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Using Canvas Interactive Flexible Learning System in Developing Analytical and Critical Skills of Business Administration Students

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ABSTRACT

This study determined the effectiveness of Canvas interactive flexible learning system in developing the analytical and critical skills of Bachelor of Science of Business students of Jose Rizal University who were enrolled in the subject of Business Organization & Management for the 1st semester of the academic year 2020-2021. Fifty students as the sample size resulted from the random selection of the sections of the subject Business Organization & Management offered during the semester became part of quasi-experimental design. Pre-test and Posttest on case analyses were conducted to determine the analytical and critical skills of the students in terms of problem determination, problem analysis, and problem resolution. Frequency count, percent, mean, and standard deviation for dependent data were used for statistical treatment. Findings shows that problem determination (WM =5.26, SD = 0.95), problem analysis (WM =5.90, SD = 2.87), and problem resolution (WM = 6.06, SD = 3.59) were improved after the treatment with WMs of 9.60, 7.30, and 7.00, respectively.

Keywords: *Canvas Interactive Learning Process, Critical and Analytical Thinking Skills, Problem Determination, Problem Analysis, Problem Resolution.*

I. INTRODUCTION

At this time of a pandemic, schools have shifted from face to face into virtual studies for safety issues. Jose Rizal University (JRU) launched the Canvas interactive flexible learning system in developing analytical-critical skills study program to accommodate the need of students. Moreover, educators play an important role to enhance the quality of students' education. In this study, an analytical-critical skills method has been employed to analyze the students' perceptions of using canvas interactive flexible learning system. In addition to that, after a thorough examination of the studies, a plan of action shall be implemented and evaluate the effectiveness of the method that will benefit the students.

The analytical-critical skills teaching method is a highly adaptable style of teaching that involves problem-solving based learning and promotes the development of analytical-critical skills. By presenting the content in the format of a narrative accompanied by questions and activities will promote group discussions and complex problem solving (Anderson, 2000). The case studies facilitate the development of the higher levels of Bloom's taxonomy of cognitive learning; moving beyond recall of knowledgeto application, analysis, and evaluation, (Anderson, 2000).

Firstly, this can be used to highlight connections between specific academic topics, real-world societal issues and applications (Flynn, 2001).

Secondly, this has been reported to increase students' motivation to participate in class activities, which promotes learning and increases performance on assessments (Flynn, 2001). For these reasons, analytical-critical skills teaching has been widely used in business and medical education for many years (Flynn, 2001). The graduates who have a higher level of thinking skills are more preferred by employees (Sulaiman, et al 2008). Analytical-Critical thinking provides an employee, not just technical skills but also the ability to come up with decisions that are based on relevant, verifiable data (Sulaiman, et al 2008). Jones & Pimdee (2017) also emphasized the emergence of knowledge-based economies which is the goal of any developing or developed country across the globe. The technical skills become more and more dispensable with the advent and evolution of new technology but on the contrary, cannot replace the ability of humans to analyze and to think critically most especially in decision making (Jones & Pimdee, 2017). This is also consistent with the research results obtained by Bashamm et al (2013) which indicated that higher educational institutions are responsible for developing the analytical -critical-thinking skill of the future workforce.

The proponent intends to conduct studies on students taking up Business Organization & Management under the Business Administration Program during the first semester of AY 2020- 2021. The purpose was to test their analytical-critical thinking in terms of problem determination, problem analysis and problem resolution.

II. RESEARCH METHODS

Research Design. The study is categorized as action research utilizing analytical, investigative, and evaluated research methods designed to diagnose problems and weaknesses whether organizational, academic, or instructional and help educators develop practical solutions to address them quickly and efficiently. Specifically, this study made use of pre-test and post-test before and after the intervention. Both tests were sub-divided into three focus variables which are problem determination, problem analysis, and problem resolution. These were the basis to identify weak points among students that can be subjected to further enhancement. This could be done through the provision of additional class activities.

Population and Sample. The sample size was determined by randomly selected the two sections from the Business Administration sections of Business Organization and Management of Bachelor of Science in Business Administration students under the College of Business Administration and Accountancy of Jose Rizal University. There were 51 students enrolled in these two sections for the 1st semester, AY 2020 - 2021. For ethical considerations, consent was also sought from the respondents and the rationale behind the study was discussed with the students.

Procedure. At the start of the 1st Semester AY 2020-2021, a validated pre-test on case analysis was conducted to establish the current analytical and critical thinking level of the students. The said pre-test was checked based on the rubric grading system. After a thorough skills assessment of the students, the Canvas interactive flexible learning system was adapted. Topics on cases on business decision-making were randomly discussed and provided to the class. After the activity, the validated post-test was administered to re-assess the level of students' skills. There were no risks foreseen by the researcher as the study was conducted within the corners of the university platform, thereby providing a secured and manageable environment. The research was conducted promptly with the supervision of the proponent to the selected respondents of the study.

Data Analysis. Quantitative data analysis was used zeroing on the frequency count, percent, mean, and standard deviation for dependent data. MS Excel was used.

III. DISCUSSION

During the start of the first semester of AY 2020-2021, a pre-test questionnaire was provided to students of BS Business Administration to determine their current interactive flexible learning system. This was followed by a learning management system activity in class and afterwards, a post-test questionnaire was given to determine if the intervention had an impact on the Canvas interactive flexible learning system of students. The results were translated and analyzed as evidenced data based along with the profile of students.

The extent of development of the Analytical-Critical skills of BSBA students before and after the intervention. Analytical-Critical skills of the students were measured in terms of problem determination, problem analysis and problem resolution.

Table. 1

Analytical-Critical Skills of BSBA Students Problem Determination before and after the Intervention

Point	Number of Students (f)	Percent	Verbal Interpretation	Number of Students (f)	Percent	Verbal Interpretation
9-10	1	2	Highest Extent of Skill Development	14	28	Highest Extent of Skill Development
7-8	13	26	Higher Extent of Skill Development	20	40	Higher Extent of Skill Development
5-6	23	46	Moderate Extent of Skill Development	7	14	Moderate Extent of Skill Development
3-4	5	10	Lower Extent of Skill Development	5	10	Lower Extent of Skill Development
1-2	8	16	Lowest Extent of Skill Development	4	8	Lowest Extent of Skill Development
Total	50	100		50	100	
Mean	**5.26**		Moderate Extent of Skill Development	**9.6**		Higher Extent of Skill Development
SD	**0.95**			**6.9**		

The above table showed the comparison of analytical-critical thinking skills of BSBA students before and after the intervention. According to the table, in the pre-test, out of 50 students,46 % of students have elicited **Moderate Extent of Skill Development**. It has a Mean of 5.26 and a Standard Deviation (SD) of 0.95. This is an indicator that students had a limited grasp on how to determine problems through objective approaches hence, they often base their problem assessment on their emotions instead of factual and verifiable data. This is a clear indicator that the students have been provided with the basic skills in identifying the problem as a focus of their interactive flexible learning, however, it is still somewhat limited due to other precipitating factors such as some students have part-time jobs and still need additional time to formulate into their thought process on how they will determine the problem for the case study. Therefore, problem determination is an integral part of the case study in the assessment of student's analytical and critical thinking skills.

On the other hand, the post-test findings showed only 14 % of students accounted for the Moderate Extent

Skill of Development out of 50 students. Hence, most of the students showed a higher percentage in the post-test which is 40% and was classified as **Higher Extent Skill Development** with a mean of 9.6 % and Standard Deviation of 6.9. This signifies that there were improvements in the students' performance utilizing their analytical-critical thinking skills. Most of the students during the pre-test performance were on the stage of adaptability and the collection of thought processes, however, once they were able to identify and understood the process, they were able to apply and utilized their analytical and critical thinking skills as shown in the post-test data.

Table 2.

Analytical-Critical Skills of BSBA Students Problem Analysis before and after the Intervention

	Pre Test			Post Test		
Point	Number of Students (f)	Percent	Verbal Interpretation	Number of Students (f)	Percent	Verbal Interpretation
9-10	2	4	Highest Extent of Skill Development	16	32	Highest Extent of Skill Development
7-8	17	34	Higher Extent of Skill Development	22	44	Higher Extent of Skill Development
5-6	24	48	Moderate Extent of Skill Development	4	8	Moderate Extent of Skill Development
3-4	3	6	Lower Extent of Skill Development	7	14	Lower Extent of Skill Development
1-2	4	8	Lowest Extent of Skill Development	1	2	Lowest Extent of Skill Development
Total	50	100		50	100	
Mean	**5.9**		Moderate Extent of Skill Development	**7.3**		Higher Extent of Skill Development
SD	**2.87**			**2.1**		

The above table illustrated the level of the interactive flexible learning system of the students using the canvas flexible learning system method. At the onset of the semester, the results of the students' problem analysis skills in the pre-test were interpreted as **Moderate Extent of Skill Development** (48%) out of 50 students. It has a Mean of 5.9 and a standard deviation of 2.87 Moreover, one eight of the total population belong to the Lowest Extent of Skill Development which accounts for only 8%.

On the contrary, 44% of the total students in the post-test were able to achieve the **Higher Extent of Skill Development** with only a 12 percent difference as compared to the Highest Extent of Skill Development which accounts for 32%. It has a Mean of 7.3 and a Standard Deviation of 2.1. It was also observed that the Lower Extent of Skill Development (14%) is higher by 6% than those in the Moderate Extent Skill Development (8%). Nevertheless, the "Higher Extent Skill Development" has the highest percentage recorded compared to those classified as the Lower and Lowest Extent of Skill Development during the case study.

It can be inferred during this point that most students can easily determine the pros and cons of decisions and the factors that can influence decision-making. In addition to that, students developed a deeper understanding of the gains and consequences of certain decisions in business. The application of the decision-making tools can be used to select the best options suited for the problem.

Table 3.

Analytical-Critical Skills of BSBA Students Problem Resolution before and after the Intervention

	Pre Test			Post Test		
Point	Number of Students (f)	Percent	Verbal Interpretation	Number of Students (f)	Percent	Verbal Interpretation
9-10	3	6	Highest Extent of Skill Development	12	24	Highest Extent of Skill Development
7-8	16	32	Higher Extent of Skill Development	22	44	Higher Extent of Skill Development
5-6	25	50	Moderate Extent of Skill Development	9	18	Moderate Extent of Skill Development
3-4	4	8	Lower Extent of Skill Development	5	10	Lower Extent of Skill Development
1-2	2	4	Lowest Extent of Skill Development	2	4	Lowest Extent of Skill Development
Total	50	100		50	100	
Mean	**6.06**		Moderate Extent of Skill Development	**7.0**		Higher Extent of Skill Development
SD	**3.59**			**2.1**		

The data above shows the level of the interactive flexible learning system as perceived by the student using the flexible learning system method intervention.

In the pre-test, 50% of students were able to utilize the critical thinking analysis classified as **"Moderate Extent Skill Development**" while 4% out of 50 students elicited the Lowest Extent of Skill Development for the case study. The outcome of students' assessment regarding their problem resolution skills was "Moderate Extent Skill Development "with a Mean of 6.06 and a standard deviation of 3.59. This signifies that most of the students have an idea in terms of problem resolution skills.

As illustrated in the data of the post-test resolution, there was a progression or improvement when it comes to analytical-critical thinking skills of problem resolution. The **Higher Extent Skill Development** manifested the highest score which is 44 percent out of 50 students followed by the **Highest Extent Skill Development** (24%) which is almost half of the total population compared to the pre-test report down to a quarter.

The 3 tables showed a significance between the pre-test and post-test validation. It was noticeable that most

students during the pre-test were not able to prepare, collect and utilized their analytical-critical thinking skills. However, given the proper preparation and guidance, they were able to improve their skills as shown in the post-test. Additionally, to further improve the analytical-critical thinking skills of the students, there should be an introduction of management tools in the class to enhance problem determination skills such as business subjects. The business subjects should emphasize the Strength, Weakness, Opportunity and Threats (SWOT) as a decision-making tool with a comprehensive situational analysis that will help students on how to approach business challenges; Intensify the campaign of library use either online or offline. There are wide variations of materials that are available in the library such as scientific journals, books etc. that will serve as a basis of their problem-solving skills; Adopt and integrate the Learning Management System (LMS) method in the current syllabi of the business administration program in the business organization and management courses; Seminars and workshops should be offered to students that would enhance their interactive flexible learning system such as webinar activities to improve their skills; Continuous research for other activities and methods that would improve the interactive flexible learning system of the students.

IV. CONCLUSION

The research concluded that there is a significant improvement before and after the intervention as shown by "Moderate Extent Skill Development" to Higher Extent Skill Development" during the pre-test and post-test validation in all the three parameters used. This signifies that student have applied the skills to analyze and think critically; they were able to develop the benefits and outcome of certain decisions in business, and can easily determine the advantage/disadvantages including factors that might influence in making a decision. In addition, the data also illustrates that students were able to benefit from it as compared to those who did not get it regardless of pre-test and post-test. The statistics proved most of the learners were able to adapt and understand the virtual learning of CANVAS, thereby using and implementing the ability to think and analyze critically those activities that were given by their educators. Although some were not able to apply the task effectively as manifested by a small percentage due to a variety of reasons. However, students under the category of "Lower/lowest Extent Skill of development should not be ignored. The teachers aim to fix the issues by trying to help their students. Extension of the due dates of students' assignments, giving special exams, quizzes, and discussions that might help them improve their performance. Furthermore, it is **recommended** to encourage professors to introduce management tools in their classes, specifically business subjects, to enhance students' problem determination systematically; Intensify campaign of the use of the library materials online and offline such as scientific journals to provide students with an anchor and bases on their problem- solving skills; The Business subjects must emphasize on decision-making tools such as Strength, Weakness, Opportunity and Threats (SWOT) to provide students with a comprehensive situational analysis on how to approach business challenges; Adopt and integrate the learning management system method in the current syllabi of the business administration program specifically Business Organization & Management courses; Offer students seminars or workshops that would enhance their interactive flexible learning system in webinar activities related to improving this skill; Conduct further research that could identify other activities or methods that may augment or improve the interactive flexible learning system of students. Overall, the CANVAS interactive flexible learning system has influenced and helped students not only in technical skills but the ability to improve their logical analysis and reasoning.

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