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My Instructional Tools Software for College Faculty

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A B S T R A C T

This study was conducted using the research and development methodology over the course of three stages. The first phase involved conducting a survey to determine the faculty needs in terms of information and communication technology. According to survey findings, faculty members were particularly interested in using offline educational software. The second phase involved creating offline instructional software in accordance with the system development life cycle. The three information technology professionals examined and evaluated the software to verify its quality. Pilot testing and rolling out the program to the faculty were part of phase three. The program was evaluated using the Department of Trade and Industry/Bureau of the Philippines Standards software quality models and the International Standard 25010:2011 Systems and Software Quality Requirements and Evaluation System. Eight characteristics make up this product quality model, which is further broken down into subcharacteristics that relate to software's static and dynamic qualities. The stated quality criteria were used as a checklist to assure a full treatment of quality needs, and offered a framework for anticipating the ensuing effort and activities necessary during system development. When defining or assessing the quality of computer systems or software products, the qualities in the quality in use model and product quality model were meant to be used together as a set.

1. INTRODUCTION

Although it can be somewhat tedious, teaching is a rewarding vocation. It involves a lot of paperwork and preparations both before and after the lesson, in addition to the efforts as a teacher to aid the students in their learning. Moreover, there would be additional due dates of submission of the requirements. The administration of files, especially the notes that teachers use in their subject courses, is a different issue that they are dealing with.

The proper handling of files is crucial for educators. A solid file management system would make it easier for them to supply not only their lesson but also all of the outputs that were anticipated of them, such as grades, TOS (Table of

Specifications), answer keys, and many other things. Furthermore, efficient file management would free up time for the professors to spend with their families or on themselves.

Certainly, technology has altered how people live. It has changed many aspects of life and redefined what it means to live. Technology unquestionably has a significant impact on all aspects of life. Thanks to technology, many tedious manual chores can be automated. A lot of difficult and important activities can also be completed more easily and effectively with the aid of contemporary technology. Living has changed, and for the better, due to the use of technology. computers allow for the more efficient and safe archiving of information. Computers have taken the place of chalk and boards, and in some cases, they can even make presentations that speak for themselves with the teacher standing aside. Since digital libraries do not require a physical space, instructors and students from all over the world can access the same collection at the same time. Portable memory devices have taken the place of notebooks, and a keyboard and computer mouse are the new writing implements. What formerly required 100 book pages can now be contained on a single memory chip. Typing only takes a few seconds compared to hours of writing. Data storage is now easier thanks to technology.

Computer education is now covered in both high school and college curricula. Each person needs to be comfortable with computers given the large range of applications for computer technology. People must keep up with the most recent developments in their fields because they live in a technologically advanced world. Education helps people learn how to use and operate various technological devices. Moreover, people can better educate themselves by using technology. This is the interaction between technology and education. Technology usage is increased by education, and education is aided by technology.

The introduction of technology into the educational sector has improved the interaction and enjoyment of the learning and knowledge-sharing processes. The shift in viewpoint is possibly where technology has had the most impact on schooling. Technology is responsible for the paradigm change in thinking from local to global. Technology is undoubtedly one of God's greatest gifts to humanity.

This study suggests developing computer tools to help faculty members organize their files. This offline instructional software is intended to help college faculty automate their course materials and organize them for simple access. According to their past usage, professors utilize computers to store their course materials in various disorganized folders, where they occasionally find difficult to keep track of them.

The offline instructional software's layout will enable the faculty to compile all of their course materials and arrange them systematically in one location, along with other functions like reminding them of the university calendar dates. These materials can be modified and can be used all over again.

The faculty might currently use a similar online program that is already in place. However, the drawback of this tool is that it needs an Internet connection before they can access their files. The suggested software designed provides a solution to this issue. The faculty will be able to use it anytime, anywhere, as long as they have their laptop with them.

2. METHOD

The (R&D) research and development technique was used in this work. It is defined as any methodical and creative endeavour undertaken to increase the corpus of knowledge, including the understanding of individuals, groups, and societies, as well as the utilization of this knowledge to produce new applications (Skills Worldwide, 2011). It is sometimes referred to as the process of developing new products or enhancing old ones. R&D activities include basic research, applied research, and experimental development (Cororation, 1999). This study has involved three phases: (1) Survey of the ICT needs of college faculty in the use of instructional software, (2) Development of instructional software, and (3) Pilot testing of the instructional software. It displays the result of software evaluation by both IT experts and faculty using ISO/IEC 25010:2011 System and Software Quality Requirements and Evaluation.

3. RESULTS AND DISCUSSION

Part I. Result of Survey of the ICT Needs of College Faculty in the Utilization of Educational Software

In the middle of March 2020, the Pototan campus of West Visayas State University performed a survey of the ICT requirements for college professors using offline instructional software. The survey tool was a researcher-made and has undergone thorough validation with the three outside campus expert validators. With 80 eighty faculty members there were 75 of them who answered the survey. The survey consisting of three parts such as: Background Information; Basic Skills, Knowledge and Attitude in the Use Technology; and Interest Level of Implementation of Offline Instructional Software. The following are tables to show the result of the survey:

Table 1. Faculty Background Information.

Questions	Responses			
	Yes		No	
	f	%	f	%
Have you used ICT in your teaching?	75	100		
Was it on-line?	21	4	53	70.67
Was it easy?	55	73.33	8	10.67

The Table 1 shows the Faculty Background Information; it is the first part of the Survey of the ICT Needs of College Faculty. As a result, 100% of the faculty of the West Visayas State University-Pototan Campus have used ICT in their teaching. There were 71% of faculty have used ICT offline, most of faculty were using software without the use of Internet connection. Majority or 73% of them found easy to use ICT in their teaching. The number of faculty who answered the last two questions such as: Was it online? and Was it easy in using ICT in their classrooms did not equal to the actual number of respondents because some of them skipped to answer several statements/questions.

Table 2 indicates that more than a half of the faculty (80.00%) used audio, video, and other multimedia to aid their teaching in the classroom. It is followed by educational websites (rank 2), MS Office (rank 3), social networking (rank 4), and e-mail (rank 5)

Table 2. Software Used in Teaching by the Faculty.

	Responses n= 75		
Software	**Frequency**	**Percentage**	**Rank**
Audio, video, and other multimedia	60	80.00	1
Educational websites	54	72.00	2
MS Office	52	69.33	3
Social networking	41	54.67	4
e-mail	39	52.00	5
On-line Library	15	20.00	6

Table 2 indicates that more than a half of the faculty (80.00%) used audio, video, and other multimedia to aid their teaching in the classroom. It is followed by educational websites (rank 2), MS Office (rank 3), social networking (rank 4), and e-mail (rank 5).

Table 3. Educational Technology Used in Teaching by the Faculty.

	Responses n=75		
Hardware	**Frequency**	**Percentage**	**Rank**
Smart Television	68	90.67	1
Desktop computer	61	81.33	2
Cellphones	56	74.67	3
Overhead projector	40	53.33	4
Calculators	34	45.33	5
Digital cameras	31	41.33	6
VCR/DVD Player	14	18.67	7

Table 3 shows that great number of faculty (90.67%) used smart television in their teaching. Next, the desktop computer (rank 2,), cell phones (rank 3), overhead projector (rank 4), and calculators (rank 5).

The results implied that most of the faculty are technology literate and possess skills to adopt new ICT innovations to be integrated in their classroom.

Table 4. Basic Skills, Knowledge and Attitude in the Use of Technology

Questions	Responses				
	Yes		No		Total
	f	%	f	%	%
Can you create word processing files?	73	97	2	3	100
Can you edit document files in MS word?	73	97	2	3	100
Can you save MS word files?	73	97	2	3	100
Can you design a table matrix for constructing a syllabus?	73	97	2	3	100
Can you compute grades on a Microsoft Excel?	69	92	6	8	100
Can you create multimedia presentations for various purposes	73	97	2	3	100
Can you use digital media for instructional purposes (i.e. digital images, social media, digital audio and electronic book)?	71	95	4	5	100
Can you use digital technology for browsing the web, opening an attachment file, retrieving information from a flash drive?	71	95	4	5	100

Table 4 displays that more than 50 percent of the faculty possess basic skills, knowledge and attitude in the use of technology such as create word processing (97.33%), create multimedia presentation for various purposes (97.33%), use variety of technology tools like laptop, desktop and tablet to enhance the curriculum (97.33%); discuss how to uphold social, ethical, and legal obligations when using technology tools and resources (97.33%); and able to give an example of browser (97.33%).

Table 5. Extent of Basic Skills, Knowledge and Attitude in the Use of Technology

Statements	Responses									
	Poor		Average		Above Average		Excellent		Mean	Total
	f	%	f	%	f	%	f	%		%
create word processing files	0	0	10	13	31	41	31	41	3.21	95
edit document files in MS word	0	0	5	7	25	33	43	57	3.43	97
save MS word files	0	0	3	4	21	28	49	65	3.53	97
design a table matrix for constructing a syllabus	2	3	5	7	30	40	36	48	3.28	98
compute grades on a Microsoft Excel	4	5	11	15	17	23	41	55	3.21	98
create multimedia presentations for various	2	3	5	7	33	44	33	44	3.24	98
use digital media for instructional purposes (i.e. digital images, social media, digital audio and electronic book)	4	5	10	13	37	49	21	28	2.96	95
use digital technology for browsing the web, opening an attachment file, retrieving information from a flash drive?	0	0	8	11	34	45	30	40	3.22	96
using a range of digital tools, such as a tablet, laptop, and desktop, to improve the curriculum?	0	0	8	11	40	53	25	33	3.15	97
Do you practice the ethical rules in the use of technology and software resources?	0	0	16	21	35	47	22	29	3.00	97
Do you show social, ethical and legal responsibility in the use of technology tools and resources?	0	0	13	17	40	53	20	27	3.01	97
Do you share ways on how one can observe social, ethical, and legal responsibilities in the use of technology tools and resources?	0	0	15	20	34	45	24	32	3.04	97
Can you identify what is off-line software?	0	0	11	15	35	47	26	35	3.12	97
Can you give an example of browser?	0	0	15	20	23	31	35	47	3.19	98
Can you discuss what search engine is?	4	5	15	20	24	32	29	39	3.00	96

1.00-1.50 - "Poor" - if the basic skills, knowledge and attitude of the faculty in the use technology is low.
1.51-2.50 - "Average" - if the basic skills, knowledge and attitude of the faculty in the use technology is regular.
2.51-3.50 - "Above Average" - if the basic skills, knowledge and attitude of the faculty in the use technology is above regular.
3.51-4.00 - "Excellent" - if the basic skills, knowledge and attitude of the faculty in the use technology is exceptional.

Table 5 points out that more than a half of the faculty possess excellent basic skills, knowledge and attitude in the use of technology like saving MS word files (65%) and with a mean of 3.53, edit document files in MS Word (57%) with a mean of 3.43, compute grades on a Microsoft Excel (55%) with a mean of 3.21. Additionally, with a mean of

3.01, more than half of the faculty (53%) exhibits above-average knowledge of social, ethical, and legal guidelines when using technology.
These results seemed to imply that the faculty has potential to adopt and learn easily to use offline instructional software.

Table 6. Level of Interest on Implementation of Offline Instructional Software as Needed in their Classroom.

Questions	Responses						
	I am not interested		I am moderately interested		I am very 1nterested		Mean
	f	%	f	%	f	%	
Are you interested in learning and using offline instructional software in the classroom?	10	13	31	41	31	41	2.79
Are you interested to set-up university calendar and personal notes schedules and automatically you will be reminded of it through pop-up message?	5	7	25	33	43	57	2.79
Are you interested to set-up and upload syllabus and instructional materials (e.g. hand-outs, assignments, videos, practical test and exercises questions; quizzes and class records files) in a form of pdf and MS Office per subject?	3	4	21	28	49	65	2.79

1.00-1.50 - "not interested" – if the level of interest of the faculty on implementation of offline instructional software is average and below.
1.51-2.50 - "moderately interested" - if the level of interest of the faculty on implementation of offline instructional software is high average.
2.51-3.00 - "very interested" - if the level of interest of the faculty on implementation of offline instructional software is highest average.

Table 6 demonstrates that more than half of the faculty members were very engaged in setting up and uploading the syllabus and educational materials (such as handouts, tasks, videos, practical test questions, and exercises); quizzes and class records files) in the form of pdf (portable document format) and MS Office (Microsoft Office) per subject (65%) with a mean of 2.79 and to set-up university calendar and personal notes schedules and automatically be reminded of it through pop-up message (57%) with a mean of 2.79. There were less than a half of faculty members very interested (41%) with a mean of 2.79and moderately interested (41%) with a mean of 2.79 in the use of Offline Instructional Software. These results simply explained that the offline instructional software should be implemented to assist them manage their course materials.
For the information, there were faculty members who skipped some items. Maybe they did not answer some items because they were not interested nor interested or any reasons.

Part II. Development of MyInstructionalTools Software

Software development is a process that uses a particular programming language to generate standalone or individual software. It entails creating a number of interconnected lines of programming code that give the software functionality. (Techopedia Inc, 2019). Software development may also be called application development and software design.

The main technique used to produce software is computer programming, which is carried out by a software programmer and involves phases like planning, analysis, design, development, integration/testing, implementation, and maintenance. The software development life cycle is what is meant by this (SDLC).

Phase 1 Planning

This initial stage's goals are to assess the problem's scope and select potential solutions. In this study, the problem was focused if offline instructional software needed by the college faculty. With that, the researcher came up with a plan to design a survey of the ICT needs of college faculty.

Phase 2 Analysis

At this stage of the study, a survey of the ICT needs of college faculty in the use of instructional software was conducted among faculty of the West Visayas State University-Pototan Campus after securing a letter of permission from the campus administrator. Of eighty (80) faculty members, there were seventy-five (75) responded to the survey. The results are shown above in Tables 1- 6. Those results were analyzed and used as a baseline for the development of offline instructional software.

Phase 3 Design

Software design can be done with several different ways. In this study, the design is done by utilizing modeling language such as UML (Unified Modeling Language). This modeling language can be written text and images or it can even be a drawing on a whiteboard (Hellgren, 2018). The primary goal of UML is to establish a uniform method for visualizing a system's design process.

Additionally, In order for the system to achieve its goals, this phase must take into account the necessary hardware and/or software, structure (networking capabilities), processing, and procedures.

The UML (Unified Model Language) diagrams as software structure were drawn as served as a blueprint and bases of program coding of the offline instructional software. The following UML consist of Activity Diagram, Deployment Diagram, Sequence Diagram, and Use Case Diagram.

Phase 4 Development

This process involves some coding, such as creating simple forms and buttons to show the client what the finished product would look like. The developer began coding in this step in accordance with the specifications and the design discussed in earlier phases.

Databases, the required interfaces, and GUI (Graphical User Interface) were all constructed based on the researcher's stated policies and procedures. Developer also writes unit tests for each component to test the new code that they have written, review each other's code, create builds and deploy software to an environment. This cycle of development is repeated until the requirements are met (Innovative Architects, 2019).

Phase 5 Integration and Testing

System testing and system integration are part of this phase. To ascertain whether the program satisfies the initial defined objectives and ISO/IEC 25010:2011 Systems and Software Quality Evaluation, this is typically carried out by IT specialists. The industry-leading models for evaluating software products are found in ISO/IEC 25010: 2011. This makes a significant contribution to determining the effectiveness of software delivery procedures and suggested improvements. Additionally, software-based items and computer systems are being used more and more for a variety of professional and domestic tasks. To accomplish goals and objectives for one's enjoyment, business success, and/or human safety, high-quality software and systems are required. High-quality software goods and software-intensive computer systems are required to provide value and avoid any potential negative effects on the stakeholders.

Thorough specification and evaluation of the quality of software and software-intensive computer systems are essential components in ensuring value to stakeholders. This should be achieved by outlining the necessary and desirable quality qualities connected to the stakeholders' aims and objectives for the system. This encompasses data and software system quality attributes as well as the system's effects on its stakeholders. When possible, the quality attributes should be described, quantified, and evaluated using commonly used or validated metrics and

measuring techniques. The quality models in this International Standard can be used to find the necessary quality characteristics that can be used to set requirements, their criteria for satisfaction, and the supporting measures. There were three (3) IT experts who initially validated and tested the software. Their feedback and recommendations were gathered and applied to improve the software quality of offline instructional software to fully meet the user's requirements. The table below showed the result of IT experts' ratings.

Extent of Compliance to ISO/IEC 25010:2011 System and Software Quality Requirements and Evaluation Result of Software Validation and Evaluation

Table 7. IT Experts Rating on Offline Instructional Software.

ISO/IEC 25010:2011 Systems and Software Quality Characteristics	N	Sd	Mean	Descriptive Rating
A. Functional Suitability				
a.1 Functional Completeness	3	0	4.00	Very Satisfactory
a.2 Functional Correctness	3	0	4.00	Very Satisfactory
a.3 Functional Appropriateness	3	0.58	4.33	Very Satisfactory
	Mean	0.19	4.11	Very Satisfactory
b.1 Time Behavior	3	0.58	4.33	Very Satisfactory
b.2 Resource Utilization	3	0	4.00	Very Satisfactory
b. 3 Capacity	3	0	4.00	Very Satisfactory
	Mean	0.19	4.11	Very Satisfactory
C. Compatibility				
c.1 Co-existence	3	0	4.00	Very Satisfactory
c.2 Interoperability	3	0	4.00	Very Satisfactory
	Mean	0	4.00	Very Satisfactory
D. Usability				
d.1 Appropriateness Recognizability	3	0.58	4.33	Very Satisfactory
d.2 Learnability	3	0	4.00	Very Satisfactory
d.3 Operability	3	0	4.00	Very Satisfactory
d.4 User error Protection	3	0.58	4.33	Very Satisfactory
d.5 User Interface Aesthetics	3	0	4.00	Very Satisfactory
d.6 Accessibility	3	0.58	4.33	Very Satisfactory
	Mean	0.29	4.17	Very Satisfactory
E. Reliability				
e.1 Maturity	3	0	4.00	Very Satisfactory
e.2 Availability	3	0	4.00	Very Satisfactory
e.3 Fault Tolerance	3	0	3.00	Satisfactory
e.4 Recoverability	3	1.15	3.67	Very Satisfactory
	Mean	0.29	3.67	Very Satisfactory
F. Security				
f.1 Confidentiality	3	0.58	4.33	Very Satisfactory
f.2 Integrity	3	0.58	4.33	Very Satisfactory
f.3 Non-repudiation	3	0.58	4.33	Very Satisfactory
f.4 Accountability	3	0.58	4.33	Very Satisfactory
f.5 Authenticity	3	0	4.00	Very Satisfactory
	Mean	0.46	4.26	Very Satisfactory
G. Maintainability				
g.1 Modularity	3	0	4.00	Very Satisfactory
g.2 Reusablity	3	0.58	4.33	Very Satisfactory
g.3 Analysability	3	0	4.00	Very Satisfactory
g.4 Modifiability	3	0	4.00	Very Satisfactory
g.5 Testability	3	0	4.00	Very Satisfactory
	Mean	0.12	4.07	Very Satisfactory

H. Portability				
h.1 Adaptability	3	0.58	4.67	Excellent
h.2 Installability	3	0.58	4.67	Excellent
h.3 Replaceability	3	0.58	4.67	Excellent
	Mean	0.58	4.67	Excellent
Grand Mean			4.13	Very Satisfactory

Scale:
1.0-1.50 - "Poor" - if major aspects of the instructional tool are of unacceptable quality.
1.51-2.50 - "Fair" - if major aspects of the instructional tool are hardly met and with below average quality
2.51-3.50 - "Satisfactory" -if major aspects of the instructional tool are hardly met and with average quality
3.51-4.50 - "Very Satisfactory" - if major aspects of the instructional tool are met and with minimum acceptability
4.51-5.0 - "Excellent" - if major aspects of the instructional tool are adequately met and with above average standard

The offline instructional software was validated and tested by the IT experts last May 7, 2020. They took the time to test each feature individually and dry run the software to ensure it was functioning as intended. The ISO/IEC 25010:2011 Systems and Software Evaluation tool was given to the IT professionals for software rating after testing. The tool has thirty one sub-characteristics with the following scoring and descriptions: (1) Poor, (2) Fair, (3) Satisfactory, (4) Very Satisfactory, and (5) Excellent. It also has eight (8) main characteristics, including Functional Suitability, Performance Efficiency, Compatibility, Usability, Reliability, Security, Maintainability, and Portability.

The result in Table 7 shows that the IT experts rated the software as Very satisfactory with grand mean of 41.13. Among the eight characteristics of the software, the highest rating was Portability and rated Excellent with a mean of 4.67 because it was found that can be installed easily to different types of personal computers. While, Reliability got the lowest rating with a mean of 3.67 (Very Satisfactory) because the software has found some minimal errors during the run time mode.

Phase 6 Implementation

After the validation and testing by the IT experts, the software was pilot tested to the faculty/end-users on May 10, 2020. The Table 8 below was the result of software ratings by the end-users/faculty.

Result of Software Pilot Testing and Evaluation

Table 8. End-Users Rating on Offline Instructional Software

ISO/IEC 25010:2011 Systems and Software Quality Characteristics	N	Sd	Mean	Descriptive Rating
A. Functional Suitability				
a.1 Functional Completeness	41	0.43	4.76	Excellent
a.2 Functional Correctness	41	0.51	4.51	Excellent
a.3 Functional Appropriateness	41	0.49	4.63	Excellent
	Mean	0.48	4.63	Excellent
B. Performance Efficiency				
b.1 Time Behavior	41	0.54	4.39	Very Satisfactory
b.2 Resource Utilization	41	0.5	4.56	Excellent
b. 3 Capacity	41	0.5	4.59	Excellent
	Mean	0.51	4.51	Excellent
C. Compatibility				
c.1 Co-existence	41	0.5	4.59	Excellent
c.2 Interoperability	41	0.49	4.39	Very Satisfactory
	Mean	0.5	4.49	Very Satisfactory
D. Usability				

d.1 Appropriateness Recognizability	41	0.4	4.80	Excellent
d.2 Learnability	41	0.43	4.76	Excellent
d.3 Operability	41	0.46	4.71	Excellent
d.4 User error Protection	41	0.46	4.29	Very Satisfactory
d.5 User Interface Aesthetics	41	0.52	4.32	Very Satisfactory
d.6 Accessibility	41	0.55	4.46	Very Satisfactory
	Mean	0.47	4.56	Excellent
E. Reliability				
e.1 Maturity	41	0.54	4.63	Excellent
e.2 Availability	41	0.54	4.61	Excellent
e.3 Fault Tolerance	41	0.57	4.32	Very Satisfactory
e.4 Recoverability	41	0.47	4.68	Excellent
	Mean	0.53	4.56	Excellent
F. Security				
f.1 Confidentiality	41	0.48	4.66	Excellent
f.2 Integrity	41	0.46	4.71	Excellent
f.3 Non-repudiation	41	0.51	4.51	Excellent
f.4 Accountability	41	0.46	4.71	Excellent
f.5 Authenticity	41	0.5	4.59	Excellent
	Mean	0.48	4.64	Excellent
G. Maintainability				
g.1 Modularity	41	0.5	4.54	Excellent
g.2 Reusablity	41	0.48	4.66	Excellent
g.3 Analysability	41	0.5	4.54	Excellent
g.4 Modifiability	41	0.45	4.73	Excellent
g.5 Testability	41	0.5	4.54	Excellent
	Mean	0.49	4.6	Excellent

H. Portability				
h.1 Adaptability	41	0.47	4.68	Excellent
h.2 Installability	41	0.49	4.63	Excellent
h.3 Replaceability	41	0.49	4.63	Excellent
	Mean	0.48	4.65	Excellent
Grand Mean			4.58	Excellent

Scale:
1.0-1.50 - “Poor” - if major aspects of the instructional tool are of unacceptable quality.
1.51-2.50 - “Fair” - if major aspects of the instructional tool are hardly met and with below average quality
2.51-3.50 - “Satisfactory” -if major aspects of the instructional tool are hardly met and with average quality
3.51-4.50 - “Very Satisfactory” - if major aspects of the instructional tool are met and with minimum acceptability
4.51--5.0 - “Excellent” - if major aspects of the instructional tool are adequately met and with above average standard

Table 8 demonstrates that the software had an Excellent rating from the end customers, with a total mean score of 4.58. Four of the eight categories, including Functional Suitability with a mean of 4.63, Security with a mean of 4.64, Maintainability with a mean of 4.6, and Portability with a mean of 4.65, were scored Excellent. The highest rating characteristic given by the end-user was the same by the IT experts which was the Portability. On other hand, the lowest rating was the Compatibility characteristic since the software has no capability to share resources and exchange information because it is a standalone application.

Phase 7. Maintenance

The product enters the maintenance phase of the software development lifecycle as soon as it is tested and installed on the client's server or computer. It often contains a few small bug fixes

that are typically addressed during this phase (Innovative Architects, 2019). When the IT experts had tested the software, they found some minimal errors. Those errors were fixed to make the software work properly and met the quality requirements set by Bureau of Philippine Standard (ISO/IEC 25010:2011 Systems and Software Quality). Hereafter, end-users had tested the software and those errors were reduced. Generally, the IT experts rated the software as very satisfactory with grand mean of 41.13 while the end-users rated it as excellent with grand mean of 4.58. It simply shows that, with proper validation and testing, makes the software more robust.

The faculty/end-users has some suggestions with regards to the color of buttons and additional features needed in classroom instruction. Some of their feedback was that, they were excited to use the software because they believe that it could help them organize their course materials, and they could make sure that they always ready during lecture time.

The results and feedback were supported by (Techopedia Inc, 2019) that says "The use of course management systems in higher education has become standard practice. By giving teachers a structure and a set of tools, they facilitate teaching and course management.". A suite of software tools called a course management system (CMS) creates an environment for class interactions. Furthermore, In order to get through significant obstacles, Reginald employs the Business&ITCenter21 eLearning program in his Computer Applications for Business classes. With the help of his program, he was able to enjoy a number of advantages, including reduced grading and lesson planning time, improved student comprehension, easier differentiated instruction, and seamless integration of blended learning.

4. CONCLUSION

The following conclusions are reached based on the study's previously mentioned findings:

The faculty at West Visayas State University - Pototan eagerly adopted offline instructional software in their respective fields and reaffirmed their commitment to incorporating technology into the classroom. It is adequately to note that in as much as the software were implemented as reflected in the results of the study, the University, through having the technology as part of the instruction, has more or less proven as a catalyst of change in improving the quality of life as partner institution.

Likewise, results of the survey of ICT needs of the college faculty strongly imply that they were very much amenable in using offline instructional software as they perceive that it can help them a lot in terms of organizing their course materials, easy to retrieve their files, their lessons are ready and they will be reminded of the university calendar schedules or personal schedules.

The faculty members assert that limited of Internet connection was addressed through the offline instructional software, they can still manage their course materials as a big help for the delivery of instruction as a whole. Additionally, this software and survey of ICT needs instrument may still be refined to achieve significantly higher results.

It was also found in this study that with proper validation and testing by the IT experts, the software becomes reliable and user-friendly where the IT experts rated the software performance as "Very Satisfactory" and "Excellent" by the end-users/faculty respectively.

Moreover, with the results of pilot testing, it was found that the software had met the ISO/IEC 25010:2011 System and Software Quality Requirements.

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