



Outcome standards and assessment in education: Case study of Standards and Assessment Agency?

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Executive summary

Education sector is crucial for the future of any country and particularly for BiH as it paves the way to democratization and development, and it is important for the success of reforms in other areas. Education is one of the main human rights, but nowadays each country invests a lot of efforts to ensure the quality of its education.

Assessment of pupils' achievements and/ or external evaluation in the context of learning is one of the methods for quality assurance in primary and secondary education and it could be used to monitor performance of various educational systems in BiH

The main research questions for this study were: What was done in BiH to ensure the quality of education, what were impacts of that on education systems and what were lessons learnt, especially regarding assessment policy among various educational stakeholders in BiH in order to improve system of quality assurance in primary and secondary education?

World Bank supported in year 2000 the establishment of Standards and Assessment Agency as an inter-entity institution, with the aim to establish a professional institution, developing and implementing assessments for the whole BiH, following international assessment procedures.

This study was focused on the evaluation of the work and results of the Standards and Assessment Agency, which had the mandate for evaluation of quality of education in BiH, and analyzing lessons learnt to find appropriate solutions for the future, in particular following establishment of the state Agency for Pre-primary, Primary and Secondary Education.

Project of the Standards and Assessment Agency was only partly successful, as it only showed the tip of the iceberg. Assessment were carried out, but the main problem was, as results of this study show, that assessments were not developed in close cooperation with beneficiaries of these assessments (ministries of education, pedagogical institutes, schools, teachers), that results were not exploited and used as foreseen and that no further, deeper analysis were carried out in order to provide relevant information for policy makers, which was a lost opportunity.

This paper argues that educational stakeholders missed the opportunity to use assessment results to develop their policies for improving the quality of education and provides recommendation for the future.

It also argues that the purpose of assessment as a quality assurance system, either international (like TIMSS or others) or assessment at national level, in BiH, without using its results as well as knowing how to use its results in improving the quality of education and making appropriate decisions. is not *cost effective* for any country, especially for countries like BiH.



Introduction

Bosnia and Herzegovina is a multi-national country and the legal responsibility for education policy is with cantonal/entity/Brcko District educational authorities. Each of the cantons, Republika Srpska and Brcko District have the right to define their own standards and curriculum. With no quality assurance system in place it is difficult if not impossible to assess the quality of standards and curricula, quality of education in general and to assure comparability of education systems.

From SAA to TIMSS - assessment of students' achievements

What could be the data or indicators that could tell us about the quality of those education systems, and how could we compare them? The most obvious answer to that question could be assessment and/or evaluation on the state level. Bosnia and Herzegovina already took part in the *Trends in International Mathematics and Science Study* TIMSS 2007 and data from that international assessment can tell us a lot about the quality of Bosnia and Herzegovina education, in particular by comparing our results with results of other countries. Would a similar assessment system be possible also in BiH, allowing comparing results on the level of cantons or entities? Based in experience from the Standards and Assessment Agency (SAA) the answer is yes, but with necessary changes and adoptions. SAA already set standards for a number of subjects and carried out external evaluation at the level of the whole country. Process was implemented successfully, but there are no data or indicators available which would tell us how information from SAA assessment was used for improvement of quality of education in individual cantons and/or entities and comparability at state-wide level, if they were used at all.

Quality of education is important for BiH

The current educational system in Bosnia and Herzegovina is not based on learning outcomes. It is focused on the educational programmes, which are content based and on teachers' centred (as opposite to student centred education) and with a small degree on the students' achievements. Outcome based education could be a model in reform of BiH education as it emphasizes what students know and are able to do, and would allow setting curriculum framework of specific, measurable outcomes. This would contribute to enhancement of the education system, which has actually, among other, the following drawbacks, which are important for our study:

- Current practice in assessment of students mainly encourages their short-term mechanical memorizing, and pays little attention to estimating their long-term basic abilities and skills
- There are no outcome-based assessments or standards based assessments that determine whether students have achieved the defined standards. Assessments actually measures whether the student knows the required information or can perform the required task related to standards. Each country through its own educational agency/ authority is responsible for setting its own outcomes/ standards, and BiH has still to develop it.
- There is no functioning system of quality assurance in place, neither on the state level nor on the level of entities/cantons.

Taking all said into account, *a co-ordinated approach to curriculum, assessment and examinations in BiH for all children to meet the highest international standards, is required.* Some activities in achieving those goals have already taken place.

¹ Memorandum of Understanding on the Common Core Curriculum Steering Board and Subject Specific Working Groups Bosnia and Herzegovina, 2003

In 2003 all Ministries of Education agreed to develop a Common Core Curriculum¹ which would be implemented in all education systems. Signatories to Agreement on the CCC agreed to ensure the beginning of implementation in the school year 2003/2004. After five years of implementation, Common Core Curriculum is still in process of development and implementation, as in the first phase only common content was agreed upon and introduced in all curricula.

² Project on External Assessment of Students' Achievements, World Bank

- Project on External Assessment of Students' Achievements started with establishing Standards and Assessment Agency (SAA) by the end of 2000 with an inter-entity agreement.
- ,which developed instruments and introduced first external measurement of the educational outcome at BiH level with Assessment of Students' Achievements² in Grades 4 and 8. The data obtained by such an assessment could give an objective picture of the quality of educational systems of BiH, could ensure comparability across the different curricula or educational programmes in BiH as well as comparability with international standards, as in the country there are no set standards of students' achievements at any learning level.

³ Official Gazette BiH (18/2003)

- Law on Primary and Secondary Education³ (article 46) states that Standard and Assessment Agency is in charge for determining standards in education.

⁴ The Law On The Agency For Pre-Primary, Primary And Secondary Education, (" Official Gazette BiH" no. 88/07

- The Law on Agency for Pre-Primary, Primary and Secondary Education, which was adopted in December 2008, spent Standards and Assessment Agency, its predecessor. Agency for Pre-Primary, Primary And Secondary Education was established with a number of tasks, among others task of setting educational standards, assessment of the achieved results and the development of common core curricula in pre-primary, primary and secondary education as well as for other professional duties in the field of educational standards and assessment of quality that are specified by specific laws and other regulations⁴.
- Bosnia and Herzegovina took for the first time part in international assessment Trends in International Mathematics and Science Study 2007 (TIMSS 2007). TIMSS through achievements in mathematics and science investigates the curricula and teaching and classroom practices in participating countries. It also provides a benchmark for educational systems to evaluate the current status of their mathematics and science education, and determine their needs in terms of assessment practices and resources for the twenty-first century.

Rationale for research

As education policy in BiH is the responsibility of canton/entity/ and partly municipality level how can we ensure education quality monitoring at all levels of education?

Evaluation is a key instrument for defining and controlling the quality of an educational system. Without a system for evaluating quality:

- it is not possible to improve the educational system/s,
- it is not possible to compare educational standards across different educational systems
- it is difficult to define that the resources allocated to education would be rationally spent



- democratization of the educational system would not be possible and democratization of educational systems is also a condition for democratization of society
- education systems will not be capable of cooperating with other countries' educational systems, thereby complicating both the integration of our country into the region and the EU

Education quality monitoring and support to its development in Bosnia and Herzegovina were supposed to be realized through the work of Pedagogical Institutes and the Standards and Assessment Agency. During 2003 and 2008, the Standards and Assessment Agency implemented external evaluations and setting of educational standards.

Agency for standards and assessment was supposed to have the role of an examination centre: to create, develop, organize, implement, govern, monitor, and control all activities composing the system of public or external exams. That requires systematically considering its evaluative and practical (operational) implications, in particular regarding feedback of external assessments to the schools and use of examination results as possible indicators of school efficiency.

Well-organized external assessments have additional functions, very important from the perspective of education quality assurance:

- Curriculum control (monitoring?) and its application in school,
- Motivating schools, teachers, and students,
- Monitoring the acceptance of educational standards.

Bosnia and Herzegovina Educational Development Plan by 2015⁵ sets the following goals: *Development of varied evaluation systems (internal, integral and external evaluations) by 2010 and within that, implementation of the external evaluation and assessment in primary and secondary education (by 2012), development of institutional structure of assessment and control in education and expert support to development of the upbringing-educational institutions. Within that in as short term goals are stated: establishment? of the Agency for Pre-primary, Primary and Secondary Education and Action Plan for reconstruction of the existing Pedagogical Institutes.*

⁵ Strategic Directions for the Development of Education in Bosnia and Herzegovina, with the Implementation Plan, 2008-2015, EU-ICBE, 2008

Research Methodology

Research was conducted *among* representatives of different levels of institutions in educational system: school principals, teachers, representatives of ministries of education, directors of pedagogical institutes and staff of the Standard and Assessment Agency (SAA). Both quantitative and qualitative methodology was used. Research was carried out using the following instruments:

- Review and analysis of relevant documents regarding policy in education, standards, international assessments, legislative matters and so on. (Technical reports on testing by SAA; project documentation of the World Bank, brochures of standards of students' achievements, Laws and other legislation documents, books of rules in education systems, TIMSS framework, curriculum, documents on reform in education in BiH as provided by EU projects in education, etc)
- Comparative analysis of good practice in international practices of assessment and assessment in BiH

- Empirical analysis using questionnaires and interviews with school principals, teachers, representatives of ministries of education, directors of pedagogical institutes and staff of Standards and Assessment Agency (SAA). Questions were about impacts of assessment on their work regarding rising the quality of education as well as about assessment practice which was carried out by SAA.

Sample

When I started research, I knew that in 2004 all primary schools took part in assessment of 8th grade pupils, but I faced with problem that teachers and principals in schools who took part only then, couldn't remember assessment process as well as its results like standards.

So I decided to ask schools which took part at least twice or three times in assessment process.

So the sample was consisted of:

- a) Primary schools teachers of subjects for which standards were defined
Answers to the questionnaire were given by 197 teachers of subjects for which standards were introduced. Territorially the percentages are the following: 7% of teachers from the Sarajevo Canton, 20.3% from the Tuzla Canton, 24.8% from the entity RS, 10.6% from Zenica-Doboj Canton, 10% from the Brcko District. Other cantons are represented by 2-4% each.
Distribution by the subjects shows, that 29.4% of them are classroom teachers, teachers of Mathematics (about 24.5%), Mother Tongue (21.8%), teachers of Physics (10, 5%), and 12.1% of teachers of Biology and Chemistry teacher (9%)..
Of these 71.7% of teachers didn't collaborate with the SAA, 20.5% of them were testators in testing and 7.7% of teachers were members of SAA working groups.
- b) School principals from 56 schools. 66.7% are schools that participated in the testing conducted by SAA, 13% of schools had their teachers as members of the working group, 17.4% of schools participated in TIMSS test and only 2 schools that did not co-operate with SAA. The percentage of schools in regions / cantons is the following; 17.9% of the Sarajevo Canton, 21.4% from the Tuzla Canton, 12.5% in Zenica Doboj Canton, 7.1% from Middle Bosnia Canton, 3.6% from the Herzegovina Neretva Canton, 1.8% from Podrinjeg Canton, 33.9 from entities Republika Srpska and 1.8 of the Brcko District
- c) Representatives of ministries of education: Republika Srpska, Tuzla Canton, Middle Bosnia Canton, Hercegovina-Neretva Canton, West Herzegovina Canton, Sarajevo Canton, Podrinje Canton, Education Department of Brcko District, Una-Sana Canton, Zenica-Doboj Canton and Canton 10).
- d) Directors of Pedagogical Institutes (PI), except Pedagogical institution of Brcko District
- e) Experts in assessment and test administration unit of SAA (4 members)

Standards and Assessment Agency (SAA)

Project on External Assessment of Students' Achievements in Bosnia and Herzegovina started with establishing Standards and Assessment Agency (SAA) at the end of year 2000.

Law on Primary and Secondary Education⁶ stated that Common Core Curriculum (CCC) will be introduced and implemented in public and private primary schools. The Law also said that

⁶ Official Gazette BiH (18/2003)



Common Core Curriculum will grant and ensure the quality of education and achievements the sufficient level of knowledge and skills.

The Law in Article 46 stated that Standards and Assessment Agency is the responsible institution for determining standards in education.

According to the Article 47 of the Law, SAA was in charge for:

- determining standards of students achievements and assessment of students achievements
- conducting and publishing research;
- establishing and conducting reporting mechanisms regarding the situation in schools in BiH;
- establishing contacts with other similar institutions in other countries, with the purpose that determined standards were in line with international standards, and giving support in diploma recognition
- conduct other activities regarding applying standards

What was the environment in which SAA started?

The education issues in BiH were very complex and related to post-war situation, to politisation of educational issues as well as to the reform of education system, Education in BiH was highly fragmented - each of the ten cantons is, according to legislation, responsible for education. Detailed information on the governance and administration of general education and its financing was not readily available. Moreover, there was no capacity for systematically evaluating student performance, and it was difficult to assess the quality of teaching and learning. So education policy had proven to be constraint to efficient public sector management and educational reform.

There was no medium term education development strategy agreed among RS and Federation of BiH. The World Bank and the Council of Europe prepared together the Education Governance and Finance Review (November 1999, Council of Europe/World Bank). This review provided framework and recommendations for a preliminary medium term education strategy. The main initiative of this document was to develop a common "intermediary institutions" and shared management mechanisms that will allow all three constituent groups in BiH to cooperate and coordinate their efforts in education on a professional basis. Education policies in BiH needed reliable and standardized public information on educational inputs, outputs and outcomes (student achievement and system performance). In that way the public dialogue in education will change from politics to the quality of teaching and learning. That information on input and outputs can help to better allocation of scarce public resources in order to ensure the achievement of educational standards compatible with those in Western Europe.

Equitable decentralization in education couldn't be possible without development of capacity at central level(s) to measure system performance, undertake quality control, and establish policies and guidelines for the system.

Standards and Assessment Agency was one of four components of Educational Development Project of the World Bank. The four components were:

- Quality Fund

- Standards and Assessment Agency
- Education Management Information System
- Council of Higher Education

Project had the budget of US\$10.6 million and it was a loan of the World Bank. It started as a Credit Agreement among entity governments and the World Bank.

⁷ Project Appraisal Document, World Bank, Report No: 20170 BIH

Agency component budget during the project period of 5 years was US\$3.7 millions. Key Indicators of the project regarding SAA were⁷:

Key indicators	Output	Outcome
Teacher and Learning Achievement	comparable student assessment results available for literacy and math	more active participation of students in the learning processes and, as a result, improved scores in internal and external school assessments
Efficient and Equitable Public Resource Management	Standards and Assessment Agency is established and capacity to define performance standards and assess student performance developed	indicators of system performance, efficiency and equity established, monitored, compared, debated and publicized
Cooperation and Coordination in Education across BiH	Standards and Assessment Agency established at the State level	<ul style="list-style-type: none"> - the three main constituent groups cooperating at a professional level in the area of standards setting, student assessment and system evaluation - shared data on education outcomes throughout BiH

Overall aim of the project was **to strengthen the governance. That means efficient and equitable public resource management.**

Regarding other related components of WB educational project, EMIS should had provided data on inputs and outputs of education system, Quality Fund should had provided incentives to primary schools and primary school teachers with the aim of stimulating innovation and creativity at the school level.

The aim of setting up the Standards and Assessment Agency was to measure compatibility between educational standards in BiH and the rest of Europe, as well as to promote accountability in public education and provide information to the education community on overall system performance with its strengths and weaknesses.

Agency's primary task was to define performance standards (i.e. what students should know and be able to do in given subjects at given stages of their schooling) and to assess to what extent those standards were reached across BiH.

The Agency should have been essentially as SERVICE institution, an expert service supplying high quality professional and specialist services in assessment.



In particular, according to the establishment act⁸, the Agency was supposed to:

- gather, process and publish quantitative and qualitative data about the levels of learning (performance outputs) at primary and secondary levels in order to inform the decision-making process;
- assist individual cantons or entities with their own assessment projects, where these are consistent with the overall aims of the Agency;
- provide a research and development facility to education institutions and individuals in respect of assessment issues;
- encourage and assist in the development of expertise in the field of assessment through training;
- seek to harmonize assessment practices in BiH with best practice elsewhere in Europe.

In the longer term, depending on political acceptability, the Agency could have been asked to lead the work of establishing an Examinations Board. This would have provided examinations for school leavers and award nationally and internationally recognized certificates of achievement.

With these agreed tasks SAA had specific characteristics, like expected cooperation with, , existing institutions, including Ministries, but be independent of them, and to broad the stakeholders base of the Agency, to be more accepted. This means involving all interested parties in education and the public at large.

Regarding the real power, SAA was a service organisation, without line responsibility or powers. It should have responded to requests for the provision of data on the performance of the education system in order to inform the decision making process.

Agency was working through the governing Board and was free from political direction. It was accountable to the Entity Prime Ministers but in a broader sense to the public at large.

SAA should have provided transparency and made its work public through its own publications, including provision of information through the internet, and through the media.

The work of Agency should have been flexible and adaptable in responding to the evolving needs of the education systems in the country. In particular, its work should have been subject to regular reviews, including consultation with all interested parties.

Regarding relations with other parties and stakeholder, all of them should have been involved as appropriate, both by being kept informed about and by participating in Agency's activities. The information and services provided could have provided benefits to many interested parties:

- **The Entities, cantonal and municipal education authorities** - Agency collected information for the country as a whole-data on standards and educational practice and performance in the country. Thus, there was an opportunity for entity/canton/municipality through the Agency or through co-operation to get its data as well as to do additional analysis.
- **Pedagogical Institutes** may have used Agency data better to identify where teacher training and other support initiatives should have been focused.

⁸ Documentation on Education Development Project, World Bank, 2000, Report No: 20170 BIH

- **School Leaders** may have benefited from information to decide better about redistribution of effort and resources.
- **Teachers and Teaching Organizations** may have identified areas where in-service training and other kinds of support were needed. Individual teachers may have used information from the Agency to adapt their teaching methods to maximize learning.
- **Universities and similar institutions** - These may have shared data and collaborated with the Agency in research projects related to specific educational needs and issues.

Beside that other institutions like **commerce and industry** may have got information how well the system provided them with the skilled workforce. **Parent and youth organizations** also could have found whether the education system was meeting their needs.

The Agency should also have cooperated closely with others in education reform, e.g. curriculum reform and so on.

As it is seen during project period SAA should develop capacity like methodology for the whole process of assessment. But it also should develop network and partnerships among Agency and beneficiaries.

⁹ Law on Primary and Secondary Education, Official Gazette BiH (18/2003)

Later the Law on Primary and Secondary Education⁹ defined the role of SAA in Articles 46 and 47.

Article 46.

Authorities responsible for establishing educational standards in Bosnia and Herzegovina are: The Standards and Assessment Agency established by the inter-entity agreement in 2000, The Curriculum Agency, the present professional institutions of entities, cantons, Brčko District of BiH, as well as other permanent and periodical professional bodies.

Article 47.

The Standards and Assessment Agency:

- establishes standards of students' achievement and of assessment of the degree of their accomplishment;
- conducts assessment research with the aim of assessing development and presenting results of the research;
- advises the competent educational authorities dealing with the prescribed standards and their implementation;
- establishes and maintain mechanisms of reporting on situation in schools in the territory of BiH;
- establishes contacts with bodies that have similar functions in other countries with the aim of providing for that obligatory standards are not below the level of standards applied in those countries;
- offers assistance on recognition of domestic certificates and diplomas in other countries;
- and implements other activities as regards implementation of standards.

So the original role of establishing standards, doing research and providing advice to educational authorities was extended with advising of implementation standards and establishing reporting mechanisms.



What was done?

The work of SAA will be reviewed in this study through outputs as well as outcomes on education systems in BiH.

Outputs are rather easy to find out because those are what assessment process delivers. In the case of SAA, outputs of SAA work are standards of pupils' achievements for some subjects.

But an outcome is a level of performance. In the case of SAA work outcome was the achieved impacts which standards had on curriculum, teaching practices, teacher training and so on. In other words impacts which standards had on rising education quality.

Standards and Assessment Agency conducted external evaluation of students' achievements in main subjects Mathematics and Mother Tongue, starting in 2002 by administering a pilot test in 4th grade, continuing in 2003 by pretesting 4th grade and 8th grade students in Mother Tongue and Mathematics and running the main test in 2004 with 8th grade students on the same subjects.

In 2006 SAA introduced assessment activities and determining standards for science subjects Chemistry, Biology and Physics. In 2007 SAA started projects of external assessment in secondary education on the sample of 19 for subjects Mathematics and Mother Tongue and continued in 2008 on the sample of 27 secondary schools, for science subjects.

More details about assessment process and its outputs can be read in Annex 1.

Summary of samples and subjects tested during assessments during the period 2002-2008 is given in Chart 1.

Chart 1.
Summary of samples and subjects tested during assessments in the period 2002-2008¹⁰

Assessments of SAA for pupils of primary and secondary schools						
Subjects for which standards were defined	Number of tested pupils	Year of testing	Number of tested pupils	Year of testing	Number of tested pupils	Year of testing
Grade	IV/V	Year	VIII/IX	Year	Gymnasiums	Year
Mother Tongue, Mathematics	1485	2002	3143	2003		
	2857	2003	46819	2004		
			2342	2008	557	2007
Science subjects			1450	2006	787	2008
Science and Social Skills	1437	2007				
Total	5779		53754		1344	

Two standards of students' achievements were defined at that time: a *sufficient standard*, which defines a minimum level that students should attain in order to pass into the next grade and a *High standard*, which identifies students that show particular skills in the domain tested. Students achieving below the sufficient standard re considered having low ability, students achieving above the sufficient standard but below the High standard are considered to have average or medium ability, and students performing above the High standards are considered to have high ability.

¹⁰ Data were collected from SAA technical reports

Standards which SAA set represent outputs of Agency's work as well as standards should represent outcomes in the sense that they had impacts on education systems in BiH.

¹¹ Only Ministry of Hercegbosanski Canton and Bosanskopodrinjski canto pleaded that they didn't know any influence of SAA in work of its ministries and therefore they couldn't fillout questionnaire.

¹² More detailid analysis is given hereafter

In questionnaires both to ministries¹¹ and pedagogical institutes, on the questions regarding influence of SAA standards on education system, givens answers showed that there was no those impacts¹². Also mostly of principals of schools and teachers pleaded that they didn't use results of SAA or standards in teaching practice.

It is indisputable that SAA had a pioneer role in external assessment. It conducted external assessments and produced standards on pupils' achievements for the first time in BiH.

The main question was why standards on pupils' achievements and external assessment didn't cause changes in curriculum, teaching practice, school organisation and other related issues.

Lessons learnt

By the Law¹³ the role of SAA was mainly to establish standards of students' achievement and of assessment of the degree of their accomplishment and advises the competent educational authorities dealing with the prescribed standards and their implementation. Also SAA should establish and maintain mechanisms of reporting on situation in schools in the territory of BiH.

There were no other annexes on this Law¹⁴ or rule books on external examination in primary and secondary schools, which more precisely regulated applying those standards, relationship among PIs and SAA regarding their roles in process of assessment, informing schools, pupils and their parents and so on.

What was good in assessment practice of SAA considering its supposed tasks as well as influence on education policy which SAA could have and which lessons could be learnt?

- **Promotion of SAA as well as its results in the media among parents, pupils and public at large**

In the general sense SAA was responsible to the public as the quality of education is in the interest of all. At the very beginning of project period the Agency distributed promotional leaflets for schools and parents about external assessment and the role of SAA. Later schools should have informed parents about testing and its role. But In SAA there were no data or prepared information for pupils and parents about the purpose of testing which schools could have distributed. In Slovenia information for pupils and their parents about the purpose of testing is on the web site of National examination Centre. There were no mechanisms of reporting the public and parents about the test results. In the line with democratization, parents and public in general must be informed about activities and results of external assessment or any other large scale assessment. Also in Slovenia, after analysis of TIMSS results, schools put their place in assessments on a poster to make it public, and information was publicly presented as soon it was available.

Regarding promotion in media there was just one spot on the Standards and Assessment Agency on the TV in the project period.

There were no statements or press releases for; no information was published on the web site or in the newspapers.

¹³ Law on Primary and Secondary Education, Official Gazette BiH (18/2003)

¹⁴ Law on Primary and Secondary Education, Official Gazette BiH (18/2003)



SAA missed the opportunity to use more efficiently the SAA web site. Site should have provided all interested parties with the data on the assessment. On the web site of SAA there weren't information that were available, like databases, bank of items for teachers, reports on testing, examination catalogue, and other important and useful information. Long after assessments book on standards and workbook of items that were allowed to be seen were available on site for download.

In responses to questionnaires teachers (about 180 answers on question how often used SAA web site), 62, 2% reported that never used it and 32, 7% reported that sometimes they have used it.

Nowadays web site is an imperative for support to all interested parties in testing and it ensures transparency of work. The example of good functioning site is the site of American NAEP (National Assessment Education Progress¹⁵) that also deals with large stake assessments in USA. The site that was created gives different information for parents, schools, teachers, education decision makers, media and pupils.

For example information for policy makers is comparison of states, content framework, and state profile, which items pupils were able to answer on the basic, proficient and advanced level. Information for selected schools consists of: how school were selected, importance of NAEP and videos for teachers, students, sample questionnaires and so on.

Information for parent contains facts about NAEP as well as all information which are important for parents, sample questionnaires, child selection, data results, data confidentiality and other relevant information.

Also another example is the site of National Examinations Centre in Slovenia¹⁶, a central institution for external assessment of pupils, apprentices, students and adults in Slovenia, which also contains all necessary information for all participants.

Kick off conference can be a good way of introducing the new issues in education. New agency organised conference where participants through lectures, workshops and material were introduced with TIMSS results as well as with the new agency APOSO (Agency for pre-primary, primary and secondary education).

Regarding promotion of Standards and Assessment Agency at the beginning, one conference was organised and visits to pedagogical institutes (PI) carried out in order to introduce staff and teachers of schools that participated with the aim of SAA.

• **Dissemination of results**

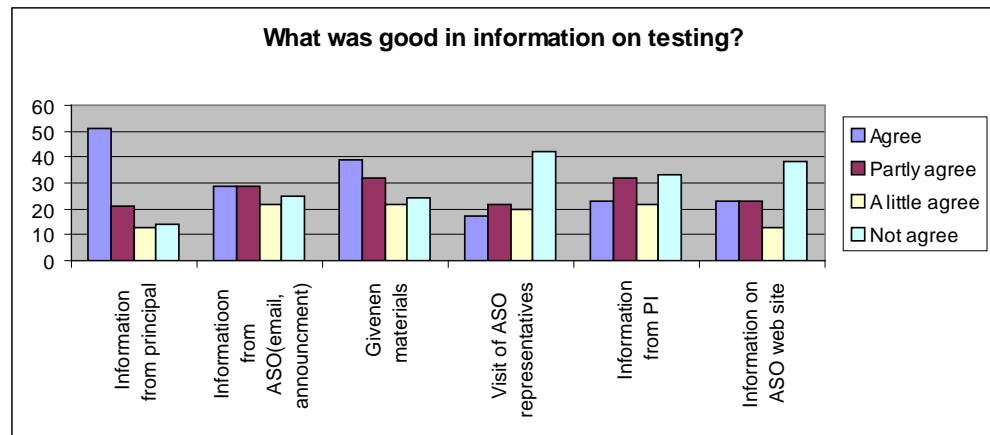
In dissemination of tests results SAA used methods like training of teachers, visits to pedagogical institutes and ministries, sending technical reports on testing and book on standards to pedagogical institutes and ministries and schools. In teacher questionnaires¹⁷ teachers were asked for dissemination of standards, training, and their opinion on external assessment in quality assurance. Approximately 50% of teachers responded to questions regarding dissemination standards of pupils' achievements in practice. In Table 1 there are given answers to the question of what was well in informing and dissemination the test result.

¹⁵ Law on Primary and Secondary Education, Official Gazette BiH (18/2003)

¹⁶ <http://www.ric.si/?lng=eng>

¹⁷ questionnaires for teachers designed for this research

Table1.
Teacher’s opinion about
feedback on testing¹⁸



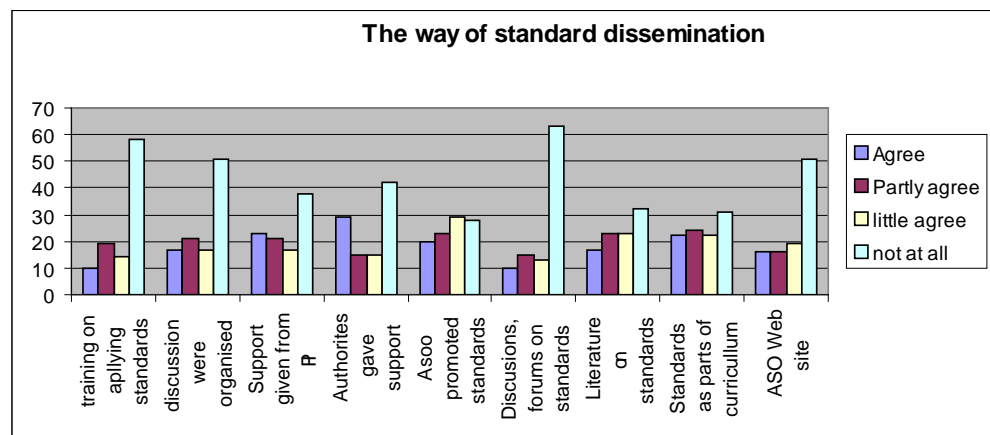
¹⁸ Results were collected through questionnaires

As seen from the table, most of the teachers agree that they received the most information from the principal.

The most of the teachers did not agree that they got information through SAA web site and by visit of SAA staff. Of course that SAA staff can not visit all schools, but through modern information technology it can communicate information about the results of the testing and application of standards. Interesting are the opinions of teachers on information provided from the Pedagogical institutes, where teachers equally agreed or disagreed on getting information from PIs. For example in teachers’ responses for Tuzla Canton, half of teachers agreed that they got information from the Pedagogical Institute and the other half stated that they did not. That confirms the fact that Pedagogical institutes didn’t have mechanism for dissemination of standards and assessment practice in PI. That depends on the policy of PI as well as support which PI got from the Agency.

The detailed results are given in Table 2¹⁹

Table 2.



¹⁹ Results were collected through questionnaires

It could be seen that training, discussion, forums, SAA web site as well as support from PI were used very little in dissemination.

School principals reported about institutional support to teachers regarding standard dissemination that schools gave the most support (45% of answers), followed by PI (25,3%), SAA (16%) and ministries (11% of answers).

Representatives of PI answered differently to the questions on training teachers and PI counsellors on applying standards and assessment practice as well as test design. Three PI pleaded to have done this training, while all other PI declared that there was no training implemented.



SAA staff responded that there was training in the assessment and applying standards, not in designing tests, and that brochure on standards and workshops were used. In SAA documentation there is no data on the number of trained counsellors / teachers.

In questionnaires there was also a question whether SAA asked PI counsellors to disseminate standards and assessment practice among teachers under jurisdiction of PI. Two PI said yes, other reported that they didn't get any request.

What about new teachers? How could they find information and get training? Generally there was no mechanism which introduced new teachers to applying standards and assessment practice. It depended on the policy of PI as well as support which PI got from the Agency.

Regarding practice of applying standards school principals have declared in an almost symmetrical proportion: 30.4% of them declared that their teachers know and apply standards in practice, 36.9 % of them declared that their teachers know BUT don't apply standards in practice and 32.6%, said that didn't know about that.

When teachers were asked about knowing and applying standards of achievement in teaching, 186 of them gave the following answers: 33.8% of them knew and used the standards, 22% knew the standards but they didn't apply them and 44.8% did not know the standards. Teachers who know the best standards are Mathematics and Mother Tongue teachers for the final grades. Among participants, the most were teachers of 4th grade and 66% of them said that didn't know and use standards. Teacher of Sciences were the least familiar with standards. It is the teachers in those schools where the most of testing were conducted. For schools and teachers where testing was done only once, the only responses were that teachers did not remember testing and couldn't answer the questionnaires.

Despite the fact that the SAA carried out eight years testing on the whole territory of Bosnia and Herzegovina, there were a large number of teachers who were not introduced with the standards. It confirms the fact that SAA didn't conducted appropriate policy regarding dissemination test results and establish stronger partnerships with PI.

For example, in TIMSS International Mathematics 2007 Report²⁰, on the question about assessment practice in Mathematic classes, according to teachers' report in BiH there were 17% pupils who were taught by teachers who gave major emphasis on national achievement tests, 44% pupils whose teachers gave some and 39% pupils whose teachers gave little or no emphasis on national achievement tests. In Slovenia, national or regional achievement tests had big influence as a source to monitor students' progress and even 83% pupils were taught by teachers who had given major emphasis on national achievement tests.

Teachers were also asked about the adequacy of standards for teaching and assessment, and whether they were appropriate according to a given level. About half of the teachers had answered this question. Among them, 75-80% completely or partially agreed: that standards were appropriate in relation to knowledge and skills required and that standards were given in the form applicable for the assessment. But also 64% of them said that standards were too high for a given level of knowledge.

Analysis of data of students' achievements by cantons/region, for example in Mathematics, showed that most of the pupils were in the medium and high level standards in RS entity. That means that in that entity teacher/PI counsellors had very high requirements in Mathematics for pupils.

²⁰ TIMSS 2007 International Mathematics Report, Ina V.S. Mullis, Michael O. Martin, Pierre Foy, IEA

On the question of how well SAA fulfilled its primary tasks to determine standards of achievement and assessing the extent to which these standards were achieved on the ground, PIs had different perception. Most of them gave SAA an average mark and two of them gave them a good mark.

Some of them said that the positive side of SAA was that PI counsellors were part of the working groups, found valuable materials received, examples of good practice from other countries, defining the standards at the level of BiH and measuring quality.

Answering the question what could be better some of them thought, that there should have been more professionalism, more trainings for teachers and that data from assessment should have been more used in teaching process.

- **In cooperation and partnership with stakeholders and beneficiaries of Agency**

All stakeholders as well as beneficiaries should cooperate with the Agency.

Each of key institutions that provide services in education should identify all stakeholders who affect its operational functions and determine what the benefits of each party in the partnership are. Of course, on the broad list of stakeholders, only some of them are the key stakeholders in partnership. Agreement on mutual relations of cooperation as well as common understanding who works with whom should be done in a collaborative manner.

PIs were one of key partners of SAA. This role remains when it comes to cooperation with the new agency, APOSO, and directors of PI agreed to that²¹.

What was the relationship between SAA and PI with respect to their role in the system of quality assurance?

Data from the project Quality Assurance in Education show, that Pedagogical institutes had express high levels of satisfaction with cooperation with the SAA in preparing and conducting tests, while they were less satisfied with the cooperation in data analysis and the least satisfied with the training of teachers in applying standards and defining measures to improve quality of education.

SAA played the role of external evaluation of student achievement in order to obtain information necessary for decision-makers.

Pedagogical institutes collaborated with the SAA by appointing PI counsellors as members of working groups (PI Bihac said that its counsellors did not participate in working groups while others reported partial or full cooperation) and as coordinators of testing. PIs provided SAA data on schools and pupils they had collected. PIs didn't used EMIS (educational information system) which was implemented as a component together with SAA in World Bank Education Development Project²², as data support system to educational authorities and public administration.

Could this relationship be improved following the experience gained?

In the report "Overview of the status of the organization and function of education institutes in BiH" directors of PIs mostly agreed that collaboration with new Agency should be realised through monitoring, evaluation and development of common core curriculum and educational standards, organisation and conducting external evaluation, analysis of test results and improving the assessment of pupils.

²¹ The project Quality Assurance in Education, EQA-OKO, 2008

²² Documentation on Education Development Project, World Bank, 2000, Report No: 20170 BiH



In the document, "The Agency for pre-school, primary and secondary education (APOSO), mission and vision"²³, in suggested model of cooperation PI-APOSO, PIs would have more implementation role in developing contents and running of programmes for professional development in the area of standardisation in assessment and materials for conducting evaluation and assessment. PIs also should process and analyse the results of evaluation and assessment at the level of pedagogical institutes. That is also corresponded with role of PIs with more focus on research and carrying out analysis.

Considering the following facts:

- that 12 education systems exist on the territory of BiH, under cantonal/entity jurisdiction
- the role of APOSO by The Law On The Agency For Pre-Primary, Primary And Secondary Education (Article 5)²⁴ in setting the knowledge and assessment standards , which was quite similar as the roles in article 47 in Law on Primary and Secondary Education, but extended with the role of the implementation of the external assessment and providing guidelines for the implementation of teacher and associate experts training in the field of knowledge standards and external assessment

²³ the Agency for pre-school, primary and secondary education, mission and vision, EU-ICBE project

²⁴ The Law On The Agency For Pre-Primary, Primary And Secondary Education, Official Gazette BiH" no. 88/07

Article 5.

In the area of setting the standards for knowledge and assessment of the achieved results, in pre-primary, primary and secondary education, and for other professional duties in the field of standards of knowledge and assessment of education quality, the Agency is competent for:

- a) identification of standards of students' knowledge and assessment of the achieved results;
- b) carrying out research activities with the aim of assessing the development of student knowledge standards, assessment of the achieved results and publishing of the research outcomes;
- c) providing advice to the competent educational authorities in relation to the issues of the prescribed knowledge standards and their implementation;
- d) establishment and guidance of mechanisms of reporting on the state of education in Bosnia and Herzegovina;
- e) collecting, processing and publishing data on knowledge quality and quantity;
- f) implementation of the external assessment;
- g) providing guidelines for the implementation of teacher and associate experts training in the field of knowledge standards and external assessment;
- h) establishing contacts with the international bodies abroad that have similar functions and with the international organizations and institutions, with the aim of harmonizing the prescribed regulations in education;
- i) providing assistance in recognition of local educational certificated and diplomas abroad as well as recognition of the foreign ones in Bosnia and Herzegovina;
- j) carrying out other activities in relation to the establishment and implementation of knowledge standards and assessment.

²⁵ Law on Primary and Secondary Education, Official Gazette BiH (18/2003)

- There are still no other annexes on the Law²⁵ or rule books on external examination in primary and secondary schools, which more precisely regulated applying those standards, relationship among PIs and agency that carried out external evaluation regarding their roles in process of assessment, informing schools, pupils and their parents and so on.

There was the idea to explore the use of the IEA (International Association for the Evaluation of Educational Achievement.) model in the new Agency. IEA is conducting assessments like TIMSS, PIRLS and others, and measures the educational outcomes of 66 countries with different educational system.

Namely, APOSO would be the main institution for common core curriculum and external evaluation of the curriculum. APOSO should developed its capacity with professional expert staff from all areas of the evaluation process (the development of testing programs, item development, test design, data analysis, writing reports an so using good practices from SAA).

PIs would take, with respect to their jurisdiction and a strong professional relationship with schools, the role of test administration.

²⁶ Questionnaires were designed for directors of PIs for this research

In the questionnaire²⁶ directors of PI were asked if PI would conduct test administration and whether there was capacity in PIs for such a role. This would mean using a model similar to the TIMSS-assessment model. TIMSS participants (countries) conduct testing; IEA creates tests and questionnaires and carries out the analysis.

PI would have coordinators and those coordinators would actively collaborate with APOSO in creating assessment framework.

Assessment Framework would include:

- Parts of the curriculum to be tested
- The percentage of subject domain
- The percentage of cognitive categories
- Population for testing
- Questionnaires about implementing curriculum and contest of learning

PIs could implement test administration which includes providing data on schools, printing tests, administering test, the collection of tests, scoring, entering data in a database and sending the database to APOSO. In many of those functions PIs already collaborated with SAA, through working groups.

APOSO would perform final analysis, depending on its capacity to do that, with the Agency for statistics independently. The analysis would be sent to PIs.

PIs could perform additional analysis by school level in order to find schools with good practices that could be transferred to the practice of schools that have poor results.

In this way, the PIs would be deeply involved in research and development, functions that have been neglected in PIs. Ministry would be also, with its coordinators, better included in further external assessment, especially when it comes to education outcomes to be measured, which are important from the standpoint of decision-makers. In this way the work of APOSO would be more acceptable. Collaboration on the line APOSO-PIs-Ministries would be strengthening.



Answering question about taking the role of test administration, the capacity for that role and coordination with schools, five PI have expressed their willingness with the role of test administration, others were against and all PIs, regarding the coordination with schools, declared that they could handle that successfully.

But regarding the capacity of PIs in the report, "Overview of the status of the organization and function of education institutes in BiH"²⁷ all pedagogical institutes, pointed out that there was not complete coverage of all functions and tasks in the current number of employees relating the number of educational institutions that serve.

²⁷ Overview of the status of the organization and function of education institutes in BiH, EQA-OKO project of EU, 2009

National Examination Centre in Slovenia also started the practice of regional organisation of testing as well as analysis of results of testing in order to spot regional differences in students' achievements.

However, PIs should have coordinators who would be part of working groups of the Agency and PIs should be deeply involved in the process of external evaluation in all its stages.

Regarding the role of Ministries as decision makers in questionnaires²⁸ ministries mostly complained that the SAA should have given more effort to establish pupils' achievements and those descriptions of levels of achievement needed to be more precise. Because of insufficiently established standards, the SAA couldn't give additional service expertise to ministries.

²⁸ Questionnaires were designed for representatives of ministries of education

Ministries also complained that SAA did analysis and comparison of pupils' achievements by canton/region but without deeper analysis why one region was more successful than another.

Regarding development of assessment through training, the good thing was that the SAA realised that teachers needed training in assessment and standards, but they didn't made enough effort to implement it, in cooperation with the PIs.

Ministries also complained that SAA should be more transparent in its work.

Ministries were mostly satisfied with the methodology of assessment as well as with assessment as mechanism of comparing pupils' achievements among cantons/region, but they needed comparison of schools within canton/region. In the field of comparison SAA standards with international standards, the Agency didn't take any measures to enable comparison, like, for example, mark items with cognitive category in database and so on.

Supposed role of the Conference of Ministries²⁹ should be to follow up and evaluate activities on defining, implementing, monitoring and developing standards in education and activities on their harmonization with European and international standards. Agency should prepare reports and information on implementation of educational standards and quality assurance in education.

²⁹ the Agency for pre-school, primary and secondary education, mission and vision, EU-ICBE project

Regarding the role of the Ministry of Education of Republika Srpska, Federal Ministry of Education and Science, and ministries of education of cantons, Department for education of Brcko District they should appointing external members of professional/expert teams of the Agency.

But the main role of ministries of education is that those ministries should have policy regarding applying and vales assessment results.

- **In research**

SAA did external evaluation and assessment research and but it didn't conduct any other additional research. Tuzla Canton prepared and implemented external final examination (matura),

sent report on that to SAA and asked for opinions but the SAA didn't cooperate. Quality of education requires research activities, and assessment gives data for additional research and analysis. Agency should provide support research activities with available data, documentation (even with the programs for data analysis) and also encourage research activities among students, teachers and all interested. That is the practice of international and regional assessments, which new agency should follow.

- **harmonisation with international practice**

The SAA participated in international assessment of Mathematics and Science in TIMSS 2007. One of task of the external assessment was harmonisation of national assessment practices with international ones. In the Law on Primary and Secondary Education³⁰ it is also stated that SAA should establish contacts with other similar institutions in other countries, with the purpose that determined standards were in line with international ones.

The SAA in assessment procedures used practice from international assessment like item development, test design, data analysis using item response theory, test administration, printing tests from databases and others. The SAA adopted quite well methodology which corresponds with practices of international assessment.

The As SAA took part in TIMSS 2007, some experience and good practice from TIMSS could be used in new agency. TIMSS makes its work transparent and gives support with data and reports on its web site.

New agency could use some practices from TIMSS like:

- assessment framework.
Assessment framework has information about content and cognitive domains for subjects, contextual framework -the context of learning through questionnaires, assessment design-type of questions, scoring procedures, scales and so on. This kind of assessment framework keeps all participants well informed about assessment.
- Encyclopaedia (Participants of TIMSS fulfilled encyclopaedia with data on its curriculum, so all data about curriculum of participants could be find)
- the scheme for scoring
- Items in item bank should have the mark for cognitive domain. Item bank of SAA consists of items which didn't have marks of cognitive domain. This is important for further analysis of cognitive skills of pupils.

TIMSS measures³¹ intended curriculum (it refers to the aims, content, and methods for teaching and learning some subject), than implemented curriculum (the context of learning like teaching practice and so on) and attained curriculum (it consists of the concepts, processes, skills, and attitudes towards mathematics and science that students have acquired during their schooling.)

Questionnaires for teachers, pupils and school principals as assessment instruments were always used SAA. But SAA never did analysis of answers to those questionnaires relating them to pupils' achievements.

Real analysis should give answers regarding implemented and attained curriculum as well as pupils' achievements.

³⁰ Law on Primary and Secondary Education
.Official Gazette BiH (18/2003

³¹ TIMSS Framework 2007



External evaluation and curriculum

What was the relation among standards and curriculum? Common Core Curriculum was established in 2003. Law on Primary and Secondary Education³² stated that the Common Core Curriculum (CCC) would be introduced and implemented in public and private primary schools. The Law also said that CCC will grant and ensure the quality of education and achievements the sufficient level of knowledge and skills. CCC didn't have the form, structure and content usual for this kind of document. It was not based on learning outcomes. Also old curriculum of canton/entity didn't state learning outcomes. If CCC would have had the form of learning outcomes then standards of pupils' achievements could be set and assessment instruments developed.

³² Official Gazette BiH (18/2003)

After that, examination centre/assessment agency conducts testing and analyse results in the context of learning outcomes and context of learning. Finally examination centre/assessment agency suggests measure for improving curriculum and teaching practice, school organisation and so on. From the school year 2009/10 in schools they are implementing the 9-years curriculum which was more or less based on learning outcomes. So CCC should be developed in the form of learning outcomes.

How standards were set without learning outcomes? How teachers can use standards of pupils' achievements in assessment if there were no learning outcomes in curriculum?

In teachers' questionnaires teachers were asked how much they agree that standards were part of the curriculum. Opinions of teachers were the following: 22% agreed, 24, 2% partly agreed, 22%, somehow agreed and 32% didn't agree that that standards were part of curriculum. It seems that some teachers managed to recognise described level of knowledge for each standard in curriculum and in assessment.

The development and definition of the standards was based on a priori expert opinions which were adjusted by gathering objective empirical data obtained from assessment. The criterion score for the cut-off between the low and medium levels was defined as sufficiency, i.e., students performing above this criterion could be considered to have reached the minimum requirements set in the curriculum and the examination programme.

But learning outcomes and curriculum in the form of learning outcomes is the base for standards.

SAA implications on educational policy

The SAA technical reports 2004 for the first time included the part titled "Implications to education policy"³³. That report stressed the role of the SAA as advisory body to educational authorities. It was recommended that the introduction of standards of learning achievements would set criteria for measuring levels of students' achievements, and help to determine the quality of the results in the exam domains. These indicators could offer suggestions on necessary changes in the teaching process, which would be useful for the educational authorities and for the schools themselves. Regional differences in students' achievements would signal the need for action in implementing the curricula and helping more students in achieving the curricular content in areas where their results were shown to be below the standard.

³³ Technical Report 2004, SAA, 2004

Comparing educational outcomes over time would allow monitoring autonomous changes as well as the effect of measures taken by the educational authorities.

Gender differences in educational outcome may signal the need for designing and implementing specific measures in order to ensure equal opportunities for all students. Finally the instruments developed by the the SAA could have served to improve the evaluation procedures within the schools and stimulate teachers to engage in ongoing assessment of students' progress. The experience should have served to the SAA in implementing similar short-term and long-term projects on external evaluation in primary and secondary schools allowing to monitor trends in education in BiH and to compare the results of BiH education with international standards.

³⁴ Technical report in 2006, SAA, 2006

Later, in the technical report 2006³⁴, there was also part titled "Implications to education policy". But it was about development of external assessment practice in BiH.

On questionnaires, representatives of ministries differently valued the SAA results and its impacts on educational policy. But generally no one of them offered some indicators about changes in educational policy caused by assessment for their ministries. They agreed that the SAA defined standards in the process of external assessment and that schools from the whole territory of BiH took part in it.

Some of them also agreed that curriculum without learning outcomes was the problem in defining and implementing standards. Regarding the role of ministries in external assessment some of them declared that role was more advisory, some preferred more coordinating role.

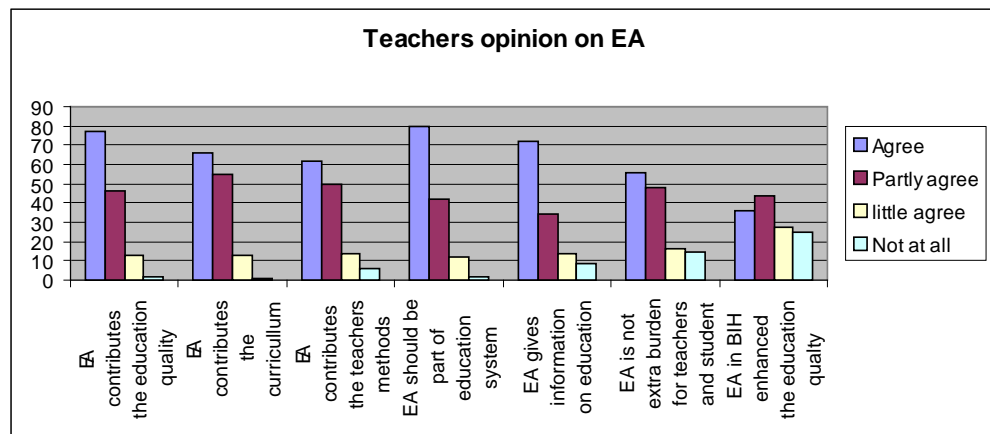
In some ministries they couldn't answer the questions about work of the SAA, because people who worked with SAA left. That means that in ministries there is no practice or policy regarding assessment and applying test results.

Ministries of education should value the results of external assessment and its possible impacts on education policy. They should more actively participate in using test results as well as in asking for additional analysis.

Opinions of external evaluations and system of quality assurance

Teachers and directors answered the question about the importance of external evaluation, and their answers are given in Table 3³⁵

Table 3.
Teachers' opinion on external assessment (EA)



³⁵ Results were given from questionnaires for schools

Teachers totally and partially agreed that external assessment contributed to the improvement of education in many segments. They agreed at least that the previous external evaluation led to the improvement of the quality of education in BiH.



Summary of some teachers' and principals' opinions and recommendations given from questionnaires³⁶:

³⁶ Results were given from questionnaires for schools

- Regarding information on assessment process teacher declares that they should be more informed as well as be involved in assessment process on time. Teachers need support for assessment like timely information, framework for assessment, a good guide for preparing students for testing. School due to insufficient information and preparation for testing were in unenviable position. They also need more specialised literature about assessment. The length of the test should be more appropriate to capabilities of pupils.
- Regarding the importance of external evaluation teachers' and principals' opinions were that external assessment was the most important segment of education quality and equalization knowledge on the whole territory and it was necessary to raise the Agency's work on higher level. External assessment should facilitate the evaluation process and contribute to monitoring the overall achievements of students and teachers, quality education, quality and professional development of teachers. External assessment should be introduced for all grades and all subjects
- Regarding the teachers and assessment teachers should become more familiar with the external evaluation through training how to use standards, through various workshops that are organized, discussion within subject teachers' groups (aktiv nastavnika) and supervision of the PIs. The best parameter for the teacher's work should be the success of student in external evaluation and it should serve for rewarding teacher.
- Regarding dissemination test results teachers and principals mostly complained that results and test feedback should get in time in order to track and eliminate shortcomings and enhance the teaching process.

Standards should be incorporated in legal frameworks or in rule book on assessment and evaluation of students.

Also standards of achievements should be done for gifted children as well as for children with special needs. Results of assessment should be public in order to stimulate, increase the level of responsibility of schools and teachers for student learning without grades without coverage as parents often seek.

- Regarding relations with curriculum, the results of assessment should contribute to revision of curriculum and to serve the schools for self-evaluation. A common core curriculum should be applied in all primary schools in BiH level or minimum of 80% of uniform standards. The curriculum content should be reduced and adapted to the age and needs of students so that students could apply the acquired knowledge in everyday life.

Clearly and precisely defined standards should be an integral part of the curriculum. Tests for the assessment should follow the curriculum and curriculum should be upgrade on the basis of test results. The quality of textbooks should be improved.

Teachers and principals recognise the importance of external assessment as well as shortcomings in assessment practice which was carried out by SAA.

Conclusions and recommendations

The Standard and Assessment Agency was on a good way to establish assessment procedures which correspond to international ones. They determined standards of pupils' achievements and assessed the level of achieved standards. They did pioneer work in development of assessment in BiH. But in many segments the SAA missed to be more active, transparent, public and cooperative regarding stakeholders and beneficiaries policy regarding outputs and outcomes of education. SAA didn't develop policy regarding raising education quality. Without more legal basis which would be obligatory for ministries as well as which define more precisely the role of PIs in assessment process, SAA should develop assessment process with usable results.

- Among different educational systems in BiH and implementing common core curriculum, assessment and/or evaluation on the state level could only offer data about the quality of those education systems
- Outcome based education should set curriculum framework of specific, measurable outcomes and those outcomes would be the base for standards. After that, assessment instruments should be developed, following, examination centre/assessment agency conducting testing and analyse results in the context of learning outcomes and context of learning. Finally, examination centre/assessment agency suggests measure for improving curriculum and teaching practice, school organisation and so on. From the school year 2009/10 all schools moved to the 9-years curriculum which is more or less based on learning outcomes..
- Ministries of Education should have more active policy regarding well functioning assessment system at state level, as the part of quality assurance system, which tell them about pupils' achievements as well as context of learning of those achievements.
- Ministries of Education should value the results of external assessment and its possible impacts on education policy in order to improve quality of education
- Ministries of Education should integrate the results of state level assessment into their systems, procedures, practice as well as require from Pedagogical Institutes to do on its own or in collaboration with APOSO additional analysis
- Pedagogical institutes should besides their role, enhance its research role and cooperate with APOSO in order to use available resource (which are scarce) in the most effective way. APOSo should give support to research activities to all interested
- Pedagogical institutes are the key stakeholders and partners of the Agency. That partnership with defined roles could be can be verified through agreement or memorandum.
- APOSO should try not only to show outputs of education but also to ensure implementation of standards in education in order to influence and improve quality of education (outcome policy).
- APOSO should develop indicators of its efficiency and efficacy
- APOSO should harmonise its assessment practice with best international practice like TIMSS and measure the whole context of learning: intended curriculum(it refers to the aims, content, and methods for teaching and learning some subject), implemented curriculum (the context of learning like teaching practice an so on) and attained curriculum



(it consists of the concepts, processes, skills, and attitudes towards mathematics and science that students have acquired during their schooling.)

- APOSO should make its work more transparent and available, supportive with information for all participants on the web site
- Training of teachers is necessary for applying standards through workshops, discussion of subject group of teachers, PIs training and so on.
- APOSO should make functioning cooperation and partnership with stakeholders and beneficiaries of the Agency. Each of key institutions should determine what are the benefits as well as the role of each party in the partnership.
- It must be stressed the role of schools and teachers in the process of testing (to get necessary information and support for testing). Teachers and schools must get feedback of testing with information and support for application of standards. The role of teachers' subject group in standards application must be stressed
- Information on testing and results and the role of testing must more wide and public
- Legal basis for assessment should be adopted like rule books on external evaluation or annexes on existing laws

Annex 1.

SAA started with pilot test in 2002. The aim of test was to provide the development of quality assurance (assessment) procedures as part of the Agency's work. Quality assurance consisted of: item development, test design, item bank, test administration, scoring, data entering, data analysis, reporting and other related activities. Agency also should have presented its purpose to the partners and beneficiaries including ministries, Pedagogical institutes, schools, teachers, parents and public. There were 1485 pupils from 56 schools in the sample. Subjects assessed were Mathematics and Mother Tongue for 4th grade of primary schools.

Test instrument prepared and used were 7 booklets with 40-50 items by test and questionnaires for school principals, teachers and pupils. Booklets were designed to measure knowledge and skills and questionnaires provided information about the context of learning.

Outputs of 2002 pilot test were developed and tested assessment procedures, staff and members of working groups trained for assessment process. A short analysis of student achievements was also prepared, but answers to questionnaires were not analysed.

Regarding promotion of Standards and Assessment Agency one conference was organised and visits to pedagogical institutes (PI) carried out in order to introduce staff and teachers of schools that participated with the aim of SAA. Leaflets about Standards and Assessment Agency were given to those PI and schools.

In the Agency no detailed data about SAA promotional activities could be found.

In 2003 Agency carried out field test for the two subjects, Mathematics and Mother Tongue, on population of 4th grade of 2857 pupils and 8th grade of 3143 pupils from 105 schools.

The aim of field test in 2003 was to measure pupils' achievements in Mother Tongue and Mathematics at the end of class teaching (4th grade) and at the end of primary school (8th grade) and to determine the factors affecting the achievement levels. The 8th grade test was based on standards which were set a priori in two core subjects.

The 4th grade test evaluated the level the defined standards of 2002 pilot pre-test were achieved and compared the 2002 pilot to 2003 pre-test results.

The aim of test was neither assessment of individual pupil achievements nor assessment the work of teachers and neither grouping schools by achievements. In the Technical Report 2003³⁷ it was stated: "The external assessment results will help education policy creators, at all levels, when making decisions to advance the education, in particular. Aside from this, these indicators will serve for: *setting the standards on pupils' achievements, evaluating the levels of pupils' achievements, curriculum advance and altering the work organization and methods in schools*".

Test Instruments used in the assessment were: 10 booklets by subjects for 8th grade (206 items for Mother Tongue and 220 for Mathematics) and 7 booklets (168 items for Mother Tongue and 147 for Mathematics) for 4th grade, questionnaires for pupils, teachers and principals.

Agency staff and the members of working groups, composed by teachers, counsellors from PI and university professors, got advanced training for defining standards, test design and item development, item analysis and data analysis, according to their role, from the experts of CITO (Assessment Centre from the Netherlands) and Assessment Centre from Macedonia. The members of the working groups were responsible for preparation of examination catalogues,

³⁷ Technical Report 2003, SAA, 2003



item design and test design. Regarding test administration principles, coordinators and testators were trained for the process of testing. Test coordinators made short reports on testing, which were then used in preparation of assessment reports at the end of the testing.

Outputs of field test in year 2003 were defined standards for Mother Tongue and Mathematics for 8th and 4th grade and adopted quality assurance procedures for testing. Analysis of factors which had influenced pupils' achievements through the evaluation of data from questionnaires was not carried out.

Regarding promotional activities there were some workshops about standards of pupils' achievements. Unfortunately there are no detailed data about numbers of workshops, number of participants who attended them and so on. Technical report on testing and standards as well as brochures on standards were produced and sent to Pedagogical institutes, ministries and schools that participated.

In the Standards and Assessment Agency data about SAA promotional activities in 2003 were available.

In 2004 the main test for the whole population of pupils of final grade (574 schools, 46819 pupils) in primary schools was implemented.

A total of 1890 test administrators, 574 school's principals and 53 coordinators were engaged. They were trained following a train-the-trainer model. Initial training of a core group of 53 test coordinators was provided by the Agency.

Items from item bank developed from earlier testing as well as new items in 3 booklets were used.

Outputs of main test in 2004 were the following: standards defined for Mother Tongue and Mathematics for 8th grade, brochures on standards and technical report on testing and determining standards. In technical report 2004 the part related to implications to education policy³⁸ was prepared for the first time. It was recommended that the introduction of standards on learning achievements would set criteria for measuring levels of students' achievements, and help to determine the quality of the results in the exam domains. These indicators offered suggestions on necessary changes in the teaching process, which were useful for the educational authorities and for the schools themselves.

³⁸ Technical Report 2004, SAA, 2004

Regional differences in students' achievements would signal the need for action in implementing the curricula and helping more students in achieving the curricular content in areas where their results were shown to be below the standard.

Comparing educational outcomes over time would allow monitoring autonomous changes as well as the effect of measures taken by the educational authorities.

Gender differences in educational outcome might signal the need for designing and implementing specific measures in order to ensure equal opportunities for all students. Finally the instruments developed by the SAA could have served to improve the evaluation procedures within the schools and stimulate teachers to engage in ongoing assessment of pupils' progress. The experience should have served SAA in implementing similar short-term and long-term projects on external evaluation in primary and secondary schools allowing to monitor trends in education in BiH and to compare the results of BiH education with international standards.

In year 2004 the project period of the Agency ended and legal status of SAA was regulated with the Law on Primary and Secondary Education³⁹ (Articles 46 and 47).

³⁹ Official Gazette BiH (18/2003)

In the year 2005 the Standards and Assessment Agency staff was involved in Reform on General Education, project conducted by the EU. Outputs of that project were proposals for a Curriculum Framework and for Framework Matura.

In the year 2006 SAA started external assessment and determining standards for pupils of final grade in science subjects: Biology, Physics and Chemistry. The aim of this testing was to check the standards which was set a priori on the basis of experts' opinion and to adjust them by gathering objective empirical data obtained from the assessment of nation-wide samples of students. 1450 pupils from 56 schools took part in testing. Assessment instruments were the following: 6 booklets for Physics with 64 items, 4 booklets for Chemistry with 52 items and 4 booklets for Biology with 52 items. Questionnaires for principals, teachers and pupils were used.

⁴⁰ Technical Report 2006, SAA

Outputs of the year 2006 testing were Standards on Chemistry, Physics and Biology, published in Technical reports 2006⁴⁰. Analyses of pupils' achievements by gender, territory and contents were also carried out. Analysis of questionnaires was also prepared but without relating achievements with the context of learning.

The Standards and Assessment Agency staff also trained Science teachers in Zenica Dobož and Middle Bosnia Canton. 298 teachers were trained and for the first time there was evidence about the number of participants in training in the Agency's documents.

In the year 2007 SAA continued external assessment on class subject Science and Social Skills for 4th/5th grade. In the sample there were 57 schools and 1437 pupils.

Assessment instruments were 6 booklets with 122 items, and questionnaires for teachers.

Outputs of testing 2007 were standards for class subject Science and Social Skills. Standards were not printed in the form of a technical report. They were sent by email to schools.

For the first time SAA started activities for secondary schools. It started external evaluation in 19 gymnasia and for 557 pupils. The aim was to introduce pupils, teachers, parents and schools to the system of external evaluation and self evaluation. One booklet with 26 items for Math and one booklet with 44 items for Mother Tongue were used together with questionnaires for schools, teachers and pupils as assessment instruments.

Outputs of this test were analysis of test results and questionnaires by school as basis for self-evaluation. Outputs were also sent by mail or by post to school participants together with guide for self-evaluation.

Result of the analysis showed that 83 % of Mother Tongue teachers said that test items were like the items they used for pupils. 79% of Math teachers said that external evaluation would help them in adjusting teaching methodology to contents required in external tests. 46% of pupils said that some contents from Math test they didn't learn in school.

In this project SAA tried to introduce the concept of self-evaluation. School could do self-evaluation of teachers practice and organisation on the basis of test results from external assessment. School could use results from external evaluation in different ways and it depended on them if they would do the self-evaluation or not. SAA didn't have any influence and it didn't get any feedback on that.

The idea was not a new one in the assessment process. Croatia introduced done external assessment and one of its' aims was also self-evaluation. In Croatia schools were required to do it. This concept was introduced and supported by educational authorities in Croatia with



guidelines, workshops and seminars for teachers. Guide for self/evaluation was also taken from Croatian National Assessment Centre and adjusted for the implementation in BiH.

In the year 2008 SAA started with external evaluation in 29 gymnasias and 787 pupils for the Science Subjects. The aim was to introduce pupils, teachers, parents and schools to the system of external evaluation and self evaluation. Assessment instruments were: 1 booklet with 38 items for Biology, 1 booklet with 26 items for Chemistry and 1 booklet with 22 items for Physics, as well as questionnaires for teachers and pupils and guide for the school to do self-evaluation.

At primary level SAA conducted external assessments for final grade of 2342 pupils from 100 schools. The aim was to see trends of student achievements in the period 2003-2008 in Mother Tongue and Mathematics. Assessments instruments were the following: 8 booklets with 169 items for Mathematics, 10 booklets with 196 items for Mother Tongue and questionnaires for teachers, principals and pupils.

Outputs of the assessment were adjusted standards of pupils' achievements, trends of students' achievements in the period 2003-2008 for Mother Tongue and Mathematics. Technical reports for 2008 assessment was printed and distributed to ministries and Pedagogical institutes. Data from trends⁴¹ show that situation was getting better in Mother Tongue for each level of achievements. In lower level in 2002/03 there were 94% pupils and the 2007/8 results showed a shift to 46% of pupils. Similar situation was for the other two levels. In the medium level in 2002/03 there were 6% of pupils and in year 2007/8 52% of them; in high level there were in 2% of pupils in 2008 comparing with 0% in 2002.

In the Mathematics situation the situation didn't change, it was the same, almost identical. There was no shift in students' achievements regarding levels. In 2007/2008 at low level there were 79% of pupils, at medium level 19% and at high level 2% of pupils, like in 2002/03.

⁴¹ Technical Report 2008, SAA, 2008



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A "Policy Development Fellowship Program" has been launched by the Open Society Fund BiH in early 2004 with the aim to improve BiH policy research and dialogue and to contribute to the development of a sound policy-making culture based on informative and empirically grounded policy options.

The program provides an opportunity for selected fellows to collaborate with the Open Society Fund in conducting policy research and writing a policy study with the support of mentors and trainers during the whole process. Sixty three fellowships have been granted in three cycles since the starting of the Program.

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