Quality assurance in the european higher education area

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Education and research trends

ABSTRACT

Purpose of the presented paper aims at motivating the necessity of assuring the quality in higher education by implementation of the quality management system

Design/methodology/approach covers the characterisation of strategic aims of the higher education, mostly - the principles of performance of higher education systems making possible the European cooperation and the comparability of the mechanisms and the results of activity.

Findings of the carried out research are as follows: implementation of the rules of higher education system should ensure: level of education being the quality standard, coherent educational system allowing for mobile choice of the place of education, universal accessibility of education, lifelong education as well as recognition of knowledge, skills and qualifications in all countries of European Union.

Practical implications: refers to any university which wants to assure quality in education by taking part in the Bologna Process.

Originality/value: of the presented paper belongs to the idea and the progress of the Bologna Process as a European widespread venture aiming at establishing the European Higher Education Area and determination of the directions of development of higher education and the research systems.

Keywords: Bologna process; European higher education area; Quality assurance; Comparability; Uniformity; Recognition

1. Introduction

"Creativity, interdisciplinarity, independence, skills of global perception of phenomena and the ability to cooperate are becoming the most important features of modern well-educated individual. Those abilities […] students should acquire not only at the university, but with the university, and with its vision and conception of the development […] [1].

The necessity of competitiveness increase in the area of the European higher education and creation of the European work market needs changes in the realisation of educational aims.

Character of those changes takes into account the nature of the effects of education, not - the manner of acquisition of knowledge; prerequisite of those changes is optimisation of usage of societies' intellectual potential.

Simultaneously, the integration of Poland with European Union implies a necessity of changes in the area of Polish higher education enabling the cooperation with universities from all European countries. Establishment of this coherent and uniform educational system is supported by, initiated in 1999 by the ministers being in charge of higher education systems in the European Union countries, the Bologna Process.

2. The idea and coordination of the Bologna Process

The Bologna Process is generally-European venture aiming at establishment by 2010 of the European Higher Education Area - EHEA.

Actions realised in the range of EHEA are compatible with the processes that are kept in scope of the European Research Area - ERA and Lisbon Strategy - LS. Actions, which are undertaken within these tree complementary ventures, show the directions of the development of higher education and scientific research system [2-4].

The character of the Bologna Process is defined by declarations and communiqués that have been signed by the minister being in charge of higher education in each country of the European Union (Fig. 1) [2-4].

The first document, including declaration of standardising the structures of higher education systems, has been Sorbonne Declaration signed in May of 1998 exclusively by the ministers of: France, Germany, Great Britain and Italy [2-4].

The idea of creation of the European Higher Education Area, included in Bologna Declaration, was signed in 19th June of 1999 by 29 ministers responsible for higher education, inclusive with Polish Minister of Science and Higher Education. Tasks of the Bologna Process, enabling the realisation of strategic aims of Bologna Declaration, have been connected mostly with [5]:

- mobility of students and teachers (vertical and horizontal),
- system of clear and comparable degrees and diploma,
- cooperation in the range of quality assurance,
- development of European aspect in higher education.

Prague Communiqué, signed in 2001, has extended the list of postulated tasks in Bologna Declaration for [6]:

- development of constant education,
- participation of universities and students in realisation of the Bologna Process,
- promotion of the European Higher Education Area outside Europe.

In Berlin Communiqué a new, very important aspect of the Bologna Process has been shown - the connection between education and scientific research as well as the meaning of research as an integral part of higher education. Development of interdisciplinary education and extension of two-degree-structured studies to tree-degree-structured ones (doctoral degree) have been recognised as the crucial ones [7].

During the conference participated by the Ministers, in Bergen (2005), as a special directions of action the ministries have qualified, included in Bergen Communiqué [8]:

- intensification of the connection between education and scientific research,
- ensuring better access to studies for all candidates,
- elimination of all mobility barriers for teachers and students,
- increasing the attractiveness of the European Higher Education Area outside Europe.

In London Communiqué as priority directions of action one has classified [9]:

- increasing the mobility,
- creation of the social aspect of higher education,
- increasing the rate of employment by three-degrees and long life education,
- strengthening the European Higher Education Area on the global scale.

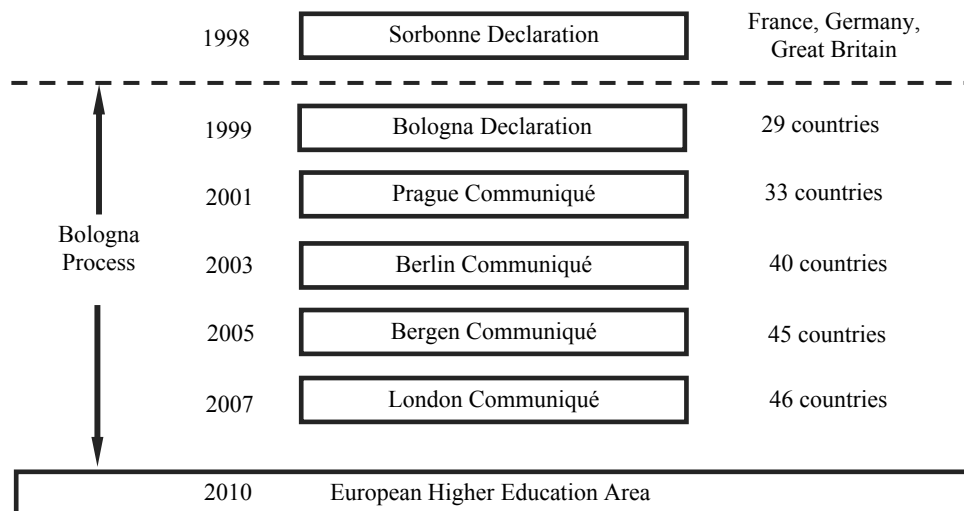In London Communiqué the implementation of techniques and

Fig. 1. Scheme of the Bologna Process [3]

methods of education student-orientated and enabling the achievement, in the planned manner, of previously determined aims and effects of education, has been considered as essential [9].

Conferences of Ministers being in charge of higher education in the European countries as well as publication of the documents of the political character (declarations, communiqués) are the decisive events for the course of the Bologna Process. During the time between conferences the Bologna Process is coordinated by the Bologna Follow-up Group; representatives of 46 countries taking part in the Bologna Process as well as representatives of European Commission belonging to the Group.

The main task of the Follow-up Group is planning the actions being the effect of settlements made by the Ministers during the conference. In the countries taking part in the Bologna Process for the coordination of the actions following the postulates of proper declarations and communiqués ministers for higher education are responsible; their task is mostly the initiation of the proper legislation changes. Actions deciding about effectiveness of the implementation of the European Higher Education Area idea are organisational, structural and programme changes, realised from the authorities of individual universities initiative [2-5, 10].

3. Realisation of the Bologna Process' demands

The main aim of the Bologna Declaration is elaboration and implementation of the domestic higher education systems

functioning rules, which makes the European cooperation and comparison of mechanisms and results of actions possible; the aim is not the standardisation of all the actions in all of the ranges of the European Higher Education Area [2-4].

Strategic aims of higher education, accordingly to the Bologna Declaration, are [2-10]:

- preparation of the graduates in conformity with the requirements of domestic, European and even world employment market,
- development of attitude of advanced knowledge being the fundament of the based-on-knowledge society,
- preparation for being active in domestic and European society of the democratic character,
- students' personal development.

Actions, that being realised, fulfil 10 main areas of actions - action lines. Moreover, the linking postulates have been formulated; the dependences between the main tasks and connection postulates have been shown in Fig. 2 [3].

3.1. Score - based system of accounting students' achievements - ECTS

System of transfer and accounting students' achievements, based on the ECTS standard, enables the coordination of the particular subjects with ECTS points on the basis of reliable estimation of the student's work connected with the realisation of
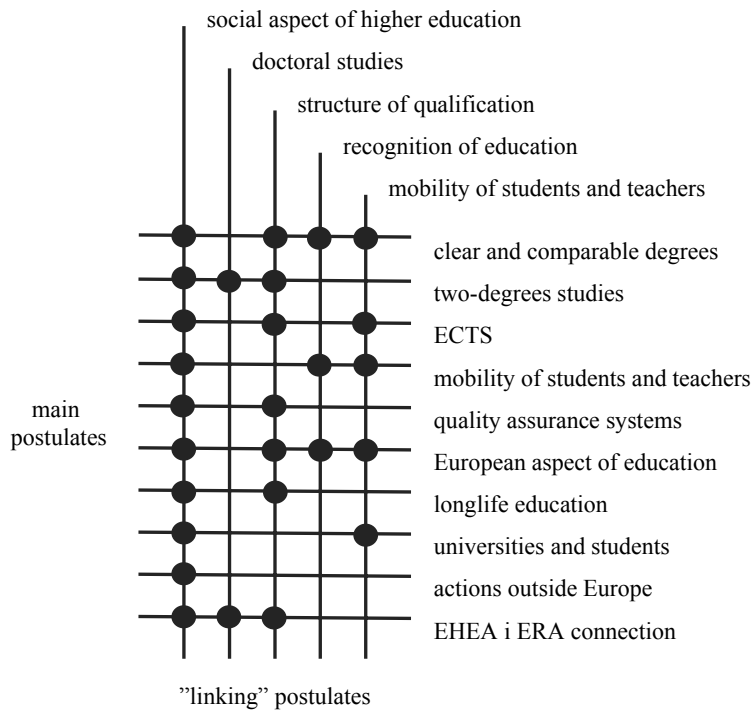

Fig. 2. Scheme of action areas in the Bologna Process [3]

a given subject. The system allows for mutual recognition of a credits achieved by students at the partner universities. In fact, the extension of ECTS system, which should assure taking into account the achievements from various: life-spans, countries, universities, in e-learning system, and even self-education connected with the job performed, is planned [2-10].

3.2. Three-degrees studies

Two-degrees studies model, accordingly to the Bologna Declaration, covers [2-10]:
- first-degree studies; the graduation is confirmed by the achievement of "bachelor" diploma; it requires 180-240 ECTS points,
- second-degree studies; the graduation is confirmed by the achievement of "master" diploma; it requires 300 ECTS points from the beginning of first-degree studies including minimum 60 ECTS points on advanced level.

Due to the decision of the ministers, included in Berlin Communiqué, the two-degree studies model was replaced by the three-degree studies, where three- degree studies mean doctoral studies [2-10].

3.3. Mobility of students and teachers

Horizontal mobility enables the realisation of a part of studies of I-th or II-nd degree at a university different from the mother one, often abroad. Vertical mobility means a change of university for a foreign university after studies of I-th degree, very often connected with a change of specialisation (Fig. 3) [2-10].

Horizontal mobility is usually realised by joint degrees and joint degree programmes run by the universities from different countries. Those programmes usually include [2-10]:
- common plans of studies and programmes of education,
- comparable periods of studies, jointly realised diploma and diploma exams,
- exchange of the university teachers,
- "joint diploma".

Difficulties connected with joint programmes of studies are mostly: acceptance of diploma, naming the programmes, students' status as well as the language of instruction at the public universities [2-10].

Another form of mobility is "borderless education" (transnational education, cross border education), in the range of which student lives in a country different from that one, which an organisation issuing diploma and certificates functions in. "Borderless education" takes place, when [2-10]:
- studies are realised in a branch of a foreign university,
- programme of studies is realised in cooperation of minimum two universities from different countries,
- studies are realised in e-learning system,
- university form one country hands the rights to the realisation of educational service down to the university functioning on the territory of the other country, very often signing its actions by one's own diploma.

The most popular barriers of mobility, as well horizontal as vertical, are the financial limitations and low studies' programme flexibility at the mother university hindering the recognition of ECTS points at the foreign universities [2-10].

3.4. System of "easy-readable" and comparable marks

A supplement to diploma is a fundamental element to improve the readability of marks. It is a document including all the data necessary to specify level and character of education by describing, realised by a student, programme of studies being the report of student's individual achievements and characterising domestic system of higher education.
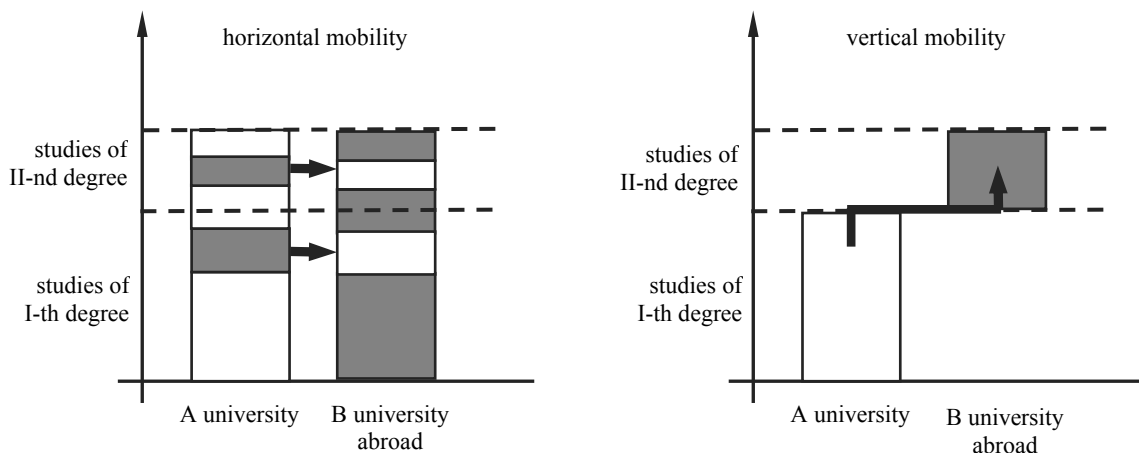

Fig. 3. Scheme of students' horizontal and vertical mobility [2-10]

Giving the definition of qualifications is the second element that increases the readability and comparability of marks. Its aim is to identify the student's qualification framework and then to assign it to every element of that structure (diploma or any document confirming the achieved qualification) [2-10]:
- student's labour inputs, expressed by ECTS points,
- character of the achieved qualification (vocational, academic) or area of the education (humanistic, technical),
- graduate's range of knowledge and skills.

Studies' programme creation, based not only on the formation of requirements connected with the diploma achievement (traditional approach), but first of all taking into account the effect of education resulting from those requirements (Bologna Process, Tuning) should prevent different effects of education at various universities [2-10].

Those differences result from the differences in programmes of studies (traditional approach) as well as from the application of the different techniques of education (Bologna Process, Tuning) [2-10].

Academic recognition, being the effect of comparability of diplomas, concerns [2-10]:
- academic aims, so the right to the further education,
- vocational aim, so the right to perform a profession.

Comparable formal qualification, and the same - the access to the next stages of studies (academic recognition from the point of view of possibilities of following education) is the main role accepted by the Lisbon Convention. So the Bologna Convention Ratification confirms the diploma recognition in the aspect of the right to the further education, but it does not confirm that right in the aspect of performing a profession [2-10].

3.5. Lifelong learning

Lifelong learning, being the form of extending the access to education on the higher level and prevention from baby-bust, should be an integral element of the strategy at every university [2-10].

3.6. Interdisciplinary education

Interdisciplinary development of society can be assured only by the interdisciplinary education and scientific research of the interdisciplinary character; also the possibility of undertaking studies of II-nd degree by the graduates of studies of I-th degree of different specialisation. The barrier in this area is legal limitation, mostly in the range of accreditation for the interdisciplinary programmes [2-10].

3.7. Doctoral studies

Doctoral studies are the basic element connecting the European Higher Education Area with the European Research Area. Studies of III-rd degree are today characterised by [2-10]:

- popularisation being the effect of the changes on the market,
- differentiation of character of education,
- adjustment of the programmes of studies to the needs of the market,
- lack of individual character and strong "student-master relation".

3.8. Quality assurance in education

Quality assurance in education is the main aim of the Bologna Process. Implementation of the quality assurance system in education includes [2-10]:
- definition of the range of every involved institutions' competences,
- internal and external estimation,
- implementation of the accreditation system.

The conducted estimation can have a function of assessment of the education process in the range of specialisation (estimation of the offer - "input estimation"; analysis of a plans of studies and teaching programmes, estimation of the realisation - "input estimation", "process estimation", "output estimation'", taking into account students', graduates' and employees' opinion) or a function of assessment of university. Document "Standards and Guidelines for the Quality Assurance in the European Higher Education Area", accepted in Bergen, describes the functioning of accreditation system on the European level and including organs that estimate the quality in education in all countries. The European Quality Assurance Register in Higher Education makes the register accreditation agencies recognizable in Europe [2-10].

4. Quality in education in the legal regulations as well as internal and external quality assessment systems

Quality in education is the key indicator of the educational process realised in higher education. The process includes [11]:
- legal regulations,
- standards of qualifications,
- educational standards,
- teaching programmes and plans of studies,
- internal and external educational estimation systems.

4.1. Law on Higher Education Act

Superior documents, establishing national legal regulation in the range of assurance of comparability and recognition of education as well as mobility of all the members of European Union in the European Higher Education Area, are the regulations of Law on Higher Education Act and the ordinances that in practice allow the creation of the atmosphere making the realisation of the Bologna Process easier [12].

Legislation regulations, included in Law on Higher Education, reflecting the course of the Bologna Process, are [12-14]:

- basics for quality of education definitions concerning form and kind of studies, specialisation, macro-specialisation, inter-specialisation studies and educational standards (art. 2),
- requirements necessary to use in a name of a university following words: university, polytechnic, academy and technical university (art. 3),
- conditions necessary to realise studies, doctoral and postgraduate studies, training courses as well as defining the competences of the Minister of Higher Education, the National Accreditation Commission and the Council of Higher Education (art. 8),
- delegation to the proper minister the administrative regulations in the range of organisation of education to be elaborated (art. 9,10),
- conditions, that have to be fulfilled by the organisational units of a university to realise studies and Minister's licence as well as the conditions necessary to cancel a licence of the organisational unit (art. 11),
- rules and procedures of creation both: inter-university and common units (art. 31),
- powers of the National Accreditation Commission as well as the rules of its cooperation with the organisations being competitive to assessment of the educational quality and accreditation (art. 49,52),
- rules of creation the organisational units outside the head office of a university (art. 85),
- rules of compulsory assessment of the teachers (art. 132),
- rules of realisation of the lectures, including these run in foreign language as well as with the usage e-learning techniques (art. 164),
- necessity of taking into account, in the process of studies organisation, transferring the results achieved by the students; procedure and conditions of the transfer (art. 165),
- studies duration time (art. 166),
- diploma granting rules (art. 167),
- rules of realisation of studies by different universities, also in overseas (art. 168),
- rules of enrolment to I-th, II-nd and III-rd degree studies (art. 169,196),
- rules of inter-universities and in-between-universities mobility (art. 171),
- conditions of organisation and realisation of doctoral studies (art. 195).

4.2. External quality assurance systems in education

Issue of the meaning of quality assurance in education for the first time has been so fiercely discussed during the congress of the ministers of higher education in 2003, in Berlin. In the signed Berlin Communiqué the ministers called on the universities for elaborate "the agreed set of standards, procedures and indicators considering a quality assurance" for creation of "European quality community" as well as to control the organs making the assessment of the educational quality [7, 15].

The main aims of external quality assurance system go as follows: [7, 15]:

- promotion of a university in the improvement and standardising quality in education (also, the increase in the transparency of educational system in every country) in all countries being the members of the European Higher Education Area,
- control of the universities in the aspect of the educational quality in reference to the standards accepted in the European Higher Education Area.

The basic procedures of evaluation of educational quality include [15]:

- review - "systematic supervision of the actions concerning quality and the achieved results being conform with the planned one as well as the results being used effectively and properly to the assumed guidelines" according to the definition included in ISO 8402 standard; review cannot serve as a tool for verification of the accepted standards of education, but only for the university verification of the accepted methods of their achieving,
- assessment - estimation of the quality of education in reference to the teaching programmes, plans of studies as well as the conditions of realisation of educational process,
- accreditation - "process of achieving, by the university, a right to grant a scientific and vocational title or of the recognition of qualifications to organise studies by the competitive authorities" according to the definition of the Bureau for Academic Recognition and International Exchange; so accreditation is the confirmation that the organisational unit of university realises in educational process on the level fulfilling the minimum criteria of standard; one should not identify the accreditation with the assessment of the educational quality.

In Bergen Communiqué, the ministers accepted the European Standards of External Assurance of Quality in Higher Education.

The standards were included in points concerning [7, 15]:

- application of procedures of internal quality assurance,
- application of procedures of external quality assurance,
- acceptation of determined, published and consequently used criterion,
- design of processes in a way assuring their effectiveness in the realisation of defined aims and tasks,
- reporting in clear and easy way to understand,
- performing the reviews in the range of the external quality assurance system,
- analysing the system and giving the instructions for its improvement.

4.3. Internal quality assurance system in education

The External quality assurance system can function effectively only in the situation, when it is closely related to the internal quality assurance system, in reality,

the responsibility for the educational quality is taken on by every university. That is why the internal educational quality assurance systems are implemented in an increasing number in the Polish universities [16-19].

Legal basis for the internal quality assurance system in education is the following [12, 20]:

- act of Law on Higher Education, dated to 27 July 2005,
- ordinance of the Minister of Science and Higher Education, dated to 12 July 2007, on standards of education for the particular specialisations and levels of education as well as the procedures of creation and conditions necessary for the university to realise both: inter-specialisations studies and macro-specialisations.

Decision about the implementation of the internal educational quality assurance system is adopted by the resolution of the senate, and its internal fundaments are as follows:

- statutes of the university,
- rector's instructions and circular letters,
- resolutions of the senate,
- regulations of the university including enclosures.

Internal quality assurance system in education, being the regulations of proceedings formally accepted by the university, includes the regulations in the range of [17-19]:

- creation, assessment and improvement of teaching programmes,
- accessibility of information pertaining teaching programmes, rules of the credits in subjects and the others information connected with the realisation of the teaching process,
- assurance of uniformity in the requirements towards students on every level and form of studies,
- granting a diploma,
- assessment of the lectures,
- assurance of effectiveness of the teaching process,
- archiving the course of studies and the results of education,
- assessment of the teachers and their possibilities using that assessment in the improvement process,
- assurance of simultaneous uniformity and individualisation of education,
- assurance of the vertical and horizontal mobility in connection with the realisation of the programmes requirements.

Foundation of the internal quality assurance system in education, beside the guidelines worked out by the university, can be constituted by the requirements included in the global standards [21, 22]:

- instructions included in ISO 9001:2008 standard (Quality management systems. Requirements that can be applied in all organisations for assurance of the ability to fulfil the clients' expectations (also students and employers), legal requirements as well as requirements defined by the organisation (also university) in stages of: design and development, services, measurement, analysis and improvement,
- instructions included in IWA 2:2007 project of standard (Quality management systems. Guidelines for use of ISO

9001:2008 standard in education) describing the organisational structure, responsibilities and resources required for the improvement of the quality management system in educational organisation, also in stages of: design and realisation of educational process, development of teaching programmes and assessment of graduates' qualifications.

Irrespectively of the accepted form of the internal educational quality assurance system, every university should implement the system individually, adapting it to its own aims of actions, manner of organisation, human resources as well as the students taking part in the educational process.

5. Summarising

The European economy has a chance to be the most competitive and dynamically progressive economy of the world, if it is based on the interdisciplinary development of society.

The base for the economic development of every country is constituted by the knowledge and skills of the universities' graduates; that is why it is of the significant importance to assure the quality in higher education. It is possible exclusively realising the Bologna Process - the worldwide venture aiming at creating the European Higher Education Area compatible with the European Research Area.

Implementation of the rules for functioning evaluation of higher education system, making the European cooperation as well as comparison of the educational mechanisms and results easier, should ensure: level of education being the quality standard, coherent educational system allowing for mobile choice of the place of education, universal accessibility to education, longlife education as well as acknowledgement of knowledge, skills and qualifications in all countries of European Union.

References

[1] T. Szulc, Education quality in universities, Proceedings of Conference of Rectors of Academic Schools in Poland, Accreditation Commission - Bologna Team, Wrocław University of Technology Publ., Wrocław, 2007.

[2] A. Kraśniewski, Bologna Process - idea, documentation, realisation, Proceedings of Conference of Rectors of Academic Schools in Poland, Accreditation Commission - Bologna Team, Wrocław University of Technology Publ., Wrocław, 2007.

[3] A. Kraśniewski, Bologna Process: the way of the European higher education, Ministry of National Education Publ., Warszawa, 2004.

[4] E. Chmielecka, A. Kraśniewski, J. Woźnicki, Benefits and costs connected with the accession of Poland to the European Union, European Integration Committee Publ., Warsaw, 2003.

[5] The Bologna Declaration. Joint Declaration of the European Ministers of Education. Bologna, 19 June 1999.

[6] Communiqué of the Conference of Ministers responsible for Higher Education, Prague, 2001.

[7]   Communiqué of the Conference of Ministers responsible for Higher Education, Berlin, 2003.

[8] Communiqué of the Conference of Ministers responsible for Higher Education, Bergen 2005.

[9] Communiqué of the Conference of Ministers responsible for Higher Education, London, 2007.

[10] From Berlin to Bergen - General Report of the Bologna Follow-up Group, May 2005. www.bologna-bergen.no

[11] J. Błażejowski, Quality of higher education from the perspective of Council of Higher Education, Conference of Rectors of Academic Schools in Poland, Accreditation Commission - Bologna Team, Wrocław University of Technology Publ., Wrocław, 2007.

[12] Act on Law on Higher Education (Journal of Laws of 2005, no 164, it. 1365)

[13] J. Woźnicki, Introduction of the principles of the Bologna Process in Poland, Proceedings of Conference of Rectors of Academic Schools in Poland, Accreditation Commission - Bologna Team, Wrocław University of Technology Publ., Wrocław, 2007.

[14] J. Woźnicki, Law on higher education as an answer on the challenge, Science 1 (2004).

[15] J.M. Pawlikowski, The European aspect of external quality assurance systems in higher education, Proceedings of Conference of Rectors of Academic Schools in Poland,

Accreditation Commission - Bologna Team, Wrocław University of Technology Publ., Wrocław, 2007.

[16] Z. Marciniak, Internal quality assurance systems in higher education from the perspective of National Council for Accreditation, Proceedings of Conference of Rectors of Academic Schools in Poland, Accreditation Commission - Bologna Team, Wrocław University of Technology Publ., Wrocław, 2007.

[17] E. Chmielecka, Internal quality assurance systems in higher education, Proceedings of Conference of Rectors of Academic Schools in Poland, Accreditation Commission - Bologna Team, Wrocław University of Technology Publ., Wrocław, 2007.

[18] M. Rocki, Bologna Process: expected development and tasks for 2006-2008, Senate Office Publ., Warsaw, 2007.

[19] E. Chmielecka, Bologna Process: comment, Outside the barrier of time and space, WSIiZ Publ., Rzeszów, 2007.

[20] Ordinance of the Minister of Science and Higher Education on standards of education for the particular specialisations and levels of education as well as the procedures of creation and conditions necessary for the university to realise both: inter-specialisations studies and macro-specialisations (Journal of Laws of 2007, no 221, it. 1640).

[21] PN-EN ISO 9001:2008. Quality management system. Requirements, PKN Publ., Warsaw, 2008.

[22] IWA 2:2007 standard project. Quality management systems. Guidelines for the application of ISO 9001:2000 in education, ISO, 2007.