

Student Satisfaction with Education Quality as a Synergy Factor

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The article provides a method to evaluate the quality of educational process. The authors suggest evaluating the quality of education in terms of consumer satisfaction, taking into consideration the weight-of-coefficient for each quality indicator. The analysis has revealed the dependence between positive tendencies in classroom management and satisfaction level of students.

Key words: questioning, quality of education, quality indicators, quality management system, quality of educational process.

Currently, the numerous approaches in determining the quality of education embrace its complexity and multi-factor character which could be conditioned by different evaluation criteria. However, it is the education process that is still the basic process in any university. According to the TQM concept and international standard regulations ISO 9000, every process should involve one customer and be focused on performing his/her requirements. The customers of the university education services are enrollees and their parents, students, post-graduates, PhD students, specialists of continuing and retraining education, teachers and department staff, graduates and their potential employers, the government and the society itself [1]. However, the main consumers of this education process are, of course, students and teachers who are not only actively involved, but also those who know the inside out of this process. In this case, to identify the basic factors influencing the quality of the education process and, it is relevant to include the above-mentioned consumers-students and teachers into the indexes characterizing it. In view of this, a questionnaire-survey was conducted in Kazan National Research Technological University (KNRTU). This questionnaire included questions related to the quality of the learning process. It should be

noted that the basic indicator showing the degradation of the learning and teaching process quality is a growing number of students who receive unsatisfactory marks in different professional disciplines. So, the first anonymous question was – why a student receives unsatisfactory marks (or marks which he/she considers unfair). 21 students gave 44 answers.

Based on the survey results, they can be classified into 5 indicator groups: teacher activity; student activity; social-welfare conditions; organization of teaching and learning process, and education program. The most significant conditioning factor is the teacher activity (38.6% of all answers). Almost 2/3 of respondent answers stated “subjective assessment of their knowledge” (27.2%). The following explanations were given: interpersonal relationship between teacher and student, teacher's mood, and even type of assessment - exam or test. The respondents also emphasized such a fact as: lectures are not interesting (9.1%), the lecturer is less interested in a favorable outcome of his/her activity.

Based on the question – answer analysis, it could be concluded that students consider the existing knowledge assessment system to be rather subjective and does not fully reflect the real results of the cooperative teacher-student interaction in joint educational activities. It should

be noted that the respondents were more or less self-critical, as 31.8% of the respondents agreed that their unsatisfactory result was a consequence of his/her personal unpreparedness, unwillingness, and even laziness; while 11.2% of the respondents explained it by lack of time due to study-work overlapping (economic reasons). Only 9.1% of respondents related their unsatisfactory marks to the bad management of the education-learning process, i.e. insufficient time for pre-exam preparation (6.8%) or vast amount of extra learning material (2.3%).

However, those respondents could also be included in the group of students who recognized their faults. As in many universities, the assessment rating tool was also implemented into KNRTU education system. This system involves 100 scores, 60 of which a student should accomplish during a semester. The student who did nothing or practically nothing throughout the semester, i.e. turning in take-home assignments in time and/or has high absence rate could result in the unsatisfactory mark in a discipline, including the exam. The fifth smallest group of students (6.8%) associate their unsatisfactory mark with the education program, which, accordingly, includes either disciplines inconsistent with their specialization (4.5%) or of no profession profile (2.3%). It should be noted that no student mentioned such negative factors as lack or low quality of courseware, poorly material-technical equipped training workshops, or even shortage of computers and computer classes.

At the same time, all above-mentioned aspects were reflected in the respondent answers to the second question: “What actions should be taken to improve the quality of education?” Students submitted 46 proposals.

These proposals could also be divided into 5 categories. However, two answers were significantly different from the previous answer-content. In addition to such an aspect as material-technical and information support of

the education activities (17.3% of all answers), the most important proposal was updating the teaching methods and technologies (15.2%). As the teaching methods and technology basically depend upon the teachers, according to students' opinion, the teaching activities should be recognized the main factor in determining the quality of both learning process itself and its outcomes. In other words, the respondent answers to the first two questions (concerning teachers) are in good agreement with each other unlike the responses about student activities. Respondents admitted that more than 30% of unsatisfactory marks are conditioned by their personal weaknesses. At the same time, these students do not believe that it is necessary to work hard, but would rather speak about lack of their motivation and necessity to stimulate their activities, i.e. it is the government, university, or teachers that should do something (“stimulate learning activities”, “increased educational scholarship”, “sponsor activities focused on student community unity”) to increase student motivation.

Ultimately, it should be noted that the present target is to enhance student learning motivation. According to student opinion, this could be accomplished by improving the learning process through different class activities, such as stimulation exercises and debating; enhancing the professional training; application of visual and teaching aids, including computers. The students consider that stimulating their motivation throughout the semester is of vital importance for them. An excellent motivation stimulator could be the assessment rating tool. Probably, upgrading this system and intensifying its efficiency would involve developing publicly accessible information of current student ratings in all subjects, for example, via university website. This would allow students to compare their achievements with those of other students, compete as individuals and encourage them for personal growth. However, this is only a



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question for debating now, as according to the law of "Personal information", a student has the right not to disclose his/her academic progress. The student considers that a good learning motivation stimulus is a high educational scholarship and it is interconnected with the attained marks of this or that student. The students are not satisfied with the existing education scholarship sum and its gradation which includes three categories: high, average, and no scholarship. They do not consider it to be a motive in the learning process. It is an interesting fact that there were such students' unpopular answers as "toughen the deadline condition of expelling for underachievers." This fact is sure to be taken into account as this is a really effective motive: only exact achievement of the academic schedule in set deadline would further the acquisition of this or that discipline. Everyone knows that, objectively or subjectively, there are students who do have academic failures (failed exams or tests) and still study for one, two or even more semesters (or even to their qualification paper). The students know this and it negatively influences their attitude to learning. The questionnaire revealed that "a desire to study" arises when there are good interpersonal relationships within a student group, when a tight-knit community of kindred spirit is gradually shaping. It is necessary to organize student leisure activities focused on student community unity. A rather effective motive to boost student activities and enhance their interest in the learning process is to further their professional development, including future job placement through university-enterprise agreements.

As it was earlier stated, teaching process is the most significant factor in organizing the learning process, and, accordingly to student opinion, some actions should be taken. First and foremost, the teacher outwardness should be enhanced. This is possible through testing techniques which are being widely implemented into the KNRTU learning process. The students of

this University understand and perceive this method very well. However, some of the respondents stated: "students should be able to speak out more in seminars, debate and not listen to boring reports." The students do not like when a teachers subdivides them into "smart or clever" and "untalented" and, respectively, the teacher's attitude is different in each case. The best result can be achieved when the teacher and student establish good and kind relationships (students appreciate this and show their respect to the teacher), but it is preferable, when the teacher and student become "solemates" and participate in the learning process as one whole. Without doubt, upgrading the teaching methods and methodology ("more interest, more motivation to study", and "love your subject and know it") is one of the basic activities which, according to student opinion, should be motivated.

Despite the fact that university material-technical and information support is not interrelated with the concept of an unsatisfactory mark, the students consider that improving this sector (i.e. updating library resources, increasing the number of computers and IT classes, new laboratory equipment) would significantly influence the quality of rendered education services in KNRTU. According to student opinions, improving the quality of the learning process could be facilitated by a more convenient timetable which would not irritate or even evoke the desire to miss classes ("the timetable should exclude gaps"; "lectures should start not at 8 am"; "there should be a 5-minute break in the lecture, as one and half lecture is dead hard").

It can be concluded that most students responses reveal only their emotional attitude, such as: "like-don't like", "want-don't want" or "will-will not." Thus, one of the most important tasks of the university administration and staff is to create such an atmosphere that students would like to study and find it not boring but interesting and challenging. In this case, the set education goals could be achieved –

training highly-qualified specialists who possess knowledge, skills, professional competencies, and innovative thinking and become "marketable," i.e. those who could guarantee qualitative education through education process quality management. Accordingly, one of the criteria for the education process quality could be student satisfaction relevant to the above-mentioned factors [2].

Based on the research results, the authors designed a questionnaire which could be used as the quality evaluation of the education process itself consistent with the satisfaction of student and teacher who are the basic consumers and participation of this process.

Brainstorming, involving different experts: students, post-graduates, and teachers, resulted in the designed questionnaire. This questionnaire included 9 basic indexes characterizing the quality of the education process: staff qualification, information support, organization of undergraduate research, material-technical support, social welfare, learning activity motivation, education process organization, administration management of the learning process, and student interpersonal attributes. Each of these above-mentioned indicators include from 4 to 9 factors.

Procedures in completing the questionnaire:

1. Respondents had to arrange the quality rating and included factors in order of their significance, i.e. their influence on the quality of the education process, beginning with the most important and essential factor (i.e. assign indicator b_{ij} and factor – b_{ij} to each questionnaire item where, $b_{ij} = 1 \div n$; $b_{ij} = 1 \div m$).

2. To determine the so-called statistical level reflecting the satisfaction of the respondents, this or that factor was assigned

a relevant value from 1 to 10. If one of the above-mentioned factors is satisfied, then it is assigned a value of 10, while the remaining factor in order of descending are assigned up to 0.

Designed questionnaire could be considered as a tool to identify the consumer attitude to different aspects of the education activities and determine the most effective learning indicators in the university; and determine the respondent satisfaction relevant to this or that factor and quality index, respectively.

However, the information on the student satisfaction level could be insufficient in the management decision-making focused on quality improvement. To exclude this uncertainty, it is necessary to introduce additional quality index levels revealing the quality context through the included factors. The students will assess the degree of fulfillment of their requirements (satisfaction) of each included factor, while their satisfaction of individual factors should be an arithmetic mean of measured satisfaction value to the factors.

The proposed method should include one specification. The main point is that each factor component contributes to the quality of rendered services being proportional to its significance and reverse. Therefore, in calculating the arithmetic mean for each individual quality factor, the following weighting factor coefficient k_{ij} is applied:

$$U_i = \sum_{j=1}^m U_{ij} \cdot k_{ij}$$

Respectively, in calculating generalized quality characteristics, the weighting coefficient of each factor should be multiplied by U_i and k_i . In this case, generalized quality characteristic is calculated as:

$$Q = \frac{U_1 \cdot k_1 \cdot U_2 \cdot k_2 + U_2 \cdot k_2 \cdot U_3 \cdot k_3 + U_3 \cdot k_3 \cdot U_4 \cdot k_4 + \dots + U_n \cdot k_n \cdot U_1 \cdot k_1}{(k_1 \cdot k_2 + k_2 \cdot k_3 + k_3 \cdot k_4 + \dots + k_n \cdot k_1) \cdot 100}, \%$$

Thus, generalized quality characteristics of the education process will reflect student satisfaction as a percentage of ideal polygon area, where satisfaction of each described factor is 100%.

Based on the research results, the education process quality assessment method was designed. This method includes calculated generalized quality characteristics as a radar chart of limited student satisfaction values for each of the factors, and where generalized quality characteristics reflect a percentage of the student requirements.

To exclude information uncertainty on the student satisfaction reflected in this or that factor, additional detail quality index level was introduced revealing the quality context through the included factors.

Formulated methodological approaches in designing the list of quality indexes are reflected in the above-described method. Proposed method is based on the questionnaire involving focus-group students. The results showed the parameters influencing the quality of the education process, the satisfaction of which was reflected in the respondent answers.

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Professional Identity as a Factor of Professional Mobility

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Professional mobility is an important factor of engineer's career development. The authors emphasize that the developed status of professional identity is a precondition for the professional mobility. The article provides the results of the tests that revealed a negative trend of professional identity development. Contextual education approach is proposed as a solution to the existing problem.

Key words: professional identity, internal motivation, professional mobility, contextual education.

The current processes of globalization and integration force modern people to be more socially mobile and flexible in order to deal with rapidly changing conditions and interact with absolutely different cultures and communities. Therefore, readiness for territorial, social, and professional mobility, is considered one of the key attributes of a modern personality.

Professional mobility is of great significance for engineering graduates since engineers should remain abreast of current trends in the related fields and demonstrate commitment to life-long professional development under the conditions of continuous informatization of the society and emergence of knowledge-intensive technologies.

Development of student professional mobility should be based on stimulation of student motivation, which directly influences the quality of the final result. This applies primarily to the internal motivation, absence of extrinsic stimuli.

The work motivation model that is designed by R. Hackman and G. Oldham and intended to enhance internal motivation of the employees is particularly popular among managers of big companies. The model is based on the idea that the task itself, including the final result and responsibility assumed by a person, is a key to employee motivation. This model

can be also applied in higher professional education. The work or future profession must be experienced as meaningful and valuable, which, in its turn, would define the professional identity.

Professional identity is defined as professional self-concept which rests on attributes, beliefs, emotions, and conscious actions related to a certain job or field. It is continuously fashioned on the way a person performs a job or pursues certain qualification within a career field.

Being a key feature of human personality, professional identity helps adapt rapidly to new working conditions. The shaped professional identity serves as an internal stimulus for professional development and personal growth.

In order to test students' professional identity, a special technology designed to examine statuses of professional identity (A.A. Azbel) was applied. The questionnaire contains 20 items (questions) each of which implies four possible answers. Based on the answers of respondents, it was possible to identify four types of statuses of professional identity, i.e. the stage of self-identification.

Undetermined professional identity: the profession or future job has not been chosen yet; there is no clear vision of career; a person does not put forward such a task as to choose the professional path.

Imposed professional identity: a person



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