WEB-BASED INFORMATION SYSTEMS FOR SURVEYS OF THE QUALITY OF HIGHER EDUCATION (ROUNDUP)

Kristina Kilova

Department of Medical Informatics, Biostatistics and e-Learning, Faculty of Public Health, Medical University of Plovdiv, Bulgaria, k_kilova@abv.bg

Abstract: Strategic aim of the European Union is to build a competitive and dynamic economy based on knowledge and ensuring sustainable economic growth. In the context of the Lisbon agenda and the Bologna process, the main resource for achieving this goal is undoubtedly the quality of education. This makes the issue of the quality of higher education extremely relevant. In universities have been set up systems to manage the quality of higher education. As main criterion for assessing their work serve surveys giving feedback on the entire process performed.
More intensive use of the Internet enables the creation and use of web-based information systems for surveys of the quality of higher education.
Keywords: quality, higher education, surveys, information systems

INTRODUCTION

Strategic aim of the European Union is to build a competitive and dynamically developing knowledge-based economy which guarantees sustainable economic growth. In the context of the Lisbon Strategy and the Bologna Process the main resource for achieving this goal is undoubtedly quality education. This makes the issue about the quality of higher education extremely relevant.

Higher education quality management systems have been built in higher education institutions. As a key criterion for assessing their work, surveys provide feedback on the whole process.

Web-based survey systems can be used to analyze the quality of education and teaching.

The University of National and World Economy has a web-based online survey system available through „Web-student". It is designed to manage the quality of education according to the Quality Management Systems and aims to periodically examine the students' opinion on the quality of teaching in individual disciplines. The survey is conducted online and students can fill in an electronic questionnaire which is automatically processed. After completing the survey, the results are summarized and published on an internal site where each teacher can check the results of their students' answers by means of a password, and the management can get information on the results of all the lecturers. Data collected from the system allows dynamic analysis and forecasting over a given period of time.

The massive use of the Internet contributes to conduct more and more online surveys of specific target audience groups.

Automatic introduction and processing of surveys is one of the greatest benefits of the information environment. When filling in the survey, the interviewee inserts it into the database, eliminating the possibility of technical errors. At the same time, instant access to processed data is provided. Saving time and speeding up the research is achieved. There is no need for costs and time to print forms, disseminate them, set up, train the interviewers. This type of communication enables the interview cycle to be severely shortened and ultimately reduces the financial value of the surveys.

Comparative analysis of web-based questionnaires as an element of quality assurance systems have been made by O. Petrov. According to the author, web-based surveys are analogous to the traditional survey method where the poll is printed, filled out, electronically entered and processed. A basic recommendation for creating an electronic survey is that it has to be brief with no more than 20 questions. All questions especially those that use scales should be formulated as clearly as possible as there is a risk of not completing the question at all or, if completed, not giving a fair answer.

A peculiar feature of web-based surveys is that we work with „virtual" respondents whose true identity remains hidden, i.e. the study may face the phenomenon of identity change and become an object of entertainment and manipulation. It is possible that a survey can be repeatedly filled out by one person and therefore technical means of identification in the network and the detection of the address from which the information is entered are being used.

Immediate introduction and processing of information create an „interactive" environment – the survey is no longer seen as a campaign or a stage of work, but as a process over time. Web-based surveys give the unique opportunity to track processes over time and to make comparisons between different periods. The study itself may last for months or even years. It is enough for the topic to be up to date and not to lose interest in the website where it is held.

There is a wide variety of online survey systems. The review examines some of the more widespread software products for creating web-based surveys.

Some internet products are distributed completely free of charge, but a few of them require good programming skills. Paid versions of programming systems allow much more flexibility in creating questionnaires and then processing the received data. Although software products are available at relatively high prices, they give us greater benefits than traditional paper surveys.

The main advantages of web-based survey systems are:
• paper saving;
• an opportunity to interview a very large target group (practically there is no limit on the number of people surveyed);
• processing and visualizing the results in real time;
• preparation of periodic reports;
• provide quick results;
• reduce the number of unfulfilled responses;
• quick change of question and appearance of the survey, etc.

✓ **ApplyNet Survey**

The product is developed by EastiSoft. The system provides the ability to quickly create web-based surveys and process responses. The interface of the environment is entirely in Bulgarian, which facilitates the work on the creation of the lists and the subsequent processing of the results.

Due to the functionality and flexibility of the software, the following features are provided:
• convenient interface for designing and modifying surveys;
• 12 types of answers to a question (menu, radio buttons, free text, etc.);
• personalizing the webpage of the survey (colors, logos, annotations, etc.);
• no special knowledge is required from the survey author;
• obtaining real-time results in an appropriate form or exporting them to a post-processing software;
• unlimited number of respondents and questions in the surveys;
• processing errors are eliminated as processing is performed automatically;
• ensure that the answers to each question are correctly entered;
• a user-friendly interface for the interviewee and others.

The developers of the product have made a flexible pricing scheme according to the organization's needs. Prices range from $ 100 to $ 4900 per month to purchase the entire system with all its additional apps.

✓ **Active WEB Survey**

Active WEB Survey is a development of Active WEB Softwares. It allows a simple creation of personalized surveys. It has a great deal of flexibility and capability. Some of its more specific features are: creating questionnaires with different types of answers (one or multiple answers to a question); visualization of results in real time; the ability to transfer collected data to Excel and Access products; generating reports over a certain period of time; creating an unlimited number of questions; changing the web page for the particular survey, etc. The program product is paid, including technical maintenance within one year. It is possible to use the product for a trial period of time.

✓ **Advanced Poll**

The Advanced Poll product is distributed by Chi Kien Uong, Germany, and is free of charge. This is its main advantage over the other products presented. The environment offers less features and opportunities and, in addition, in order to prepare and conduct a survey, specific programming skills are needed.

The software environment provides a powerful administrative tool for fine-tuning the survey parameters. Advanced Poll's capabilities include: multiple studies at the same time; ready templates; unlimited number of answers; Multilanguage interface; IP address lock; adding comments to the survey. The results are saved in mySQL database and can then be processed with any external product. Here, the results are not automatically processed and presented in an appropriate form.

✓ **Lime Survey**

The Lime Survey online survey product is distributed free of charge. The interface of the environment is well-formed. The product is relatively easy to work with. Multiple features are available for Advanced Poll:
• unlimited number of surveys at the same time;
• unlimited number of questions in the survey;
• unlimited number of respondents;
• multilingual interface (including Bulgarian);
• 20 different types of answers; the ability to add videos and pictures to the survey;
• changing the questions depending on a previous response;
• ability to create an open or closed group of users who can complete the survey;
• basic statistical processing of the results obtained;

- detailed manual for working with the system, etc.
✓ **Survey Monkey**

Survey Monkey is an online software product. It offers a free version for adaptive studies (up to 10 questions and up to 100 respondents) as well as paid programs that include data analysis, bias selection and data submission tools. Survey Monkey provides data collection, analysis, brand management and consumer marketing on Facebook for Virgin Group and Samsung.

✓ **EvaSys**

The software offers customized questionnaire templates for paper and online surveys, and helps to quickly analyze and summarize the results. Handling of paper surveys requires scanning with a licensed scanner.

✓ **Google Forms**

Google Forms is getting more and more popular among surveys. They are easy and convenient to use. After opening the base questionnaire template different types of questions can be added. The results are visualized graphically. At any time, the results obtained can be exported to an Excel file and processed further.

✓ **Other products for web-based surveys**

WEB Survey Methodology is a site which provides extremely detailed information on conducting web-based surveys.

Its developers have given links to over 300 types of software which are related to conducting online surveys. Most of the products are free of charge and limited in functionality. Nonetheless, it is possible to use some of the provided products for a specific study.

Surveys are one of the main tools of quality education management systems for collecting feedback from service users (students, employers, etc.). Therefore, creating, processing and presenting the final results of the survey are a very responsible and labor-intensive process. To facilitate the conduct of surveys, software products have been developed to allow the creation of web-based ones.

The advantages of web-based surveys are the following: access to a global audience, guaranteed anonymity for respondents (leads to more comprehensive and accurate answers), interactive research environment, method attractiveness, automated introduction and processing of surveys (elimination of the possibility of error tolerance), high speed research and low financial costs. When used appropriately these factors may be stronger than the disadvantages of the method.

Each of the software products examined has its own advantages and disadvantages and it is very important to define the purpose of the survey in order to select the required product. The offered Advanced Poll and Lime Survey products which are free of charge are well suited for a small number of surveys. In the case of complex surveys and often repeated surveys the paid versions of the various software products or the development of specific web-based survey systems would be more appropriate.

CONCLUSION

The ever-increasing use of the Internet provides an opportunity for creating and using web-based information systems for higher education quality surveys. The quality of education is a responsibility of all the participants in the education process – lecturers, students, institution management. Quality assurance is a process that requires transparency and dissemination of the results to all of the stakeholders. The feedback provided through surveys, the establishment of systems of continuous monitoring and the application of changes based on the scientific conceptual framework will help the education to move from quality assurance to quality improvement.

BIBLIOGRAPHY
[1] Д. Лечева, К. Харизанов, П. Йорданова, Уеб-базиран софтуер за обработка на анкети, Научни трудове на Русенския университет, Vol. 52, №6.1, pp. 82–86, 2013
[2] H. Karle, International recognition of basic medical education programmes. Medical Education. Vol. 42, №1, pp. 12–77, 2008
[3] В. Кисимов, Състояние и развитие на електронизацията в рамките на Университета за национално и световно стопанство. Икономически алтернативи. Vol. 3, pp. 105–111, 2011
[4] О. Петров, Сравнителен анализ на уеб-базирани анкетни продукти като елемент на системите за осигуряване на качеството, In: Национална научна конференция с международно участие "Качеството на висшето образование в България – проблеми и перспективи", Vol. 2, pp. 83–89, 2009
[5] В. Джамбазов, Провеждане на уеб-базирани анкетни проучвания, Годишник на Департамент Антропология на Нов български университет, pp. 23-38, 2008
[6] Университет за национално и световно стопанство, Web-student, Информационна база [Internet]. Available from: https://student.unwe.bg/
[7] Active WEB Softwares [Internet]. Available from: http://www.activewebsoftwares.com/Home.aspx
[8] ApplyNet Survey [Internet]. Available from: http://www.applynet.net/

[9] Advanced Poll [Internet]. Available from: http://www.proxy2.de/
[10] Lime Survey [Internet]. Available from: http://www.limesurvey.org/
[11] Survey Monkey [Internet]. Available from: https://www.surveymonkey.com/
[12] EvaSys [Internet]. Available from: http://www.evasys.co.uk/start.html
[13] WEB Survey Methodology [Internet]. Available from: http://www.websm.org/
[14] T. Kellaghan, V. Greaney, Using assessment to improve the quality of education, pp.98, 2001
[15] K. Peeva, Theoretical Aspects of the Assessment of Quality in Higher Education, Trakia Journal of Sciences, Vol. 8, №2, pp. 429–435, 2010
[16] A. Mihaylova, P. Uchikov, R. Staynova, Study the opinion of pharmacy students on electronic learning in Moodle, Knowledge – International Journal, Vol. 26, №2, pp. 565-568, 2018