The Evaluation on Effectiveness of a Technology Based Instructional Materials in Marketing Principles Course

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Abstract—The focal point of this research is to evaluate the effectiveness of a technology based instructional materials in Marketing Principles course. It sets the foundation of a successful clarity and focus in facilitating the teaching learning and students' motivation. The visual sense and performance of students are indicators of effective PowerPoint presentations (PPTs). Tis study is tested to 42 college students using the experimental and descriptive methods. Findings showed that students' visual sense is highly related to the presented graphics of the ten lessons that were created in the slides of the PPTs and effectiveness is related to students' sensitivity with colors, enthusiasm, cooperation, and volunteering attitude but not on domineering and critical behaviors of students. Result of this study will help the creators of PowerPoint presentations to improve their instructional gadgets, and gives promising business opportunities for education and industry.

Index Terms—Technology Based Instructional Materials, Marketing Principles, PowerPoint Presentations

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1 INTRODUCTION

PowerPoint (PPT) presentation is a standard component of the Microsoft Office bundled together with Word, Excel, and other office productivity tools [1]. It is computer software created in Microsoft which allows the user to create slides with recordings, narrations, transitions and other features in order to present information. Mentioned by [1] the PPT is powerful presentation software that can motivate and activate performance of both the user and the viewer.

The design of the PPT slides is made available according to the lesson content and used by the instructors either via projector or the Internet. This useable instructional material is the most popular among all the instructional materials used in classroom that can visibly available for use by the teacher. It can be technology based thru the Internet or just powered by computer gadgets. The emergence of computer technology had supported the use of these instructional materials to meet the diverse needs of college students [2]. Aside from e-books, the PPT presentation has aesthetics, connecting with interdisciplinary of the arts and on strategic contexts [3].

The visual effectiveness of the PowerPoint presentation was used as the main focus of evaluation in

this research [4], found in her study that aesthetics communication and teaching strategy are significantly related. It means that the art in communicating to the audience when a teacher uses the PPT depends primarily with the storyboard in slides. Thinking outside the box strategy was named "variation" method as a result of her experiment. In her modules in Marketing Principles course used in classroom were evaluatedas designsand used to indicate memorable stories during the reading comprehension teaching strategy. The use of the visual sense in translating beauty, arts and culture is common to business, marketing, law and the applied science courses [5]. In view of this, the Powerpointpresentation was used to create memorable presentation in story telling narrative with aestethics [6]. Students are sensori-inclined and emotionally motivated by the graphics that appeal to their visual sense. Their emotional behaviors encourage the use of attractive designs in colors, photographs, and drawings that are originally made as personal use for the teacher to facilitate in classroom activities [7]. This can be done only in technology based and adaptable strategies of teaching and learning [8].

In this study, the evaluation of a technology based instructional materials particularly the ten PPT presentations used in the teaching and learning of 42 college students of Marketing Principles course presents:

   a) the effectiveness of graphics in slides of PPTs for motivation;

   b) the effectiveness of the visual images in slides on students' observed behaviors;

   c) the effectiveness of modules/lessons delivery of the PPTs with graphics on slides for motivation.

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2 CREATION OF POWERPOINT PRESENTATION

2.1 INITIAL STAGE

Instructional materials such as the PPTs must be crafted in compatible with the needs of learners, otherwise the material resources will be worthless and rubbish [5]. A study on affectivity of instructional materials in Marketing Principles was found to need abstract and logical thinking [6]. In her study on evaluation of constructed instructional materials in the content areas of selected business course, a new method of teaching in classroomwas created named as "variation technique". Consisted of validated modules, handouts and tests in Marketing Principles, the presented study made used of the results increating the PPTs. The ten (10) PowerPoint presentations were output of the evaluated modules that were properly made from the lessons of Marketing Principles course. The term "Outside the Box" was the new term assigned by the researcher in naming the "variation technique" during the initial state of designing the PPTs.

The present study is related to the previous experiment in terms of effective creation of lesson plans that matched the needs of students. This is important in motivating the receiver of any conventional advertising tool for communication, which can be made in the designs of the PPTs [7]. Another very important in the making of PowerPoint presentation is the strict and systematic following of guidelines called "the methods". For example, in creating a workshop model of PPT, clarity in the directions of the activities to be performed is very essential in lesson planning to assure of students' motivation [8]. Since they provide guides and references for students to perform actively, they also serve as blueprint in documenting the processes of a competency building in an e-learning module [9].

2.2 FINAL STAGE

A study on the effectiveness of video-based instructional materials found positive response to the 71 respondents of three study group centers in a distance learning [10]. Results of ANOVA showed that the learners exhibited similar levels of acceptance to the video-based instructional materials. In this study, the subjects in the experiments similarly rated the PPTs after the duration of the activities performed in classroom. The experimenter used the content of the slides as a gauge in evaluating the feedbacks such as the impact of graphics in their visual sense, and the effectiveness of the slides in PPTs to the students' sensitivity with colors, enthusiasm, cooperation, attitudes and behaviors while they are being observed

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without their knowledge. In crafting effective instructional design model, there should have answers to: Who are the learners and how many are they? What is the setting and how much time is spent in it? Is the design industrial or can it be dynamically changed? [11]. The creation of effective design in PPTs sets the materials into meaningful content while the rules for the whole duration of the activities in a program depends from the strategies found in the lesson plans [12]. This means that in the creation of PowerPoint presentations, it precedes the creation of content in lessons before creating the designs of the storyboard in slides of PPTs.

3 METHODOLOGY OF RESEARCH

Structured interviews, observation and achievement results in student performances wereused in the analysis of descriptive data. Without the knowledge of students that they were being observed, the workflow step by step procedure in the delivery of lesson plans were rated and analyzed accordingly by the researcher who performed the classroom activities using the PPTs. The depth-interview was conducted at the end of the semester to augment some of the data that needs clarity on the focus of observation as required for every PPT being evaluated.

There were 61 enrollees in the Marketing Principles course but only 42 respondents were included in analysis of data due to the absence of complete attendance and performance ratings of the 19 students who failed to complete their performance grades during the execution of the 10 lessons in PPTs. The observation on attitudes and behaviors were based from their active and passive participation in classroom activities. The effectiveness of graphics in slides (for motivation), was made available by the participants in a survey using the online means. They were also instructed to like or download the ten PPTs from SlideShare.com. Analytics of likes and download counts of the PPTs were also provided by the social media, which are linked in the facebook account of the teacher who created the PPTs.

Three-point scale was used in rating the effectiveness on graphics of the slides found in the ten PPTs, and the observed student behaviors include effective criteria in rubrics with the following scale:

1= low effectivity/behavior;
2= moderate effectivity/behavior; and
3=high effectivity/behavior.

The effectiveness of lessons using the PPTs was evaluated by the students using a five-point scale:

1= not effective;
2=somewhat effective;
3=effective;
4= much effective; and
5= very much effective.

Mean, standard deviation, ranks, and chi-square were used in the interpretation of data.

4   ANALYTICAL CONCEPT

The pictogram in Figure 1 shows the bases of evaluating the effectiveness of the ten PowerPoint presentations. It covers issues on graphics for students' motivation, the visual images put in the slides, the delivery of lessons in modules, and the actual performances of student respondents taken from ratings in their classroom activities, test results, and grades in the workshops and group processes conducted during the delivery of lessons.
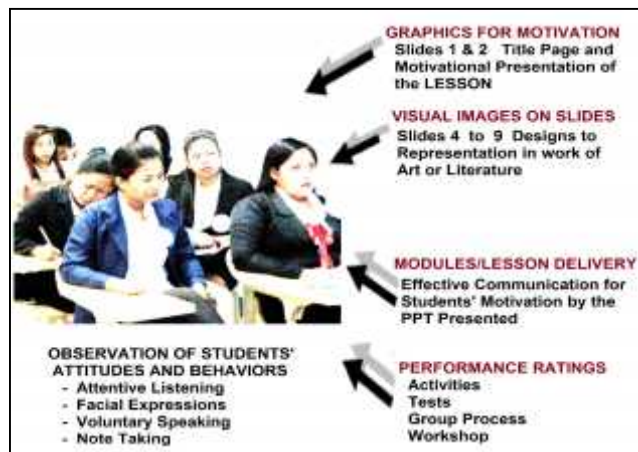

Fig. 1- Analytical Concept of Evaluation on Effectiveness of the PPTs as a result of observation in an Experimental Design Study

Five behaviors were observed during the delivery of the lessons: enthusiasm, sensitivity, active with self-sufficiency, cheerful with happy face, and volunteering attitude. These are noted by the instructor while they are listening and attentively looking to the details of the presentations in slides while classes are going on. Graphics for motivation is found in Slides 1 and 2 consisted of title page, and another slide that contained visual arts, which are vividly described or seen in drawings, caricatures and pictures. The visual images are composing of the appearance or representation, a thing in work of art and literature that can be formed closely resembled to what is expected in the lesson.

The evaluation also includes the oral presentation of the instructor during the delivery of the lessons. Like any other technological media, the 10 PowerPoint presentations contained texts, photographs, sketches, caricatures, filmstrips, and videos [13]. The performance ratings of students in various activities were taken from the accomplished handouts, tests and worksheets and were treated as independent variables.

5   RESULTS

5.1 EFFECTIVENESS OF GRAPHICS IN SLIDES FOR MOTIVATION

Table 1 presents the frequencies and rank results on the effectiveness of Graphics contained in the slideshows for motivation purposes. Slides 1 and 2 had supported some important roles of emotion, relevance, and visuals in

TABLE 1. FREQUENCIES & RANKS ON GRAPHICS

Graphics	Frequencies			Total	Rank
	Low	Mod	High		
1. Photographs	15	8	19	88	2
2. Drawings/Caricatures	12	10	20	92	1
3. Symbols & Texts	19	5	18	83	3
4. Colors & Designs	21	8	13	76	4
5. Printed Materials	24	9	9	69	5
Total	91	40	79	408	

Chi-Square = 59.576; df= 8 Crit. Values of $X^2@.05$= 15.51 Significant

learning and memory of student participants [14]. As gleaned in this table, the highest ranks were observed in students' responses to the use of drawings/caricature, photographs and symbols with texts. This indicates that the PowerPoint presentation with graphics can be crafted and designedto facilitate the transfer of information and for effective motivation. Theeffective transfer of information was due to the graphics put in the slides. These are alsocalled "technological instructional media" containing texts, photographs, sketches andcaricatures, filmstrips, and videos [15]. The effectiveness of graphics in slides depends from the virtual images placed in the PowerPoint presentation. As found, students were motivated to participate in the discussions and classroom activities because of the drawing, photographs and symbols that are designed in attractive colors with texts. As recommended by [16] the "dual channel" or use of both verbal and visual channels is better in delivering the PPTs to its audience. Too much text in the screen doubles the loads of the visual channel. It needs the balancing of number of texts and images in the slides.

TABLE 2. EFFECTIVENESS OF VISUAL IMAGES ON BEHAVIORS

Observed behaviors	Effects of Visual Images on Behaviors		
	Computed Chi Square	Critical Value @ .05df	Analysis
1. Sensitivity on Colors	51.39	15.51	Sig
2. Enthusiasm	32.96	15.51	Sig
3. Cooperation	27.68	15.51	Sig
4. Critical & Domineering	6.13	15.51	Not Sig
5. Volunteering to lead	15.60	15.51	Sig
Total		40	79

5.2 EFFECTIVENESS OF VISUAL IMAGES ON BEHAVIORS

Visual images are the appearance of representation or thing in a work of art or literature that resemble another that is closely reflecting something about a simile or metaphor [17]. Effectiveness of visual images can be due to attractiveness in colors, lines and shapes or the print in designs that can capture attention.

In this study, behaviors of students were gauged by their active participation and attention on details about the graphics placed in slides with designs in symbols, colors, and various images they saw in the PPTs during

the oral delivery of lessons.

Table 2 presents the effects of visual images on students' behaviors. The findings showed that they are sensitive to colors, enthusiastic in their participation, and very cooperative when their classmates are cheerful with happy face. They volunteer to lead during classroom activities butsome students were domineering and critical in their dealings with others. In the results of chi-square, it appeared that all the observed behaviors except "critical and domineering behavior" have significant results. The effects of visual images found in PPTs were due to sensitivity of the viewers to the attractiveness of colors. They have enthusiasm, cooperation and volunteering attitudes. When the PPTs used the key elements of emotions such as "happy face", the students also changed their moods that resemble the images they see. This is a proven guideline on the science of instruction, which is relevant to both the visual and verbal communications [18].

Instructional design models provide creators to be more artistic and complementing the effective use of illustrations. In [19], researchers offer a means to make more powerful and effective illustrations. Like any other instrument of learning, the crafted PowerPoint presentations have specific intention such as to be sensitive; how well it can improve the learners, and how effective it can be used in the teaching learning conditions. The behavior of students who showed emotions of happy face and became very cooperative and enthusiastic was a sign of effective communication using the PPTs. According to [20], bad PowerPoint presentations can be avoided by creating meanings into stories that are memorable to the audience. These stories in images should resemble the viewers' emotions and experiences.

5.3 EFFECTIVENESS OF MODULES ON LESSON DELIVERY

Effective communication is the ability of the PPT presenter to deliver the intended outcomes of lessons made in the slides of the PowerPoint presentations. It includes gestures, languages and textual or oral communication made by the instructor during the delivery of lessons [21]. This means that as much as possible, reading the slides during the delivery should be discouraged. It is also important to maintain eye contact when connecting with the audience [22]. It means that making greater eye contact with audience can increase the quality of face-to-face interactions. [16] also confirmed the coherence principle that stated, "People learn better when extraneous words, pictures, and sounds are excluded rather than included in the multimedia presentations".

By knowing the audience, big ideas can draw into their emotions via the delivery of the PPT presentations. Findings on the effectiveness of modules for motivation in Table 3 found that from the students' rating in tests, oral recitation, group processing and activity outputs appeared of having six PPTs out of the 10 PPTs evaluated were "Very Effective"with 4.56 to 4.88

mean ratings.

TABLE 3. EFFECTIVENESS OF MODULES ON PPT DELIVERY

Titles of PPTs	Mean	SD
1. Marketing Concepts and Functions	4.88	0.323
2. The Consumer	4.77	0.532
3. Consumer Behavior and Purchase Decision	3.68	0.536
4. Psychological Factors Affecting Consumer	4.35	0.799
5. The Buying Behaviors of Organization	4.68	0.537
6. Market Segmentation and Targeting	4.03	0.317
7. Marketing Research and MIS	3.10	0.303
8. The 4 P's	4.56	0.500
9. Marketing Channels and Channels of Distribution	4.68	0.504
10. Physical Distribution & Distribution Management	4.58	0.561

Computed results of mean and standard deviations taken from students' achievement grades inthe E-Grading System of Cagayan Valley Computer & Information Technology College, Santiago City Philippines wereanalyzed via Average Mean and Standard deviations. The same analytics were also found in the likers and downloaders of PPTs in SlideShare.com where these PPTs were uploaded for publication.

6 CONCLUSIONS

This study is one of the few attempts to evaluate the learners' use of technology based instructional materials.

1. Fortunately, the result of this study showed very high significant on the effectiveness of the technology based instructional materials in terms ofGraphics in Slides of PowerPoint Presentations for Motivation of students.

2. The observed behaviors of students' sensitivity to colors, enthusiasm, cooperation, and volunteering attitude are significantly effective on visual images.

3. Their domineering and critical behaviorsare not significantly related to the effectiveness on visual images.

4. The study demonstrated that the use of technology based instructional materials in the teaching of Marketing Principles is a promising skill for creative designing in both the educational and industrial setting.

7 RECOMMENDATION

1. The classroom teaching needs effective use of PPTs with appropriate graphics, designs, and content. It is recommended that the appearance of the visual images, graphics and content in the instructional materials should be evaluated using the same procedures made by the author of this experiment.

2. Providing opportunities of creating modules or instructional materials for institutions that offer distance learning is recommended;

3. The universities and colleges should create a working group that evaluatesthe content and designs of PPT and standardize its procedure in delivery to intended audiences. Postgraduate professors should also learn the easier way oftransferring information with effectiveness intent.

4. The usefulness of knowledge and skills in marketing communications can be integrated in the training proposals foreffective PowerPoint presentations, creation of effective multimedia appropriate to their audiences

5. People learn better when multimedia messages are designed in ways that are consistent with how the human mind works and with research-based principles.[22] It is recommended that story boards should be made before the designing of slides and will be used by the instructor during thedelivery of the PPT. This isto ensure motivation, attention to details, and enjoyment in learners.

6. Follow-up study to be conducted to the postgraduate courses to distinguish the result of this study conducted in the undergraduate course.

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