QUALITY MEASURING: VALIDATION OF EDUCATIONAL QUALITY AT FACULTY OF LOGISTICS, UNIVERSITY OF MARIBOR

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ABSRACT

Nowadays, the quality of high school educational processes and students' expectations in this field represent the main issue at educational institutions all over the world. These complex subjective demands were studied at the Faculty of Logistics, University of Maribor. The quality measuring research was based on a questionnaire which consisted of 60 different questions, covering different points of views on the study process itself. The majority of queries were of a selective type, while some of them were open-typed questions. More than a half of students from all years and levels of undergraduate and post graduate studies have returned valid questionnaires, which were used in final analysis. The results of the survey had given some of the most important inputs for the PDCA cycle, which helped with improving the study processes at the faculty.

Keywords: Quality, Study process, Survey, PDCA cycle

1. INTRODUCTION

According to fundamentals and vocabulary standard ISO, a term quality represents a degree to which a set of inherent characteristics fulfils requirements. Following this statement, the first issue of fulfilling desired quality rate is to actually meet the expectations of the public in question, i. e. students as the ones with future outlooks, the state as the payer of educational activities, public sector as the main group of employers, etc.

Since the Faculty of logistics is an important part of University of Maribor, and as such a significant part of educational activity in Slovenia, it is important that the quality of latter is on a desirable level. With this mind set, an eight-week internal research was carried out. Its goal was to audit, whether the educational activity fulfils all of the defined educational plans, faculty's vision, mission and strategic goals. The main idea was very similar to Stoian, Dinu and Vlad's (2015) case study, where they addressed 147 questionnaires to the students of five master programmes at the Faculty of Management, Economics Engineering in Agriculture and Rural Development in Romania.

The final outcome of the research was a document, encompassing 224 pages, on which the methods and results were presented in details. In addition to this internal research, the Faculty of logistics also gathers its feedback by mandatory yearly online questionnaire, which must be filled in by every student as they are enrolling onto the next study year.

The quality measuring research at Faculty of logistics will be briefly described and represented on the following pages.

2. METHODS

As stated by M. H. Borden and L. Z. Owens (2001) in their guide to choosing the best assessment method, it is very important, that we know what problem do we want to learn about and therefore to select the right and most appropriate tools for gaining the information we need. It is also essential that we gather sufficient number of students and/or personal who are willing to participate in our surveys. These are the keys to carrying out a successful survey. At the same time it is very important we are aware that the usefulness of gathered information is dependent on adequacy of used tool, skills and experiences of users and lastly on financial, material and personal sources that are available to us.

Table 1. Number of participants, listed by grades and study programmes

	1st year of study	2nd year of study	3rd year of study	Total
Higher education professional programme	148	54	56	258
University programme	43	24	31	98
Post-graduate study programme	56	45	/	101
Total				457

Source 1: Hren, Klančnik & Kušar, 2014

Generally speaking, the main intention of the research at FL UM *(2014)*, as already mentioned before, was to roughly assess the activity of the faculty. The first step towards results was to draft a questionnaire, following by distribution of the latter in reference to target groups of students. Those groups were divided regarding the programme the interviewed students were in – higher education professional programme, university programme and post-graduate study programme, all on divided into three grade-years, which is stated in the following table (Table 1). A total of interviewed students was 457, but the rate of filled-in questionnaires was considerably low – only 63.35%. That gives us a total of 299 analysed questionnaires which is roughly comparable or even slightly better than Kontic's (2014) quality measuring, as 109 respondents participated in her survey.

The performed survey had questions divided into nine sequent categories:
1. Syllabus;
2. Educational sources;
3. Teaching and learning process;
4. Grading and feedback;
5. Student's potential progress and achievements;
6. Guidance and support;
7. Quality of educational work;
8. Faculty – students relations and
9. Student's point of view on the questionnaire.

Altogether, the participants filled in 60 questions, most of which were a selective-type queries, and 8 sub questions, which were mainly open-typed. Selective-type answers differed, accordingly to questions asked. So, 32 of those questions were »yes/no« queries, further 4 had

also had a third option answer »I don't know«. Other questions were mainly asked to be answered by assessing the given possibilities with numeric values from 1 to 5 or from 1 to 6, similar to Stoian, Dinu and Vlad's (2015) study where they used a Likert scale with values varying form 1 to 3 or Kontic's (2014) survey where a seven-point Likert scale was used.

To later analyse the feedback gathered with questionnaire, a weight values had to be determined. Besides the numeric values, created scale also included percent-share values and descriptive values. The weight value scale is presented in the bottom table (Table 2).

Table 2. Determined weight value scale

Numeric value	Descriptive value	Percent-share value
1.00 – 1.50	Very poor	0.00% – 10%
1.51 – 2.50	Poor	10.01% – 30%
2.51 – 3.50	Partially poor	30.01% – 50%
3.51 – 4.50	Satisfactory	50.01% – 70%
4.51 – 5.50	Good	70.01% – 90%
5.51 – 6.00	Excellent	90.01% – 100%

Source 2. Hren et al., 2014

2.1. Occupation of nine categories of the survey

The focus of the first category - Syllabus, was on gathering information about students' cognition of lesson plans, program organisation and usefulness of lectures, suitability of timetables and last but not least, students' expectations.

Next on, the authors were interested in suitability of educational work areas, such as classrooms and library and also accessibility of educational sources.

The third category in questionnaire included queries about learning and teaching processes. The students were asked about understandability and usefulness of teaching contents and of course, if they think that they were correctly directed to practical use of their newly gained knowledge.

In this carried out research the questions on grading and feedback couldn't be left out indeed. So the fourth compound of questions tried to find out, what students thought about appropriateness and fairness of grading and what was the general opinion on usefulness of feedback as a part of it.

In the fifth and sixth part of the questionnaire the iterviewed students have also had to assess their personal potential progress and achievements and later on, how much useful guidance and support do they get from professionals and career centre of FL UM.

And because the main reason to conduct this research was to assure and constantly improve the faculty's manner of education, the last three sections of survey focused on the quality of educational work, relations between faculty and students, and as a final, students' point of view on this and other questionnaires. The emphasis of questions was on comparing the Faculty of logistics to other faculties, assessing the lecturers and their assistants and lastly, the students got the opportunity to estimate their contentment with the faculty and the feeling of their belonging.

After carrying the questionnaire out, the next step was to make an analysis and write a closing report, outcomes of which will be represented in the following.

3. RESULTS

The analysis of the questionnaire gave the authors an insight into students' experience with the Faculty of logistics and also an important feedback on faculty's manner of teaching activity. For elaboration of the questionnaire the authors had used a SWO method. With the latter, they could critically assess strengths, weaknesses and opportunities which had occurred during the interaction of the faculty with its students.

After taking a closer look at result gathered in the first section about syllabus, a taken closure said, that this part has taken a weight value of 4.55 which fits it in the descriptive value of »good«. Majority of students thinks their employability increases as they graduate in this study programme. They are also pleased with the organisation of the programme, course of lessons and the quantity of assignments. But the downside in this area was visible as the curriculums don't seem to meet the expectations of students. They also aren't well familiar with the lesson plans and as such they aren't able to assess their level of gained knowledge. The fact that some of the iterviewed students feel like the faculty isn't much of a challenge for them can be quite alarming too.

The analysis of questions about educational sources has shown that the students are satisfied with the working environment, such as classrooms, library and technical accessories. The most pleased group of students are the ones in the higher education professional programme. They think that access to needed literature is adequate. The only soft spot in the field of educational sources is, that quite a few students can't really utilize those given sources.

Generally speaking, the teaching processes are suitable for the students and the lectures are understandable, evethough the general assessment of this section belongs to descriptive value of only »satisfactory«. Quite a big share of the iterviewees think, that they can't really choose their own way of fulfilling given assignments, eventhough they admit that they were well directed in using gained knowledge.

The subject of grading and given feedback was generally assessed by the students as »satisfactory«. General opinion is that grading is suitable and the usefulness of feedback is quite adequate. However, students admit they are bothered because not all of the professors have the same grading standards, therefore a question asking about that was actually assessed as »poor«. Also not all of the professors give sufficient feedback on students' work.

In general, the iterviewees share the same mind about having enough time to prepare for examinations.

A shared desire among majority of students at FL UM is to improve oneself. The ones who don't seem to find themselves in this group are sadly not quite realizing what their gained education is profitable for.

Opinions on professional and academic support for students seem to be opposing. Only a half of asked students are namely satisfied with the amount of support they are given. But all in all, students resort to tutors, administration employees, lecturers and also to one another when in need for help and guidance.

An alaysis of improvement and quality assurance had given satisfactory results of percent-share value being 67%. Students had assessed their faculty as equally good or even better than other faculties. They are satisfied with educational cadre. The only thing bringing this section of questionnaire downwards is shared student's belief that their queries aren't taken as gravely as they would like.

The students' feeling of belonging to the institution is broadly common and pleasingly, they do recommend the Faculty of logistics to students-to-be. Only minor dissatisfactions are present in the field of not-so-well timed notifications about cancelled courses.

The results of last section asking about this and other questionnaires showed, that students otherwise do fill in questionnaires after the lectures, but not it satisfactory percentage.

All in all, the weight value of all sections combined equals to the value of 4.52, which leads us to descriptive grade being »good«. However, the management of the faculty should be attentive and try to improve, as the assessment is just above the value of 4.50. If the value decreased for only a bit, the general evaluation of the Faculty of logistics would only be »satisfactory«. The collective weight values of nine sections is implied in the bottom graph (Picture 1).
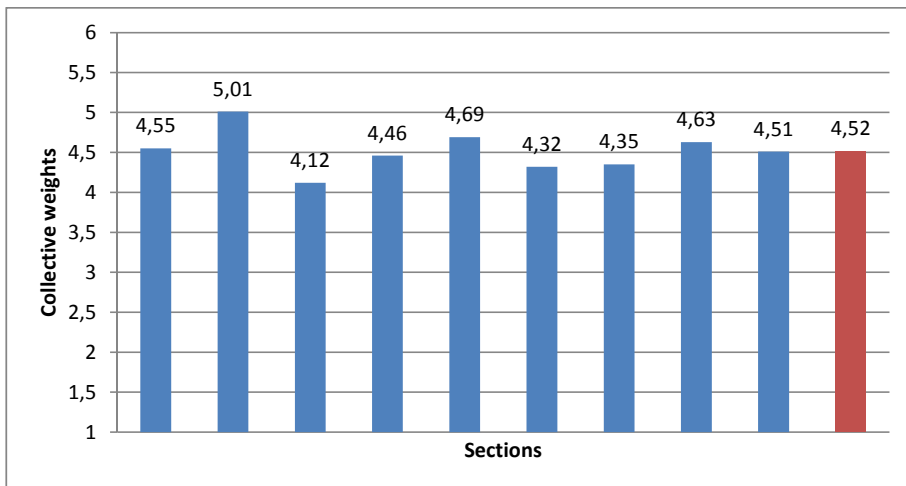
Picture 1. Collective weight values of nine sections of the questionnaire
Source 3. Hren et al., 2014

As already mentioned before in the first paragraph, the management at Faculty of logistics is also assembling feedback on their activity by anonymous online questionnaire, which must be filled in annually by every student as they are enrolling onto the next study year. Eventhough the query gives general guidelines for future interactions, it has some major insufficiencies. The gathered results are non-representative as the assessments are made by all students, even the ones who are not actually attending lectures. The problem also occurs, because students don't take the questionnaire seriously or they even take advantage of anonymity for sullying their professors. It is also noticeable that the students' evaluations depend on the amount of work they are given by professors. Considering the latter, it might be a good idea that the faculty would also introduce the auto-evaluation processes in order to improve itself. As Pisonova and Nagyova (2014) claimed, the internal evaluation process is an essential part of quality improvement.

4. DISCUSSION
The survey carried out at the Faculty of logistics, University of Maribor represents just one of many necessary inputs for specifying and improving study-oriented activities at the educational institution. Why just one of them? Simply because students aren't the only public in question when it comes to education. As Pisonova and Nagyova (2014) proved in their survey, self-reviewing plays an important role in quality improvement in addition to internal researches, and should as such emphasize the importance of asking oneself important and right questions which will be leading our direction – What are we good at? Where do we want to go? How can we achieve this? etc.

Overview of the conducted survey at the faculty is actually quite satisfactory. It didn't just contribute to getting to know the institution and its activity. It also gave us useful guidance in the field of opportunities. Throughout this survey the Faculty of logistics became more aware of its weak points and thus more prone to improving. The main opportunities that could be seized in the future are, for example, improving the organization of different study programmes and thus making the lectures more interesting, inviting and useful for students. Taking Jorda and Alonso's (1970 – 2010) survey in consideration, a continuous approach to estimating educational attainments would be also useful after a certain period of time.

It would also be interesting and maybe even necessary to observe the results of the carried out survey if the gender of iterviewed participants would be taken in consideration, like Stoian, Dinu and Vlad (2015) did in their case study of quality of the educational programs in Romania, as they noticed some significant differences between genders.

The results of FL UM research have also indicated similar varying in degree of perceiving the difficulty of the courses to the research conducted by Lidice and Saglam (2013). A big majority of students found courses challenging for them, eventhough others might have implied that the programme doesn't seem to be much of a challenge for them.

Eventhough the results of the FL UM survey had been quite adequate, they weren't compared with an optimal model. Chakrabarty, Richardson and Sen (2016) carried out a validation CEQ questionnaire and later on they compared the results to artificial model, which might be a good idea, as the institution can more clearly see their Status quo.

All in all, the survey at Faculty of logistics, University of Maribor served its purpose. With the help of assessments it is now known where the improvements are necessary and which parts of activities should be kept a close eye on in the future. The results will surely help maximizing the prosperity and strengthening the educational activity to its fullest.

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