

The left side of Graph 3 shows the actual quality situation of the selected school and the right side shows the effect of the corrected values of the chosen subjective criteria. The school has a less acceptable class management, an acceptable culture of relationships and habits, and an acceptable collaboration within the school and with the broader community. After the values of these criteria had been modified (i.e. student participation had increased) to the maximum value, school quality increased from "suitable" to "very suitable", even though motivation and the objective criteria remained unchanged.



Graph 3: Actual and corrected values of school quality (for the selected school) Legend: QS = school quality, 1 = class management, 2 = culture of relationships and habits, 3 = school and community, 4 = motivation, 5 = objective criteria

With some criteria, the values had to be increased by two or more levels; in such areas, the school should strive to achieve greater changes. These changes include offering the students more opportunities for co-creating the curriculum and encouraging the students to take advantage of such opportunities, a greater choice in the educational content and greater opportunities to acquire additional knowledge and skills, establishing fair relationships etc.

If the school followed the simulated indicators, it is very likely that motivation would also increase, which would then result in the increase of the school's quality as well. (This could be a new hypothesis for further research).

### Part 5: Research findings

Student participation is an important factor in establishing school quality. Schools with good class management, a highly developed culture of relationships and habits, and good collaboration within the school and with the broader community (or with highly developed forms of work with many opportunities for student participation) can achieve higher quality. Schools need a method and an instrument to evaluate student participation and school quality. The expert model in the programme DEXi has proven to be an appropriate instrument for evaluating school quality with respect to student participation. The model incorporates professional knowledge, gathered from the head teachers and the teachers from our sample schools.

#### Benefits, deficiencies and instrument applicability

With a combination of the DEXi model and a detailed "what-if" analysis (simulation of values) in the programme Vredana, the impact of student participation on quality can be established. Both computer tools, DEXi and Vredana, are user-friendly and could therefore be easily used in professional practice as an aid in evaluation. It is not difficult to update or modify the model; schools could thus easily adapt it to accommodate their wishes and requirements.

The gathering and the preparation of data, which would serve as a basis for evaluation, present a greater problem than the use of the instrument. Quality is defined very differently in different schools and the methods of gathering data differ as well. In addition to this, there is no uniform methodology at a national level for the management of data, which could be used for a simple and transparent evaluation of quality. To be able to use the presented instrument for evaluating school quality efficiently, a system of collecting and managing data about schools and schoolwork would have to be established first.

The practical application of the model for evaluating school quality was conducted in secondary schools. However, the model can also be effectively applied in primary schools as well as in higher education. Every type of school has its own methods and instruments for developing student participation, but it is very likely that this process involves similar subjective factors of quality and has a similar effect on school quality.

The applicability of the model as well as the methodology are very broad; they can be used for internal or external evaluation of schools, at all levels of education (primary, secondary and higher education), and for evaluating the subjective criteria of quality, which can prove to be a competitive advantage of any given school. Since we have established that the presented model for evaluating school quality has several benefits, we believe it is worth considering its possible uses in professional practice.

# Part 6: Conclusion

All around the world societies are making great efforts to improve the quality of schoolwork because they are aware of the importance of educated young citizens. Some countries, such as Sweden (Antikainen, 2006) or the USA (Davis, 1994), are prepared to invest considerable resources and energy into this, while others, such as Japan (Johnson, 1996), are successful with minimal input. A good school is one that knows how to motivate its students to participate actively in schoolwork and achieve good educational results as well as learn the skills and the values required for life.

Quality also includes the culture of the school and its management, which provides the opportunities to develop other dimensions of quality, especially those related to student participation and motivation (such as class management, the culture of relationships and habits, and collaboration within the school and with the broader community). To achieve the desired quality in school, the objective as well as the subjective conditions for quality must be provided. The objective conditions ensure that the formal operation of the school is in order, but they do not suffice to make a school a "good" school. The subjective conditions, created by the people in the school in the form of school culture and climate, are of equal importance to school quality. This is how a school "breathes" and operates, and the students play an important role in this. The normative organisation of the school system guarantees the inclusion of the students in schoolwork (formal participation), which is a condition for the development of all other dimensions of informal student participation. To what extent the students actually participate in the creation of the curriculum depends on the specific conditions in a given school, mainly on the level of the subjective factors of quality, such as democracy, autonomy, teamwork, a safe and encouraging work environment, etc. The degree of student participation (in class and on the interpersonal level) directly affects the quality of schoolwork, as our evaluation of the influence of participation (Part 4) has demonstrated. Quick changes that improve school quality directly, can be made in these areas.

In this paper, we proposed a model for measuring the impact of student participation on the quality of schoolwork. The model was verified in professional practice. The interviewed head teachers and teachers have contributed valuable feedback, which has been incorporated into the model. The instrument and the methodology may be useful for internal or external evaluation of schools at all levels of education.

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#### Sažetak

U ovom se članku posebna pažnja posvećuje aktivnosti učenika – čimbeniku koji škole razlikuje po pitanju njihove kvalitete. Svrha je rada prikazati rezultate istraživanja o utjecaju aktivnosti učenika na kvalitetu rada škole. Cilj samog istraživanja bio je razviti i verificirati model evaluacije utjecaja učeničke aktivnosti na kvalitetu škole. Da bi se taj cilj ostvario, bilo je nužno odrediti u koje i kakve su školske aktivnosti učenici najčešće uključeni, te kriterije kvalitete u tim školama u kojima je utjecaj učeničkih aktivnosti najveći.

Za kreiranje modela korišten je računalni program DEXi. Za potrebe tzv. "što ako" analize korišten je program Vredana. Oba alata dostupna su besplatno na adresi http://lopes1.fov.uni-mb.si.

Ključne riječi: kvaliteta škole, aktivnost učenika, model evaluacije, evaluacija učeničke aktivnosti