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Promoting Outcomes-Based Instructional Materials: Testing the Effectiveness of Print Modules for Business Students

Analyn V. Inarda* 

University of Rizal System Rodriguez, PHILIPPINES

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Abstract: Education delivers systematic instruction so effective learning acquisition may take place. It molds students into holistic well-being to contribute to various industries; hence, relevant competencies are developed. Strengthening education significantly encompasses the production of formfitting and distinct instructional materials to invite a sequential way of presenting quality instruction. This research is focused on knowing the effectiveness of the modules developed in Human Resource Management for Filipino business students. Specifically, it is developmental research and utilizes a pretest and post-test control group design. Numerical data were supported by phenomenological interviews, strengthening the study's results. It involved 80 college students classified as the experimental and control group. Moreover, the interview includes 10 participants. Findings reveal that utilizing the modules realized the increase in performance of the experimental group due to their exposure to the materials. However, one of the pitfalls has been revealed in utilizing self-directed learning material; thus, academic performance will only improve if students are organized to set their own goals and learning pace. Using outcomes-based instructional materials leads to substantiating learning, effectively enticing learners' interest. It maximizes students' motivation and participation since topics are well-planned and designed comprehensively. The materials are an essential tool in inviting the enthusiasm of business students to engage in learning. These are valuable means to encourage independent learning without sacrificing the competencies to be learned and applied by the learners.

Keywords: *Business students, human resource management, methodological triangulation, outcomes-based education, print modules.*

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Introduction

Education system approaches are rapidly changing, and their dynamics have been evident for years. It has continuously evolved through passing dramatic breakthroughs (Childress, 2021) brought about by countless periods of environmental and technological changes. Similarly, there has been an issue with the quality of business graduates universities produced, including skills gaps, instructional materials, quality of teachers, and industry collaboration (Campbell, 2018; Uddin, 2021). To cope with the transformations emphasizing 21st-century learning planning and thinking, higher education has prompted and encouraged ingenuities since educational innovations, which include competency-based learning and more student-centered, aim to increase and improve knowledge application. A critical insight taken away was that educators recognized how they could contribute by producing print and digital learning materials. Teachers have a huge role in how students acquire learning (Peng et al., 2019). In like manner, one has to initiate strategies and write materials to aid the success of knowledge transference. Production of instructional materials was instrumental when the COVID-19 pandemic struck (Dayagbil, et al., 2021). Flexible learning has been prevalent (Zhang et al., 2021); thus, educational materials must be produced. It may be encouraged by having student-centered learning, compelling them to be independent and discover knowledge independently. The module effectively promotes self-directed learning (Ladell-Thomas, 2012), wherein students can acquire knowledge at their own pace. The idea is for the learners to establish their learning goals, decide on the learning process, identify strategies, and assess their learning outputs (Loyens et al., 2008; Torrefranca, 2017).

Furthermore, the quality of modules is a paramount concern that is easy to comprehend (Zabidi et al., 2017) and engages learners' higher-order thinking skills. Significantly emphasizing that instructional materials should be developed, which will be beneficial for many reasons, outcomes-based modules have been developed for Filipino business students. The Human Resource Management materials adhere to the needs of the course that are ordered to

* **Correspondence:**

Analyn V Inarda, University of Rizal System Rodriguez, Philippines. ✉ analyn.inarda@urs.edu.ph



shift to an outcome-based approach (Commission on Higher Education, 2014). The topics and objectives are focused primarily on the desired competency and what is vital for students to value and skills to be utilized. The instructional material is grounded on an outcomes-based syllabus (Portana et al., 2021) comprising eight modules. The researcher observed that although there are so many textbooks or reference materials in the said field, many still need to meet the specific objectives and competency of the course since they are discussed in general contexts. In addition, more articles are needed to reveal the influence of teacher-made materials on business students' academic endeavors. Thus, this work attempted to test the effectiveness of the developed modules. Finally, the approach and exercises in the module are outcomes-based, which leads students to apply what they have learned.

Literature Review

The Need for Instructional Materials

The need for more relevant and formfitting instructional tools is a concern that hinders the delivery of quality education and causes some difficulties in knowledge conveyance. Developing instructional material is crucial for most schools since it plays a role in learning (Tuimur & Chemwei, 2015). These are considered significant since it provides learners with real educational experience (Olokooba, 2021); thus, they develop an enthusiasm for hands-on activities. These can be printed and electronic materials used to communicate knowledge to students in learning (Dewi & Harahap, 2016). These materials can guide learners (Lipscomb et al., 2004), and teachers can transfer knowledge to students spontaneously (Koko, 2016). Many studies claimed that it is imperative to utilize instructional materials to substantiate learning (Awolaju, 2016; Choppin et al., 2022), and teachers have an essential role in providing relevant and appropriate learning sources (Dio, 2017) to promote knowledge acquisition. Similarly, educational materials are undoubtedly vital for the delivery of instruction successfully (Esu et al., 2016).

Teachers might consider students' culture and background in using instructional materials as teaching aids to utilize the same effectively. In addition, selecting appropriate educational material with consideration of learners' mental capability might influence their achievement and rate of performance (Dio, 2017). Moreover, whether it is local or foreign-made, it helps in teaching-learning. Some students prefer printed materials (Mizrachi, 2015), while others are more enthusiastic about using electronic copies; however, they still print them for reading (Ji et al., 2014). Students commonly prefer to use printed material due to comfortability and physical side effects (Pálsdóttir, 2019) they encounter in its utilization. The teachers should consider other factors in the selection of appropriate materials. This can help to invite the learners' interest and develop broad concepts on the topics learned (Kochhar, 2009).

Use of Instructional Materials for Students and Teachers

Literature suggests that instructional materials are helpful and have influenced the academic performance of students (Okendu, 2012), which supplements the instructional processes. It stimulates the learners' interest, which must be supplied so they can explore independently. It guides the students to prepare for future lessons. It promotes cooperative learning so they can work to accomplish shared goals that guide interdependence, motivating group members to help and support each other (Palmer et al., 2010), collaborating, and critically analyzing scenarios. Using instructional materials improves students' academic performance better than those taught without (Abubakar, 2020; Nwike & Catherine, 2013). The concepts of the topic presented are better understood; hence, the school performance of students is influenced (Adalikwu & Iorkpilgh, 2013). Using instructional materials to create an effective plan to deliver the knowledge to a specific group of students is imperative. Various conceptual and cognitive skills can be applied (Bukoye, 2018).

Jayaram and Dorababu (2015) claimed that distance education success in its implementation depends significantly on the study materials used. It also helps the teachers deliver the subject and consider the aspects so learners can understand the topics. Specifically, instructional materials are used by teachers to plan lessons in a specific period, assess the knowledge of their students, assign tasks, create projects, and administer exams (Adalikwu & Iorkpilgh, 2013). These materials should be relevant and validated since it has influenced students' learning outcomes, and teaching in this modern period is increasingly becoming more complex (Anyanwu, 2003). This helps the students and teachers to achieve academic goals in the process (Olayinka, 2016). Ikerionwu (2000) reiterated that the presence of instructional materials assists teachers in presenting their lessons practically and sequentially.

Development of Instructional Materials

Phases of materials development should be premeditated to produce an excellent and valuable tool. The analysis of students' needs and the design of materials, content, and language are essential. Its absence may result in a dilemma on the utilization, leading to students' confusion about the subjects being taught. Instructional materials which are too challenging to comprehend and contain poor language and format may lead to students' unsuccessful performance (Glewwe et al., 2009). Hwa (2020) asserted that it is not easy to craft educational material which will be worthwhile and entirely suits the need of the learners. However, if provided, it will dramatically increase the learning outcomes. The development of the modules in this study considered the results of Portana et al. (2021), particularly the challenges

of both learners and teachers in using the developed materials. In detail, the issue of quality and quantity adequacy, limitation of topics, complexity of exercises, and presentation of figures and illustration. Therefore, testing the validity and quality of the materials produced is a rigorous process. Alignment to curricular standards is vital to meet the objectives of its utilization. Studies on instructional materials mainly developed revealed their acceptance as utilized by teachers and learners. Tan-Espinar and Ballado (2016) bared respondents agree that the developed material met the criteria in terms of design and recommended that it is a tool to enhance the educational process, which is supported by Terano (2015).

Four problems are formulated in the study: (a) what are the processes undertaken to develop the instructional materials; (b) what are the mean scores of the experimental and control groups on their pretest and post-test; (c) do the experimental group's pretest scores differ from their post-test results; and, (d) is the experimental and control group mean scores significantly differ in their post-test results? It aims to develop and identify the materials' effectiveness in human resource management for business students.

Methodology

Research Design

This work is developmental research (Richey & Klein, 2005). It used a pretest-post-test control group design to test the effectiveness of the developed modules. Creswell and Creswell (2018) defined it as a traditional, classical design randomly assigning participants to two groups. Methodological triangulation (Bekhet & Zauszniewski, 2012) strengthened the study's quantitative findings.

Contents and Basis of Development

The development of the material was based on the requirement of the Philippine Commission on Higher Education implementation of outcomes-based education in colleges and universities to assure quality. The modules developed contain the instructional goals, objectives, coverage, contents, format structure, and assessment. Various local or foreign references have been used in its formulation. A critic reader runs through the grammatical context of the modules. The draft of the modules has been sent to three members of the technical working group of the university on book writing for evaluation before its actual utilization and was assessed based on contents, language and grammar, presentation, usefulness, authorship, publication standard, and physical features.

Sampling Technique

The two groups of respondents comprise 80 business students majoring in Financial Management and Marketing Management enrolled in Human Resource Management course. They were randomly selected and classified into the experimental (Financial Management) and control groups (Marketing Management). Both groups are regular first-year students, ages 18-19 years old, composed of males and females, to ensure they can be compared accurately. After quantitative results had been established, a phenomenological transcendental (Moustakas, 1994) interview was conducted with 10 participants selected by purposeful sampling based on inclusion and criteria, which cover students' sex, mean scores, and the number of hours allotted for studying the subject.

Experimental Procedure

The conduct of the study was explained to both groups then a pretest was given. This was administered to examine prior knowledge of the course Human Resource Management. The materials contain eight modules with topics such: (a) The Evolution of Human Resource Management –Global and Philippine Context; (b) Human Resource Management Definition, Scopes and Functions, HR Manager and their roles; (c) Job Organization and Information, (4)Acquisition or Procurement of Human Resources; (d) Maintenance of Human Resources; (e) Development of Human Resources; (f) Research in Human Resource Management; and, (8) A Glimpse of Human Resource Management in the Philippine Government Context. Each module has objectives, pretest questions to measure the previous knowledge on the topic, contents that also include additional information, the post-test (e.g., case analysis, multiple choice type question, true-false, individual and group activity) to examine the knowledge acquired by the students after being exposed to the material and the list of references. The objectives and activities in the modules ensure that students can apply the valuable learnings they acquire in the lessons. The experimental group was exposed to the modules; the first week was devoted to online orientation (Google Meet) and materials distribution, while the 17 weeks were on the utilization of the materials as their primary course reference. The teacher provided thorough instruction, allowing them to be flexible enough to handle their lessons and perform the tasks and activities. Based on a budget of work reflected in the syllabus for each topic, they are tasked to submit activities for each module through e-mail, messenger, and google classroom. There is no actual lecture discussion conducted. However, there allotted one hour a week of online consultations for students concerning module design, language, format, and activities. Control groups are taught using the lecture-discussion, encouraging student participation. For 17 weeks, three hours a week were allotted for online meetings (Google Meet) to discuss the topics reflected in the syllabus. The conduct of classes and activities is followed

as scheduled. Tasks and activities are also given to assess their learning and submitted through e-mail, messenger, and google classroom. After module utilization, a post-test was administered to both groups using the same teacher-made test.

There is no recorded attrition to both study participants, which may threaten the internal validity; however, concerning the control group, total attendance of each participant cannot be required because of the online platforms being utilized, which display various limitations.

Questionnaire and Test Questions Validity

A teacher-made test composed of 50 items was utilized to measure the average performance of the student respondents on the pretest and post-test. This test is based on the contents of the developed modules. Questions from the test include analysis, comprehension, and application. Before making the test pattern in the module's contents, a table of specifications and the subject's approved course syllabus have been prepared. It underwent item analysis as reflected in Table 1, which established the index of discrimination (ranges from 0.20 to 0.58) and difficulty (ranges from 0.20 to 0.70).

Table 1. Index of Difficulty and Discrimination

Item Number	Index of Difficulty	Interpretation	Index of Discrimination	Interpretation
1	0.3	Difficult	.34	Discriminating
2	0.4	Difficult	.30	Discriminating
3	0.6	Moderately Difficult	.28	Discriminating
4	0.4	Difficult	.30	Discriminating
5	0.3	Difficult	.27	Discriminating
6	0.4	Difficult	.20	Moderately Discriminating
7	0.7	Easy	.20	Moderately Discriminating
8	0.4	Difficult	.25	Discriminating
9	0.6	Moderately Difficult	.50	Discriminating
10	0.4	Difficult	.20	Moderately Discriminating
11	0.6	Moderately Difficult	.20	Moderately Discriminating
12	0.6	Moderately Difficult	.45	Discriminating
13	0.6	Moderately Difficult	.23	Discriminating
14	0.4	Difficult	.24	Discriminating
15	0.5	Moderately Difficult	.25	Discriminating
16	0.6	Moderately Difficult	.30	Discriminating
17	0.6	Moderately Difficult	.23	Discriminating
18	0.7	Easy	.40	Discriminating
19	0.6	Moderately Difficult	.30	Discriminating
20	0.6	Moderately Difficult	.34	Discriminating
21	0.5	Moderately Difficult	.23	Discriminating
22	0.6	Moderately Difficult	.31	Discriminating
23	0.7	Easy	.28	Discriminating
24	0.3	Difficult	.30	Discriminating
25	0.3	Difficult	.20	Discriminating
26	0.3	Difficult	.20	Discriminating
27	0.6	Moderately Difficult	.30	Discriminating
28	0.4	Difficult	.20	Moderately Discriminating
29	0.3	Difficult	.33	Discriminating
30	0.2	Very Difficult	.30	Discriminating
31	0.4	Difficult	.40	Discriminating
32	0.4	Difficult	.30	Discriminating
33	0.3	Difficult	.33	Discriminating
34	0.4	Difficult	.37	Discriminating
35	0.3	Difficult	.50	Discriminating
36	0.4	Difficult	.40	Discriminating
37	0.5	Moderately Difficult	.30	Discriminating
38	0.6	Moderately Difficult	.40	Discriminating
39	0.6	Moderately Difficult	.30	Discriminating
40	0.7	Easy	.58	Discriminating
41	0.7	Easy	.40	Discriminating
42	0.6	Moderately Difficult	.30	Discriminating

Table 1. Continued

Item Number	Index of Difficulty	Interpretation	Index of Discrimination	Interpretation
43	0.6	Moderately Difficult	.42	Discriminating
44	0.6	Moderately Difficult	.30	Discriminating
45	0.5	Moderately Difficult	.30	Discriminating
46	0.3	Difficult	.20	Moderately Discriminating
47	0.6	Moderately Difficult	.42	Discriminating
48	0.4	Difficult	.48	Discriminating
49	0.6	Moderately Difficult	.30	Discriminating
50	0.5	Moderately Difficult	.40	Discriminating

The number of items is distributed as follows: for module 1, there are seven items (2, 10, 16,18, 31, 38,47), module 2 has four items (27, 45, 48, 50), module 3 has seven items (9,14, 17,21,33,43,46), module 4 has seven items (1,8,15,28, 30, 37,42), module 5 has seven items (3, 13, 20,25, 32, 40, 49), module 6 has seven items (4, 5, 19, 22,29,35, 39), module 7 has five items (6, 11, 23, 24, 34) and module 8 has six items (7, 12, 26, 36,41,44). Likewise, it was subjected to expert validation and tested the reliability. The instrument was pilot tested on another set of business students who were not part of the study. The result of .97 is interpreted as highly reliable using Spearman Rho. The pretest was utilized to assess the knowledge of both groups before the experiment. At the same time, the post-test was also given to the same groups after the experimental group used the materials.

Interview questions were made based on the results of the quantitative findings, specifically the outliers, to explore a wide range of topics. It contains four (4) central questions, which are the broadest question that can be asked, each with sub-questions that subdivide central questions into parts or topics (Creswell, 2015). It was content validated by experts. The researcher conducted pilot interviews (Majid et al., 2017) with two business students outside the study and recorded how they would answer the questions, which helped the researcher improve the interview guide and questions. Feedback was analyzed, and suggestions were considered before the instrument was utilized by 10 participants (Creswell & Creswell, 2018) who were part of the experimental group. During the qualitative data collection procedures, sub-questions became the key questions directly asked during the interview. The purpose is to confirm, expand, or discord results, increasing the validity and understanding of quantitative data.

Analyzing of Data

Appropriate statistical treatments were used to identify the effectiveness of the modules with the utilization of SPSS version 26, particularly descriptive and inferential statistics. The mean scores of experimental and control groups on their pretest and post-test were identified employing descriptive statistics. Inferential statistics are used to examine the difference between the pretest and post-test of the experimental group and the post-test of the experimental and control groups.

After the quantitative findings had been established, the researcher conducted the interview. The researcher purposefully selected 10 participants from the experimental group based on the inclusion and exclusion criteria set. An online meeting (Google Meet) was conducted; however, the participants received, read, and signed the informed consent form before the interview. This contains and follows ethical procedures in conducting interviews. The participants describe their ideas and experiences based on the questions deliberated. Thematic analysis was used to analyze qualitative data, and it underwent cool-to-warm analysis so that themes may emerge. The result analyzed were confirmed by participants through member checking (Birt et al., 2016; Creswell & Clark, 2017) to ensure the principle of trustworthiness (Korstjens & Moser, 2018), particularly credibility, transferability, dependability, confirmability, and reflexivity. The study ensured ethical considerations were followed, and students were informed about their detailed participation and treated equally during the study. An interview protocol (Jacob & Ferguson, 2012) has been prepared to guide the proceedings.

Findings / Results

The results are presented to reveal the effectiveness of the developed modules in Human Resource Management for Filipino business students. This work is in response to the Philippines Commission on Higher Education order shifting to an outcomes-based education principle, including instructional design.

Table 2. Mean Scores of the Experimental and Control Groups on Their Pretest and Post-Test

Module Number	Experimental Group				Control Group			
	Pretest		Post-Test		Pretest		Post-Test	
	M	SD	M	SD	M	SD	M	SD
1	2.07	1.14	4.15	1.50	2.26	.760	2.95	1.29
2	2.78	.90	3.66	.69	2.71	1.13	3.29	.92
3	3.27	1.24	5.22	1.17	3.03	1.49	4.03	1.28
4	3.15	1.44	5.76	1.31	3.18	1.27	4.24	1.49
5	3.17	1.48	5.46	1.38	3.29	1.50	4.11	1.29
6	3.34	1.44	5.22	1.27	3.11	1.78	4.08	1.47
7	3.20	1.40	4.05	1.26	2.55	1.67	3.29	1.41
8	2.07	1.67	3.02	1.91	1.92	1.83	3.39	2.22
Total	23.05	7.84	36.54	6.85	22.05	7.63	29.37	7.06

The experimental group displayed increased scores from the pretest ($M = 23.05$, $SD = 7.84$) to their post-test ($M = 36.54$, $SD = 6.85$). Similarly, the control group obtained a post-test score ($M = 29.37$, $SD = 7.06$) higher than their pretest ($M = 22.05$, $SD = 7.63$).

The experimental group got a lower mean score on the topic eight post-test, "A Glimpse of Human Resource Management in the Philippine Government Context." It may be attributed to a history in which they have experienced *difficulty in schedules* since they have to complete all the required activities resulting in giving less attention to the contents of the last module. Student remarked:

"We need help managing our schedules ending the semester. I enrolled in seven subjects, and all professors gave the bulk of requirements". (S2)

"We are struggling with the management of our schedules." (S1)

To further support the increased of experimental group scores, the phenomenological interview highlighted that the materials invite *enthusiasm and curiosity* of the students to use because of their unique and sequential features. As remarked:

"When I saw the modules, it is something different. I have this feeling that I will learn more on the subject because it is arranged in a manner students can easily understand the topics." (S4)

"With sufficient reference to use so we can acquire knowledge on the subject, these modules are helpful." (S6)

"The modules are well arranged and written; the design and contents with additional details interest me to read and use the modules." (S7)

Furthermore, participants reiterated that it serves as their *guide in learning* all the topics in the syllabus. Confirmatory statements quoted:

"All the topics in the syllabus are covered in the modules. The activities and exercises are well designed". (S4)

"I am steered on what I need to learn in the topics." (S2)

"We can inquire to our professor based on our notations of the topics which are not clear to us." (S3)

"I am sure that the modules helped me to learn a lot about the course because of contents that are arranged well and full of useful ideas." (S5)

Table 3. Significant Difference in the Mean Scores of the Experimental Group as Revealed by the Pretest and Post-Test Results

Module Number		M	SD	MD	t	df	p	Cohen's d	H ₀
1	Pretest	2.07	1.14	2.073	10.95	40	.000	1.58	R
	Post -Test	4.15	1.50						
2	Pretest	2.78	.90	.878	5.59	40	.000	1.11	R
	Post -Test	3.66	.69						
3	Pretest	3.27	1.24	1.951	8.33	40	.000	1.62	R
	Post -Test	5.22	1.17						
4	Pretest	3.15	1.44	2.610	9.65	40	.000	1.90	R
	Post -Test t	5.76	1.31						

Table 3. Continued

Module Number		M	SD	MD	t	df	p	Cohen's d	H ₀
5	Pretest	3.17	1.48	2.293	8.12	40	.000	1.60	R
	Post -Test	5.46	1.38						
6	Pretest	3.34	1.44	1.878	6.76	40	.000	1.39	R
	Post -Test	5.22	1.27						
7	Pretest	3.20	1.40	.854	3.83	40	.000	0.64	R
	Post -Test	4.05	1.26						
8	Pretest	2.07	1.67	.951	2.95	40	.005	0.53	R
	Post -Test	3.02	1.91						
Total	Pretest	23.05	7.84	13.48	14.18	40	.000		R
	Post -Test	36.54	6.85						

As revealed by the pretest and post-test results about the modules, On module 1 recorded an increase ($MD = 2.073$) in their performances after it was used ($t = 10.95, p = .000$); similarly, module 2 ($t = 5.95, p = .000$) module 3 ($t = 8.33, p = .000$), module 4 ($t = 9.65, p = .000$), module 5 ($t = 8.12, p = .000$), module 6 ($t = 6.76, p = .000$), module 7 ($t = 3.83, p = .000$), and module 8 ($t = 2.95, p = .005$) emphasized the sense that performance rises. The null hypothesis is rejected since the p -value is less than 0.05 level of significance. It concludes that there is a significant difference in the mean scores of the experimental group, as revealed by their pretest and post-test scores. Medium to large effect sizes were revealed; thus, practical significance was established.

The results were inveterate and expanded by the interview conducted. There is *knowledge concentration* since the contents are well planned, which leads to retaining information, and students can understand all the topics. Confirmatory statements include:

"The modules are helpful; we are not confused about every topic... We are guided". (S5)

"There is focus on the competencies we need to learn since details of the topics are well written in the modules." (S7)

"I think... this is a good approach to a college education. Considering our new learning environment, we are guided to grasp what we need to learn. It steers us to focus on the subject details and competencies because of these materials". (S1)

Moreover, participants reiterated that the modules are *user-friendly*, which helps. They can quickly know what is meant by the topic. They claimed:

"The modules are a complete package; we are informed as to the objectives we need to meet; the layout suits our needs; it is readable and easy to comprehend." (S2)

"The terms in human resource management are well defined, and the exercises help us to apply what we have learned." (S8)

Table 4. Significant Difference in the Post-Test Means Scores of the Experimental and Control Group

Module Number		M	SD	MD	t	df	p	Cohen's d	H ₀
1	Experimental	4.15	1.50	1.199	3.77	77	.000	0.86	R
	Control	2.95	1.29						
2	Experimental	3.66	.693	.369	2.01	77	.048	0.46	R
	Control	3.29	.927						
3	Experimental	5.22	1.17	1.193	4.31	77	.000	0.97	R
	Control	4.03	1.28						
4	Experimental	5.76	1.31	1.519	4.79	77	.000	1.09	R
	Control	4.24	1.49						
5	Experimental	5.46	1.38	1.358	4.50	77	.000	1.01	R
	Control	4.11	1.29						
6	Experimental	5.22	1.27	1.141	3.68	77	.000	0.83	R
	Control	4.08	1.47						
7	Experimental	4.05	1.26	.759	2.52	77	.014	0.57	R
	Control	3.29	1.41						
8	Experimental	3.02	1.91	.370	.794	77	.429	-0.18	FR
	Control	3.39	2.22						
Total	Experimental	36.54	6.85	7.16	4.57	77	.000		R
	Control	29.37	7.06						

Module 1 ($t = 3.77, p = .000$), module 2 ($t = 2.01, p = .048$), module 3 ($t = 4.31, p = .000$), module 4 ($t = 4.97, p = .000$), module 5 ($t = 4.50, p = .000$), module 6 ($t = 3.68, p = .000$), module 7 ($t = 2.52, p = .014$), reflects the difference on the experimental and control group post-test scores; thus, the hypothesis is rejected. However, for module 8, the hypothesis fails to reject ($t = .794$) since the p -value (.429) is greater than the significance level of 0.05. Effect size ($d = -0.18$) shows that the control group performs better than the experimental group.

The interview disclosed that the experimental group's post-test scores on module 8 were lower than the control group. This is due to the *rigidity of schedules* because of the ending semester; hence, the number of activities submitted by the students has affected their concentration on the contents of the last module. Students confirmed:

"I had difficulty focusing on the last module topic...we also have other requirements to attend to". (S8)

"I was not able to focus on the last topic due to my concentration on other subject requirements." (S2)

"I find the last topic interesting because I want to work in government, but given the time element, I have difficulty understanding the contents. However, I will still read and study the last topic". (S7)

On the other hand, participants expanded their views and reiterated that modules could be an effective tool to *benefit learners* (Nardo, 2017) on their academic journey.

"I hope other business subjects may utilize modules; these benefit us as our primary reference. We did not find difficulty in looking for sources since the topics in the syllabus are contained in the modules". (S9)

"More instructional materials like modules will ease our burden in looking for references and understanding the topics....it will greatly help us". (S2)

Furthermore, students emphasized the *systematic order* of the module's contents.

"The modules are well planned before the development. You can see all the elements to make it acceptable to be utilized". (S2)

"We can corroborate with each other because we have a common language in interpreting the topics; we can ask each other without being lost on the information we acquired from the material." (S4)

"The modules and the contents of the approved syllabus are in congruence; all the topics are in order". (S5)

"It is good that there are variations of exercises given in the modules which test the knowledge acquired by the student". (S3)

Discussion

Evidence of educational changes has been recorded, and concurrently it is more focused on a student-centric model which drives interest in education. The most valuable are the what and how the students are taught. Outcomes based-education lets the students practice their skills based on what they have learned in the course. Therefore, a university must be shifted to a pedagogical model like outcomes-based education, which includes assessing the practices in implementing the curriculum. The study tested the effectiveness of an outcomes-based print module for business students.

Both groups displayed a yield in their performances on their scores; however, there is a manifestation of an increase in scores for the experimental group in all areas except topic number 8, which is "A Glimpse of Human Resource Management in the Philippine Government Context." In comparing the results, the idea is taken that the utilization of the modules by the experimental group realized a notable increase in their performances due to their exposure to the materials. Aside from enticing and stimulating the learner's academic interests, it improved their learning outcome, which is demonstrated in completing the course. This also addresses the instructional needs of the learners (Agaton & Cueto, 2021) since the study was conducted during the COVID-19 pandemic, and modules are considered effective tools to reach and enrich learners. Utilization at their own learning pace led to course content familiarity, which helped them understand and learn the lessons. It implies that the use of the developed modules plays a role in significantly improving their scores (Adalikwu & Iorkpilgh, 2013; Dio, 2017; McIntyre et al., 2018; Torre Franca, 2017). The interview supports the idea that the modules developed and utilized are valuable so students can quickly clench what is being explained on the planned topics to be learned. Thus, addressing the competencies to be developed positively influences learning outcomes (Ferrerias-Garcia et al., 2021).

On the other hand, a difference in scores was revealed on the pretest and post-test of the experimental group. The presence of instructional materials indicates that the group has ample opportunities to understand the subject relevant to the course. They could engage in the lessons and develop a sense of responsibility to complete their activities. Using the materials led to applying mastery of the subject in all the topics. The increase in performance is the manifestation of learning the concepts. In the interview, they responded positively to the questions relative to the utilization of the

modules and enthusiastically provided feedback which constructively established how valuable the materials are. It can be further inferred that students achieve better after using the modules; being taught with materials leads to better performance (Olayinka, 2016; Paredes-Baan, 2021). These aid the students in understanding the subject (Oluwagbohunmi & Abdu-Raheem, 2015); hence, it substantiates learning (Choppin et al., 2022). The students used the module at their own pace without the teacher's assistance; therefore, it is a paramount concern that it is easy to understand and comprehend. The elements of user-friendly instructional materials, as concluded by Simui et al. (2017), are present in the developed and utilized modules. Specifically, the importance of contents based on the approved syllabus, design and objectives, language, format and style, pictures and illustrations, and appropriate assessment from diverse sources. The mentioned components can contribute to addressing the learners' needs (Igbo & Omeje, 2014).

Finally, the modules utilized significantly improved students' performance. The experimental and control groups were given equal hours and thoroughly guided during the study. However, the results ascertained that the experimental group (Albay & Eisma, 2021) performed better. Underscoring that using the modules influences learning acquisition (Chingos & Whitehurst, 2012), the experimental group obtained higher post-test scores (Abubakar, 2020; Nwike & Catherine, 2013) than the control group. Hence, the effectiveness of the materials (Alelaimat & Ghoneem, 2012) is evident with the increase in performance. Exposure to teaching aid is indispensable in increasing students' performance; thus, it will benefit the learners to acquire the essential competencies. However, one of the pitfalls has yet to be revealed in utilizing self-directed learning material. Thus, academic performance will only improve if students are organized to set their goals and learning pace. The modules precisely cover all the topics which define the expected learning. It implies that they are valuable for students' knowledge; hence, understanding and skills have been stimulated with their utilization. It would help the students quickly learn the subject (Bukoye, 2018). In the same way, it will also assist the teachers (Olumorin et al., 2010) in delivering their lessons systematically and logically.

Conclusion

Outcomes-based instructional materials are an essential tool in inviting the enthusiasm of business students to engage in learning to address the industry's needs. It maximized motivation and participation since topics are well-planned and designed comprehensively, and the knowledge learned is applied. Practical, user-friendly, and easy-to-comprehend instructional materials are paramount in its development. It is significantly considered by the students and commands their assent and understanding of the materials to be utilized. Furthermore, print modules cultivate further knowledge, increasing students' performance after being exposed to the materials and independently defining their learning pace. Instructional materials utilized by the professors and learners must be validated before their utilization to ensure that the competency required is learned. Various methodologies are needed to establish consistent and conclusive helpful evidence in testing instructional materials' effectiveness. Finally, learning materials are a valuable tool to encourage independent learning without sacrificing the competencies learned and applied by business learners.

Recommendations

The study implicates outcomes-based education material's importance in enticing learners' interest. However, further investigation should be conducted to describe or explore specific areas in educational materials development that need to be improved to cope with the fast-changing pace of education. While there are available published materials to prove that print and digital learning materials are significant to learners, there is still a need to explore other dimensions. It might include capacitating educators to make a responsive tool to facilitate learning in remote and hybrid environments. Furthermore, to accentuate that teachers can be makers and not only buyers of instructional materials. Therefore, educators are continuously encouraged to produce research-based instructional materials to make learning independent and productive, including a focus on strengths and weaknesses.

Limitations

The materials did not undergo an assessment of gender-fair language, which other researchers and authors might consider in future undertakings. On the other hand, the study is conducted only in one state university in the Philippines. Results might have been improved in collaboration with other state or private universities to obtain more definite evidence.

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