

Student Perception on the Extent of Use of Instructional Materials in an Open Distant Learning (ODL) Platform in Database Management System Course

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Abstract - Student centered pedagogical approach are already implemented in higher institutions in the Philippines. The course utilized the ODL platform technology as a tool in the delivery of the subject Instructional materials (IM's) for fast and efficient delivery of the different lessons in relation to the course objectives. This study employed quantitative research approach using descriptive design. The respondents of the study are the 3rd year Bachelor of Science in Information Technology (BSIT) students enrolled in the course Database Management System at Leyte Normal University. A total of 50 students who were identified to answer the survey questionnaire on the extent use of instructional material in teaching Database Management System course. The result shows that the respondents perceived that instructional materials are very useful with a grand mean of 4.50. This implies that the lessons included in the instructional material helps the student understand the topics in Database Management System. Hence, the student finds the instructional material and the ODL platform as engaging, encourages independent learning and effective.

Keywords - ODL (Open Distant Learning), Instructional Materials, Quantitative, Descriptive-Correlation, Database Management.

I. INTRODUCTION

Textbooks and instructional materials are some of the available learning materials that teacher use to deliver the knowledge and skill to the student. These contain the lesson that students are expected to learn, which most teachers focus their teaching on the material included in the book they use. Instructional materials (IM) play an important role in the teaching and learning process. According to Abdu-Raheem (2016) he defines instructional materials as significant tools necessary for teaching and learning of school subjects to enhance teachers' efficiency and improve students' performance. Additionally, Isola (2010) likewise define instructional materials as items or gadgets that help the instructors to introduce their lessons sensibly and successively to the students. Instructional materials can be in the form of video, workbook, and textbook to enhance the knowledge and skills of the student.

However, Abolade and Olumorin (2004) reported that factory produced instructional materials are very limited and expensive. Also in the study of Abolade (2009) he mentioned that the advantages of instructional materials are that they are less expensive to create and helpful in showing the vast number of students to give careful consideration to enhanced their learning. Nonetheless, Akinleye (2010) authenticated that successful teaching and learning requires an instructor to teach students with instructional materials and utilize functional exercises to make adapting more remarkable, intelligent, practical and pragmatic. Esu, Erukoha and Umoren (2004) concurred that instructional materials assist the teaching and learning environment more exciting. Universities in the Philippines have a scarcity of resources in IT books. It was mentioned in the study of Las Johansen, Quisumbing, et.al (2017) with limited IT books found in the library, it was noted that there is a need for the development of instructional materials for IT classes to supplement learning/teaching process in the delivery of IT

lessons. Similar study of (Olumorin, C. O., Yusuf, A., Ajidagba, U. A., & Jekayinfa, A. A. 2010) mentioned that due to the high cost of instructional material provided by the publishing companies teacher are encourage to produced localized instructional materials. Also, Ogbondah, L. (2008) it is recommended that teachers should have a training on how to produce instructional materials that will make learning more interesting and stimulating.

Afolabi and Adeleke (2010) stated that non-accessibility and non-usage of learning materials may result to poor learning as components in burden of the utilization of teaching strategies. Hence, Jekayinfa (2012) additionally recognized the significance of improvisation of instructional materials as making learning concrete and genuine that enables the students to take part in the creation of materials.

However, poor academic performance of students in the Database Management System 2 course is attributed to numerous components among which is the instructor's approach in teaching the course due to the limited resources available in the library. Teaching the course without instructional materials to support the teaching /learning process may result to poor scholastic performance of the student.

Statement of the Problem

In spite of the desire for technological development, couple with the fact that Database Management System is an important component in the development of the computer. Several studies have been conducted on the development of instructional materials, but none of this study has been conducted to determine the effectiveness of using improvised instructional materials to improve academic performance of Second year BSIT Students in Database Management 2 subject. And, specifically this answer to the following research questions;

1. What is the perception of the respondent in terms of:
 - a. Content;
 - b. Instructional design;
 - c. Assessment;
 - d. Usefulness;
 - e. Utilization;
2. What is the level of utilization of instructional material in the teaching/learning process?
3. What is the level of usefulness of instructional material as a tool in the teaching/learning process?

II. REVIEW OF LITERATURE

A. Instructional Materials and Academic Performance

Several studies have been conducted instructional materials and academic performance. For instance, Oladejo, Olosunde, Ojebisi, and Isola (2011) conducted a research on the effect of instructional materials on student academic performance. They discovered that understudy who who shown utilizing improvised instructional materials has statistically significant change in the Physics accomplishment test contrasted with the understudy who were educated with regular technique. Similar findings with Akpan, V. I., & Onoh, U. A. (2017) in Ikwuano Abia State 120 students in the sample population were separated into two clusters, one cluster was taught for two weeks with instructional materials and the other cluster was additionally taught similar lessons for two weeks without instructional materials. Toward the end of the two weeks, a sample test on what was taught, was given to the two clusters. The scores of the test were gathered and analyze utilizing the mean (M). Students who were taught with instructional materials performs better that those with the other cluster.

In the same way, Effiong, O. E., & Igiri, C. E. (2015) conducted research to determine the impact of instructional material in teaching and learning of Biology. Data was gathered through the use of self-structured questionnaire and it was interpreted using frequency and percentage. The result shows that instructional material promotes retention and instructional material influences academic performance of the biology students.

B. Effectiveness of Instructional Materials

In the study of Olayinka, A. R. B. (2016) wherein he tested the effects of instructional materials on secondary schools' students' academic achievement in Social studies in Ekiti state, Nigeria. The result shows that with 0.05 significant levels found that instructional materials promote better academic performance and therefore it is recommended that teachers of Socials Studies should utilize improvise instructional materials for the teaching / learning process. Also, in the study of Akpan, V. I., & Onoh, U. A. (2017) instructional materials make the teacher's work easy, strategic and result oriented and therefore recommended to have an instructional material bank where teachers' have access to the different instructional materials. However, Okudo, A. R., & Omotuyole, C. (2013) teacher in early childhood education in Lagos State, Nigeria preschoolers should be taught with locally made instructional materials. Training for teacher on how to develop and use of

instructional materials is highly needed to effectively enhance the teaching / learning process and to improve the communication competence among preschoolers.

C. Open Distant-Learning Platform for Instruction delivery

The origins of educational management, specifically of e-learning management, are related to the General Theory of Administration consolidated in the twentieth century, according to Sobral and Peci (2008). E-learning implies important changes in the culture and structure of the institutions that decide to adopt it Moore and Kearsley (2007), administration consists in the efficient and effective use of resources in an organization, so that its objectives can be achieved. In this regard, the process of contemporary administration involves four interrelated activities called

administrative functions: planning, organization, managing and control, arising from the primordial definitions from French administrator Henri Fayol, early twentieth century Fayol (1990). According to Chimpololo (2010), ODL is a relatively new concept in institutions of higher learning because previously, it was mainly practiced at secondary school level. MZUNI established the Centre for Open and Distance Learning (CODL) and according to Chimpololo (2010) and Mzuzu University (2014), the Centre was established in July 2006 to plan, prepare, and coordinate the offering of programmes through open and distance learning delivery modes as mentioned in the study of Chawinga and Zozie (2016).

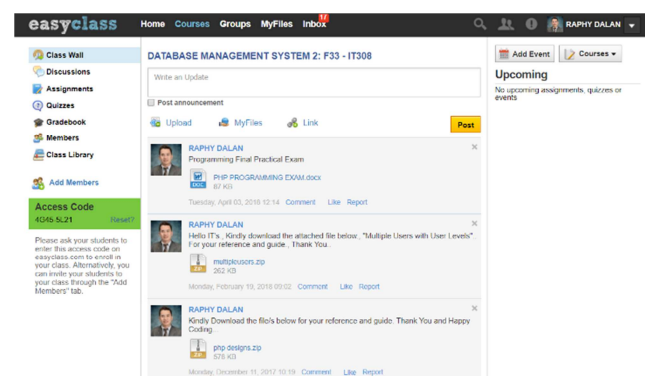
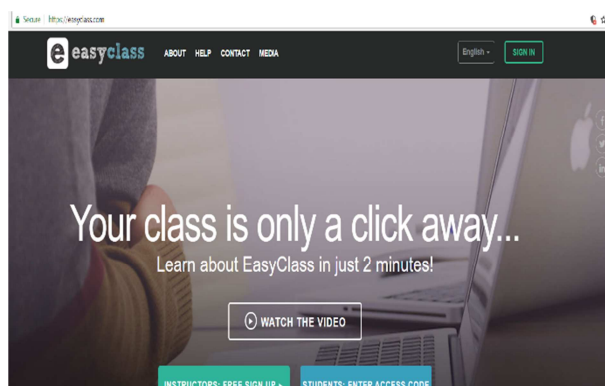


Figure 1. ODL platform (www.Easyclass.com)

III. METHODOLOGY

A. Research Design

This study employed quantitative research approach using descriptive design. The descriptive research design Student Perception on the Extent Use of Instructional Material in Teaching Database Management System Course in ODL platform. This type of model is used to describe the current status of phenomena to describe what exists about the conditions in a situation (Key, 1997).

B. Respondents of the study

The respondents of the study are the 2nd year Bachelor of Science in Information Technology (BSIT) students enrolled in the course Database Management System at Leyte Normal University. A total of 50 students out of 70 students who were identified to answer the survey questionnaire on the extent use of instructional material in teaching Database Management System. There are seven (5) student who were

absent during the time the survey questionnaire was administer.

C. Research Method

The 3rd year BSIT at the start of 2nd semester of SY 2017-2018 the IT students were given developed improvised instructional materials for the Database Management System course uploaded in OLD platform (www.easyclass.com. Since, November of 2017 to January 2018 almost three months the IT students have been using the instructional materials to help the Database Management. The survey questionnaire is patterned to Prince Edward Island (2008), Evaluation and Selection of Learning Resources survey form. However, there was a little change from the original questionnaire to suit the current study. Moreover, the questionnaire is composed of four (4) parts: Part I focuses on the content; instructional design and assessment; Part II on the extent use of instructional materials in ODL platform; Part 3: Rate the effectiveness of

using instructional materials and Part 4; What recommendation that will be the basis for the revision of instructional materials. The questionnaire was given personally during class schedule MTh 10:30-12:00 and TFri 1:00-2:00.

This study utilized Microsoft Excel 2010 and SPSS specifically the use of frequency count, percentages and mean statistical tools in determining the effectiveness of instructional materials based on the content; instructional design, assessment.

D. Treatment of Data

Below qualitative description used for instructional material in terms of Content, Instruction design and Assessment.

Qualitative Description for Content, Instructional Design and Assessment

Rating Scale	Qualitative Description
5	Strongly agree
4	Agree
3	Undecided
2	Disagree
1	Strongly disagree

Below is the limit scale and the qualitative description for the Content, Instructional Design and Assessment

Frequency Distribution	Qualitative Description
4.21-5.00	Strongly agree
3.41-4.20	Agree
2.61-3.40	Undecided
1.81-2.60	Disagree
1-1.80	Strongly disagree

Qualitative Description for the extent use of Instructional material

Rating Scale	Qualitative Description
5	Always
4	Very often
3	Sometime
2	Rarely
1	Never

Limit Scale for the extent use of Instructional material

Frequency Distribution	Qualitative Description
4.21-5.00	Always
3.41-4.20	Very often
2.61-3.40	Sometime
1.81-2.60	Rarely
1-1.80	Never

Qualitative Description for the Effectiveness of Instructional Material

Rating Scale	Qualitative Description
5	Extremely useful
4	Very useful

3	Somewhat useful
2	Slightly useful
1	Not useful

Limit scale for the Effectiveness of Instructional Material

Rating Scale	Qualitative Description
4.21-5.00	Extremely useful
3.41-4.20	Very useful
2.61-3.40	Somewhat useful
1.81-2.60	Slightly useful
1-1.80	Not useful

IV. RESULT AND DISCUSSION

Table 1: Instructional Material in terms of Content

CONTENT	Weighted Mean	Qualitative Description
1. The syllabus identified course objectives and method of grading.	4.20	Strongly Agree
2. The course content was consistent with the stated course objectives.	4.41	Strongly Agree
3. The course content was arranged in a clear, logical and orderly manner.	4.22	Strongly Agree
4. Content is current	4.13	Agree
5. Content is accurate	4.22	Strongly Agree
6. Scope and depth of topic are appropriate to student needs.	4.30	Strongly Agree
7. The level of difficulty is appropriate for the intended students	4.15	Agree
8. Content integrates "real-world" experiences.	3.98	Agree
GRAND MEAN	4.30	
Qualitative Description	Strongly Agree	

Table 1 represents the perception of the respondents in terms of content in the instructional materials. Instructional materials should be that the course content is consistent with the stated objective with mean of four and forty-one (4.30). Followed by Scope and depth of topic are appropriate to the student needs with four and thirty (4.30). Then, Content is accurate and The course content was arranged in a clear, logical and orderly manner with mean of forty and twenty-two (4.22) were identified by the respondent as **Strongly Agree**. Also, Content is accurate with mean of forty and thirteen (4.13), followed by The level of difficulty is appropriate for the intended students with mean of four and fifteen (4.15). Finally, Content integrates real world experience with a mean of three and ninety-eight (3.98)

were identified by respondent as **Agree**. As a result, the perception of the respondent on Instructional materials in terms of Content has Grand Mean of 4.30 with a qualitative description as **Strongly Agree**.

This implies that in the development of improvised instructional material the content is focused on the student needs and in-line with the course objectives in the syllabus. Wherein, in the syllabus the contents are arranged according to the level of difficulty and is presented accurately. Study of Thiagarajan, S. (1974) which he developed a model for instructional development called Four D-Model (Define, Design, Develop, and Disseminate). In Define stage, it identifies the objective and constraint of instructional materials. This set of objectives is used as the basis for test

construction and later integrated in the instructional materials that the teachers utilized. Additionally, in the study of Fradd, Lee, Sutman, & Saxton, (2001) developing instructional materials it is required to address students'

needs. This will ensure that the materials meet the needs of the students and teachers' expectations.

Table 2: Instructional Material in terms of Instructional Design

INSTRUCTIONAL DESIGN IN ODL PLATFORM	Weighted Mean	Qualitative Description
9. The material is suitable for a wide range of Open Distance Learning / delivery.	4.20	Strongly Agree
10. The materials are available to download 24/7.	4.20	Strongly Agree
11. The platform is easy to use in diff. device.	4.20	Strongly Agree
12. The methodology promotes development of communication skills.	4.11	Agree
13. The material encourages group interaction	4.22	Strongly Agree
14. The material encourages student creativity.	3.85	Agree
15. The material allows/encourages student to work independently.	4.28	Strongly Agree
16. Materials are well organized and structured.	4.11	Agree
17. Material promotes retention	3.91	Agree
18. The platform is recommended in other programming subjects.	4.15	Agree
GRAND MEAN	4.12	
Qualitative Description	Agree	

Table 2 shows the perception of the respondent in terms of instructional design. Instructional material is suitable for a wide range of learning/teaching styles using ODL platform, material promotes student engagement and methodology promotes active learning with mean four and twenty (4.20) or as identified by respondents as **Strongly agree**. Moreover, the material encourages group interaction with mean of four and twenty-two(4.22) or identified by respondents as **Strongly agree**. Also, the material allows / encourages student to work independently with mean of four and twenty-eight (4.28) or **Strongly agree**. Lastly, the rest of the indicators the respondents **Agree** that the instructional material promotes development of communication skills, material encourage student creativity, materials are well organized and structured, materials promotes retention and the concepts are clearly introduced.

This implies that instructional design should be engaging that allows students to work independently and promote harmonious group interaction. Hence, instructional design can have utilized variety of teaching / learning style to cater individual needs of the students. According to Donkor, F. (2011) teachers are encourage to create instructional materials for teaching / learning that are useful, easy to use, and enjoyable to the learners. Furthermore, the study of Akpan, V. I., & Onoh, U. A. (2017) to enhance the instructional design individual differences needs should be recognized and integrated in the design phase. Instructional material should not only be flexible but also support diverse learners with different learning styles.

Table 3: Instructional Material in terms of Assessment

ASSESSMENT	Weighted Mean	Qualitative Description
19. Appropriate follow-up activities are provided	4.26	Strongly Agree
20. Adequate assessment/evaluation tools are provided.	4.26	Strongly Agree
21. The course's assignments (readings, problem sets, essays, projects, reports, in-class exercises, etc.) helped you learn.	4.70	Strongly Agree
22. Graded materials (exams, quizzes, assignments, reports, projects, etc.) reflected what was taught in the course.	4.59	Strongly Agree
23. The instructor used a timely feedback of the quizzes and assignment	4.52	Strongly Agree
24. You put effort into learning the materials covered in this course.	4.43	Strongly Agree
25. You are challenged to do your best in this course.	4.65	Strongly Agree
26. You are encouraged to ask questions.	4.35	Strongly Agree
GRAND MEAN	4.47	
Qualitative Description	Strongly Agree	

Table 3 refers to the perception of the respondents in terms of assessment. In all indicator the respondents **Strongly agree** or Grand Mean of four and forty-seven.

This implies that there should be adequate exercises, activities, and quizzes included in the instructional materials that will help the student learn the topics in interactive way. Timely feedback is necessary to inform and help the

students improved in their skills and knowledge in Database Management System. Hence, Akpan, & Onoh (2017) learning activities were designed to improved student metacognition and problem solving skills and management strategies. Furthermore, according to (Young, M. F. (1993) as cited by Oliver, Herrington, & Omari (1996)) assessment is integrated in the learning environment not as an add-on to instructional design or separate process of pre-test, posttest.

Table 4: Extent use of Instructional Material

How often do you use the Database Management System instructional materials in ODL platform?	Always	Very Often	Sometimes	Rarely	Never
TOTAL	38	4	4	4	0
MEAN	4.52				
Qualitative Description	Always				

Table 4 shows the perception of the respondents on the extent use of Database Management System instructional material. Wherein Database Management System instructional material is being used **Always** or with a mean of four and fifty-two (4.52). This implies that in-order for

the students to get the maximum advantage of the instructional material it should be used always. According to the study of Igu, Ogba, & Igwe, (2014) teachers should maximize the use of instructional material during class instruction.

Table 5: Usefulness of Instructional Material

How would you rate the usefulness of the instructional material in the teaching/learning process?	Extremely useful	Very Useful	Somewhat useful	Slightly Useful	Not Useful
Total	35	7	6	2	0
MEAN	4.50				
Qualitative Description	Extremely Useful				

Table 5 shows the perception of the respondents on the usefulness of improvised instructional material for the Database Management System course. The instructional material is **Extremely Useful** or grand mean of four and fifty-zero (4.50).

This implies that the lessons included in the instructional material helps the student understand the topics in Database Management System. Hence, the student finds the instructional material as engaging, encourages independent learning and effectiveness. Moreover, in the study of Donkor, F. (2011) the students expressed high perceived usefulness of video-based instructional materials in learning practical skills in block laying and concreting. The learners also found the materials relevant, effective, enjoyable, and interesting, and would recommend them to their fellow students to use.

V. CONCLUSION AND RECOMMENDATION

Therefore, it is concluded that improvised instructional material with the used of ODL platform as a medium of delivering the instructions is very useful in the teaching / learning process as perceived by the respondent to help the students understand the topics in Database Management System. Improvised instructional material should be attuned with the course objective and encourage students to work independent learning. Therefore, it is recommended that improvised instructional materials should have more exercises to allow the students to practice and understand the lessons in Database Management System course aligned with the OBE curriculum.

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