A Case Study of Graduate Quality: Subjective Opinions of Participants in the Sphere of Education

Alexander Yu. Prosekov a, Irina S. Morozova a,*, Elena V. Filatova a

a Kemerovo State University, Kemerovo, Russian Federation

Abstract
The article considers the problem of graduate quality assessment from the perspective of various participants of the educational sphere. The research features the current state of education. It focuses on the national specifics that affect a particular model of education during its implementation. Modern education is characterized by interaction of several local educational environments and the adoption of innovative features of one national education system by other countries. The authors compared various national education systems and pointed out the following common traits: transformability, modelability, openness, and adaptability. As for the education of the early XXI century, it appeared to include the following characteristics. First, educational institutions satisfy people's needs for educational services. Second, the informative capacity of classes is increasing. Third, educational institutions are involved in the ranking process.

The study features the opinions of employers, students, and professors regarding the quality of training of social specialists in the spheres of education, healthcare, and social protection. The paper describes advantages and disadvantages of various national education models. The authors stress the need for the development and implementation of a Russian national education model and formulate its key guidelines. They assessed the efficiency of the current education model via opinions of employers, students, and professors on the formation of professional competencies in students of Bachelor and Master Programmes. The opinions of the three groups of respondents underwent a comparative analysis. According to the employers, the level of professional training was higher in Masters than in Bachelors. The professors demonstrated a more critical attitude to the level of Bachelors and evaluated it as average. The students appeared more positive in their assessment of Bachelors, but they also evaluated Masters as more skilled than Bachelors. The obtained data can be used to develop technologies that could facilitate the educational process and improve the graduate quality in higher education institutions.

* Corresponding author
E-mail addresses: ishmorozova@yandex.ru (I.S. Morozova), rector@kemsu.ru (A.Yu. Prosekov), filatova.fev@yandex.ru (E.V. Filatova)
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1. Introduction

The issues of modern education are a combination of events, conditions, and relationships shared by all subjects of the education process. Many researches describe the state of modern education as complex and controversial (Isaeva, 2009).

Taking into consideration the current challenges, education has to improve the development strategies of its content and structure. In the process of transformation, education acquires new content and elements, thus producing new models.

A theoretical analysis made it possible to state the procedural nature of the development of the modern education system, as well as its transformability and modelability. Its systemic characteristics are getting more variable. This provides a larger and a more individualised set of educational offers and services, the ultimate goal of which is to allow every individual to master desired competencies during one's entire lifetime.

We agree with A.M. Mitina (Mitina, 2005) in that a varied reform of education is taking place worldwide as a result of the challenge to make lifelong education accessible to all.

For instance, in Thailand, human resource development problems triggered the growth of corporate universities and partnerships between corporations and universities. Corporate partnerships in the sphere of education are quickly adapting to the needs of industry and are becoming increasingly popular, thus complementing traditional higher education (Crocco et al., 2017).

The Latin American macro-university is considered a highly productive model: it is a state-controlled type of higher education that combines the ideals of democratisation, high revenues and meritocratic models of selection and access (Fischman, 2018).

According to N.A. Korneeva (Korneeva, 2007), open education, as a learning system, is based on the principles of flexibility, modelability, parallelism, asynchrony, and continuity. Open education implements the learning process via an active use of specialised information technologies and teaching aids.

According to O.Yu. Vlasova, the modern education system should be adaptable (Vlasova, 2015). Broadly speaking, adaptation means that the system adapts to some changing conditions. A system is considered adaptive if it can adapt to changes under internal and external conditions. The criteria of adaptability include a certain variety of characteristics of education, the flexibility and variability of the dual response of elements, and a feedback. Thus, education model is considered adaptable if it ensures people's right to education in a certain range of changing conditions. The wider this range, the more adaptive the model.

Modern education has to provide necessary conditions to satisfy the needs of the individual in educational services. We agree with N.A. Korneeva (Korneeva, 2007) that the difference between the need for educational services and the need for education is that the former results in one's professional development, mastering a trade, professional or social growth, as well as the formation of key competencies.

Modern education is also characterised by an increasing information flow, which, in its turn, inevitably leads to an increase in the informative capacity of classes and a constant improvement of the educational process (Kondratenko, 2015).

Another feature of contemporary higher education is its involvement in the ranking. According to William Yat Wai Lo (Yat Wai Lo, 2011), the emerging global university rankings are important soft power resources that have the potential, as a management tool, to change the global landscape of higher education.

Therefore, education system is a set of elements integrated as various models, whose functioning ensures maximum efficiency.

The problem of the graduate quality deserves special attention. According to G.A. Paputkova (Paputkova, 2015), the current state of the economy determines a high interest to the problems of graduate quality improvement as a leading competitive advantage of a university.

The essential characteristics of education quality have acquired different interpretations that depend on both the historical process and the country of the research.
According to L.D. Maslova (Maslova, 2012), Russian higher education demonstrates a more developed external quality assessment, which is focused on standards and performance indicators. The main elements of this system include standardisation, licensing, certification, and accreditation, as well as a comprehensive ranking of educational institutions and individual specialties. Effective mechanisms and assessment procedures involve a point-rating system (Shmonin, 2012) or an independent social and professional accreditation (Mustafayev, 2015).

According to the analysis of independent assessment procedures for graduate quality in Europe and Asia conducted by T.V. Tretyakova (Tretyakova, 2019), there is a wide variety of approaches to the establishment of governing bodies of the system of assessment and monitoring the education quality. T.V. Tretyakova sees an advantage in the combination of an external assessment conducted by independent commissions and a self-examination conducted by the educational institution.

Foreign practice shows that the procedures for the independent assessment of graduate quality are associated with the processes of certification of qualifications and are often a mandatory initial stage in confirming the professionalism of a graduate. An independent assessment of graduate quality in a particular discipline or field of training significantly increases confidence in assessing the results of professional education, since it separates educational service from its assessment.

In the United Kingdom, academic achievement and professional qualifications are evaluated by qualification organisations that are independent from both educational institutions and the government. Assessment of knowledge and professional competencies is based on professional standards and conducted by independent experts. In China, an independent assessment of graduate quality is carried out by employers acting on behalf of coordination councils for cooperation between educational organisations, enterprises, and related departments.

A Malaysian research team (Rajadurai et al., 2018) traced the gap between the key attributes of graduates of technical universities and their actual efficiency in getting a job. All elements related to the personality dimension were placed in the "keep up the good work" quadrant (high importance/high performance). The knowledge aspect was placed in the "focus here" quadrant (high importance/low productivity). Skills (soft skills and hard skills) and intellectual abilities were placed in the "low priority" quadrant. Physical abilities were the only aspect placed in the "possible excess/bust" quadrant. The data obtained prove that competitiveness of graduates should be ensured by the development of their personal qualities. Similar results were obtained by the studies on the problems of project education (Chen, 2019), emotional and social learning (SEL) (Corcoran et al., 2018), issues of assessing the formation of competencies (Hwang, 2019), and the applicability of visualisation tools in metaprojecting of the educational environment (Zakharova et al., 2019).

To optimise the process of graduate quality assessment, it is compulsory to perform a comparative analysis of the positions of key participants in the educational sphere, i.e. students, professors, and employers.

2. Materials and methods
The present research featured opinions of participants of the educational process regarding the level of professional competence of Bachelors and Masters.

Information was obtained by questionnaire method, which presupposed written answers to a system of standardised questions.
We developed three types of questionnaires: for employers, for students, and for professors.
The results were analysed both quantitatively and qualitatively.
The experimental data were processed using Microsoft Excel and Matchcad.14v.
The statistical data analysis included the following methods. The mean values were compared using Student's t-test for dependent samples, when analyzing the opinions of respondents regarding the quality of education of Bachelors and Masters in groups of students, employers, and professors. Student’s t-test was also used for independent samples, which made it possible to identify significant differences in the opinions of representatives of different groups.
When developing questionnaires, we relied on the opinion expressed by J. Raven, N. Chomsky, R. White, N.V. Kuzmina, A.K. Markov, V.I. Baidenko, and A.V. Khutorskoy. The questionnaires were also based on the Dublin group identifier of qualifications awarded to
students, which mean completion of a short cycle of higher education. The structure of the questionnaire included 20 competencies assessed on a ten-point scale.

1. The ability to put knowledge into practice;
2. Teamwork;
3. Leadership;
4. Quality awareness;
5. Counseling and preventive work in the social sphere;
6. The ability to establish business contacts with specialists of various services and organizations;
7. Willingness to demonstrate a humanistic approach to people;
8. The ability to purposefully and effectively implement modern technologies of social work;
9. Computer skills;
10. Time management;
11. The ability to develop programs to be implemented in various areas of social policy;
12. Readiness for effective communication when organizing work on social protection of the population;
13. The ability to prevent professional burnout;
14. Eloquence;
15. Multitasking;
16. The ability to gain the trust of customers and colleagues;
17. The ability to resolve conflicts and mitigate differences;
18. Willingness to engage in organizational and public planning;
19. Reliability and responsibility, an adequate response to socio-economic changes in society;
20. The ability to generate new ideas (creativity).

Institutes of the Kemerovo State University served as experimental base for the research. The study involved 248 people: graduate students (90), professors (80), and specialists (78) from various services and organisations, e.g. Department of Education and Social Welfare, Department of Culture and National Policy, etc.

The selection of subjects was conducted out in such a way that the sample population reflected the trends of the total population. Quality representation was planned so that all elements of the total population were represented in the sample population. All groups had an equal gender ratio. The comparable age of the subjects ensured the homogeneity of the sample. The groups of employers and professors included specialists with 10–20 years of professional experience. The rationale for the sample size was made using methods of mathematical statistics. The total population of students was 1,100. For a simple random sample of 1,100 units, the maximum statistical error (with a 95 % confidence probability) is 9.9 % (Larina, 2015). The number of respondents in the representative sample was 90 people. The sample size was also calculated for groups of employers and teachers.

3. Results

Figure 1 illustrates the attitudes of the employers towards the formation of competencies demonstrated by Bachelors and Masters.
The obtained data suggest that the average score given by the employers to Masters was higher according to all 20 competencies \( (t = -2.16, \text{number of degrees of freedom} = 77, \text{at } p = 0.07) \). Thus, according to the employers, the general level of professional training of a Master is not significantly higher than that of a Bachelor.

As for the most significant competencies of both Bachelors and Masters, the employers mentioned quality awareness, computer skills, ability to prevent professional burnout, ability to resolve conflicts, reliability and responsibility, and creativity. According to the employers, Masters have to possess all the abovementioned competencies. However, leadership scored only 1.5 points, both for Masters and Bachelors. Not only was the average score for Masters higher than for Bachelors, but none of the Bachelors' competencies was scored higher than that of the Masters.

Significant differences between the formation indicators were obtained for two competencies: "ability to implement modern technologies" \( (t = -6.55, \text{number of degrees of freedom} = 77, \text{at } p < 0.01) \) and "willingness to engage in organisational and social planning" \( (t = -6.55, \text{number of degrees of freedom} = 77, \text{at } p < 0.01) \). According to the employers, Masters possessed the maximum indicator of formation, while Bachelors had a score that indicated an average level of formation. A smaller gap in the formation indicators was revealed for such competencies as "ability to develop programmes to be implemented in various areas of social policy" \( (t = -5.17, \text{number of degrees of freedom} = 77, \text{at } p = 0.01) \) and "time management and planning" \( (t = -5.17, \text{number of degrees of freedom} = 77, \text{at } p = 0.01) \).

Therefore, the employers evaluated the level of competency formation as above average and saw no difference between Bachelors and Masters.

**Figure 2** illustrates a comparative analysis of the mean values of students’ opinions regarding the formation of the competencies in Bachelors and Masters.
The obtained data showed that the average score given by the students to Masters was higher for all 20 competencies \( (t = -3.16, \text{ number of degrees of freedom} = 89, \text{ at } p < 0.05) \). Thus, the students believed that the level of professional training of a Master was higher than that of a Bachelor. As for individual professional competences, students assessed willingness to demonstrate a humanistic approach to people as the most important competency for both Bachelors and Masters. It was the only competency that received the highest score \( (10 \text{ points}) \).

Masters did not score low for any of the competencies, unlike Bachelors. The students gave the latter only 4 points \( (t = -9.36, \text{ number of degrees of freedom} = 89, \text{ at } p < 0.01) \) for "ability to develop programmes to be implemented in various areas of social policy".

Almost all assessed indicators demonstrated differences with different levels of confidence. There was a certain degree of subjectivity in the grades given by the students to Bachelors and Masters. According to the students, Masters had all competencies formed at a higher level. This subjective position might be explained by the fact that, when designing their own individual educational trajectory, the students considered Master's degree as an obligatory stage in obtaining higher education.

Significant differences between the formation indicators were obtained for the following competencies: "leadership" \( (t = -6.55, \text{ number of degrees of freedom} = 89, \text{ at } p < 0.01) \), "time management and planning" \( (t = -6.55, \text{ number of degrees of freedom} = 89, \text{ at } p < 0.01) \), "ability to establish business contacts with specialists of various services and organisations" \( (t = -6.55, \text{ number of degrees of freedom} = 89, \text{ at } p < 0.01) \), "willingness to engage in organisational and public planning" \( (t = -6.55, \text{ number of degrees of freedom} = 89, \text{ at } p < 0.01) \), and "ability to develop programmes to be implemented various areas of social policy" \( (t = -9.36, \text{ number of degrees of freedom} = 89, \text{ at } p < 0.01) \).

According to the students, not only did Masters have a higher mean score, but also no competency given by them to Bachelors received more points that the same competency assessed for Masters.

Therefore, when assessing graduate quality, the students paid more attention to the problems of interaction in professional groups and organisational structures. They also noted significant differences between Bachelors and Masters in the field of social interaction management.

**Figure 3** illustrates a comparative analysis of the mean values of professors' opinions on the formation of the competencies in Bachelors and Masters.
The obtained data showed that the average score given by the professors to Masters was higher according to all 20 competencies ($t = -3.63$, number of degrees of freedom = 79, at $p < 0.05$). Moreover, the professors proved the most critical group. The professors demonstrated a more critical attitude to the Bachelors and evaluated their graduate quality as average.

However, almost all competencies showed no differences with a high level of reliability ($p < 0.01$) between the formation indicators. Significant differences were obtained only for such competence as "willingness to engage in organisational and social planning" ($t = -5.17$, number of degrees of freedom = 79, at $p = 0.01$). According to the professors, the fact that a graduate mastered all levels of educational programmes did not mean that this competency was well-formed.

Surprisingly, the "leadership" competency received a low score ($t = -3.16$, number of degrees of freedom = 79, at $p < 0.05$). Thus, the professors did not believe that this ability can be developed at university.

Unlike the students and the employers, the professors gave Bachelors higher scores for "ability to implement modern technologies" than to Masters ($t = 3.63$, number of degrees of freedom = 79, at $p < 0.05$).

A higher level of formation in the absence of differences with a high level of reliability ($p < 0.05$) was identified for such competencies as "ability to prevent professional burnout" ($t = 2.06$, number of degrees of freedom = 79, at $p = 0.08$) and "ability to establish business contacts with specialists from various services and organisations" ($t = 2.24$, number of degrees of freedom = 79, at $p = 0.06$). Therefore, the professors evaluated these competencies as average at both levels of education.

The obtained data indicated that all three groups of respondents gave Masters higher mean values of competencies. The employers and the professors also demonstrated significant differences in the mean values of the general level of competency formation in Bachelors ($t = 3.06$, number of degrees of freedom = 156, at $p < 0.05$). This trend persisted in their assessment of the general level of competency formation in Masters ($t = 3.29$, number of degrees of freedom = 156, at $p < 0.05$).

When assessing Masters, all respondents noted the maximum sufficient level of formation of ten of the competencies. Therefore, Masters demonstrated a high level of formation in 50% of the competencies proposed for assessment.
As for Bachelors, only five competencies were given a high score, which is 25%.

Some competencies received different opinions from the professors, the students, and the employers. Thus, we detected statistically significant differences by comparing the mean values given to Bachelors by the employers and the professors for the "teamwork" competency (t = 5.56, number of degrees of freedom = 156, at p < 0.01). This trend persisted in the scores given to Masters (t = 4.86, number of degrees of freedom = 156, at p < 0.05).

In addition, significant differences were detected in the mean values given by the employers and the professors for the competency "ability to implement modern technologies" to both Bachelors (t = 3.06, number of degrees of freedom = 156, at p < 0.05) and Masters (t = 9.36, number of degrees of freedom = 156, at p < 0.01), with the professors being even more critical of Masters.

The mean values of the level of formation of "time management and planning" competency also demonstrated a statistically significant difference. This competency demonstrated significant differences in the mean values given by the employers and the students to Bachelors (t = 5.67, number of degrees of freedom = 166, at p < 0.01) and in the mean values given by the employers and the professors to Masters (t = 5.56, number of degrees of freedom = 156, at p < 0.01). Only the employers awarded this competency in Masters with the highest score; other groups of respondents assessed this competency as average.

The opinions of the employers also differed from other groups in their evaluation of the "multitasking" competency.

Significant differences were detected in the mean values given to Bachelors for this competency by the employers and the teachers (t = 9.36, number of degrees of freedom = 156, at p < 0.01), the employers and the students (t = 5.67, number of degrees of freedom = 166, at p < 0.01), as well as to Masters by the employers and the professors (t = 7.86, number of degrees of freedom = 156, at p < 0.01). The employers gave the highest score for these competencies to both Bachelors and Masters. The professors and the students assessed these competencies as average both in Masters and Bachelors.

Both employers and students gave Masters and Bachelors high scores for "ability to gain the trust of clients and colleagues". The professors gave Bachelors fewer points for this competency. The students and the professors assessed "creativity" in Bachelors as average. For this competency, significant differences were detected in the mean values given to Bachelors by the employers and the students (t = 3.63, number of degrees of freedom = 166, at p < 0.05) and the employers and the professors (t = 5.56, number of degrees of freedom = 156, at p < 0.01). All respondents gave Masters a high score for this competency.

4. Discussion

The obtained data made it possible to analyze opinions of professors, students, and employers on the formation of the competencies in graduates with Master and Bachelor degrees.

Subjective opinion of participants in educational practice has remained in the focus of attention of scientific community for a remarkably long time. For instance, L. Harvey made a comprehensive assessment of approaches to the quality of higher education at the turn of the XX – XXI centuries. The author emphasized that, despite the growing uniformity of approaches to quality monitoring, the studies of this phenomenon in the context of higher education still remain insufficient (Harvey, 1998).

The results of our study contribute to the ongoing discussion of education quality assessment (Thornton, 2010). The data indicate that a competitive university graduate meets the requirements of the profession, i.e. personal and professional potential, as well as the ability to use modern effective methods, techniques, and technologies in professional activities. A competitive graduate brings into the professional activity an individually-creative, innovative component and consciously develops his or her own personal and professional personality. An analysis of the subjective students' opinions made it possible to ascertain the presence of a conscious attitude to their future, which is consistent with the data obtained in the study performed by A. García-Aracil, S. Monteiro, L.S. Almeida (García-Aracil et al., 2018). The present study revealed that students are aware of the problems of interaction in professional groups and organizational structures. This fact was comparable with the authors' point of view: ample learning experience, which contributes to the development of methodological and practical competencies, if combined with collective
experience related to career and employment skills, can help graduates make a seamless transition from learning to work.

Talking about the need to determine the subjective opinion of participants in the educational process regarding the education quality, one should mention the data obtained by S.W. Hwang and Y.A. Kwon. They proved that diagnosis should use a tool to measure one’s own competence as a condition for improving the educational program (Hwang, 2019).

Our data on students’ positive attitudes toward the study programs are comparable to those obtained by E. Mustafa, N. Mohd Ariffin, A.H. Mohd Arshad, A.M. Mohamad, and N.A.H. Hanafiah (Mustafa et al., 2019), who showed that most students are satisfied with the academic and non-academic university programs.

Hence, the ultimate goal is to teach future specialists to competently integrate the knowledge, values, and skills of their profession into their practical activities.

Our position does not contradict the data obtained by F. Trede and D. Jackson on the engagement of participants in the process of becoming effective professionals (Trede, 2019).

Although some researchers argue that for the development of a specialist it is important to be able to transfer practical skills into the real context of professional activity (Sutin, 2018), the results of our study showed that the employer does not see significant differences between the competencies of Bachelors and Masters. Remarkably, these difficulties are present in competency assessments conducted by J. Strijbos, N. Engels, and K. Struyven (Strijbos et al., 2015).

In assessing competencies, the employers, the students, and the professors gave absolutely different scores to one and the same competence, i.e. there was not a single competency that received the same score from all three groups of respondents. However, the respondents demonstrated a more consistent position when assessing Masters.

R. Decker, M. Garcia, A. Kelly & H. Mulrooney revealed that employers value personal qualities of a graduate. At the same time, the quality of teaching and learning, feedback and relationships are highly rated by both staff and students.

Students, while being quite positive about teaching and learning methods, expressed uncertainty about the quality of education they receive (Dicker et al., 2019).

L. Bunce and M. Bennett believe that it is not enough to take into account only the opinion of students. They showed that a stronger consumer identity, as an indicator of the presence of a Bachelor’s degree as a purchased product to increase future incomes, is associated with lower academic performance (Bunce, 2019). The educational organizations should take into account the revealed relationships when advertising their academic proposal.

Our analysis showed that it is the employers who should assess the level of practical training of a university graduate, as well as his or her willingness to perform professional functions. This is only logical because the employers are the final consumers of the product in the field of professional education. This circumstance predetermines a need to develop a system of interaction with employers, which will increase the competitiveness of graduates in the labor market.

5. Conclusion
For centuries, education has maintained its status of one of the most important areas of human activity. This sphere of human life is one of the largest and most extensive worldwide. A large number of people are involved in this sphere during their entire lives. The demand for education can be traced at almost every stage of human life. Currently, all members of educational process are demonstrating less and less satisfaction with its result. The present research suggests that serious changes are taking place, and a new education system is on its way.

In modern education, various local educational environments interact actively. As a result, specific features of one national innovative environment are adopted by the educational space of other countries.

The general characteristics inherent to most national educational systems include transformability, modelability, openness, and adaptability. The specific characteristics of education of the early XXI century include the following traits: first, educational institutions satisfy people’s needs for educational services; second, the informative capacity of classes is increasing; third, educational institutions are involved in the ranking process.
The paper also gave an outlook of modern interpretations of independent assessment procedures of graduate quality, which are aimed at improving the quality of educational services. The approaches to the organisation of the assessment procedure proved variable.

The present research featured various national educational models, their advantages and disadvantages, with the focus on the problem of the development and implementation of a national education model for this country.

We analysed opinions of employers, students, and professors on the efficiency of the current Russian model represented by the formation of professional competencies in Bachelors and Masters. According to the employers, Masters have a higher level of professional training. The professors turned out to express a more critical attitude to Bachelors, whose level of competency formation was assessed as average. The students were more loyal in assessing the competencies of Bachelors, while assessing the level of Masters as superior.

Most of the proposed competencies (14 out of 20) received different opinions from the three groups of respondents. The remaining six competencies received relatively similar opinions, i.e. the scores were different, but they fit in the same numerical segment defined as high, medium, or low. Masters had higher mean values than Bachelors, with the exception for three competencies: the abilities to establish business contacts with specialists of different services and organizations, to implement modern technologies, and to resolve conflicts. There, professors gave a higher score to Bachelors than to Masters.

The obtained data can be implemented in developing various technologies that can be used to organise the educational process and improve the graduate quality in higher education institutions.

The research results can be used in developing new educational technologies and building an effective national model of education.

The targeting of education is changing from the current operational function to the one focused on the development of creative potential. Thus, the new education model should help to satisfy the diverse needs of the individual. However, it is not enough to provide people with favourable conditions for receiving or continuing education. It is also necessary to encourage them to take advantage of the provided opportunities. Otherwise, the "educational indifference syndrome" is inevitable. The need for education must be consciously and purposefully shaped by the society, who should be ready to satisfy the need of its members in obtaining the desired education within suitable terms, contents, methods, levels, etc. For this, the society should demonstrate a developed desire to make efforts to get education.

One’s need for education is integrative in nature, for it combines one’s social, spiritual, and material needs. The stimulation of education involves the development and enrichment of the prospects of the individual. Education should receive the status of a social value that allows one to comprehend all other values that society can offer.

Expanding the boundaries of cooperation can open up new opportunities, for instance, for Russian students and young scientists, without "losing face". A new national system of education should combine the historical Eurocentric tradition with the Russian intellectual potential, national identity, and cultural experience; then it has every chance of maintaining a "golden mean" in its development.

References


