

Local Knowledge Integration in Higher Education in an Online Learning Environment through Virtual Expert Sharing

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ABSTRACT

This study was conducted to assess the effectiveness of Project E-LOCAL, a virtual expert sharing activity, in enhancing students' knowledge and their appreciation on Cagayan culture and tradition of a Private Higher Education Institution in Northern Philippines. A combination of quantitative and qualitative methods of research was utilized in the study. For the quantitative part, both quasi-experimental method and descriptive survey were used, while basic qualitative research was employed from the qualitative aspect of the research. A total of 41 pre-service teachers participated in this study. The results reveal that students have limited knowledge on their own culture prior to the implementation of the program. Finally, results of the evaluation of the students on the implementation of the program shows that Project E-LOCAL is very effective as a teaching and learning strategy in integrating local knowledge in an online learning environment.

INTRODUCTION

Local knowledge or indigenous knowledge plays a very important role in the development of local communities towards sustainable development. It is then important that these should be documented, promoted and preserved. However, previous studies and literatures claimed that many people, especially students nowadays are forgetting the value of their own culture and identity due to their low awareness and knowledge of their culture (Eko & Putranto, 2019; Burgess, 2019). This can be attributed to some societal changes and trends such as technological advancement, migration, mergers and acquisitions of culture from other groups, diffusion, and globalization among others (Goksoy, 2019; Hortelano, et. al., 2018). With this kind of situation, it is important that agencies and institutions, such as higher education institutions must implement sustainable activities and programs for cultural preservation, protection, and promotion.

Higher Education institutions play a very important role in the promotion and preservation of local knowledge among indigenous communities. Many studies have shown how important is the role of higher education institutions (HEIs) in local knowledge promotion (Moore, 2012; Bartell, 2003; Hoppers, 2001). HEIs should integrate local knowledge promotion especially along instruction, research and extension as stipulated by the Commission on Higher Education (CHED) Memo. No. 2 series of 2019. Since higher education institutions are considered knowledge generators and many of their professors and staff are considered experts, they can really come up with initiatives and programs that will promote and preserve local knowledge especially in the areas of research and development and also along innovation such as digitization of cultural resources (Norman, 2004). It has been stressed that higher education institutions have a crucial role to play in documenting and promoting local knowledge. In fact, even the Church document, *Ex Corde Ecclesiae* is faithful in instilling the challenge and the role of universities in the preservation and promotion of indigenous knowledge and even cultural heritages (Pope John Paul II, 1990).

“Every Catholic university, as a university, is an academic community which, in a rigorous and critical fashion, assists in the protection and advancement of human dignity and of a cultural heritage through research, teaching, and various services offered to local, national and international communities.”

Ex Corde Ecclesiae, No. 12

Many universities and colleges around the world already came up with initiatives and programs for local knowledge promotion and preservation. Universities should collaborate with government and non-government agencies in the conduct of indigenous studies so that policy and extension programs are implemented. Indigenous knowledge should also be part of the curriculum at all levels and in all programs where applicable. Since universities are considered as the main producers and generators of knowledge, then, they play

a powerful tool in the documentation of local knowledge and indigenous systems (Sen, 2005; Anderson, et. al., 2008).

University of Saint Louis (USL), a higher education institution in the Philippines embraced the mission on Indigenous Peoples (IP Concern). Despite its young age as an educational institution, USL is committed in its mission of becoming a university that promotes Filipino and indigenous culture and traditions through its trifocal functions: instruction, research and extension. Through the establishment of the Center for Social Innovation, Local Knowledge and Educational Research (CSILKER), USL carried its goal of becoming a university cultural hub in the Cagayan Valley Region. Part of the major research agenda of the center is on the protection and promotion of local knowledge and Cagayano Development which also includes cultural and indigenous studies, local history, Cagayano studies, and ethnobiological studies.

The province of Cagayan is known for its natural, cultural and historical splendor. In addition, Cagayan is without a doubt one of the Philippines' richest archaeological sites. The National Museum's excavations and the Cagayan Museum's field research have yielded a plethora of archeological finds, including artifacts dating back to the Paleolithic Age, the Neolithic Age, when man began to produce his own food through the domestication of plants and animals, and the Iron Age, which spans the years 2000 B.C. to 1000 A.D. (National Commission on Culture and the Arts, 2015). Furthermore, the predominant languages of Cagayan are Ibanag, Itawes, and Ilocano (in various shades and intonations), as well as Malueg. Ilocano has become the province's primary language, with 67.3 percent of the population speaking it. Itawes account for 13.5 percent, Ibanag for 15.3 percent, and Malaueg for 1.7 percent of the population (Tindowen, 2016).

It is then worthy to note that indeed, the Cagayan province is considered as a cultural hub. Hence, the need for cultural education and awareness of the province must be initiated and implemented especially among students considering the drastic change and evolution of societies brought about by globalization. However, with the current restrictions in education due to the COVID-19 pandemic, colleges and universities shifted to flexible learning modality to adapt to the current needs of the education sector. The University of Saint Louis implemented flexible learning modalities such as the use of online learning. Despite this shift, the need for local knowledge integration should always be a prime consideration of the university especially that the Commission on Higher Education mandates every university to integrate local knowledge in schools through the CHED Memo No. 2 series of 2019. Hence, the birth of Project E-Local. This study was conducted to determine the effectiveness of the Project E-LOCAL in enhancing students' knowledge and appreciation on Cagayan culture and tradition.

LITERATURE REVIEW

The Project E-LOCAL

The university through the Center for Social Innovation, Local Knowledge and Educational Research introduced the Project E-LOCAL (Expert sharing on Local knowledge, Culture and the Arts, and Local history) to promote Cagayano Studies and Development to its students. The Project E-LOCAL is a six-week virtual sharing activity of authors and writers of research papers on Cagayano Studies to Pre-Service teachers of the University of Saint Louis through the use virtual learning platforms such as Zoom and Google Meet. Research papers that were shared focused on Indigenous Peoples Education, history of Cagayan, language and literature, and indigenous knowledge systems and practices of Indigenous Peoples of Cagayan province were shared to the students. Emphasis was given by authors to research methodologies in doing cultural researches. A Pre-test and Post-test were conducted to determine the effectiveness of the said program in increasing the knowledge of participants. An evaluation of the program was also done to determine the strengths and weaknesses of the program. In this way, intervention will be done to address the problems and issues that arise from the implementation of the said project.

METHODOLOGY

This study utilized both quantitative and qualitative types of research to assess the implementation of the Project E-Local among Teacher Education students of University of Saint Louis, a Higher Education institution in Northern Philippines. For the quantitative part, a combination of quasi-experimental method and descriptive method were used. Quasi-experimental research specifically, the pre-test and post-test method was used to determine the effectiveness of the Project E-LOCAL in increasing students' knowledge on Cagayano Culture. On the other hand, descriptive research method was used to evaluate the implementation of the said program.

On the other hand, for the qualitative aspect, the study utilized basic qualitative research method by Merriam and Tisdell (2015) to explore the effects of the said program to pre-service teacher. According to Babchuck (2017), this research approach helped provide the idea that meaning is socially constructed by individuals in interaction with their world. It helped interpret how individuals experience and interact with their social world, the meaning it has for them, which in this case were pre-service teachers who brought to light the effects of the Project E-LOCAL to them.

The participants of the study were the 41 Pre-Service Teachers of the School of Education, Arts and Sciences of the University of Saint Louis who were enrolled in the Research in the Disciplines Course last First Semester of the School Year 2020-2021. Only students whose ethnicity is Cagayano (either belonging to the different ethno-linguistic groups of the Province) were considered as participants of the study.

Table 1. Distribution of the Participants of the Study

Profile Variables	Frequency (n=41)	Percentage (%=100.00)
Field of Specialization		
BSED major in English	8	19.51
BSED major in Mathematics	9	21.95
BSED major in Social Studies	10	24.39
Bachelor of Elementary Education	14	34.15
Ethnicity		
Ilocano	23	56.10
Ibanag	11	26.83
Itawes	6	14.63
Malaueg	1	2.44
Place of Origin		
Tuguegarao City	18	43.09
Other Municipalities of Cagayan	23	56.91

Research Instrument

Pre-test and Post-Test

The pre-test and post-test is a teacher-made test composed of 30-item multiple choice to assess students' knowledge on Cagayano culture. The test covered topics in Indigenous Peoples Education, history of Cagayan, language and literature, and indigenous knowledge systems and practices of Indigenous Peoples of Cagayan province. The researchers ensured that all the items of the test were part of the different sessions and researches shared by expert sharers. The test was validated by Social Sciences teachers and was revised based on their suggestions.

Questionnaire

Both closed-ended and open-ended questionnaires were used to assess the implementation of Project E-Local of the university. The closed-ended questionnaire is composed the following domains: (1) project aims and effectiveness, (2) project implementation, (3) project sustainability and (4) quality of expert-sharers. Meanwhile, an open ended questionnaire was used to further explore the effects of the implementation of the project to pre-service teachers.

Data Collection

This research study followed three phases of data collection:

a. Pre-Implementation Phase

The researchers sought permission from the Vice President for Academics for the conduct of the study and the implementation of the program through the Research in the Disciplines course. After approval, the researchers administered the pre-test to the participants. The test ran for 1 hour. After the

pre-test, the researchers oriented the participants with regards to the component and objectives of the project.

b. Implementation Phase

The participants were engaged in Project E-Local every Monday from 9:00-10:30 in the morning from October 5 – November 16, 2020. Six expert sharers were invited to share the salient findings of their studies and researches related to Cagayano culture and identity. The following were the six topics that were shared to the participants:

- A. Session 1: Local Knowledge Integration in Higher Education: The USL Experience
- B. Session 2: The Ethnomathematics of the Aetas of Cagayan Province
- C. Session 3: From Womb to Tomb: Beliefs and Practices of the Aetas on Life and Death
- D. Session 4: The Linguistic Survey of the Maluaegs of Rizal, Cagayan
- E. Session 5: The Cultural Resources of the Ibanags
- F. Session 6: Popular Religiosity of the Itawes and their Concept of Salvation

c. Post-Implementation Phase

After the implementation of the project, the same test was administered to the participants. However, test questions and choices were jumbled. After the post-test, participants were also asked to evaluate the implementation of the program. They were also asked to answer the open-ended question to determine the effects of the said program to them.

Data Analysis

Quantitative Data Analysis

Frequency counts and percentage were used to determine the pre-test and post-test scores of the participants using the following score range and qualitative description:

Scores	Qualitative Description
28-30	Excellent
25-27	Very Satisfactory
21-24	Satisfactory
16-20	Fair
15 and below	Poor

Paired Sample T-Test was used to determine significant difference on the pre-test and post-test of the participants.

Weighted mean was used to describe the evaluation of the participants on the implementation of the project with the following mean range and qualitative descriptions:

Mean Range	Qualitative Description
3.50 – 4.00	Very Effective
2.50 – 3.49	Effective
1.50 – 2.49	Less Effective
1.00 – 1.49	Not Effective

Qualitative Data Analysis

The responses of the respondents in the open-ended question were analyzed following three major stages of coding: open-coding, axial coding and selective coding (Creswell, et. al., 2007; Merriam & Tisdell, 2016). While reading the transcripts, open coding was done by literally underlining and highlighting significant statements, and writing notes and comments on the margin. Initial codes were identified based on the significant statements and marginal notes. Open coding was repeatedly done across all the pages of the transcripts. Axial coding was used after the open coding by classifying and tabulating the identified initial codes, and similarity or identity of the meanings of the initial codes were the basis for classification and tabulation. The initial categories were subjected to selective coding, the final stage of qualitative data analysis, whereby overlapping categories were lumped together after a thorough analysis.

The number of categories was finalized using the CERES criteria for the determinations of categories (Ballena & Liwag, 2019): (1) Conceptual congruence, (2) Exclusivity, (3) Responsiveness, (4) Exhaustiveness, and (5) Sensitivity. Conceptual congruence of themes was observed when all of them belonged to the same conceptual level; in short parallelism was observed in the phraseology of themes. Second, exclusivity means that one identified theme should mutually exclude the others; thus, overlapping of themes was avoided. Third, responsiveness was maintained when the identified themes were the direct answers to the research problems or objectives of the research. Fourth, exhaustiveness was followed when the identified themes were enough to encompass all the relevant data contained in the transcripts. Fifth and last, sensitivity was observed when the identified themes were reflective of the qualitative data; in short, they had strong and material support from the data.

RESULT AND DISCUSSION

Table 2. Pre-test and Post-Test Scores of the Participants

Scores	Pre-Test		Post-Test	
	n	%	n	%
28 – 30	0	.00	0	.00
25 – 27	0	.00	10	24.39
21 – 24	2	4.88	23	56.10
16 – 20	24	58.54	8	19.51
15 and below	15	36.58	0	.00
Total	41	100.00	41	100.00
Mean Score	17		23	
Qualitative Description	Fair		Satisfactory	

Table 2 presents the pre-test and post-test scores of the participants. As reflected in the table, almost half of the participants have pre-test scores ranging from 16-24. The results indicate that they performed fairly in the pre-test. Furthermore, 36.58% of the total number of participants failed in the pre-test. This suggests that pre-service teachers lack knowledge on their own culture. The results of this study is confirmed by previous studies in which it was found out that college students nowadays are not that knowledgeable to local knowledge specifically, on their own culture and tradition (Rychly & Graves, 2012; Aikenhead, 2001). In fact, Mulder (2013) stressed that most Filipinos have forgotten their culture as a result of the advent of new technology. People today are overly reliant on it, and, as a result, they are unable to reflect on their customs and traditions.

With regard to the post-test scores of the participants, the table shows an improvement in the scores among the participants. As reflected by the post-test mean score, majority of the participants have a satisfactory rating. It is important to note that 24.39% of the total participants of the present study have very satisfactory scores in their post-test. More importantly, only few participants received satisfactory post-test scores. This could mean that after the implementation of the program, there is now an increase on their level of knowledge on Cagayano culture and tradition.

Table 3. Significant Difference on the Pre-Test and Post-Test Scores of the Participants

Test	Scores	Mean Difference	t-value	P-value
Pre-Test	17	5.00	6.250	.000
Post-Test	23			

*Significant at .01 level

Table 3 shows the significant difference on the pre-test and post-test scores of the participants. As disclosed in the table, the pre-test mean score of the participants is 17.00 while their post-test mean score is 23.00. The difference

of 5.00 in the pretest and post-test scores reflects a significant increase in the level of knowledge of the participants on Cagayan culture and tradition. This indicates that the mean score after the conduct of the program is significantly higher than the mean score before the conduct of the project E-LOCAL. The paired t statistic resulted to 6.250 with statistical significance $p=.000 < .01$. The results imply a significant difference in the scores. Hence, the results clearly show that the implementation of a virtual expert sharing strategy increased students' knowledge on their own culture and tradition as Cagayanos. The findings confirm the results of previous studies claiming that the utilization of expert-sharing strategy in the teaching and learning process is effective in enhancing student learning experience which result to increased level of knowledge on a certain topic (Kurczek & Johnson, 2014; Crawford & Jenkins, 2017; Roman, 2018).

Effects of the Project E-LOCAL to the Personal and Professional Development of Students

A. Enhancement of Skills in doing and writing Cultural Studies and Researches

One important and positive effect of the implementation of the Project E-LOCAL among teacher education students is the enhancement of their skills in doing and writing cultural studies and researches. It has been stressed that research is one of the major functions of pre-service teachers in higher education. Studies conducted revealed that still, research has been the weakness of many students in higher education (Tindowen, et. al., 2019; Matula, 2009). In this project, students were given a chance to enhance their research writing skills especially that they were exposed to different methodologies and tips in doing research papers.

B. Appreciation of Cagayano Culture and Identity

Another important theme that was transcribed from the responses of the respondents is appreciation of Cagayano Culture and Identity. Students realized many things about the richness of Cagayano culture and at the same time became more knowledgeable about their own traditions and cultural heritage. As a result, many of the respondents would like to engage to studies and researches involving Cagayano studies and communities focusing on dances, music, arts, indigenous systems and beliefs and language and literature.

C. Conduct of Extension Activities and Service Learning Programs

Another important theme that was revealed in the study is that because of the project, many of the Teacher Education students would like to conduct extension, outreach and service learning programs to cater to the current needs of cultural groups in the province. Some of the activities that they would like to implement are literacy programs, medical and dental mission, feeding program, gift giving, and livelihood assistance program.

D. Living the Missionary Character as part of the CICM

The Congregation of the Immaculate Heart of Mary (CICM) is considered as one of the many religious congregations around the world that took initiatives in the documentation and promotion of local knowledge. CICM missionaries are known to document cultures and languages especially in Northern Philippines. USL is under the management and supervision of CICM. It is then important that students enrolled in the university should also embraced CICM identity of being missionaries. And because of the program, the missionary character and identity of students was ignited (Medrano, et. al., 2016). In this sense, they actually feel how important is preservation and promotion of local knowledge as a major character of a CICM and Louisian student.

Table 4. Evaluation on the Implementation of the Project E-LOCAL

Indicators	Mean	Description
Project Aims and Effectiveness	3.56	Very Effective
Project Implementation	3.44	Effective
Project Sustainability	3.80	Very Effective
Quality of Expert Sharers	3.66	Very Effective
Overall Mean	3.62	Very Effective

The table shows the evaluation of the students towards Project E-LOCAL. In terms of project aims and effectiveness, the project is said to be very effective among students since the respondents believed that the project helps them to acquire important information and methodologies in doing cultural studies and researches. At the same time, the project also translates to the students being able to appreciate Cagayano culture and identity. Through the project, students were able to expand their knowledge to different cultural resources of different indigenous peoples groups in the province. The findings suggest that the project leads to the development and enhancement of research skills and capabilities among students since many studies argued that expert sharing activities serve as one way in inculcating the culture of research among students.

Meanwhile, along its implementation, the project was assessed by the respondents as effective. This means that the project was implemented very well. However, there are some issues and concerns that arise during the implementation of the project such as time management, slow internet connectivity, and some other external concerns. As to program sustainability, since the respondents agreed that the project is effective; it should further be implemented and be sustained. And finally, along quality of expert sharers, the respondents agreed that it is very effective. This means that students believed

that resource speakers/authors are highly knowledgeable with their researches. At the same time, they answered the questions of the students effectively. Overall, project E-LOCAL is very effective.

CONCLUSIONS AND RECOMMENDATIONS

The study concludes that the project E-LOCAL is effective and sustainable as it attains its goal of integrating local knowledge in higher education. The project is effective in increasing students' knowledge of the Cagayan culture and tradition. In addition, the project promotes positive effects among pre-service teachers personally and professionally. Specifically, responses of the students revealed four major effects to them which are as follows: (1) enhancement of Skills in doing and writing cultural studies and researches, (2) appreciation of Cagayano Culture and identity, (3) conduct of extension activities and service learning programs, and (4) living the missionary character as part of the CICM. Finally, results of the evaluation of the students on the implementation of the program shows that Project E-LOCAL is very effective as a teaching and learning strategy in integrating local knowledge in an online learning environment in the midst of the COVID-19 pandemic.

The Project E-LOCAL, as a learning strategy should be continuously implemented among pre-service teachers since it was found out that the program effectively helps students increase their knowledge of their culture. In addition, the project should be regularly evaluated in order to reveal the strengths and weaknesses of the program. In this way, teachers and implementers of the program may develop strategies to address the weaknesses of the program. Other teachers may also dwell into implementing other teaching and learning strategies integrating local knowledge in their virtual classes, as well as in modular learning.

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