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Research and Development of Co-Curricular Activities (CCAs) of Industrial Engineering Students for the Distance Learning

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ABSTRACT

Quality learning settings, materials, methods, and outcomes are all parts of quality education (UNICEF, 2000). To build sustainable livelihood and contribute to peaceful and democratic societies, all students require a good education (Barrett and Tikly, 2010). As a result, a great education encompasses solid academic learning and a diverse spectrum of cocurricular activities in which students engage to attain their full potential. Furthermore, good education encompasses formal academic learning and a wide range of co-curricular and extra-curricular activities that students engage in to achieve their full potential this study is to examine further into positive attitudes of industrial engineering students toward the concepts of co-curricular activities in remote education during the CoViD-19 pandemic. Additionally, the researcher uses a Descriptive Research design to determine the benefits and preferred CCAs of most industrial engineering students at Quezon City University. One of the goals of descriptive research is to describe a phenomenon and its characteristics. This research is more concerned with what rather than how or why something has happened. Therefore, observation and survey tools are often used to gather data (Gall, Gall, & Borg, 2007). Responses were analyzed using Likert scale and ranking and the results shows that the majority of the respondents of Industrial Engineering students do not engage in extracurricular activities (46.4%) when it comes to online setup. In terms to face-to-face interaction, 78.6% of Industrial Engineering students engage in extracurricular activities. This study shows that the study found out the top five preferred co-curricular activities of Industrial engineering students in Quezon City, first, the Quiz Competition/General Knowledge Competition (46.90 %), and second, organizing seminars, symposiums, and workshops. The third most popular co-curricular activity is acting competition (21.9 percent), followed by arranging job fairs (37.5 percent). The fifth most popular co-curricular activity, with a total percentage of 15.6 percent, is a free discussion on current issues. This concludes that the researcher should implement a research and development studies with regard to social involvement and development programs. This finding indicates that the convenience of online student services is not only a necessity for distance students but also a preference for campus-based students (Shea, 2005).

Keywords
Co-Curricular Activities (CCA), Flexible Learning, Distance Education Activities, Higher Education Institution

Introduction

Quality learning settings, materials, methods, and outcomes are all parts of quality education (UNICEF, 2000). To build sustainable livelihood and contribute to peaceful and democratic societies, all students require a good education (Barrett and Tikly, 2010). As a result, a great education encompasses solid academic learning and a diverse spectrum of cocurricular activities in which students engage to attain their full potential. Furthermore, good education encompasses formal academic learning and a wide range of co-curricular and extra-curricular activities that students engage in to achieve their full potential.

Co-curricular activities, or CCAs (sometimes known as co-education), are one of the extra-curricular activities that students can participate in on top of their regular schooling. These events are usually academic and either organized or developed to help students better understand the course and complete specific skill development assignments (CSUF, 2010; Ingale, 2014; Dhanmeher, 2014). Co-curricular activities are essential aspects of student education. Students develop their interests and capacities while establishing competencies and soft skills through co-curricular activities to prepare them for real-world challenges (David, 2003). Various stakeholders, including staff, instructors, parents, and institutional administrators, share responsibility for the educational progress of learners worldwide. Staff members of the student affairs department are in charge of creating campus settings that affirm students and provide the resources they need. They need programs and services outside the classroom to suit their academic and social needs (Kuh et. al., 2011, p. 164).

Under the Commission on Higher Education (CHED), many institutions and colleges have embraced flexible learning approaches. These systems consider significant changes in the learning environment during the pandemic. Students can choose from these three learning modes: (1) online - provides internet classrooms to provide teaching, (2) offline - uses printed modules or digital media stored on storage devices, (3) blended - combines online and offline learning modes

The purpose of this study is to examine further into positive attitudes of industrial engineering students toward the concepts of co-curricular activities in remote education during the CoViD-19 pandemic. It presents the perspectives of students who are actively participating in the CHED's distance education procedure (flexible learning). Furthermore, it is anticipated that this research will provide information about the proper delivery of distance education in areas such as educational technologies. Also, the study aims to determine the classifications of co-curricular activities Industrial Engineering students usually participate in and their merits to Industrial Engineering students in this time of the pandemic.

Methodology

The target population of the study is 326 randomly selected 1st year to 4th-year industrial engineering students. 89 students from the 1st year level, 60 students in second-year level, 73 willing participants from the 3rd year level, and lastly, 104 students from 4th year Industrial Engineering students at Quezon City University. Additionally, the researcher uses a Descriptive Research design to determine the benefits and preferred CCAs of most industrial engineering students at Quezon City University. One of the goals of descriptive research is to describe a phenomenon and its characteristics. This research is more concerned with what rather than how or why something has happened. Therefore, observation and survey tools are often used to gather data (Gall, Gall, & Borg, 2007). Data gathered and obtained from the instrument were tabulated, organized, analyzed, and interpreted using descriptive statistics. Descriptive statistics are measures used for making inferences and generalizations about the population based on the data gathered from the sample (Birion and De Jose, 1998). The researcher will choose 326 respondents that will serve as informants for this research. The target respondents involve were the randomly selected 1st year to 4th year Industrial Engineering Students enrolled in the 2nd semester, the school year 2021 – 2022 in Quezon City University. This criterion needs to be followed to ensure the better quality of the data or information.

Results and Discussions

Table 1 revealed that the year level of the respondent responses to the study ranged from 1st year to 4th-year Industrial engineering students. It was observed that 27.14% (89 students) of the respondents are in the first year. 18.36% of the respondents are in the second year, 22.38% of the respondents are in the third year, and 32.12% are in the fourth year. Generally, most of the respondent is in the fourth year (103 students) which is based on the study.

Table 1. Target Respondent of the study

Year Level	Number of Respondents	Percentage
1st Year Level	89 Students	27.14%
2nd Year Level	60 Students	18.36%
3rd Year Level	73 Students	22.38%
4th Year Level	104 Students	32.12%

According to the survey, 28.6% of Industrial Engineering students are aware of two co-curricular activities offered by their university, while 25% are aware of three. The remaining 21.4% of students are aware that their university offers at least one co-curricular activity in which they participate. Other survey findings stated that other students are aware that the university offers five co-curricular activities in which they currently participate. As a result, the majority of students are aware that the university offers two co-curricular activities in which they are involved.

Participation of students in co-curricular activities at university during face-to-face interaction

According to the survey, 78.6% of Industrial Engineering students participate in extracurricular activities, while 21.4% do not. As a result, the majority of the students participate in extracurricular activities provided by the university

Participation of students in co-curricular activities at university in an online setup

According to the survey, 46.4% of Industrial Engineering students do not engage in extracurricular activities in an online setting, while 35.7% do. 17.9% of students participate in the online setup, either actively or passively. As a result of the research, the majority of the students do not participate in online extracurricular activities offered by the institution.

Co-curricular activities participation in distance learning

According to the survey, 46.4% of Industrial Engineering students in their second year participated in co-curricular activities, compared to 32.1 % in their first year. In the third year, 17.9% of students participate in co-curricular activities, and in the fourth year, only 3.1% of students participate in co-curricular activities. According to the findings, the majority of students are participating in co-curricular activities during 2nd year at the university.

Existing system/program that IE students know when it comes to co-curricular activities in distance learning

According to the study, 57.1% of Industrial Engineering students are aware that their peers organize seminars, symposiums, and workshops, compared to 28.6% who are aware that the university hosts a Quiz competition/General Knowledge competition. According to these statistics, the majority of students are aware that they are primarily involved in the organization of webinars, symposiums, and workshops.

The top 5 preferred CCAs of Industrial Engineering students at QCU

The survey provides the top 5 preferred co-curricular activities of Industrial engineering students in Quezon City, the table shows that the first preferred co-curricular activities of the Industrial engineering students preferred are **Quiz Competition/General knowledge competition** with a total percentage of 46.90%.

Table 2. First Preferred CCAs of Industrial Engineering Students at QCU

Co-curricular Activities	Percentage
Quiz competition/General knowledge competition	**39.30%**
Organizing seminars, symposiums & workshops	28.60%
Essay writing competition	10.70%
Drawing Competition	10.70%
Organizing Job Fair	3.60%
Acting Competition	3.60%

For the second preferred co-curricular activities is **organizing seminars/symposium/workshops** with a total percentage of 37.50%.

Table 3. Second Preferred CCAs of Industrial Engineering Students at QCU

Co-curricular Activities	Percentage
Organizing seminars, symposiums & workshops	**28.60%**
Quiz competition/General knowledge competition	21.40%
Essay writing competition	14.30%
Organizing Job fair	7.10%
Science fair	7.10%
Others	18%

For the third preferred co-curricular activities is **acting competition**, with a total percentage of 21.9%.

Table 4. Third Preferred CCAs of Industrial Engineering Students at QCU

Co-curricular Activities	Percentage
Acting competition	**21.90%**
Free discussions on contemporary issues	9.40%
Organizing seminars, symposiums & workshops	9.40%
Mental Mathematics	6.30%
Drawing Competition	3.10%
Acting competition	21.90%

For the fourth preferred co-curricular activities is **organizing job fair**, with a total percentage of 37.5%.

Table 5. Fourth Preferred CCAs of Industrial Engineering Students at QCU

Co-curricular Activities	Percentage
Organizing Job fair	**37.50%**
Science Exhibition	9.40%
Spell bee/ Vocabulary & Spelling competition	6.30%
Drawing Competition	3.10%
Mathematics Competition	3.10%

For the fifth preferred co-curricular activities is free discussion with contemporary issues, with a total percentage of 15.6%.

Table 6. Fifth Preferred CCAs of Industrial Engineering Students at QCU

Co-curricular Activities	Percentage
Free discussions on contemporary issues	**15.60%**
Organizing Job Fair	12.50%
Mental Mathematics	9.40%
Science Exhibition	9.40%
Debating	6.30%

Research and development of CCAs and its merits

With a weighted mean of 4.1900 and a standard deviation of 20.8447, the majority of respondents think that their co-curricular activities help them become more engaged in their organization. With a weighted mean of 4.4000 and SD of 24.2383, the majority of respondents believe that "social skills have been developed through co-curricular activities." According to the findings, students believe that the extracurricular activities in which they participate at university have a greater impact on their social and behavioral status.

Other data revealed that with a weighted mean of 4.4400 and a standard deviation of 27.3861, the majority of students agree that co-curricular activities taught them how to manage their time. With a weighted mean of 4.5100 and an SD of 28.3284, the respondent strongly believes that their respect has grown in co-curricular activities over the time that I have been involved in them. With a weighted mean of 4.5000 and SD of 27.6405, having a verbal interpretation of "Strongly Agree," also suggests that students are interested in one thing and that participating in co-curricular activities at the university made them desire more or even made them interested in many things. The data revealed that the student experience positive satisfaction when it comes to co-curricular activities

With a weighted mean of 4.2200 and an SD of 21.5870, another statement demonstrates that the growing popularity of online programs at colleges and universities has raised awareness of the need for student affairs personnel to serve the co-curricular demands of distance students. With a weighted mean of 4.4700 and SD of 26.2011, the respondents also agree with the last part of the statement "Students who prefer to learn at a distance are now regarded members of the institutional community and should be given fair resources, services, and programs."

The findings of the study show that the overall performance of the student in co-curricular activities has a better advantage in their social skills, time management, esteem development, and others. This result is very consistent with other studies with regard to research and development of Co-curricular activities. The result also supports the Gardner and Barnes (2007) findings, indicating that there is an ongoing need to encourage students to fulfill their development through co-curricular activities at the year level and university

Table 3. Significant Impact of the Barriers encountered in FL to the Self-Paced Learning

Statements	Weighted mean	Mean square	SD	Interpretation
Through those co-curricular activities that we have, I become committed to the group I belong to.	4.1900	18.7500	20.8447	Agree
My social skills have been built up through co-curricular activities.	4.4000	20.1000	24.2384	Agree
I have learned to manage my time through those co-curricular activities that we have.	4.4400	20.5600	27.3861	Agree
My esteem has developed	4.5100	21.1300	28.3284	Strongly Agree

throughout the time that I have joined the co-curricular activities.				
Even though I am only interested in one thing joining the co-curricular activities at the university made me want more or made me even interested in many things	4.5000	21.0200	27.6405	Strongly Agree
The growing popularity of online programs at colleges and universities has brought attention to the need for student affairs professionals in supporting the co-curricular demands of distance students.	4.2200	19.0200	21.5870	Agree
Students who choose to learn at a distance are now considered members of the institutional community and should be provided with equitable resources, services, and programs.	4.4700	20.6700	26.2011	Agree

Summary of Findings

The researcher behind this study entitled Research and Development of Co-curricular Activities (CCAs) of Industrial Engineering Students for the Distance Learning conclude the following statements:

1. According to the researcher's survey, the majority of the participants in the study is in their fourth year, with a total percentage of 32.12%. (104 Industrial engineering students). Additionally, the questionnaire was used as one of the research instruments to collect and analyze data for the study.
2. The study concludes that the majority of the respondents of Industrial Engineering students do not engage in extracurricular activities (46.4%) when it comes to online setup. And when it comes to face-to-face interaction, 78.6% of Industrial Engineering students engage in extracurricular activities, these findings present that the students are very active in co-curricular activities when they are in face-to-face settings.
3. The study found out the top five chosen co-curricular activities of Industrial engineering students in Quezon City, according to the research, are first, the Quiz Competition/General Knowledge Competition (46.90 %), and second, organizing seminars, symposiums, and workshops, and third, conducting research. The third most popular co-curricular activity is acting competition (21.9 percent), followed by arranging job fairs (37.5 percent). The fifth most popular co-curricular activity, with a total percentage of 15.6 percent, is a free discussion on current issues.
4. According to the findings, 43.8 % of Industrial Engineering students recommend that the university conduct social involvement and development programs. This finding indicates that the convenience of online student services is not only a necessity for distance students but also a preference for campus-based students (Shea, 2005). Furthermore, social participation and growth are advantageous in building a holistic approach and improving behavioral factors for co-curricular activity research and development.

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