

**Impact Assessment of the Extension Activities Conducted
by the College of Education,
Central Mindanao University, Maramag, Bukidnon,
Philippines**

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Abstract

This was conducted to determine the impact of the extension activities conducted by the College of education with the purpose of providing excellent services in instruction, research, extension and production. The extension activity conducted was one of the universities initiatives to serve the Filipino. The study was conducted to examine the impact of extension programs of Central Mindanao University College of Education. Specifically, the study aimed to assess the impact of the Extension program zeroing in terms of knowledge, Skills, and the environment; and identify Problems met in planning, implementation, Monitoring and Evaluation. The study employed a descriptive research design with a survey questionnaire as the main instrument. The questionnaire was submitted for expert validation and was pilot tested on non-participants of the study. Structured question was also utilized to serve as guide when participants were personally interviewed. A total of 23 participants of the College of Education extension programs and services were employed. Descriptive statistics such as frequency counts, percentages, and t-tests were used in the study. Results revealed that the participants the participants believe that through the extension services of the College of Education, they became more knowledgeable after the extension program, while in terms of the skills the participants strongly agreed that their skills improved and the techniques taught during the training were effective in the classroom setting and in the environmental impact the participants were now aware of how to preserve the environment by properly disposing of waste materials and applying 3Rs in the classroom by using renewable and recyclable as decoration materials and for class activities. Based on the T-test result a considerable difference were observed based on the data showed in terms of knowledge, skills, and environmental impact. Moreover, the extension activity made a lot of changes in their lives. All the participants were satisfied with the Planning, Implementation, and Monitoring of Extension Services of the College of Education.

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INTRODUCTION

Background of the study

A higher education institution like CMU have a societal responsibility to promote the interchange of ideas, information, experiences, and know-how in addition to imparting knowledge, skills, technologies, and advice. Central Mindanao institution (CMU) is mandated to serves four purposes: production, research, education, and extension. It has been serving its constituents and stakeholders through various extension programs that was based on the needs of the participants. All around Mindanao Island, a university has been offering and expanding its extension programs. According to Maunder, agricultural extension is described as "a service or through educational procedures, in improving farming methods and techniques, increasing production efficiency and income, bettering their levels of living, and lifting the social and educational standards of rural life". This definition highlights the multifaceted role of agricultural extension in enhancing farming practices, livelihoods, and overall rural well-being. The goal of the university's research and extension programs is to include the community, disseminate information and support the overall growth of its stakeholders and community trough outreach activities that was a product of research.

Extension is one of the key thrusts of an SUC that has a crucial role in knowledge building through instruction and research. Extension programs conducted in the Philippines play an essential role of the functions of academic institutions. RA 7722 requires SUCs to respond to the community's needs for growth and development. According to Lauzon (1997), implementing an extension project also builds communities through nonformal Education, which was geared towards empowering people to help themselves through sustainable programs.

In the implementation of the RDE efforts. Faculty members from the ten colleges of the university in partnership within partnership and coordination with Local Government Units (LGUs), NGO's and other partner agencies. The faculty members are actively involved in planning, implementing, and evaluating extension programs within their respective campuses or colleges. The technical experts were the faculty members of the University Implementing extension programs funded institutionally or external agencies. Faculty members from various colleges were working hand in hand depending on the expertise needed in the study. True to its commitment, CMU has extended countless community engagements in numerous barangays, offices, and schools, which included technology transfer, livelihood program with skills training, enterprise development and commercialization to name a few. However, the program's impact on beneficiaries has not yet been assessed. Henceforth, this study was conducted to examine the impact of CMU College of education extension programs and activities on their beneficiaries. The study's findings would help other researcher, and extension agents effectively address to improve the extension program of the college of agriculture.

Systems Theory was utilized as basis of the impact assessment study, which shows how various factors can affect the successful implementation of any extension programs an interconnected system influenced by numerous factors. With a comprehensive understanding of the interplay among, knowledge, skills and environmental factors, the study seeks to determine the overall impact of the extension programs to improve its implementation and in a sustainable manner.

The Theory of Planned Behavior (TPB) was used to checked and predicts an individual's intention to engage in a behavior at a specific time and place. The theory posits that individual behavior is driven by the interplay of three determinants: an individual's attitude toward behavior, subjective norms, and perceived behavioral control (Ajzen, 1991). The attitudes, experiences, and observations of the farmers can affect their attitude, motivation, and aspiration towards the extension activity conducted by the college of education, it may affect their beliefs, intention, and decision to willingly join and participate to any extension activities of the University.

METHODOLOGY

2.1 Research Design

A mix method research design was employed to determine the characteristics of the participants. To assess the impact of the extension program the following indicators were used; acquired knowledge, skills, economic, environmental impact, and the program evaluation were also assessed. Descriptive statistics was utilized such as ranks, percentage, frequency counts, means and t-test. A T- test was used to compare the data collected to answer objective number three of the study. A t-test is a statistical tool used to compare the observed results. Also, a 5-point Likert Scale was utilized to determine the impact of the extension project and activities concerning acquired knowledge, skills, economic and environmental impact as a result of the capacity-building training, seminars, and activities provided by the College of Education. A survey questionnaire was prepared. The data were gathered using a survey questionnaire would be administered personally by the researcher. Each question was explained to the participants before answering to ensure that participants understood the questions. To check the result of the study a focus Group Discussion (FGD) and Key Informant Interview (KII).

2.2 Locale of the Study

Bukidnon is a landlocked province in Northern Mindanao, Bukidnon is located at the heartland of Mindanao. It is linked to Davao in the south and Misamis Oriental in the north of the island. Topography is predominantly a rolling tableland of grass with an average elevation of 915 meters. Low plains alternating with rolling uplands, deep canyons and valleys characterize the terrain. It lies between the parallels 7°25' and 8°38' north latitude and meridians 124°16' east longitude. The region is characterized by mountainous terrains which are often considered marginal farmlands. The sloping farmlands of Bukidnon are home to indigenous and smallholder farmers and records some of the highest poverty incidents in the region. Bukidnon is one province under the region 10, It has a bountiful resources and possible engagements for various sources of income. It is the home of the world's most extensive pineapple plantation.

The City of Valencia is located at the heart of the Island of Mindanao. It is located in the central part of the Province of Bukidnon with a total land area of 63,126 hectares, 35,321.74 with a total of 55.95% agricultural area that is suitable for crop production. The following crops are planted in the city rice, corn, sugarcane, and other industrial crops (Phil Atlas, 2015). This study was conducted at Valencia, Bukidnon. A map of the locale study locale is shown in figure 1.

PHILIPPINES VALENCIA, CITY

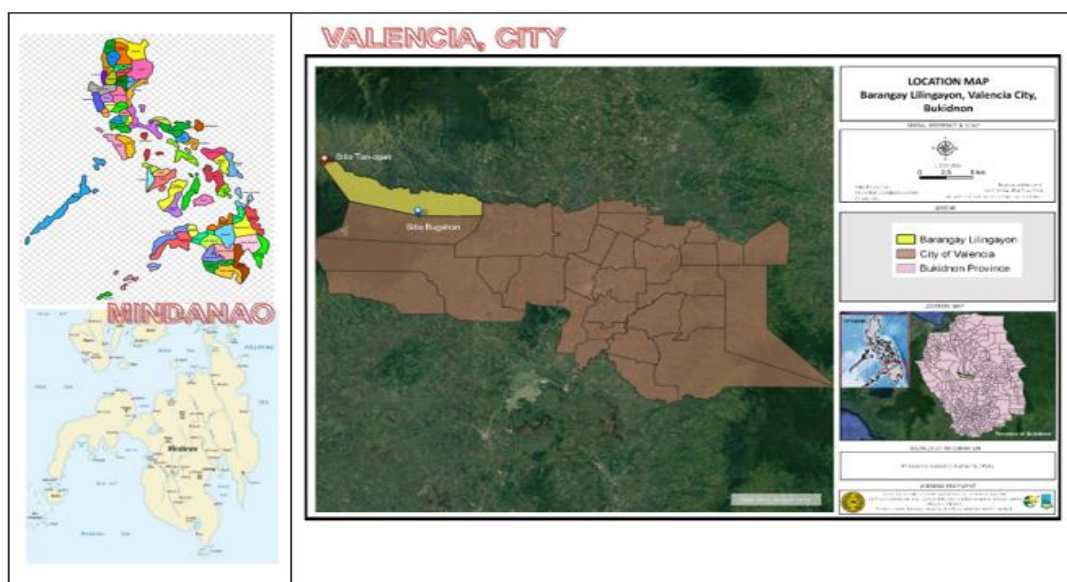


Figure 1. Map of the Philippines and Bukidnon showing the locale of the study

RESULTS AND DISCUSSION

Impact Assessment of Respondents on the Extension Services of the College of Education

The impact of the various Extension Services was measured using the three domains, namely knowledge, which is shown in Table 1; skills in Table 2; The knowledge is verified regarding how knowledgeable the respondents perform the assigned roles and functions. On the other hand, skills were manifested in how well they applied in the field, the seminars, and the training the College provides.

Acquired Knowledge

As shown in Table 1, the participants believe that through the extension services of the College of Education, they became more knowledgeable after the extension program, with a weighted mean of 4.95 (Strongly Agree) as compared to their knowledge before, which has a mean score of 3.33 (undecided). It can be gleaned from the table that the participants rated most of the statements as strongly agree after the conduct of the extension activity. The participants became more knowledgeable about the teaching and learning styles to be implemented in the classroom settings. Moreover, their knowledge of applying gender and language skills in the classroom was improved. Lastly, the participants are knowledgeable that designing appropriate materials for Day Care of Children was helpful to the learning and development of the children. This means that the transfer of knowledge was evident.

Table 1. Acquired Knowledge of the Participants

INDICATOR	Before		After	
	Mean score	Descriptive Value	Mean score	Descriptive Value
1. I have knowledge in understanding various types of learners and Principles of Child Development Learning.	3.48	Agree	5	Strongly Agree
2. I have knowledge in understanding the relationship of physical, social and cognitive development in teaching.	3.55	Agree	5	Strongly Agree
3. I have knowledge on the principles of teaching and learning process.	3.41	Agree	4.50	Strongly Agree
4. I have knowledge on the various strategy in Teaching and Learning Process.	3.0	Undecided	5	Strongly Agree
5. I have knowledge on the behavior of the The 21 st century children.	3.30	Agree	5	Strongly Agree
6. I have knowledge on providing Children with positive guidance.	3.30	Undecided	5	Strongly Agree
7. I have knowledge on the proper application of gender and language Skills.	3.40	Agree	5	Strongly Agree
8. I have knowledge on Literacy Development and Reading aloud.	3.21	Agree	5	Strongly Agree
9. I have knowledge on letter Cutting.	3.28	Undecided	5	Strongly Agree
10. I have knowledge on designing appropriate materials for Day Care Children.	3.40	Agree	5	Strongly Agree
Weighted Mean	3.33	Agree	4.95	Strongly Agree

<i>Legend:</i>		2.51-3.5	-	Undecided
1.00-1.50	-Strongly Disagree	3.51 – 4.5	-	Agree
1.51-2.50	-Disagree	4.51-5	-	Strongly Agree

Acquired Skills

Table 2 presents the acquired skills of the Daycare workers. Before the implementation of the study together with the training series, participants rated the acquired skills as agree, with a weighted mean of 3.81. After the projects, the participants strongly agreed that their skills improved, and the techniques taught during the training were effective in the classroom setting. They became more competent in the assigned task, with a weighted mean of 5.0. This means that the participants have acquired the skills taught during and even after

the implementation of the project thus, they were skillful in understanding various types of learners and Principles of Child Development Learning, identifying the Principles of Child Development Learning, applying the Teaching and Learning Process and gender and language Skills.

The data implies that the training conducted for the participants was effective, and the learnings acquired were applied in the classroom settings. This result corroborates with Oblemero (2020) study, which mentioned that training provided to the community was useful and the acquired learnings changed their perspective to be better in their endeavor.

Table 2. Acquired Skills of the Participants

INDICATOR	BEFORE		AFTER	
	Mean Before	Descriptive Value	Mean After	Descriptive Value
1. I have skills in understanding various types of learners and Principles of Child Development Learning.	4.0	Agree	5	Strongly Agree
3. I have skills in identifying the Principles of Child Development Learning.	3.90	Agree	5	Strongly Agree
4. I have skills dealing with The 21 st Century Children.	3.0	Agree	5	Strongly Agree
5. I have skills in applying the Teaching and Learning Process.	4.0	Agree	5	Strongly Agree
6. I have skills in providing Children with positive guidance.	3.90	Agree	5	Strongly Agree
7. I have gender and language Skills.	4.0	Agree	5	Strongly Agree
8. I have skills in Literacy Development and Reading aloud.	4.0	Agree	5	Strongly Agree
Weighted Mean	3.81	Agree	5	Strongly Agree

Legend:

1.00-1.50	-Strongly Disagree	2.51-3.5	-	Undecided
1.51-2.50	-Disagree	3.51 – 4.5	-	Agree
		4.51-5	-	Strongly Agree

Impact Assessment of the Participants on Environment

Table 3 shows the assessment of the participants in terms of their actions towards the environment. The participants rated their actions towards the environment before (3.84) and after (4.84) the study as agreed and strongly agreed, respectively. The participants were now aware of how to preserve the environment by properly disposing of waste materials and applying 3Rs in the classroom by using renewable and recyclable decoration materials and for class activities. During the implementation of the project, the participants were encouraged to conserve the environment by transforming unused household materials into classroom and school decorations. They try to maintain and promote the implementation of environmentally sound waste management systems in their classroom and the school by sharing ideas on utilizing recyclable materials and the importance of proper monitoring and promoting cleanliness. Their earning and skills acquired from the extension programs helped them to be more disciplined in dealing with their surroundings and the environment. The result implies that the extension project has helped in preserving the environment. This result was consistent with the findings of Perez and Cabrera (2013). It was reported that the program is highly effective in promoting sanitation and cleanliness in ensuring a safe environment.

Table 3. Impact Assessment of the Participants on Environment

ENVIRONMENTAL IMPACT INDICATOR	Before		After	
	Mean	Descriptive Value	Mean	Descriptive Value
1. I am aware of preserving the environment through the proper disposal of waste materials in letter cutting.	3.37	Undecided	4.96	Strongly Agree
2. I am aware in conserving the environment by using renewable and recyclable as decoration materials and for class activities.	3.83	Agree	5	Strongly Agree
3. I am aware in collecting and recycling unused materials to use as decoration in the classroom conserve the environment.	3.87	Agree	5	Strongly Agree
4. I am aware in sharing my ideas to other Daycare workers in the community on how to utilize recyclable materials as decoration and classroom materials.	3.78	Agree	4.72	Strongly Agree

5. I am aware on the importance of proper monitoring and promoting cleanliness in the classroom.	4.0	Agree	5	Strongly Agree
6. I am aware in ensuring that the classroom area is free of pets and pests to avoid diseases.	4.0	Agree	5	Strongly Agree
7. I am aware of maintaining the cleanliness of the classroom area ensure the safety of my children.	4.0	Agree	5	Strongly Agree
8. I am aware in promoting the implementation of environmentally sound waste management system in the school.	3.90	Agree	4	Strongly Agree
Weighted Mean	3.84	Agree	4.84	Strongly Agree

Legend:

1.00-1.50	- Strongly Disagree	2.51-3.5	- Undecided
1.51-2.50	- Disagree	3.51 – 4.5	- Agree
		4.51-5	- Strongly Agree

T-test Result

Table 4 presents the T test result of the study. It can be gleaned that in terms of the knowledge Before (M=3.33, sd=.61) and knowledge _After (M=4.95, sd=.22), which indicate that the extension activities conducted resulted in the improvement in the knowledge of the participants, $t(135)=-59.711, p=.000$.

The result from the skills _Before (M=3.81, sd=.49) and skills _After (M=5.0, sd=.17) indicate that the extension activities conducted resulted in the improvement in the skills of the participants, $t(135)=-19.135, p=.000$.

In terms of environmental impact, the result from the Environmental impact _Before (M=3.72, sd=.28) and Environmental impact _After (M=4.84, sd=.23) indicate that the extension activities conducted resulted in the improvement in the Environmental Impact of the participants, $t(135)= -12.535, p=.00$

The data implies that the extension projects have a crucial role in providing knowledge, transferring skills, and instilling positive behavior towards the environment in the participants.

Table 4. T-test results on the Assessment of the Conducted Extension Activity in terms of Knowledge, Skills, Values, Attitudes, and Environmental Impact

	Mean	sd	t	p-values
Knowledge_Before	3.33	.61	-11.757	.000
Knowledge_After	4.95	.22		
Skills_Before	3.81	.49	-19.135	.000
Skills_After	5.0	.17		
Environmental Before	3.84	.44	-12.538	.000
Environmental After	4.84	.23		

Challenges Encountered Along Planning, Implementation, and Monitoring of Extension Services

Based on the answer of the respondents, they never experienced problems, trials, or challenges from the planning stage to the implementation stage until the evaluation stage. It can be gleaned from the table that all the participants are satisfied with the Planning, Implementation, and Monitoring of Extension Services of the College of Education. The result corroborates with the study of Soliven et al. (2023) who mentioned that the respondents of the extension programs never experienced problems, trials, or challenges during the implementation of the project. While the study of Ekou (2013) has an opposite result in contrast, the findings of the review revealed that mismanagement of projects is a challenge to their sustainability. Mwesigwa (2012), the study was conducted from two parishes of Busiisi Sub County, Hoima district in western Uganda and had failed to deliver results because it was mismanaged.

Table 5. Challenges Encountered Along Planning, Implementation, and Monitoring of Extension Services

A. Planning	Frequency (Answered No)	Percentage
1. There is no direct focal person to contact with and discuss the concerns and needs of the Barangay.	23	100
2. Lack of involvement of fellow barangay officials in the planning stage.	23	100
3. There is no clear understanding between the Barangay and the College in the conduct of Extension Activities.	23	100
4. Lack of communication between the Punong Barangay and the extension coordinator of the College.	23	100
5. Lack of proper consultation by the College to the Barangay.	23	100
B. Implementation	Frequency (Answered No)	Percentage
1. Lack of financial resources to fund extension activities that demand barangay counterpart.	23	100
2. Lack of support from barangay officials.	23	100
3. Lack of time to participate/attend in the activities conducted	23	100
4. Lack of equipment in support to extension services.	23	100
5. Difficulty understanding the lectures during the training/seminar.	23	100
6. Lack of cooperation among the residents to attend seminars/trainings conducted.	23	100
C. Evaluation	Frequency (Answered No)	Percentage
1. The proximity of the adopted barangay was far, making it difficult to conduct regular on-site monitoring.	23	100
2. Vehicles are inaccessible to reach barangay anytime.	23	100
3. Lack of time by the College Extension Coordinator and implementers to monitor the project	23	100

Program evaluation

Evaluation focuses on beneficiaries' reactions towards the output or outcome of the project. In line with this, table 6. presents the distribution of the participants according to program evaluation. The participant rated the program evaluation indicators as strongly agree with an average mean of 4.86 with the following statements; extension activities conducted were highly relevant, which addressed (4.88); the identified problems are based on the participants' needs and are linked to intended effects (4.77). The project is effective and improved their knowledge of gender sensitivity (4.79), counseling performance skills (4.80), has attained the outlined objectives, and the activities were used appropriately, 4.92 and 4.84, respectively. Based on the answer of the participants, the project has met and accomplished its predetermined objectives, and related activities were performed. They also strongly agree that the activities conducted were cost-efficient; thus, objectives were achieved at the least cost. The services were provided in time, and the impacts were accomplished within the appropriate period. The participants provided feedback that the project was on the right track; it answered their needs and interests. According to Campbell and Barker (1997). Appropriateness of the program is essential as it results in better extension and clientele relationships. It further leads to a fully-supported extension program.

The data implies that the project is cost efficient and has achieved its objectives and activities. According to World Bank (2004), evaluation is the final step in determining whether the project achieved its expected effects, outcomes, and/or impacts based on given inputs, time, and objectives. Bhandari (2009) states that effective measurement and evaluation of field operations support sustainability in multiple ways. Overall, the participants are glad that they were present in the extension activities conducted by Central Mindanao University College of Education.

Table 6. Distribution of Participants according to Program Evaluation

Statements	Mean	Descriptive Value
1. The project activities reasonably linked to the intended effects.	4.77	Strongly Agree
2. The project addressed the identified problems.	4.88	Strongly Agree
3. The project is based on the needs of the participants.	4.78	Strongly Agree
4. The project improved my knowledge on gender sensitivity	4.79	Strongly Agree
5. The project improved my counseling performance skills	4.80	Strongly Agree
6. The project has attained its outlined objectives.	4.92	Strongly Agree
7. The activities were used appropriately.	4.84	Strongly Agree
8. The activities conducted were cost-efficient.	4.98	Strongly Agree
9. The objectives were achieved at the least cost.	4.88	Strongly Agree
10. Services were provided in time.	4.87	Strongly Agree
11. Impacts were achieved within the appropriate period.	4.80	Strongly Agree
12. The knowledge gained is continually being used or shared.	4.84	Strongly Agree
13. The skills acquired is continually being practiced.	4.91	Strongly Agree
14. The project resulted to other outcomes or outputs that are of used continually and benefits the community.	4.96	Strongly Agree
Weighted Mean	4.86	Strongly Agree

Legend:

- 1.00-1.50 - *Strongly Disagree*
- 1.51-2.50 - *Disagree*
- 2.51-3.5 - *Undecided*
- 3.51 – 4.5 - *Agree*
- 4.51-5 - *Strongly Agree*

CONCLUSION

Based on the results, the following conclusions were derived;

The participant knowledge about the teaching and learning styles implemented in the classroom settings and applying gender and language skills in the classroom was improved. The skills of the participants improved, and the techniques taught during the training were effective in the classroom setting. In terms of environmental factor participants were now aware of how to preserve the environment by properly disposing of waste materials and applying 3Rs in the classroom by using renewable and recyclable decoration materials and for class activities. the project is cost efficient and has achieved its objectives and activities.

The extension program of the College of Education Extension were relevant and met the problems and needs of the participants and the target activities were met. The participants acquired skills that are related to their line of work; In terms of the participant's knowledge, skills, values, and dealing with the environment had significantly changed before and after the extension programs. The participants were glad that they attended the extension activities.

LIMITATIONS AND RECOMMENDATIONS

Based on the conclusion the following recommendation were drawn:

The College should conduct a follow-up extension program which includes new teaching and learning styles relevant to the new generation.

It is also recommended that a conduct comparable extension activity in other barangays to increase its community service, which will, later, be a source for a comparative impact study assessment;

For better coordination, the adopted barangay should assign a barangay official who will take charge of the extension, partnerships, and linkages;

To strengthen the skills of the daycare teachers the partnership, linkages and collaboration among the potential agricultural industries for training opportunities can be established and it can be sustainable through the use of Memorandum of agreement. Linkages can also aid in the sharing of resources for skills training and other experiential learning activities.

To ultimately operationalize the boundary of instruction and extension, the faculty members must be given enough time for the extension activities.

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COMPETING INTERESTS

The authors have no competing interest to declare.

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