Vol. 7 · June 2016
Print ISSN 2244-1824 · Online ISSN 2244-1816
doi: http://dx.doi.org/10.7719/irj.v7i1.367

JPAIR Institutional Research is produced
by PAIR, an ISO 9001:2008 QMS certified
by AJA Registrars, Inc.

Web-Based Faculty Evaluation System of Apayao State College, Philippines

IMELDA M. TAGUIAM
http://orcid.org/0000-0002-1825-0097
menggaytaguiam@gmail.com
Apayao State College
San Isidro Sur, Luna, Apayao

ABSTRACT

In the evaluation of teaching effectiveness, critical factors being considered may vary depending on the use of results. At higher education institutions, results of evaluation usually merit-academic milestones such as tenure and promotion. The search for outstanding employees, on the other hand, may require a more rigorous scheme of evaluation. Furthermore, positive results may lead to a nomination for a scholarship grant. As methods of assessing teaching effectiveness change, concerns about the fair play of alternative methods come up. The researcher used the Methodology by Nunamaker *et al.* (1990) in designing the Web-based Faculty Evaluation System, which was created on a PHP/MySQL platform. There are various Methodologies, but the Multi-Methodological Approach of Nunamaker *et al.* (1990) is the most compelling and comprehensive due to its iterative nature and full circle and continuous development that is required to produce a sustainable and scalable system. The data gathered were classified, tallied, analyzed and interpreted using frequency, percentages, and mean. The findings of this study automating evaluation process will improve the accuracy of the report generated and eliminates issues such as the possibility of manipulating the evaluation result. User acceptance test questions can be formulated based on its Usability. From the questionnaires survey, the respondents strongly agree that the operation of the system is useful, as revealed from the tables presented in the result and discussion.

Keywords — Evaluation System, information technology, web-based system, multi methodological approach, Apayao State College, Philippines

INTRODUCTION

In Apayao State College (ASC), the student evaluation for teachers is usually conducted every first week of October and last week of February for the whole academic year. This activity is done in a classroom on a regular basis. The chair of the department is usually the one in charge of floating the instrument to the students as well as collecting the forms, computing for the individual performance of the faculty, organizing, and summarizing. The professor concerned then signs the result for confirmation.

According to Dommeyer, Baum, Hanna, and Chapman (2004) problems with the traditional method of faculty evaluation. First stated that every university in the USA regularly conducts student evaluations of faculty teaching performance, the majority of which happens conducted in a classroom setting with paper surveys. The results of these are often used to make promotion, tenure and merit pay decisions and, consequently, generate controversy among faculty.

The online method of collecting teaching evaluations offers numerous advantages over the in-class method. However, with the status of the current evaluation in ASC that still exists, using manual process routinely repeats the job especially that the evaluation is conducted twice in a year. The routine of repeated conduct is tiring. It is a waste of time and that the consumed bond paper and toners in a year continually increases. Unlike electronic system, it is simple to supervise. The reports are based on real time. Another advantage is being paperless. Though there are works associated with the web design especially the data by the input-process, the process that is hardly coded and the generated reports will print out correctly. These difficulties are encountered only during the duration of the development but after completing, the system will facilitates its operation (Dommeyer *et al.*, 2004).

Kasiar, Schroeder, and Holstad (2002) state that the web-based evaluation took less time because the students can immediately submit their response electronically. In the traditional system, they have to complete the evaluation and then physically return them to the professor in-charge. The staff workload was decreased with the web-based system. The electronic system can lessen the job of the staff. Like for example, the process of photocopying the instruments, distributing the tools to the students takes the staff's time.

An information has become rapidly accessible because of technological advancements. The computer environment is employed so as to ensure faster flow of information in the rapidly developing world. If we take universities as the

most important institutions to inform societies, it becomes clear that universities should also be the platform where information should be utilized most efficiently today (Geymen, 2012).

The web in education is becoming an informative medium for the Universities. Further, demonstrated that the higher education institutions have developed their own web portals because universities wish to project the impression that they offer the most convenient service and excel in the field of Information Technology (Basa, 2011).

Just like any other Higher Education Institution (HEIs), ASC would also like to improve its services. It continues to look for ways in which things are made easier to ensure the effectiveness and efficiency of the school. Needless to say, the utilization of the information technology in any work done in school would facilitate its operation. As such, the developer of this system deemed it very worthy and timely to come up with an electronic evaluation.

OBJECTIVES OF THE STUDY

A web-based program improves the current system of evaluation to facilitate efficient conduct and to replace or supplement the traditional system of using papers. Specifically, the objectives of the study are to: 1) Determine the existing evaluation process 2) Develop a Web-based faculty evaluation; and 3) Assess the acceptability of the system.

METHODOLOGY

Research Design

The web evaluation was conducted at Apayao State College located in San Isidro Sur, Luna, Apayao, Philippines involving the students, Faculty of the different departments, Campus Dean, Director for Instruction, Department Heads, College President, and the non-teaching staff. The study was designed to test the computerized evaluation by the users. The randomized subject pool is included in the program of the electronic evaluation to avoid bias.

Sample

In ASC, the number of students enrolled particularly at Luna Campus was 1202 as of the first semester of the school year 2013. The researcher asked permission from the different department heads to assist her in conducting the

evaluation in class. The total of students who participated in paper form was around six hundred seventy-eight (678), and the electronic evaluation were four hundred thirty-eight (438) coming from the different departments. The response rates for each treatment group were 56.40% for the paper form and 36.43% for the computerized evaluation. The subjects agreed to participate in the study upon the request of the researcher, as teaching evaluation is routinely conducted.

The school is offering eight (8) programs at Luna Campus: namely; the Bachelor of Science in Information Technology (BSIT), BS Agriculture (BSA), BS Forestry (BSF), Bachelor in Elementary Education (BEED), Bachelor in Secondary Education (BSE) , Bachelor in Technology Teacher Education (BTTE), Bachelor of Science in Business Administration (BSBA), Bachelor of Science in Hotel Restaurant Management (BSHRM). As of the time of the conduct of the research, there was 38 full-time faculties employed and 12 job orders faculty who taught in the college and each faculty had three to five preparations and a majority of them handled seven to eight subjects each semester. All 39 sections from all professors in the school were evaluated, with an average size of 25 students.

Locale of the study

Apayao State College, Luna, Apayao is the location of this study. The school is in San Isidro Sur, Luna, Apayao. This site is one of the three campuses of the Apayao State College namely: Malama, Conner Campus, Cubet Conner Campus, and Luna Campus.

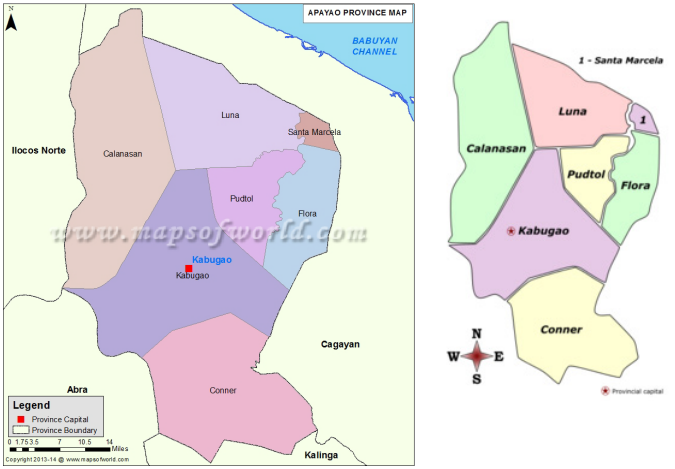

Figure 1. Study Location

Instrument

Qualitative Contribution Evaluation (QCE) of the National Budget Circular No. 461 practices of the State Universities and Colleges (SUC's) was used as the primary instrument to gather data. The QCE is an integral and effective component of total quality assurance in public tertiary education. It is designed to make an effective motivator for the development of a culture of excellence in Instruction, Research, Extension, and Production.

The students were asked to evaluate the individual faculty on a five-point-likert scale. Also, there were lines provided at the end of the questionnaire to allow for free responses/comments. The students responses were anonymous and students were asked not to include any identifiers(name, student number, comments) which might compromise anonymity. The digital responses were not tracked and were stored in a separate database without any identifiers. Students were informed and assured of the anonymity of their responses.

Data Gathering

Data collection began on October 7, 2013. The researcher asked permission in a form of request letter to get a copy of the plantilla of the Higher Education and the GAS, enrollment data in the first semester school year 2013 as part of the input process. After gathering the data, the software was developed and tested by the respondents after the questionnaires were administered to ensure 100 percent retrieval.

Respondents of the Study

The respondents were the students, department heads, the Campus Dean, the Director of Instruction, Administrative Personnel, Faculty, and the College President of the Apayao State College.

Statistical Treatment of Data

The data gathered were classified, tallied, analyzed and interpreted using frequency, percentages, and mean. The responses use interpreted as follows: 4.50-5.00 – strongly agree, 3.50-4.49- Agree, 2.50-3.49- uncertain, 1.50-2.49- disagree, and 1.00-1.49- strongly disagree.

RESULTS AND DISCUSSION

Process:

The current evaluation in Apayao State College is done every first semester and second semester of the year. The task is given to supervisors being the head of the department. The process flows as follows: The department counts the number of students the teacher has, after which photocopy, forms are prepared for every class, and the evaluation is conducted by distributing the tool to each student per class. The instrument is collected and summarized and the ratings transferred into digital format using Excel. The individual rating of an employee is printed and signed by the professor concerned for confirmation and submitted to the office of the Human Resource Management Officer (HRMO).

Problems/Limitations

High Cost. The rough estimate of the paper scheme assumes that the number of students is equal to one thousand two hundred (1200) with six (6) subjects and six (6) teachers. At this rate, the institution has to produce Eighty-six thousand four hundred (86400) instruments that are equivalent to 173 reams (bond paper long) at $4.64 per ream, amounting to $7,350 per year.

Missing Documents. Cooper and Lybrand (1999) reported that "7.5% of all documents get lost, and 3% of the remainder is misfiled." This loss papers means that almost 10% of documents are in danger of being lost or missing that cannot be reproduced if lost. These involve the risks and costs associated with paper filing systems.

Security issue. In paper-based, it is not simple to trace who accessed or copied paper documents. There is sober organization risk when there is confidential information copied by unauthorized personnel.

Slow access. Retrieving a document filed in a cabinet is slow. In situations where information contained in a shelf is required immediately to respond to a customer's request, the delay may cause customer dissatisfaction. Also, re-filing paper documents waste time and may result in misplacement of the files.

Retrieval. Furthermore, employees want to keep records or request a copy for the purpose of documentation. This type of request takes longer than necessary

because the personnel in charge of the records will have to sift physically through reams of documents in the file to find the requested document. There are even, unwanted but unavoidable when clients are asked to come back because the physical retrieval of the documents is taking so much time that personnel becomes unproductive.

Bias. Sometimes, the personnel in charge of evaluating the faculty would take the easy route and instead merely used the data from the previous rating to avoid going through all the inconveniences of conducting an evaluation. This prejudice usually happens if, and only if, the personnel is extraordinarily busy. However, there are also some instances when sometimes the person in charge of conducting the evaluation is not prepared to conduct classroom evaluation that sometimes the previous rating of the performance will remain or edit some scores on the items of the questionnaire.

Controversial Issues. There has been a lot of controversies, on the receiving of benefits based on performance, that some faculty members received higher payment because they were rated "outstanding" while some received lower benefits because they were rated "satisfactory." However, there were some allegations that some employees remained outstanding because someone had to manipulate their scores. There were complaints including instructors influencing ratings , major concerns over how the evaluation data was collected, when distributing questionnaires there were comments or influence peddling from the professors, and opportunities to alter results prior to turning them in (Simpson & Siguaw, 2000).

Accomplishing NBC-461. For State Universities and Colleges (SUC's) one way of promoting teaching staff is to accomplish the following 1) Qualitative Contribution Evaluation (QCE); 2) Summary of Evaluation from six (6) semesters; 3) Evaluation Tool from peer, self, supervisors, and students; 4) documents rated and evaluated, e.g., professional growth, seminars, research, extension, length of service, etc. All of these are supporting document for the National Budget Circular (NBC-461). Sometimes the forms were prepared within 24 hours and even extended the next day if not finished on time. Owing to the urgency of the document gathering, concerned faculty members submit an incomplete portfolio or worse, do not forward the portfolio at all. All these instances result in faculty not being promoted at all.

The Process of developing the Web-based faculty Evaluation

Data Modeling of Web-based Faculty Evaluation System is a multifaceted process of Theory Building, Observation, Experimentation and System Development (Nunamaker *et al.,* 1990), based on the Multi-Methodical Approach in Information Systems Development. The research methodology is used in developing the Web-based Faculty Evaluation System which was created on a PHP/MySQL platform. There are various Methodologies, but the Multi-Methodical approach of Nunamaker *et al.* (1990), is the most compelling and comprehensive due to its iterative nature, full circle and continuous development that is required to produce a sustainable and scalable system.

The full circle nature of systems development in the research life cycle shows an integrated approach, which is believed to be necessary a study is to keep pace with technological innovation and organizational acceptance. The Multi-Methodological approach consists of four research strategies: Theory Building, Experimentation, Observation, and Systems Development (Nunamaker, Chen & Purdin, 1990).

Theory Building includes the development of new ideas and concepts, and construction of conceptual frameworks, new methods, or models. Theories are usually concerned with common system behaviors and are subjected to rigorous analysis.

Activities undertaken:

In this study, the researcher determines the input data to the system and output data to be produced by the system and then studied the process needed to be done in these data and look the constraints on the behavior of the software. The overall understanding of the current evaluation is observed and investigates the different solutions that are possible.

All the relevant data were collected: students enrolled during the semester, plantilla, and the instrument. To perform the requirements, analysis of the software gathered information from the department heads, administrators, faculty, and some students to ascertain the requirements. There are contradictions and ambiguities, but it was resolved during the presentation of the context diagram which shows them the overall view of the system.

The hardware and software requirements are identified in the following: 1024x768 resolution or higher is required for the core products and 800x600 resolution, or higher is required for this software. It can run in Windows OS, Mac OS, Windows web browsers, Mac Browsers, Microsoft Office 2003 to 2013.

Hardware requirements: Dual Core 1.6GHz or faster with RAM: 1 gigabyte (GB) (32-bit) or 2 GB (64-bit).

Administration Level

The Database backend of the system is MySQL while the front end is PHP and web-based, user-friendly Graphic User Interface, which enable the System Administrator to perform easy maintenance. This level ensures the integrity of the transaction, data collection, analysis, report generation, data archival and security of access. There are two key issues in this level, User Authentication,

User Authentication

The Web, which is being accessible anytime and anywhere, there has to be a way to ensure the identification of the respondent through password and user level authentication. The student evaluating the course should be enrolled in the course, and evaluate the course or teacher only once. The same principle applies to supervisor to teacher, peer, and self-evaluation.

User Interface Design

Web applications are challenging to design. The important concept in systems development is its usability s it is divided to financial increase or failure (Tarafdar & Zhang, 2005; Cappel & Huang, 2014; J. M. Pearson & A. M. Pearson, 2008). On the other hand, a usable website that supports customers is associated with higher firm performance as cited by (Geczy, Izumi, & Hasida, 2010). The advancements in technology and significant investments, is commonly observed that web services implementing business processes have low usability. The author makes a point that this can be attributed from misalignment between natural characteristics of human interactions in the digital environments and their design and implementation. Designers should look into the relevance (Pearson and Pearson, 2008), depth and breadth (Ruffini, 2001), accuracy and concurrency (Seethamraju, 2006), and consistency (Sindhuja & Dastidar, 2009) of the information.

Assessment of respondents as to the usability of the system response by the school Administrators

As regards the usability of the system, the data show that on the items stated on the table “effective-completeness and accuracy”, “efficient-speed with accuracy”, “engaging, pleasant, interesting or satisfying”, “error tolerant-prevent

and recover from mistakes", "easy to learn" were all answered "strongly agree". When it was shown and tested by them, and the flow of the system was explained by the developer, the respondents agreed that the system would be useful. While the system test was on-going, the respondents were suggesting that the system would be used for trial in the coming school year for further improvement and to check its error tolerance. It means that the web-based evaluation can be used by the respondents to achieve their goals with value and contentment. However, as pointed by Sindhuja and Dastidar (2009, p 58), usability is a quality attribute that assesses how easy user interfaces are to use, in a sense that users can easy operate the system by ease of finding what one desires and knowing where one is on the website. There must be a user control and must have freedom-lack of restrictions. The system must also have a user support to recognize nor diagnose and recover from errors, elasticity and efficiency of use. This study concludes that the respondents are willing to replace the traditional system of evaluation due to the usefulness of the system is found out therein as also describes by the authors mentioned above.

Assessment of respondents as to the Usability of the system response by Non-Teaching Staff

As regards the usability of the system, the respondents strongly agreed that the evaluation system served its purpose. In fact, all the questions in the survey questionnaire were answered "strongly agree" which means respondents were very satisfied with the use of the system. The same comment was raised during the presentation of the system and testing as School Administrators'.

Assessment of respondents as to the Usability of the system response by Teaching Staff.

As regards the usability of the system, the respondents answered all the items "strongly agree." It can be gleaned from the data that on the item "effectiveness" , "efficient", "engaging, pleasant", "error-tolerant", "easy to learn" these were all answered "strongly agree". This means the respondents were very satisfied with the design and that they were confident that the system would serve its purpose. Dommeyer et al. (2004) in their study describe that on-line method of collecting teaching evaluations offers numerous advantages over the in-class method: According to him, it is cheaper to administer, it will process data quickly, and less vulnerable to professional influence. Also, Barkhi and Williams (2010) in

their studies titled "The Impact of Electronic Media on Faculty Evaluation" cited that the creation of information-based and decision support technologies into virtual organizations that use communication media channel may not result in successful implementation and usage unless proper incentives are designed that prevent games that promote an unfair evaluation process but would instead induce truthfulness and objectivity in a faceless evaluation setting, while at the same time can provide timely feedback for improvement.

Assessment of respondents as to the Usability of the system response by Students

As regards the usability of the system, 85 percent of the students answered "strongly agree", 10% answered "agree", and 5% answered "uncertain" to the statement "effective" andall other items were answered "strongly agree". This may be attributed to the perception that there was not much difference between a computerized from that of the current evaluation system for some of the respondents who answered "agree", and "uncertain"

Assessment of respondents on the Web-based performance evaluation on its Accuracy to generate report by the School Administrators

Record keeping and report generation are the two important aspects ofthe system being developed and validated. As regards the assessment of the level ofaccuracy of records generated through the system, it is revealed by the data gathered that all the information needed for the report were accurately recorded and produced in the system.

As a whole, most of the respondents (school administrators) assessed that the data generated under report generation tabulation of QCE for NBC 461, Individual Performance Rating, Summary of Evaluation for QCE, List of Employees Performance Rating, Student Evaluation Document, Peer Evaluation Document, Supervisor Evaluation Document, and Self Evaluation were all accurate. In fact, they asked for a copy of the evaluated professors in the software and the forms were produced correctly as the same.

Assessment of respondents on the Web-based performance evaluation on its Accuracy to generate report by the Non-Teaching Staff

As regards the assessment of the level of accuracy of records generated through the system, it is revealed by the data gathered that all the data needed for report were accurately recorded and generated in the system,

These findings show that the non-teaching staff agreed on the accuracy of the generated reports and its 100% correct outputs that produced by the system.

This accuracy implies that the system will facilitate and expedite the job of the supervisors, and the administrators in maintaining an individual record of every teaching staff and non-teaching staff Evaluation Performance Rating.

Assessment of respondents on the Web-based performance evaluation onits Accuracy to generate the report by the Teaching Staff

As a whole, most of the respondents claimed that the data generated under report generation the "tabulation of QCE for NBC 461", "Individual Performance Rating", "Summary of Evaluation for QCE", "List of Employees Performance Rating", "Student Evaluation Document", "Peer Evaluation Document", "Supervisor Evaluation Document", and "Self-Evaluation" was tested and proven by the respondents.

All of the end-users answered the items "strongly agree." This agreed that the system was working efficiently and successfully for its purpose.

CONCLUSIONS

The Multi-Methodological approach of Nunamaker *et al.* (1990), is an effective software development tool in a situation where the developer clearly understood the operations of the web-based evaluation system of the Apayao State College, which will be developed. The automating electronic process will improve the accuracy of the report generated and eliminates issues addressing from the possibility of the manipulating evaluation result. User acceptance test questions can be formulated based on its Usability. From the questionnaire survey, the respondents strongly agree with the operation of the system, as revealed from the tables presented in the result and discussion.

TRANSLATIONAL RESEARCH

The findings of the study could be best used by the school. Just like the other State Colleges and Universities, ASC would like to improve its services and elevate the quality of its performance. This could be best used also to easily check records. The system is also best to eliminate issues addressing from the possibility of the manipulating evaluation result.

ACKNOWLEDGMENTS

Sincere gratitude and deep appreciation are due to her husband, Gilbert Laro Taguiam, for his support and patience throughout the duration of her study. Her mom, Mrs, Vivencia G. Maiztegui, for her unending financial, spiritual and moral support; Her sons, Justgim and Justeen for the inspiration in finishing her study; Her Brothers and Sisters for their moral and spiritual support Lovee Maiztegui-Taguba, Connie Maiztegui-Robles, Eulogio Maiztegui Jr., Jacinto Maiztegui, and Melchora Maiztegui. Finally, to the Lord Almighty for all the bountiful blessings, guidance and for giving the courage to face all trials and obstacles that came her way.

LITERATURE CITED

Basa, R. P. B. R. S. (2011). Factors affecting faculty web portal usability.

Barkhi, R., & Williams, P. (2010). The impact of electronic media on faculty evaluation. *Assessment & Evaluation in Higher Education*, *35*(2), 241-262.

Cappel, J. J., & Huang, Z. (2014). The Effect Of Predictor Variables On Selected Website Navigation Aids. *ASBBS Proceedings*, *21*(1), 159.

Cooper and Lybrand. (1999) Case Study: Document Management Systems. http://www.computerweekly.com/feature/Case-Study-Document-management-systems

Dommeyer*, C. J., Baum, P., Hanna, R. W., & Chapman, K. S. (2004). Gathering faculty teaching evaluations by in-class and online surveys: their effects on response rates and evaluations. *Assessment & Evaluation in Higher Education*, *29*(5), 611-623.

Géczy, P., Izumi, N., & Hasida, K. (2010). Foundations for effective portal service management. *Global Journal of Business Research*, *5*(2), 131-141.

Geymen, A. (2012). Interactive web-based campus information system.*Scientific Research and Essays*, *7*(47), 4100-4108.

Kasiar, J. B., Schroeder, S. L., & Holstad, S. G. (2002). Comparison of traditional and web-based course evaluation processes in a required, team-taught pharmacotherapy course. *American Journal of Pharmaceutical Education*, *66*(3), 268-270.

Nunamaker Jr, J. F., Chen, M., & Purdin, T. D. (1990). Systems development in information systems research. *Journal of management information systems*, *7*(3), 89-106.

Pearson, J. M., & Pearson, A. M. (2008). An exploratory study into determining the relative importance of key criteria in web usability: a multi-criteria approach. *Journal of Computer Information Systems*, *48*(4), 115-127.

Seethamraju, R. (2006). Web quality–A study of user perceptions. *IIMB Management review*, *18*(1), 15-24.

Simpson, P. M. & Siguaw (2000) Student evaluations of teaching: an exploratory study of the faculty response, Journal of Marketing Education, 22(3), 199–213

Sindhuja, P. N., & Dastidar, S. G. (2009). Impact of the factors influencing website usability on user satisfaction. *IUP Journal of Management Research*, *8*(12), 54.

Tarafdar, M., & Zhang, J. (2005). Analyzing the influence of web site design parameters on web site usability1. *Information Resources Management Journal*, *18*(4), 62.