

QUALITY FUNCTION DEPLOYMENT AS A METHOD USED IN THE DEVELOPMENT OF THE QUALITY OF EDUCATION FOR THE NURSING PRACTICE

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Abstract: *Quality Function Deployment* method enables rational design of service not only from technical perspective but also due to market and clients' demands – students but indirectly also employees. House of quality serves as a medium of transfer of client's expectations, market's demands on relevant number of ordered technical factors, which enables the design of new or/and improved service. For the purposes of this research a matrix Quality Function Deployment (QFD) prepared by Bartosz Soliński has been used. It allows to transform – requirements of clients/students of nursing to easily measurable parameters of service process – process of tutoring, providing their desired values. Due to benefits of introducing QFD, the method can be used on different stages of quality management process, so you should exploited in the process of improve the quality of practical training of future nurses.

Keywords: quality, education, nursing, practical, training.

Introduction

Quality in the health sector is determined mostly by qualification of the employees. Nowadays, employers care most of all about acquiring those graduates, that possess not only theoretical knowledge, but also practical skills. Female and male nurses are in similar situation. Therefore, to be able to talk about an increase in the quality of nursing education, practical aspects should be particularly looked at. To achieve that, a method of *Quality Function Deployment* (QFD) [4], which main feature is focus on needs expressed by the market through actual values perceived by the client (described as “voice of the client”) [2]. QFD is an effective program of work for multidisciplinary teams, using a matrix called “House of quality”, which enables systematization of information and client's (students') experience, to make a decision connected with providing a service (process of life-long learning). QFD method enables rational design of service not only from technical perspective but also due to market and

clients' demands – students but indirectly also employees. This method can be used on different stages of quality management process. The example of “house of quality” building will concern nursing specialty in the Department of Health Sciences of Pomeranian Medical University, therefore a few things about this facility should be said. Department was created in May 2004 through transformation of Nursing Department (existing since 2001/2002 academic year). Presently nursing is studied stationary on a first degree by 120 students and on second degree by 142 students. Moreover, non stationary studies gather around 243 students, both on master's degree and on bridge lectures. Up to 2009 master's degree was carried on as a singular, 5 – year long degree. Department is divided into 29 organizational units, including 9 that employ nurses and midwives on didactic and scientific positions. Department educates students on following specializations: nursing, obstetrics, emergency medicine, cosmetology, dietetics, physiotherapy and public health (2 specializations). This is a

relatively young faculty, in the phase of intensive development, so the high quality of the education process is essential for its further fate.

“House of quality” building phases

“House of quality” serves as a medium of transfer of client’s expectations, market’s demands on relevant number of ordered technical factors, which enables the design of new or/and improved service. Literature mentions many different forms of matrixes and possibilities of data interpretation. However due to the assumption that house of quality consist of six basic components, following parts were researched:

- Client’s expectations, in which potential users (students of nursing, have defined expectations about the service – tutors of practical education of nursing). Due to time restrictions author used a research conducted on a group of 217 students of Medical Department of Rzeszów’s University, including stationary, non-stationary and first-degree students [1]. In this article they are divided into 3 groups:

- Expected features of education process, among them: designating educational goals, choice of educational methods best fitting theory, enabling students to actively participate in classes, creating objective criteria of grades as well as shown jointly: transfer of educational content according to assumed aim of theme of classes (importance 1,55), in a planned and systematic manner (importance 1,53), in a way stimulating student to gain more knowledge (importance 1,47),

- Expected rules of organizing classes, among them: preparation of equipment and place (importance 1,56), describing a clear organization of classes (importance 1,59), and execution of classes according to given plan (importance 1,65),

- Expectation concerning interpersonal communication, shown together: ability to establish a good contact with students (importance 1,19), expressing kindness to students (importance 1,25), keeping good contact with each student during lectures (importance 1,72).

- Technical requirements, characterizing service from the designer’s point of view. They are chosen in a way, enabling fulfilment of clients’ demands. They ought to be measurable and achievable. Given parameters are set as

minimants (decreasing their value causes better fulfilment of student’s demands towards service), maximants (increasing their value causes better fulfilment of student’s demands towards service) and nominants (this factor has an optimal value that is ought to be achieved). To do this, a questionnaire was used, assessing didactics (providing among the others criteria of academic teacher’s grade) in Pomeranian Medical University (PUM), as well as being an annex to Resolution no 6/2007 of Pomeranian Medical University (PUM) Senate, questionnaire of periodical assessment of academic tutors of PUM in Szczecin employed on positions such: lecturers, senior instructor, instructor, lector positions that on PUM are associated with practical education on nursing), assuming numerical scale 2 – 6, where 2 is a negative grade, 3 – 4 are positive grades, 5 – 6 are favouring grades.

- Plan matrix, illustrating client’s feelings observed during research. They contain relative values – weights of given requirements, which importance is determined according to the average value of position according to the scale of importance for students of nursing. Next, an evaluation of analysed university and its competitors has been made in relation to the needs of clients (created based on research conducted among students of Department of Health Sciences of Pomeranian Medical University for the needs of annual evaluation of tutoring process and annual ranking of universities, as direct competitors few were assumed: Company 1 – Department of Nature Science of University of Szczecin (due to greatest similarities in tutoring process between this department and PUM’s one) Company 2 – Department of Health Science of Medical University in Poznań (as a closest to PMU medical university). A scale 1 – 5 was assumed, where 1 means weak fulfilment, 3 – an average, 5 – good fulfilment.

- Matrix of correlations, illustrating relations between technical requirements and those stated by clients, where as a scale of measurement numerical values were taken. To reduce the number of data for analysis, key relations were the focus and number of desired technical specification. For the needs of this research following values of factors of relations were assumed: 9 - strong relation, 3 - average relation, 1 – weak relation.

- Matric of technical correlations (roof), used to define placement of correlation of each

technical feature, both in plus – assuming positive character (+) like those in minus – negative (-) of designed service. Matrix this provides information on innovative possibilities.

- Technical priorities, patterns and goals used to: determine priorities for each technical requirement provided in the matrix, to measure technical compatibility of compared features and degree of its development's difficulty. To determine them, additionally following things have been done:

- Degree of the technical parameters importance, which was expressed through sum of products of importance factors of each requirement and their relations with given technical parameter. Due to that technical problems impairing the quality of the service can be identified,
- Characteristics of desired parameters' values. Measurable technical parameters

were established, which when reached would fulfil the needs of clients/students and increase competitiveness of product/service,

- Characteristics of factors of the technical difficulty, by defining the degree of the technical difficulty, organizational and financial, associated with achieving desired technical parameters. A scale 1 – 5 has been assumed. The higher the value of a factor, the higher the possibility of issues,
- Comparing technical features with competitors. Chosen parameters of PUM's services were compared, with the same parameters of competitors' products, from the same segment of market. It has been made based on annually published rankings of universities. A scale 1 – 5 was assumed: were 1 means a bad state, 3 – average state. 5 – a good state.

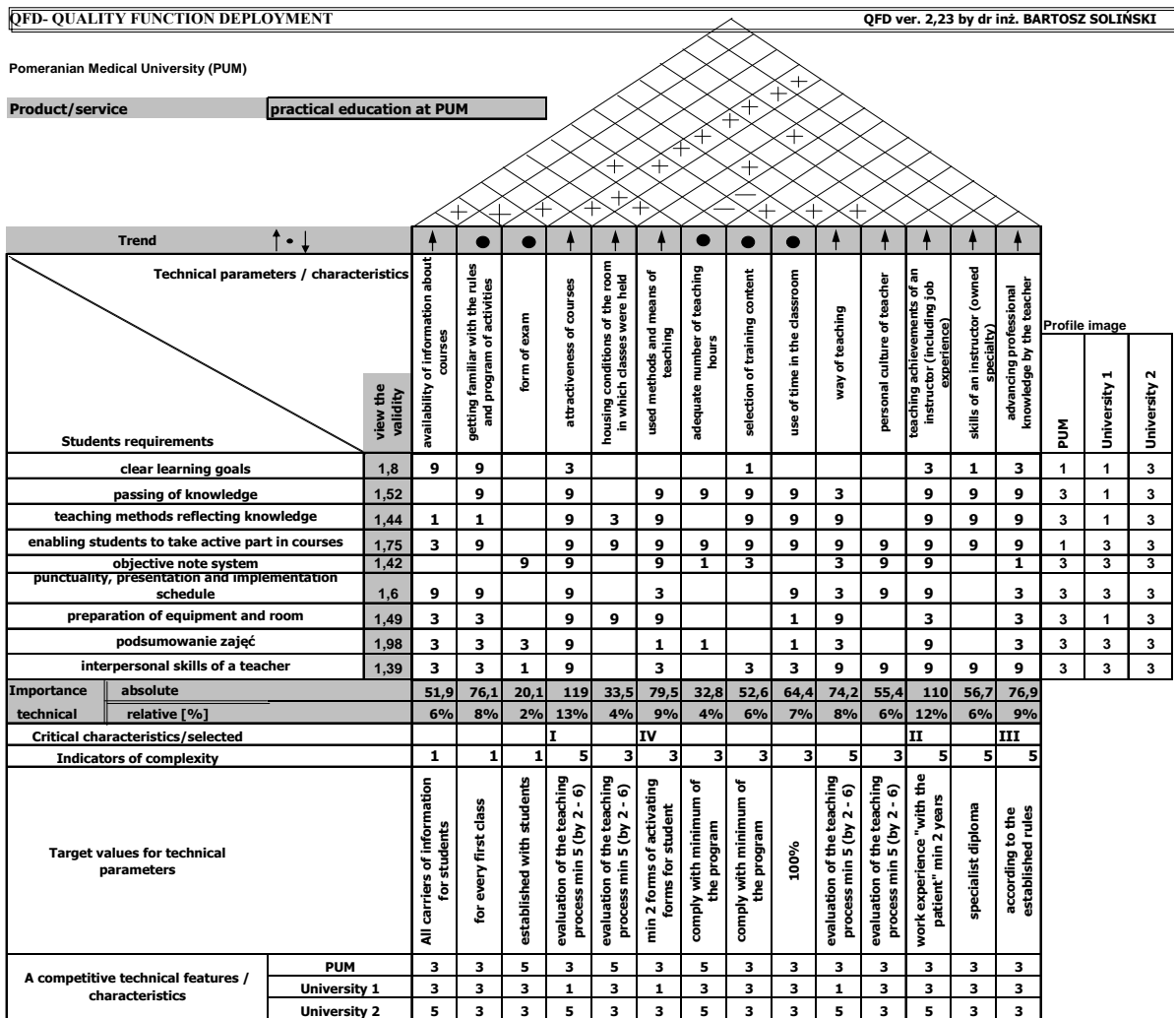


Fig. 1. QFD in the process of the nurses practical education at PUM in Szczecin.

„House of quality” in the process of improve the quality of educational practical training nurses

For the purposes of this research a matrix Quality Function Deployment (QFD) prepared by Bartosz Soliński [5] has been used (Fig.1). It allows to transform – requirements of clients/students of nursing to easily measurable parameters of service process – process of tutoring, providing their desired values. This will further allow to plan the necessary modifications of the practical tutoring process, to fulfil the needs of clients/students, and therefore increase the level of education’s quality.

Conclusions

Due to benefits of introducing QFD such as: being certain of clients’ satisfaction, elimination of errors made during the provision of service, decreasing the cost of service, allow to differentiate an educational offer in comparison to competitors, on the other hand clearly stated technical requirements and systematized expectations of students foster creativity and employees development. Therefore, presently this method finds its use in many areas of economic life, also in the sector of educational services despite its work and time-consuming character. The essence of QFD is an attempt to answer questions:

- What does client want?
- How should client requirements be translated on technical requirements of a service?

- What should be made better in relation to competitors?

Answers in the form of conclusions were formulated based on prior analysis:

1. The most important for students are expectations towards the rules of lectures organization.
2. Due to the context of students expectations, all technical requirements are pretty essential in the process of providing educational service (they make up from 2% to 13%), and therefore should not be excluded. However, the critical factors are: lectures attractiveness, job experience of a tutor, his or hers further educational development, as well as used methods and means of education.
3. Based on „house’s roof”, where majority are „+”, it has been assumed that: practical education on nursing on PUM is not restricted by further optimization of most of requirements, therefore, it provides good conditions for its further excelling in quality.
4. In the assessment of competitiveness: from the position of client/student all pointed elements should be excelled. The most attention should be put on planning and then execution of educational process in a way allowing students to take active part in classes, through for example the use of only active methods of tutoring (on potential workplace); from the position of the designer those elements should be excelled, in which PUM scored average. On the other hand due to high factor of difficulty with mutual importance of requirements (critical values) special attention should be put on: attractiveness of classes, job experience of the tutor, as well as his or hers desire to deepen the experience and knowledge.

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